

# **Living Within Our Means: Avoiding The Ultimate Recession**

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**The recession we're in right now  
is going to be very grim.**

**But nothing like as grim  
as the recession that awaits us  
if we don't start**

**LIVING WITHIN OUR MEANS**

# **1 THE END OF CAPITALISM AS WE'VE KNOWN IT**

We've had the language to give voice to what's going on in the world today for a long time: quite simply, we've been "living beyond our means". How many times have you heard that, seen the nodding heads, but knew that nothing would change? We've felt this instinctive anxiety for a long time, but lacked the empirical evidence to help us resist the siren voices of those in business and politics who kept on telling us there was no problem. Now it's all blown up in our faces, and, in retrospect, it seems so blindingly obvious.

But we still don't properly understand just how far beyond our means we've been living, environmentally as well as financially, let alone the way those two spheres of human activity are connected. If we don't seize hold of those linkages, the advocates of "patch-up business-as-usual" will soon reassert their customary influence over politicians and the media. The shock to the system from the near-collapse of our global banking industry has been traumatic – and it's going to get a lot worse before it gets better. Even so, that is nothing compared to the near-imminent collapse of the ecological systems on which we depend – particularly a stable climate. And the two are intimately connected.

## **Debttonation Day**

On August 9<sup>th</sup> 2007, banks suddenly stopped lending to each other. Earlier in the year, they'd started to re-evaluate the huge levels of debt on their balance sheets, and discovered that although they still didn't quite know how bad it was, it was much, much worse than anything they'd feared. "Debttonation Day" dawned. The system locked down, spreading instant consternation from Wall Street to Main Street, from the US to Europe to the rest of the world, threatening an economic crash graver than anything seen since the Great Depression eighty years ago. In March 2008, Bear Sterns collapsed and the rot really set in.

## **The Methane Timebomb**

One year after "Debttonation Day", an exchange of emails between researchers involved in monitoring the Siberian continental shelf in the Arctic Circle (published in the Independent) reported intense concentrations of methane – sometimes up to 100 times background levels – over thousands of square miles. They reported examples of the "sea foaming" with gas bubbling up through "methane chimneys" rising from the sea floor. Their hypothesis? A combination of melting sea ice and warmer run-off from Russia's Arctic rivers is causing the sub-sea layer of permafrost to melt away, releasing what could be hundreds of millions of tonnes of methane. Methane is twenty times more powerful than CO<sub>2</sub> as a greenhouse gas.

It is the principal purpose of this pamphlet to demonstrate that these two explosive phenomena are symptoms of the same systemic flaws in contemporary capitalism. There will be little chance of engineering any kind of meaningful response to either crisis unless we understand that the “living beyond our means” which has been going on for decades, has led both to massively over-leveraged balance sheets and a massively over-leveraged use of the natural world.

But in all the intense coverage of the credit crunch and economic recession, there’s been surprisingly little reference to environmental issues – outside of the environment world. With the exception of a sequence of blockbuster reports on the potential for some kind of “Green New Deal” from UNEP and others, the mainstream parties in the UK have been keeping very quiet. Indeed, it has become received wisdom that environmental issues should now “be put on the back burner” given the ferocity of the economic recession. Even dealing with climate change, which is widely acknowledged by scientists as the single most important challenge facing humankind today, is now seen by many politicians and business leaders as “an unaffordable luxury”. We’re in some terminal zero-sum game it would seem: we either combat the grim consequences of global recession or we get to grips with climate change and a host of other sustainability challenges. But not both at the same time!

This paper argues exactly the opposite: that the convergence of these two crises should be seen both as the “perfect storm warning” that it is, and as an astonishing opportunity to confront and resolve both crises without further delay.

### **Opportunity Out Of Disaster**

There are two powerful reasons to see things in this counter-intuitive way. First, instead of treating each crisis as a “stand-alone phenomenon” in its own right, even the most cursory examination of the causes underlying each crisis reveals the same inherent dysfunctionalities within this particular model of capitalism. Second, in the same way that our capital markets imploded for lack of proper regulation, so our carbon-intensive economies are about to implode – socially and environmentally – for lack of proper regulation of emissions of greenhouse gases. Which means, quite simply, that the only available global solution to our economic crisis lies in addressing our sustainability crisis through what is rapidly becoming known as a “Green New Deal” for the 21<sup>st</sup> Century”.

If our politicians could for one moment focus on this extraordinary opportunity, especially at a time when the reputation and standing of the United States has been so powerfully enhanced by the election of Barack Obama as the next President, we would find ourselves with a unique chance of securing a genuinely sustainable future for ourselves and all those who come after us.

The consequences of missing out on this opportunity do not bear thinking about. But economic paradigms do not die easily, and this particular

paradigm has taken such a firm hold on the collective psyche of the human species, and will be defended so ferociously by a self-serving elite of massively powerful beneficiaries of that paradigm, that the odds on “overthrow and make anew” rather than “accommodate and retrieve lost ground” are still no more than 50/50.

We should take heart, however, from the fact that what has had to be done to rescue the banking system (through massive public interventions and nationalisations to the tune of \$3 trillion globally) has already fatally weakened the case for any kind of return to the status quo. After all, what can be done for the banking system can surely be done for the protection of human civilisation itself?

### **Shifting Power Bases**

Many commentators have arrived at the conclusion that the role of America as the principal driver of the global economy is to all intents and purposes finished. It's possible that the astonishing growth in countries like China and India over the last twenty years would have brought to an end its period of dominance in the not so distant future anyway – no empire lasts forever. But the cataclysmic collapse in financial markets over the last year or so makes that transition inevitable and imminent. And with it, many believe, will go the particular variant of capitalism that has reigned supreme over the last thirty years.

For those concerned both about society and about the state of the environment, globally or locally, this should be a cause of unconstrained celebration. Though most environmental organisations have demonstrated next-to-zero interest in the macro-economic systems against which today's “environmental issues” are played out, the truth is that not one of their respective causes has had the remotest prospect of succeeding under this particular system of capitalism. Its dramatic collapse offers at least some chance of a belated reconciliation between the pursuit of economic prosperity on the one hand and the protection of the life-support systems on which we all depend on the other.

It's a sign of just how bankrupt mainstream political debate has been here in the UK over so many years that the interface between capitalism and the state of the environment has warranted little if any attention. Even the Liberal Democrats (who can justifiably claim to be the “greenest” of the three major parties) have conspicuously failed to contextualise their “environmental policies” within any kind of transformative critique of contemporary capitalism. Going back over the last twenty five years or more, a depressingly deterministic acceptance of the core tenets of contemporary capitalism has – in all major parties – rendered much of the debate about the environment unavoidably superficial. Thankfully, the near-inevitable demise of contemporary capitalism could open up some space for a long overdue debate at a much deeper level. It may even become permissible, thirty years

or more after the intense debate in the seventies about the Club of Rome's "Limits to Growth" report, to re-open that all-important area of enquiry.

## **Flawed Role Models**

The next section will briefly look at a number of the dominant characteristics of this particular model of capitalism, and seek to demonstrate not only how they have contributed to the current financial crisis but also to the chronic failure on the part of governments to do anything more than slow the pace of environmental destruction – at the very moment in human history when the scientific evidence available to us regarding the cumulative impact of the human economy on natural systems has become literally incontrovertible. But it may be helpful first to give such abstract ideas a rather more human face by looking at the role of two of the most important protagonists of contemporary capitalism over the last thirty years or so – Jack Welch, former Chief Executive of GE, and Alan Greenspan, former Chairman of the US Federal Reserve.

Jack Welch, formerly of GE, is the most celebrated Chief Executive of the last 30 years. Indeed, he was recognised by his peers as "Business Manager of the 20<sup>th</sup> Century" It's his variety of capitalism that is now withering away in front of our eyes. He was aggressive, ruthless, and known to friend and foe alike as "Neutron Jack" for his ability to hollow out businesses by sacking a quota of employees every year ("pour encourager les autres") whilst keeping the business itself intact.

He was also an environmental despoiler on an heroic scale. It's not the legacy he himself lays claim to in his self-aggrandizing autobiography, but he will be known for decades to come for his part in laying waste the Hudson River near New York – through the calculated, persistent release of PCBs – to help reduce costs and maximise profits. After years of costly delaying tactics, a clean-up of sorts is now underway. And GE's current shareholders will see billions of dollars from what would have been their rightful dividends deployed over the next decade or more to clean up his toxic mess.

Neutron Jack was decommissioned in 2001. Fast forward 7 years. Every single one of the much-hyped "masters of the universe" who have caused the financial system to implode, are, to a man, Jack Welch look-alikes. Their legacy is of course a very different one: packages of toxic debt released with criminal irresponsibility into the US capital markets, just as Jack Welch released his barrels of PCBs into the Hudson River.

The "ultimate boss" presiding over the system throughout that time was Alan Greenspan, Chairman of the US Federal Reserve for 19 years. Until very recently, many would have made the claim that Alan Greenspan was the most convincing candidate as "guru-in-chief" of contemporary capitalism, just as Jack Welch was voted by his peers as "Business Manager of the 20<sup>th</sup> Century". He was judged to have exercised such impeccable judgement as to

have single-handedly secured rising prosperity through turbulent times for the majority of US citizens – and indeed for the rest of the world. As such, he became one of Gordon Brown’s most influential role models; in the citation for his honorary Knighthood, specific reference was made to his contribution “to promoting economic stability” – which sounds almost as astonishing today as the erstwhile protestations of Gordon Brown that he had done away with the damaging impacts of “boom and bust”.

Throughout his time in office, Greenspan refused to acknowledge that he might be contributing to a wholly unsustainable “bubble” in the US housing market (his favourite euphemism under attack was to make light of the institutionalised mis-selling of credit as “froth”, or even “irrational exuberance”!), basing his confidence in this particular model of credit-fuelled economic growth on the belief that house prices in the US would not fall but would continue to rise steadily – even indefinitely. It seems unbelievable that the world should have been in awe, for so long, of a man capable of such utterly crass nonsense.

### **Lest We Forget**

But people were. Here in the UK, there must be many a contributor to The Economist and the FT cringeing at the adulatory copy that they churned out month after month during his tenure of office. And there must be many in the current Government astonished that their then Chancellor put such unequivocal faith in such a false prophet, a man who fetishized the beneficence of self-regulating markets whatever the evidence was actually telling him.

Unfortunately, it’s a little late for retrospective astonishment of that kind, leaving the rest of us to wonder how it is that Labour politicians so comprehensively threw in their lot with a financial system that encouraged mainstream mortgage providers to act as loan-sharks, that positively eulogised the innovation involved in off-balance sheet funding and inadequately regulated hedge funds, that embraced corporate privilege with born-again zeal, with not so much as a word of criticism about utterly obscene salary deals and even more obscene bonuses, that lived in such dread of these “masters of the universe” that they were prepared to slash capital gains tax, promote offshore tax havens, placate “non-doms” at any price, and exercise the lightest of touches in terms of pursuing tax avoidance or even fraud.

One can only hope that the next generation of Labour politicians will ask how it was that Ministers really did believe that the market place could miraculously transform private greed into public good, and how it was they felt quite so comfortable in the company of a generation of “spivs and speculators” as they plunged us all into a vortex of artifice.

## **2 CAUSES AND EFFECTS**

An even greater concern, in one sense, is the fact that the core tenets of this particular model of capitalism have warranted so little applied attention, by any of the major political parties, over the last twenty years or more. Some kind of strange “herd mentality” has clearly been at work, excluding from the mass media the few voices which have been raised in warning about the potential risks entailed in embracing capitalism of this kind, and suppressing the sort of critical thinking that would have opened up a very different kind of debate. So let us turn now to some of those core tenets.

### **2.1 DEREGULATION**

#### **2.1.1 Impact on Capital Markets**

One need hardly dwell on this. After months of increasingly angst-ridden soul-searching amongst politicians and regulators alike, there is now universal consensus that what was once complacently characterised as a “light touch” was little more than a green light for total abuse of the system. The self-same politicians in the UK and US who were only too keen to apply this light touch are now in the vanguard of those calling for a “total clean-up” in the face of such irresponsibility.

It’s ridiculous to seek to pin all of this on Labour. It was Mrs. Thatcher, in the 1986 “big bang”, who demolished the firewalls between retail banks and investment banks, the thin end of what became a very fat deregulated wedge. And one has to go back nearly fifty years to tell the full story of how two generations of free-market zealots successfully whittled away at the constraints and regulations put in place after the Great Depression in the 1930s.

The pendulum is now swinging back. We’ve already seen short-terms bans imposed on the practice of “short-selling”, and criminal investigations have been launched in the US. Outraged electorates must, after all, be offered up a few re-regulated scapegoats for ritual slaughter. A head of steam is building up for the reimposition of capital ratio requirements, for a comprehensive insurance scheme to cover defaulting organisations, for a ban on anonymous trading, for an end to utterly perverse bonus schemes, and for greatly improved transparency to enable regulators to cope better with the unparalleled complacency that has underpinned capital markets until today.

#### **2.1.2 Impact on the Environment**

Environmental deregulation is likely to prove just as problematic, just as calls for much stricter regulation can only increase in the future. But there are big differences between the situation here in Europe and the situation in the US. Here, there’s been a slow down (and sometimes a complete halt) to the “pipeline” of regulatory interventions from the EU which started in the 1970s

and 1980s. In a way that is often ignored by UK politicians, these interventions have done more than anything else to help improve both the quality of the physical environment and the quality of life for European citizens. A few years ago, however, governments just seemed to lose their regulatory nerve in the face of unprecedented lobbying by big business, preferring the use of voluntary agreements or “market measures” to what has been endlessly disparaged as “command and control” regulations.

In the US, by contrast, it’s been full-on deregulation, as George Bush set about dismantling the fundamental pillars of environmental regulation (The Clean Air Act, The Clean Water Act, The Endangered Species Act etc), in an intensely damaging process brilliantly captured in Robert J. Kennedy’s “Crimes Against Nature”.

This story really needs no re-telling. The consequences of grotesquely inadequate regulation, government after government, administration after administration, are all around us. Thomas Friedman summarizes this admirably in his new book “Hot, Flat and Crowded”:

“There are no cushions left, there’s nowhere to hide; there are no more green fields to dump your garbage into, no more oceans to overfish, no more endless forests to cut down. We have reached a stage where the effects of our way of life on the earth’s climate and biodiversity can no longer be ‘externalised’ or ignored or confined. Our environmental savings account is empty. It is not pay now or pay later. It is pay now or there will be no later. There will be no avoiding accountability for the total cost of ownership of what you produce and consume. The days of a ‘sub-prime planet’ are over – a planet we could own for no money down, where there were no interest payments until sometime far into the future, and all the true costs were hidden.”

## **2.2 DEBT-DRIVEN GROWTH**

One person’s credit is another’s unmanageable debt. Indeed, indebtedness – in the shape of personal debt, corporate debt, farm debt, national debt and so on – is the single most important feature of today’s model of economic growth. To keep alive the illusion of prosperity, politicians of every persuasion have not just condoned the taking on of debt as “sound economic practice”, but have actively promoted it. And their electorates have dutifully gone out there and consumed on the back of those debts as if there would be no tomorrow and no final reckoning.

### **2.2.1 Impact on Capital Markets**

Back in the 1970s, economists began to question how the engine of economic growth could be sustained at a time when productivity gains were starting to have a major impact on both unemployment and average earnings:

“Herein lies the inherent contradiction at the heart of our market economy: if dramatic advances in productivity can replace more and more human labour, resulting in more workers being let go from the workforce, where will the consumer demand come from to buy all the potential new products and services?” (Jeremy Rifkin)

The “solution” turned out to be a relatively easy one: fuel the engine of growth with increased debt rather than increased earnings. Discourage savings; promote consumption through the availability of credit of every kind. Live for today by living on tick, and hang the consequences. As a consequence, levels of personal debt have gone through the roof, with the active, indeed enthusiastic encouragement of politicians, so that the UK is now one of the most indebted nation in the world. And as they now gear up for a self-righteous witch-hunt against the mis-selling of credit, let’s just remind ourselves who created that culture of “anything goes” in the first place.

The scale of the problem in the US is literally mind-numbing. David Walker, the US Comptroller General until February 2008 when he resigned in despair at his inability to get politicians to focus on the debt crisis (which he describes as “a greater threat to the security of the United States than international terrorism”), believes that the publicly acknowledged debt of \$10 trillion is a fraction of the real picture – once you add in the full costs of the current bank bail-outs, of the wars in Iraq and Afghanistan, of the Administration’s Medicare programme for seniors and so on. His calculation is that the debt now amounts to around \$50 trillion – the equivalent of \$175,000 for every American citizen. And more and more of that debt is held by China and the Sovereign Wealth Funds of countries in the Middle East and Far East – hence the threat to national security.

### **2.2.2 Impact on the Environment**

As our debts to the banks and others have built up, so have our debts to Nature – in terms of the totally unsustainable depletion of natural resources, measured by the loss of top-soil, forests, fresh water and biodiversity. Everybody knows that liquidating capital assets to fuel current consumption is crazy, but nobody seems to know how to stop it. Judging by the regularity with which politicians trot out today’s favourite green clichés (“We do not inherit the world from our parents; we borrow it from our children”), you’d think they understood the difference between capital and interest. But they clearly don’t.

Some time ago, the Global Footprint Network and the New Economics Foundation launched a new initiative (under the name “Ecological Debt Day”) to mark the point in the calendar year at which society exceeded the total volume of resources available to us every year – were we intent on maintaining intact our stocks of natural capital. In 2008, their report demonstrated that we went into “overshoot” on September 23<sup>rd</sup>. In 2005, it was October 2<sup>nd</sup>. In 1995, it was November 21<sup>st</sup>. In 1986, it was December 22<sup>nd</sup>. The direction of travel is crystal clear, as are the moral consequences:

this kind of deficit consumption is, in effect, drawing down on the capital entitlements of future generations. Given that I've never heard a single politician indicate the slightest awareness of this phenomenon (let alone any stated intention of planning to pay back against these ecological debts), we should recognise this for what it is: intergenerational larceny on a staggering scale.

The phenomenon in itself is hardly surprising. When the global population is still increasing by around 70 million people every year, and when per capita resource consumption is still increasing every year in all but the poorest countries, and when increased technological productivity can do little more than offset a small part of that combined impact, overshoot is literally unavoidable. And though no one should ever underestimate the misery caused to hundreds of millions of people by getting into debt and getting stuck in debt (see below), it's our debt to the natural world that matters more than anything else. As we will see in the next chapter, having more or less successfully recapitalised the banking system, we now need to recapitalise the natural world on an even more heroic scale.

## **2.3 COST EXTERNALISATION**

### **2.3.1 Impact on Capital Markets**

In effect, a whole generation of bankers has externalised the full costs of their systematic mis-pricing of risk (see next section) onto a whole generation of borrowers. Most of them to be fair, probably should have known better, but were just caught up in Alan Greenspan's "irrational exuberance". There are already more than a million people in negative equity here in the UK, and that figure will continue to rise throughout 2009.

The combined human and social costs of gulling huge numbers of people into living beyond their means will be felt for many years to come. It's become increasingly clear that being in debt is now a major contributory factor in the unprecedentedly high levels of mental ill-health here in the UK. Not only does this significantly damage the quality of life of millions of people, but it adds very significantly to the direct and indirect costs incurred by society and taxpayers. The Department of Health's own calculations set this cost at £76 billion a year. Tim Kasser's "The High Cost of Materialism" reveals the full implications for society of promoting a way of life based primarily on private consumption and the pursuit of extrinsic gratification.

Politicians find it difficult to link this kind of societal cost-externalisation to our current model of growth-at-all-costs capitalism. They bewail the consequences (as in the Tory party's current analysis of the UK's "Broken Society"), but are reluctant to look very far beyond the symptoms – arguing endlessly about rival ways of alleviating those symptoms without digging very much deeper. But when they do (as in David Cameron's short-lived flirtation

with “The Politics of Wellbeing rather than the Politics of Unsustainable Growth”) they tend to get slapped down by the likes of the Daily Mail.

### **2.3.2 Impact on the Environment**

The world would look very different if politicians ever put into practice some of their favourite mantras about the efficacy of markets. To a man and woman, they all sign up enthusiastically to the notion that markets only work well when the price that we pay for something in that market accurately reflects the costs of bringing it to market. And then they do next to nothing to ensure that this should be carried through in practice, in effect licensing continuing cost externalisation for fear of being seen to do anything to threaten the onward march of progress through exponential economic growth. Chief Executives like Jack Welch are only able to prosper with year after year of double-digit growth because politicians fail to regulate their companies properly.

It was Lord Stern’s report on the economics of climate change that first brought home to politicians the true consequences of what he described as “the greatest market failure the world has ever seen”. The only way of correcting that market failure is to ensure that the price we pay for emitting CO<sub>2</sub> accurately reflects the cost of the pollution it causes – in terms of its impact as a greenhouse gas. The EU’s Emissions Trading Scheme represents the first attempt to put a formal price on every tonne of CO<sub>2</sub> emitted by Europe’s most energy-intensive industries, and other countries are now planning similar “cap and trade” interventions – including the United States.

The big question now is deceptively simple: what is the “right price” for a tonne of CO<sub>2</sub> – given that, according to some scientists’ worst fears, we might already be risking the collapse of human civilisation as a consequence of not getting the price right? And will a global cap-and-trade scheme (which is what the current climate change negotiations have in mind as an end goal) get us to that “right price” within the very short window of time available to us? Politicians have never before had to reckon with this kind of systemic cost internalisation on such a massive scale.

## **2.4 MIS-PRICING RISK**

### **2.4.1 Impact on Capital Markets**

The mis-pricing of risk lies absolutely at the heart of today’s crash. And everyone was involved: the central banks, investment banks, hedge funds, rating agencies, regulators and even the financial media themselves. More and more stories are now emerging of the measures taken to suppress divergent thinking and to silence critical voices through all that time – in both the United States and the UK. That’s just one of the reasons why the whole sorry saga is still shrouded in uncertainty and ignorance. The audit trail is only just beginning to be tracked back through the system from “debttonation

day” on August 9<sup>th</sup> 2007 (the point where the banks stopped lending to each other) to the point where the rot set in. Multiple law suits in the US will undoubtedly accelerate that process, but the basics are already clear.

In the mortgage market, the difference between “prime borrowers” and “sub-prime borrowers” is simple: the latter are at much greater risk of defaulting on their mortgage than the former. Having pretty much saturated the prime market, lenders had to do something with the bubble of credit puffed up by Alan Greenspan, and the sub-prime market was the obvious place to go. No particular problem in this as long as house prices continued to rise, but when house prices started falling, that risk started to loom very large indeed.

But lenders (central banks) didn’t just sit on those loans; with the active encouragement of regulators, politicians and even the IMF, they bundled them up into securities that could be traded in the financial markets. These securitised packages (known as “collateralised debt obligations”) were then bought by the investment banks, who were completely sold on the idea that this kind of securitisation (breaking “the product” up into appropriate slices) would increase its value and reduce its risk – even though they didn’t actually know what balance of risk there was in any one portfolio! This problem was compounded by unknown off-balance sheet exposures. The rest, as they say, is history – starting with the “historic” collapse of Bear Sterns on 14<sup>th</sup> March 2008.

One aspect of this systematic mis-pricing of risk relates to the role of the Rating Agencies (Standard and Poor’s, Moody’s, Fitch and so on) and their self-evident collusion with investment institutions in pricing the risk of these toxic derivatives in such a ludicrously unrealistic way. It wasn’t until it was far too late (with the poisoned packages spread far and wide through the world’s capital markets) that the Agencies began to raise the alarm. This may not have been criminal, but it was certainly wilful, part and parcel of an approach which was systemically biased to short-term profit-maximising opportunism.

#### **2.4.2 Impact on the Environment**

The generation of whizz kids (analysts, fund managers etc) that have provided the “cutting edge” to today’s casino capitalism have never come remotely close to understanding how to “value the environment”. It’s only now that climate change is starting to put at risk multi-billion dollar businesses (tourism companies deserting destinations whose reefs have been destroyed or whose mountains have been denuded of any snow, agricultural businesses unable to carry on through lack of water in some places or too much water in others, and so on) that they are beginning to take an interest. The depth of their ignorance remains staggering, and it’s no good saying that they’re not paid to act as environmental champions. Of course they’re not. But they are paid (very large amounts of money) to price potential risk and potential value, and for them to have remained blind to the value provided by the natural world (and drawn down by all of us, year in, year out, as a multi-trillion dollar subsidy) has put the entire system at risk.

People still fail to understand just how big a risk this is. Back in the 1990s when Bob Costanza and his colleagues at MIT did their calculations on the total monetary value of the 17 principal “eco-system services” on which we depend (things like building fertility in the soil, flood control, climate regulation and so on), the figure they came up with was \$33 trillion – pretty much the same economic value as one year’s worth of GDP.

Since then, some of these calculations have been refined to help decision-makers understand the true economic value of the ecosystems and habitats to which they are still so blithely laying waste. As regards pollination, for instance, scientists have estimated that if we had to do by hand what is currently done for us for free by bees, bugs, birds and bats, the annual cost would be well in excess of half a trillion dollars. Sounds crazy, doesn’t it? But in the province of Szechuan in China, that’s exactly what they’re having to do right now. Having wiped out most of their invertebrates through the over-application of pesticides, they’re now having to collect pollen by hand and apply it (using feather-dusters!) by hand to keep alive their hugely valuable orchards.

## **2.5 MIS-ALLOCATION OF CAPITAL**

### **2.5.1 Impact On Capital Markets**

With both potential risk and potential value systematically mis-priced, it’s hardly surprising that such huge sums of capital have been systematically mis-allocated. Guided only by Alan Greenspan’s reality-defying supposition that house prices in the US would never fall again, hundreds of billions of dollars were advanced to US citizens manifestly incapable of ever repaying those debts. Not so much “masters of the universe” as “morons inflamed by greed and the lure of year-end bonuses”.

The full extent of the losses in the US is still not fully understood, but the panic-stricken measures still underway to rebuild the balance sheets of once-mighty financial institutions are enough to make the disciples of Milton Friedman or Ayn Rand (Alan Greenspan’s principal mentor) weep into their champagne. With Fannie Mae, Freddie Mac and AIG already taken into public ownership, George Bush will leave office in January 2009 as the greatest nationaliser of the modern era. For those institutions unable (or unwilling) to get their hands on that fountain of tax payers’ dollars, recourse must be had to the Sovereign Wealth Funds of the Far East or the Middle East – compounding the geo-political irony of America becoming even more dependent on either China (the country which now funds America’s massive and still growing national debt), or on the same countries which already hold sway over them in terms of their continuing dependence on their oil.

## **2.5.2 Impact On The Environment**

Vast tranches of capital are still deployed, day in, day out, funding projects which further undermine the resilience of the natural systems on which we depend, or further accelerate the depletion of non-renewable resources. The physical reality of climate change, for instance, is still not properly informing capital allocation processes; one recent study has demonstrated that if all the hydrocarbon assets (oil, gas and coal) in which investments have already been made were to be fully produced and brought to market, it would take concentrations of CO<sub>2</sub> in the atmosphere to around 700 ppm – at exactly the time when scientists are telling us that we will need to stabilise at no more than 450 ppm and probably closer to 350 ppm.

Somebody's going to get hurt. For instance, financial institutions are currently punting billions of dollars on the investments being made by the oil majors in the tar sands of Alberta – it is estimated that up to \$125 billion will be invested by 2015, depending on what happens to the price of oil over the next couple of years. For every barrel of oil extracted from the tar sands, between 2 and 4 times as much CO<sub>2</sub> is emitted as with a conventional barrel of oil. With CO<sub>2</sub> trading at a few Euros or dollars a tonne, perhaps that's no big deal. But with CO<sub>2</sub> at (say) \$150 a tonne (which is where many economists believe it will be once the true cost of accelerating climate change hits home), the scale of stranded assets that will then litter Alberta's hydrocarbon-rich land beggars belief. One has to ask why it is why so many very smart people still haven't worked out the mind-boggling financial implications of needing to reduce emissions of CO<sub>2</sub> by at least 80% by 2050 – which is now the UK Government's statutory target, and one which others will no doubt be adopting very soon.

But one also has to ask why the oil companies are making those investments. The answer takes us straight back to the difference between prime and sub-prime investment markets: because the oil companies are being frozen out of the few remaining "prime" hydrocarbon assets in Russia, Venezuela, Nigeria and so on, they are seeking to make up for that shortfall in reserves by an accelerating dash into the "sub-prime" world of the tar sands. As Greenpeace puts it, "there is a good chance that the tar sands could be to the oil industry (and its investors) what sub-prime housing has been to the banking sector."

## **2.6 ECONOMIC GROWTH**

The single most pervasive orthodoxy of contemporary capitalism is that its success depends utterly on securing the highest possible levels of economic growth (as measured by GDP), year in, year out. To challenge this orthodoxy as an economist is to condemn oneself to outer darkness, and very few of them ever do it. As a result, the putative benefits of exponential economic growth have become, quite literally, "articles of faith", beyond empirical analysis or even political debate.

As part of this process, it is claimed, as an article of faith, that growth as we know it today is not only the only reliable way of reducing poverty (for which there is indeed some evidence, particularly in countries like China and India, though few if any of the costs of that kind of growth are ever properly factored in), but also the only way of reducing inequality, for which there is not a shred of evidence, as worsening equity gaps after decades of strong economic growth have so powerfully demonstrated. It is also claimed that exponential economic growth is the only way of improving the environment – on the grounds that without growth, no nation will have the economic means to clear up the mess that it created in generating that growth! The absurdity of this assertion speaks for itself.

Yet not all growth is bad, and growth of the right kind will undoubtedly be necessary as humankind “transitions” from today’s suicidally unsustainable economy to one which has a chance of meeting the needs of 9 billion people, elegantly and sufficiently, by 2050. I have written at length about this in “Capitalism As If The World Matters”, so must take a narrower focus here.

### **2.6.1 Impact On Capital Markets**

Investors look to companies for increased dividends, and demand annual growth in profits to secure those dividends. Governments look to companies for increased taxes, and expect year-on-year growth to secure those revenues. Even when companies are generating very strong profits, they will still be ruthlessly marked down by the markets if those profits aren’t growing every year. Boards of Directors will be punished and even removed if they can’t provide that growth – and provide it in the short-term rather than over time. (When NatWest was taken over by the Royal Bank of Scotland in 2000, its annual profits were still growing year on year, but apparently not fast enough for the markets. Indeed, its Chairman and Chief Executive at the time were excoriated in the pages of the Financial Times for ignoring the interests of shareholders “by taking their eye off the ball in worrying so much about the environment” and similar causes!)

It is rarely understood just how much high levels of debt contribute to the “imperative” of securing year-on-year exponential growth. Interest has to be paid out of profits; the greater the interest to be paid, the stronger the drive for growth. The same is true with personal debt; anyone with a 100% mortgage and high levels of debt on their credit cards is going to want to grow their own personal income to help cover the interest.

It is important to realise that none of this has happened by chance. It is clear, from a macro-economic perspective, that governments around the world have fuelled their respective credit bubbles in part to help ratchet up levels of economic growth.

## **2.6.2 Impact On The Environment**

Growth trumps all in today's capitalist world. However much governments may sign up to the principles of "sustainable economic growth" (as very articulately explained in the UK Government's own Sustainable Development Strategy, "Securing The Future") to ensure that a proper balance can be maintained between economic growth, living within environmental limits, and securing a healthy and just society"), they really don't mean it.

Every additional cumulative impact on the natural world is still justified on the grounds that the specific socio-economic benefits generated by any new development will somehow compensate for the damage done to the environment. True enough, planning laws, development controls and environmental regulations all help to mitigate what would otherwise be an even gloomier picture; tools such as Cost Benefit Analysis, Environmental Impact Assessment, Lifecycle Analysis or Whole-Life Costing have all been developed to help achieve a better balance or a "more sophisticated set of trade-offs", as Defra puts it. But their combined impact over the last 20 years or so has been marginal.

The scale of destruction continues largely unabated – particularly in developing and emerging economies. It was announced in November 2008, for instance, that the loss of rainforest in the Amazon was up 4% on the previous year, meaning that current losses now exceed those of the 1980s, when Friends of the Earth International launched the first ever global campaign against rainforest destruction. And all done, as ever, in the name of economic growth.

## **2.7 THE EROSION OF DEMOCRACY**

### **2.7.1 Impact On Capital Markets**

After the collapse of Enron and a handful of similarly shocking corporate scandals in the 1990s, the US Administration stepped in to address some of the most egregious shortcomings in its systems of corporate governance. Arthur Anderson, a household name at the time as one of the "Big 5" accountancy firms, and Enron's accountants, paid the highest price as it was forced into liquidation; Sarbanes-Oxley was rushed through Congress, and everyone breathed a deep sigh of relief.

We now know that all this was mostly cosmetic. A lethal combination of complexity, opacity and "regulatory capture" has left investors as vulnerable as ever to the kind of systematic abuse we've seen over the last few years. Non-Executive Directors are kept largely in the dark, and have few if any real powers; notionally independent Remuneration Committees play a quite disgraceful game of "you scratch my back and I'll scratch yours".

At the same time, the flow of corporate dollars flooding into Washington via an army of corporate lobbyists has grown and grown, eroding democracy's

checks and balances at every point in the system. Robert Reich argues in his latest book “Supercapitalism” that this almost certainly isn’t the corporate conspiracy that many see it to be, but represents nonetheless a massive weakening of our interests as citizens rather than our interests as consumers.

“Our voices as citizens – as opposed to our voices as consumers and investors – are being drowned out. We may even be losing confidence that what we have to say as citizens is important. This is not because big corporations have conspired to drown out or marginalise our citizen voices, but chiefly because corporations are engaged in escalating competition for political outcomes that advantaged them over their rivals. The same trend is becoming evident in many other democracies, as supercapitalism is spreading around the world. But it is not the way capitalism and democracy should continue to evolve. We need not be slaves to present trends any more than we were to previous ones. We can, if we choose, fashion a democratic capitalism more suited to our nobler aspirations for the 21<sup>st</sup> century. Yet to do that, it is necessary to separate capitalism from democracy and guard the border between them.”

In the aftermath of the banking crash, a process of intense negotiations are now underway to address some of the “irregularities” and “irresponsible behaviour” that are held to lie at the heart of the debacle. The use of such reassuring euphemisms show just how keen both governments and business interests are to avoid any radical changes to existing governance structures. The whole “Bretton Woods II” process is going on pretty much behind closed doors, with little, if any, opportunity for the voices of civil society to be heard let alone properly reflected in any “reform package”.

### **2.7.2 Impact On The Environment**

This “cognitive dissonance” between us as citizens (losing out because of extreme impacts on the environment and wider societal interests) and us as consumers or investors (winning out in the short term through increased choice or lower prices) cannot be resolved by companies undertaking voluntarily to act as responsible corporate citizens. Companies are not citizens! They are legal entities charged with legal responsibilities to the governments of the countries in which they operate and with fiduciary responsibilities to their shareholders. They have no other statutory responsibilities. The massively over-hyped emphasis on Corporate Social Responsibility (see below) has served only to distract us from a very simple reality: wider social interests (both at home and abroad) can only be served by governments exercising their democratic mandate to change the rules of the game by establishing a different “level playing field” on which all contestants must compete.

Governments are today even slower to take on that decisive role than they have been before. Fear of “nanny-state” accusations in the media, combined

with an astonishing loss of confidence in their ability to make things happen (and a simultaneous loss of trust amongst their electorates), have all conspired to leave the environment more dangerously exposed to continuing damage and destruction than would be the case in more citizen-oriented democracies.

That said, the speed with which the governments of the western world have had to intervene to take control of banking systems after deregulated markets have failed so badly, reminds one that there isn't any reason why governments shouldn't act in a far more decisive way to protect the life-support systems on which we depend - once the true failings of deregulated, "laissez-faire" economics have become even more apparent.

## **2.8 THE FIG LEAF OF CORPORATE SOCIAL RESPONSIBILITY**

### **2.8.1 Impact On Capital Markets**

This is a tricky one. Whilst it's demonstrably true, at a micro-economic level, that many good things have been undertaken by companies in the name of Corporate Social Responsibility, and that these initiatives have made a substantive difference to communities, people and the environment, it's equally true, at a macro-economic level, that these small-scale incremental improvements in responsible performance have only served to obscure much deeper, systemic problems with today's dominant business models.

A particularly stark example of this can be witnessed in the ruins of a banking industry that was once the pride and joy of the UK Government. Every single one of our once-revered financial institutions have for a long time had very impressive CSR programmes. Northern Rock was an outstanding exemplar of community-based engagement, as was the Halifax bit of HBOS; Lloyds TSB runs one of the most innovative CSR programmes in the whole world; HSBC has pioneered some of the most important climate change initiatives in the corporate world today. And so on.

Yet the truth of it is that every one of these once-revered financial institutions has been simultaneously engaged in some of most irresponsible business behaviour in the history of capitalism. As we've seen, risk has been systematically mis-priced; credit has been systematically mis-sold; incentive schemes were geared to promote value-destroying personal greed; Audit Committees failed, quarter in, quarter out, to exercise any kind of proper scrutiny; bundles of bad debt were packaged up and sold on as so many toxic time-bombs; and literally everything involved in this global scam was made more complex, more opaque, more impenetrable, less subject to scrutiny and audit of any kind – presumably for a purpose.

You can pretty much guarantee that not one of the Directors of CSR in any of these once-revered financial institutions would have been consulted about any of these strategic decisions. After all, what has CSR got to do with

investment strategies? With executive remuneration? With company policy on “collateralised debt obligations”? Or taxation policy? Or hedge funds? And even if they had been consulted, you can absolutely guarantee they would have been ignored – the seductive pull of big money will always trump the platitudes of corporate responsibility.

### **2.8.2 Impact On The Environment**

By the same token, if one looks at the cumulative damage to the environment done by companies through the systematic mis-allocation of capital, mis-pricing of risk and mis-aligning of incentives, it's clear that even the most intensively managed of CSR programmes can do little to offset these systemic problems and their resulting impacts. Better to have such programmes than not, but best of all not to be gulled into thinking that this is the right route to the kind of sustainable capitalism we now so desperately need.

It has of course suited governments to encourage the burgeoning industry of Corporate Social Responsibility. With regulations seen by many governments as “the policy instrument of last resort”, voluntary Corporate Social Responsibility programmes have provided near-perfect cover for endlessly postponing and diluting more appropriate regulatory interventions. In thrall to the massive influence of large multinational companies, governments have been only too happy to point to the threadbare fig-leaves of “voluntary measures” rather than properly regulate markets so that they can operate transparently, efficiently and equitably. The EU's failed “Auto-Oil” initiative (where voluntary standards for reducing emissions of CO<sub>2</sub> were painfully hammered out, after endless delays and compromises, with both car companies and oil companies) provides a very telling example. It's clear to most observers that EU governments are now going to have to do what they should have done at the start and regulate decisively – even if it is against the wishes of their own still powerful car companies.

### **3 REFRAMING CAPITALISM**

“Change your mind when the facts change”  
(John Maynard Keynes)

That well-known quote doesn't quite fit the current circumstances. The facts haven't actually changed. They are exactly the same facts as they were this time last year, or even this time 37 years ago, for that matter, at the time of the first major UN Conference on the Environment and Human Development in Stockholm in 1972. What has changed is our perception or interpretation of those facts. Just as we now know the economic boom-times of the last 15 years or so were built on a “vortex of artifice”, so we've begun to realise that our pursuit of exponential economic growth, regardless of its impact on the natural world and its life-support systems, has been premised on an equally vicious vortex of artifice. During that time, our self-deception has known no bounds, on both counts.

Just as house prices do not (and never will) go on rising indefinitely over time, so our use of finite resources cannot (and never will) go on expanding indefinitely over time. Surprising though it obviously is to every single high-flyer who has passed through the Treasury over the last 37 years, the so-called “laws” of the market never have and never will take precedence over the laws of thermodynamics. Like all outlaws, we're now being punished for our transgressions – and climate change is just the scariest of the retributions that may be visited upon us if we don't change our ways very profoundly and very quickly.

One of the more astonishing of all the many acts of self-deception that our societies have been party to over the last 20 years or so relates to the projected availability of hydrocarbon fuels – oil, gas and coal. For all sorts of reasons, we've behaved throughout that time as if supplies would continue to flow in such a way that there would be no problem in meeting rising demand indefinitely into the future. Given just how critical oil and gas have been in underpinning the massive expansion in our economies since the Second World War in the 20<sup>th</sup> Century, this has become one of those “received articles of faith” which brooked no dissent.

This is clearly not the place for a detailed consideration of the debate surrounding “peak oil” – for that, readers should check out Richard Heinberg's “Peak Everything” or Jeremy Leggett's “Half Gone”. But whereas it was once just a small and rather beleaguered group of former oil company employees and dissident geologists warning of an imminent “peak moment”, that's changed dramatically in the last couple of years. Even the International Energy Agency (which has been seen by many as an ultra-loyal defender of the “stay calm” arguments of the oil companies) has now revealed that it too believes that the peak moment could come as early as 2012.

2012! You might imagine the prospect of that moment coming very much sooner rather than later would be galvanising politicians around the world to start putting in place radical contingency measures. That is absolutely not the

case. In October 2008, eight of the UK's most prestigious companies published a report called "The Oil Crunch" to give voice to their own deep concerns about the security of future energy supplies in the UK, and expressed absolute astonishment that there was so little understanding of these issues either within Treasury or within the Department of Business and Enterprise.

It's true of course that this is not an easy one for governments to call. Security of supply is not just a function of available supplies in themselves, but of wider security and geo-political issues, of capacity issues in the industry itself, of the role of speculators in manipulating energy markets, and above all of price. In that regard, governments the world over may have been granted a temporary reprieve in that a prolonged economic recession will dramatically reduce demand for oil and gas, especially if investments in energy efficiency are now massively ramped up. That means prices should stay relatively low (although \$50/\$60 a barrel is only "low" in comparison to the 2008 high point of \$147) until demand picks up again. At which point, the majority of analysts now believe that prices will move rapidly upwards as demand again exceeds supply.

Even those who do not subscribe to this medium-term scenario are at least ready to acknowledge that the age of "cheap oil" has come and definitively gone. Jeroen Van de Veer, Chief Executive of Shell, has himself said as much on a number of occasions, not least to justify Shell's burgeoning investments in the "sub-prime" tar sands of Alberta.

## **Taking Stock**

In the face of such persistent acts of self-deception, it's clear that changing our ways is providing as difficult for humankind as ever. Paradoxically, however, I am more optimistic about the prospects of us doing this today than I was this time last year, for three reasons:

1. The sheer intensity and depth of the collapse in banking systems (and the ensuing recession which could still turn into this century's first Great Depression) has blown away years of ideological fantasizing about the superiority of deregulated, debt-driven, finance-based capitalism. It has both humbled the "Masters of the Universe" who exploited these political fantasies to enrich themselves at the expense of their shareholders and customers, let alone the rest of us, and it has licensed such unorthodox policy responses (not least in terms of the nationalisation of failing banks) that practically anything must now be on the table.
2. The overwhelming evidence about climate change and about its rapidly accelerating impacts (as with the release of methane in the Arctic touched on earlier) leaves our politicians with less and less space to hide. The UK's new Climate Change Act is clearly the first serious attempt on the part of any OECD nation to enable its citizens to

understand just how profound a transformation in their lives this is going to be.

3. The rebirth of America as witnessed in the election of Barack Obama as its next President is absolutely fundamental. There was, quite literally, no solution to the world's converging crises with George Bush in the White House, and it would have been the same under a McCain presidency. That doesn't mean to say that Barack Obama will deliver "just like that", and it is clearly extremely unwise to heap such impossible expectations on any one person. But at least the potential is there, on climate change, on security issues, on Palestine, on a transformed global economy – and it just wasn't there before.

Even before the uplift in people's spirits that the election of Barack Obama seemed to bring, there was no shortage of ambitious plans starting to emerge to address the so-called "triple crunch": the credit crunch, the oil crunch and the climate crunch. Perhaps the most impactful of these has been the Green New Deal brought together in June 2008 by a group of progressive UK NGOs. Suddenly, "New Deals" of every description started popping up all over the place, often with totally diverging world views, let alone policy prescriptions – but all "praying in aid" Roosevelt's 1933 New Deal which is widely held to have set the US on the path to recovery after the Great Depression.

I shall return to a number of these proposals in the final section, but need to preface what follows with a warning: there is as yet no over-arching consensus that what is now being called for represents a root-and-branch transformation of capitalism. Most of the strategies and specific policy proposals out there fall more into the category of "fixing" what has gone wrong and then getting back to some of the "certainties" that obtained prior to the credit crunch. To us in Forum for the Future, that looks like a disaster in the making, in that it may well "fix" the superficial problems (particularly regarding the banking and financial services sector), but it will do nothing to address the systemic failures that the first part of this pamphlet looked at.

### **Making Capitalism Sustainable**

Historically, it's all too often been the case that environmentalists have been very reluctant to engage in addressing these dilemmas at a systems level – in other words, not focusing solely on the symptoms of today's converging crises, but addressing instead the root causes inherent within this particular version of capitalism.

But at its heart, sustainable development comes right down to one all-important challenge: is it possible to conceptualise and then operationalise an alternative model of capitalism - one that allows for the sustainable management of all the different capital assets on which we rely, so that the yield from those different assets sustains us now as well as in the future? And it is possible to do it in a way that lifts people's spirits as to the real potential of humankind rather than assumes the worst about human nature?

At the risk of stating the obvious, behind the notion of capitalism lies the notion of capital – which economists use to describe a stock of anything (physical or virtual) from which anyone can extract a revenue or yield. Capitalism has a number of important characteristics that distinguish it from other economic systems: private ownership of the means of production, reliance upon the market to allocate goods and services, the drive to accumulate capital, and so on. But the core concept of capitalism, from which it derives its very name, is the economic concept of capital.

When people think of capital in this sense, they usually think of some of the more familiar ‘stocks’ of capital: land, machines and money. But in the description of the Five Capitals Framework that follows, this basic concept of capital (as in any stock capable of generating a flow) has been elaborated upon to arrive at a hypothetical model of sustainable capitalism. It entails five separate capital “stocks”: natural, human, social, manufactured and financial.

### **Natural Capital**

Natural capital (also referred to as environmental or ecological capital) is that part of the natural world which we humans make some use of or derive some benefit from – hence, its definition (in economists’ jargon) as any stock or flow of energy and matter that yields valuable goods and services. There are different kinds of natural capital:

- *resources*, some of which are renewable (timber, grain, fish and water), while others are not (fossil fuels);
- *sinks* that absorb, neutralise or recycle waste;
- *ecosystem services* such as climate regulation, flood control, pollination and so on.

### **Human capital**

The definition of human capital in our Five Capitals Framework is a simple one: ‘the physical, intellectual, emotional and spiritual capacities of any individual’. In an economic context, it consists of our health, knowledge, skills and motivation, all of which are required for productive work. Enhancing human capital - for instance, through investing in education and training - is vital for a flourishing economy. Poverty is both morally indefensible and socially inefficient in that it prevents millions of people from fulfilling their potential.

### **Social capital**

Social capital is the value added to any activity or economic process by human relationships, networks and co-operation. Social capital takes the form of structures or institutions which enable individuals to maintain and develop their human capital in partnership with others and includes families, communities, businesses, trade unions, schools, and voluntary organisations.

### **Manufactured capital**

The two remaining stocks of capital (manufactured and financial) are probably the most familiar. However, manufactured capital is not quite as simple a concept as it sounds. It is made up of material goods that contribute to the production process, but do not become embodied in the output of that process. The main components of manufactured capital include:

- *buildings* - the build environment of villages, towns and cities;
- *infrastructure* - the physical fabric supporting social and economic life, including transport networks; schools; hospitals; media and communications; energy; and sewerage and water systems; and
- *technologies* - the means by which goods and services are produced, from simple tools and machines to information technology, biotechnology and engineering.

### **Financial capital**

The role of financial capital is perhaps the least understood of all the categories of capital now seen as essential to a sustainable economic system. Indeed, it is usually excluded from such models on the grounds that financial capital has no intrinsic value, is not essential for the production of goods and services, and simply provides a means of exchange for the fruits of other categories of capital. Paper assets that make up the stocks of money, bonds and equities have no value in themselves, but are simply derivatives of the underlying manufactured, natural, social or human capital stocks.

At its simplest, our wealth depends on maintaining an adequate stock of each of these types of capital. If we consume more than we invest, then our opportunities to generate wealth in the future will inevitably be reduced. Sustainability can only be achieved if these stocks of capital are kept intact or increased over time.

## **4 A SUSTAINABLE NEW DEAL**

But who really cares about alternative models of capitalism? As we've seen, "just get on and fix it" would appear to be the dominant mood. The problem is that without an alternative framework we might just be fixing the wrong bits for the wrong reasons, thus ensuring the wrong outcomes.

The good news is that we're certainly going to see more and more activity in this new "21<sup>st</sup> Century New Deal" space. President-elect Obama has already indicated his determination to put in place a \$150 billion "green jobs" package, with the emphasis on enhancing energy security within the US through renewables and energy efficiency. Gordon Brown is also talking about a somewhat more modest set of interventions in a new stimulus package, some of which may be geared to today's low-carbon imperative. But his Chancellor totally failed to seize hold of that opportunity in the annual Pre-Budget Report in November 2008.

All this provides further proof of the readiness of politicians today to think in different ways in response to the credit crunch and the worsening recession. But what needs to happen if our goal is not just to "come out the other side just as fast as possible with as little damage done as possible", but to build the foundations for a system of wealth creation that simultaneously addresses both the climate crunch and the oil crunch? Though this is obviously not the place for any kind of detailed manifesto, there are five main areas where political interventions now need to be prioritised.

### **4.1 RECAPITALIZATION STRATEGIES**

Apart from a minority of free market purists (who really do believe that the banking system should have been allowed to collapse as a necessary "corrective" in the system), it's widely accepted that governments around the world had no choice but to intervene to recapitalise the banks' balance sheets. Levels of debt were so startling, balance sheets so over-leveraged (when it went to the wall, Lehman Brothers had \$35 loaned out for every \$1 it had on deposit!), risk models so comprehensively defective (for all the vast sums of money paid to very smart people to develop ever more sophisticated stress-testing systems), and the loss of trust across the entire system so absolute, that nothing else would have made very much difference.

The sums involved are truly staggering. Writing in News Week in December 2008, Jeffrey Garten (Professor of International Trade and Finance at Yale) offered the following analysis:

"In the United States, Ben Bernanke and Hank Paulson have orchestrated a series of rescue measures that now number more than a dozen so far this year, from the \$200 billion bail out of Fannie Mae and Freddie Mac to the £1.4 trillion guarantee for bank-to-bank loans. Depending on how you add up these measures, the total reaches as high as \$8 trillion, a figure that represents more than half of US GDP,

and is, according to Barry Ritholtz, author of the forthcoming “Bailout Nation”, more than the sum of every major US Federal project in the past century, including the invasion of Iraq, the New Deal and the Marshall Plan to save Europe after the war. Indeed, it is more than the total the United States spent on World War II - \$3.6 trillion in today’s dollars.”

Even so, this is just the start of an even more ambitious, radically different kind of recapitalisation programme that will now be required to put the foundations of our economies (namely, the life-support systems that underpin all economic activity) onto a genuinely sustainable footing. Mind-boggling though it must now appear, we really have very little choice about this – for do we really want to be remembered as the generation that managed to rescue the global banking system, even as we allowed the natural world to collapse around us?

#### **4.1.1 Recapitalizing Nature’s Balance Sheet**

All the devastating problems now associated with this particular model of deregulated, debt-driven, over-leveraged capitalism can be seen to have been at work in our chronic mis-management of natural capital. As we saw in the first part of this pamphlet, deregulation and licensed cost externalisation have imposed grievous burdens on the natural environment. We’ve aggressively drawn down on Nature’s capital assets (its resources and eco-system services), liquidating natural capital to generate current income. In the process, Nature’s balance sheet is now over-leveraged to an astonishing extent, creating a burden of debt that there is little prospect of paying back in this generation. Not only have we been living beyond our own means, but well beyond the means of future generations as well.

The only appropriate response to this is a massive recapitalisation programme to restore Nature’s balance sheets. At the 2008 gathering of the IUCN in Barcelona, scientific paper after scientific paper highlighted the “war of attrition” that human kind is now waging against the natural world – all in the name of economic progress. Much of this is the direct consequence of totally defective accounting systems. The natural world currently provides us with an incalculably vast flow of goods and services, including food, fibre, clear water, fertile soil and a stable climate. Our economic and social wellbeing is totally dependent on maintaining that flow of eco-system services.

“The world has already lost much of its biodiversity. Urgent remedial action is essential because species loss and ecosystem degradation are inextricably linked to human wellbeing. We cannot – and should not – put a break on the legitimate aspirations of countries and individuals for economic development. However, it is essential to ensure that such development takes proper account of the real value of

natural ecosystems. Yet we are still struggling to find the “value of nature”. Nature is the source of much value to us every day, and yet is mostly by-passes markets, escapes pricing and defies valuation. This lack of valuation, we are discovering, is an underlying cause for the observed degradation of ecosystems and the loss of biodiversity.”

That quote is taken from the interim report of the so-called TEEB project – The Economics and Ecosystems and Biodiversity – which is advising both the EU and G8 on ways of reforming the system to help protect habitats and biomes by recognising their true economic value. It calls for measures to eliminate the billions of dollars of government subsidies that are still directly or indirectly implicated in the “war of attrition”; it recommends a massive ramping up of PES initiatives (“Paying for Ecological Services”) as the surest way of protecting and even rebuilding stocks of natural capital; and it puts a very welcome emphasis on the need to share the benefits of these investments far more equitably than would have been the case in the past.

By far the most authoritative account of the extent of today’s ecological overshoot (and of how we need to manage our total “biocapacity” to much greater effect) can be found in WWF’s “Living Planet Report 2008” ([www.panda.org](http://www.panda.org)). As it says, more than 75% of the world’s population lives in countries where consumption levels are outstripping environmental renewal. This leaves absolutely zero room for any doubt as to just how quickly and substantively governments are going to have to move to redress decades of living way beyond our ecological means.

Perhaps the most urgent and compelling example of this approach is captured under the debate about REDD – Reducing Emissions from Deforestation and Degradation. Up to 20% of total annual emissions of greenhouse gases come from the continuing loss of forest cover through commercial forestry and changing land use. If we could “sort that source of emissions”, it would be the biggest single contribution towards the overall task of reducing emissions of CO<sub>2</sub> by 80% by 2050.

The basic idea is a simple one: the countries that have the forests are poor, and cannot afford (it is argued) not to develop them. Their full value as carbon stores and climate regulators is not properly reflected in the market price paid for the timber from them. How could it be? But now that we’ve come to recognise (at last!) the full value of those all-important “services”, all we need to do is agreed on a price for those services and make over to the owners of those forests an equivalent per-hectare payment to compensate them for the “profits foregone” for keeping their forests intact. This could be done in a number of ways, including rich countries making direct payments to rainforest countries to “offset” a given percentage of their own greenhouse gas emissions. For example, if the UK wanted to offset 1 million tonnes of its own annual CO<sub>2</sub> emissions, at a price of (say) £20 a tonne, it would “contract” with a rainforest country to permanently protect the hectareage required to keep 1 million tonnes of CO<sub>2</sub> sequestered, and hand over £20 million every year.

(Just to get some idea of the scale of this, the 2006 Stern Report on the economics of climate change estimated that a sum of around £2.5 billion would be required every year to prevent further deforestation in the eight largest rainforest countries. Other experts have assessed the value of carbon sequestration provided by intact rainforests as being well in excess of £40 billion a year.)

A real head of steam is now building up around this REDD approach – as is the criticism. NGOs are not persuaded that setting up a scheme which is based on carbon trading, or on the profit motive, will ever really work. They have raised compelling concerns regarding land rights, poor governance in the countries concerned, corruption, the interests of indigenous people, illegal logging – as well as deep worries that focussing primarily on the eight most problematic countries (those where the forests are most at risk) will provide little incentive for the countries with the best record of protecting their forests.

In that context, the Global Canopy Programme has launched a new campaign (Proactive Investment in Natural Capital or PINC for short) to pay for the ecosystem services provided for by forests that are not yet threatened with deforestation:

“Large areas of standing forests are remote and sparsely populated so that the opportunity costs of conservation are low. Therefore, the “forest utility” could be maintained for around \$10-20 per hectare per year. Payments could initially be from a governmental fund, but to achieve scale could eventually take the form of forest-based equities or bonds in the markets, designed as a “patient investment” today, which would acquire value tomorrow, by enabling humanity to continue to benefit from “forest utilities” in perpetuity.”

This is just one of the planet-scale interventions that are going to have to be brought forward to address the increasingly urgent challenge of climate change. As the IPCC has warned, we do not have decades, let alone generations, to achieve the kind of radical decarbonisation on which the future of human kind now totally depends.

#### **4.1.2 Recapitalizing Society’s Balance Sheets**

A vast and still growing literature (both academic and populist) has charted the impact of today’s model of capitalism on those stocks of social and human capital that underpin much of the sense of security, community and identity that make people feel good about their lives. With the same relentless “there is no alternative” fundamentalism that has laid waste our natural environment, both the Conservative Party and the Labour Party have accepted this “war of attrition on society itself” as a necessary price to pay for the material progress that people have enjoyed.

When people talk about “the pursuit of economic growth at all costs”, many of those costs are paid through rising levels of addictive pathologies of one kind or another (alcohol, drugs, gambling and so on), of mental ill-health, of loneliness, of hollowed-out communities, of violence and sexual abuse. A lot of it is invisible, and is much harder to put a price on than some of the environmental damage that we have simultaneously witnessed. But that doesn’t make it any less of a cost, as elaborated in Oliver James’ latest book “The Selfish Capitalist”.

“Selfish Capitalism will automatically seek to destroy anything which threatens its principal outcome: making the rich richer. It actively fights forms of capitalism which prioritise long-term investment of profit for the public good. Whilst it frequently uses appeals to chauvinism and racism to drum up popular support, in practice it discourages nationalism but creates barriers to corporate globalisation. It rejects out of hand ecological evidence that it is destroying the planet. Pretending otherwise, it heartily loathes family life, hastening its decline, because family life poses an alternative to workaholia and inauthenticity. It far prefers nurseries to care for babies and toddlers, so the parents can swell the labour market (making it easier for employers to keep wages low), and if that results in insecure and miserable children who grow into needy adult consumers who use materialism to fill the void, all the better for profits. It strongly militates against anything likely to promote intrinsic values, such as a commitment to community, altruism, concern with beauty or authentic motives for aspirations. It is constantly on the alert to prevent social forms which may lead to emotional wellbeing. For, as advertising executives so openly admit, true contentment with what we have got is the greatest single threat to the consumerism that is indispensable for the Selfish Capitalism.”

One of the direct and most benign consequences of the collapse of this particular model of capitalism must surely be the opportunity to re-think some of the trade-offs that we have gone along with for so long. There is an alternative – an alternative which has been practised all this time by most of our European neighbours, who have never been as star-struck by the kind of materialist values and debt-driven consumerism that have characterised the economies of the US and UK. We now have a chance to rebuild some of those stocks of natural capital – in effect, recapitalising societies balance sheet as well as nature’s balance sheet.

Again, housing provides an excellent example of what this might look like in practise. The kind of massive retro-fit programme referred to in the section above would bring huge social (as well as environmental) benefits in terms both of improved housing quality and lower energy bills. The Institute of Public Policy Research has suggested that ten thousand advisors should be appointed nationwide, one for every twenty streets or so. They calculate that the cost would be somewhere around £500 million every year

– a figure which would need to be set against national energy savings for £4.6 billion.

Beyond that, the Government now has a chance to undo some of the damage caused by a housing strategy that has relied far too heavily on private sector house builders, leaving huge numbers of people unable to get onto any kind of housing ladder. Even if house prices continue to decline at the same rate in 2009 as they did in 2008, there will still be many people who will not be able to buy their own home and who will still be struggling to find affordable housing on any terms. That's partly because the Section 106 Agreements that provided for a welcome quota of affordable social housing have now all but dried up. But with land values plummeting, there's an unprecedented opportunity for the Government to provide direct funding to rebuild stocks of new homes; the Home Builders' Federation has come up with a plan for 17,500 new affordable homes for an investment of £2 billion. This should be done in partnership with local authorities, many of which are now keen to play a far more active role in the housing market. Birmingham, for instance has an estate of more than 80,000 houses and flats. Support is growing for the idea of local authorities taking over houses that are up for repossession – on the grounds that the accommodation this would provide would be cheaper than the kind of "bed and breakfast" accommodation they're otherwise legally required to find.

For many, this would be just one aspect of the wholesale revitalisation of the local economy. Very much against the grain of conventional Treasury thinking, all sorts of pioneering initiatives over the last decade or more have shown what this might look like: Community Reinvestment Trust, Community Land Banks, Community Development Finance Institutions and so on. Little has been done to promote any of this since the 1980s. For example, although it's perfectly legal for Local Authorities to issue Municipal Bonds, there's been only one major initiative of this kind in the shape of Transport For London's £600 million Bond. Local Authorities control £1 trillion through their pension funds, and, right now, the prospect of low-yield but very high security investments must be looking increasingly attractive (by way of contrast, the market for Municipal and State Bonds in the US already exceeds \$2 trillion).

In that context, there's no clearer example of how best to recapitalise society's balance sheet than the swathe of current proposals to strengthen the Post Office network. Post Offices are a vital part of the social fabric for millions of people in the UK, providing direct access to a range of government and other services. Labour back-benchers have been developing plans to convert the Post Office into a universal People's Bank based on the Post Office card account with its five million cardholders. As campaigning MP Jon Crudders has said:

"Our great national postal structure is a trusted public service. What a banking system needs more than anything else is trust. The banking sector has eroded that trust, leaving high anxiety. Banks have also physically withdrawn from large areas of Britain. Building on the Post

Office card, the Government should stop the proposed closure of 2,500 post offices and instead support them as trusted social, economic and sustainable centres of finance, communication and community cohesion. This great network could become the foundation of local economic resilience.”

Intriguingly, this has become the test case of whether or not this Government sees the current recession for what it really is: an end to the version of capitalism that has dominated our lives for the last 30 years. For the last decade, ministers have applied wholly discredited business models to managing the Post Office, setting aside any concept of “public service” in pursuit of its usual deregulatory, profit-driven mantras. The closure programme was announced to “save” the tax payer the princely sum of £150 million a year – little more than a rounding error in comparison to the £37 billion the Government has been able to conjure up to bail out the banks. In a decision that beggars belief, Peter Mandelson (as Secretary of State For Business and Enterprise) has just announced that the Government still intends to put parts of the Post Office network up for sale “to encourage increased competition and business efficiency” far from “recapitalising” society’s balance sheet, the architect of much of Labour’s own particular brand of growth-at-all-costs neo-liberalism is clearly of the opinion that there are still assets out there to be stripped, public values still to be trashed and social capital still to be liquidated.

Perhaps things will just have to get a great deal worse before politicians truly appreciate the nature of the crisis we are now in. Between 1933 and 1940, President Roosevelt’s New Deal invested between 3% and 4% of US GDP every year. Much of that was directed into the “Civilian Conservation Corps” which ended up employing more than 3 million people to undertake basic conservation projects such as tree-planting, soil conservation and habitat improvement. It may be premature, but the Government would do well to start thinking much more dynamically about the contribution that the so-called “Third Sector” could make to any emerging Green New Deal. National organisations like Groundwork, BTCV and the National Trust are extraordinarily well placed massively to ramp up their community-based programmes. As highlighted in the recent report from Capacity Global, Defra’s own “Every Action Counts” programme ([info@capacity.org.uk](mailto:info@capacity.org.uk)) was able to use relatively small amounts of public money to leverage relatively large amounts of public value – in terms of improved local environments, engaged communities, both young and old getting stuck in, resource energy efficiency and so on. Schemes like Fair Share (which is already significantly involved in helping reduce the massive scandal of food waste across the UK) could be doing so much more if it had access to enough working capital to expand into a nationwide social enterprise.

In case this all sounds somewhat twee in the middle-class way, BTCV robustly spells out just how misplaced a perception that is:

“BTCV achieved a yield of 1:4 in terms of social return on investment – i.e. for every £1 invested, local communities gain £4 of benefits such as

reduced crime, increased leisure and increased employment. Our annual investment of £30 million in UK communities and environments returns £120 million in social value. Importantly, our volunteers are not the middle class “greenies” of popular myth. 20% of our projects take place in, and draw volunteers from, the 15% most deprived areas in the UK. Of course the middle classes in the leafy suburbs will act to conserve their quality of life – not least because they know the economic benefits, for example in terms of beneficial effects on house values, but to us, it is equally obvious that people in the poorest neighbourhoods will also – given half a chance – band together to make better places and stronger communities.”

BTCV started out in life as “The Conservation Corps” back in 1959. It now has more than 1800 groups involved in its Community Network, and is involved in training more than 14,000 people every year in terms of meeting local skills needs. It’s already developing plans for mobilising huge numbers of people as “local carbon armies” on the assumption that both the Government and Local Authorities will recognise this particular “silver lining” as a massive opportunity that needs to be seized hold of without further delay. But does that assumption hold water?

## **4.2 A GREEN NEW DEAL**

As soon as it became clear (in the middle of 2008) that what had been referred to up until then as “an economic downturn” was turning rapidly into a full-blown recession (with the potential to end up as another “Great Depression” on the same scale of that of the 1930s), more and more attention began to focus on Franklin D. Roosevelt’s “New Deal” which is widely held to have provided the stimulus to start digging the United States out of the Depression. Whatever the intrinsic merits of this analogy, it’s been given a huge boost by Barack Obama’s commitment to a \$150 billion recovery package for the US economy which is being widely interpreted as the 21<sup>st</sup> Century equivalent of the 1930s New Deal.

The exhumation of the work and reputation of John Maynard Keynes has lent weight to the reassertion of government economic muscle over the diminished potency of discredited capital markets. To hear Alistair Darling, Chancellor of the Exchequer, suddenly lay claim to Keynes as the greatest economist of the 20<sup>th</sup> Century, after a decade where the merest mention of the great man’s name was seen as out-and-out heresy, demonstrates just how cataclysmic the impact of the recession has been on the Treasury. That said, nothing resembling even the sketching out of a New Deal for the UK economy had seen the light of day by the end of 2008.

The real catalyst for the “New Deal” debate here in the UK can be traced back to the publication of a report (“A Green New Deal”) in July 2008. Its authors (including Larry Elliot, the Economic Editor of The Guardian, and a

host of the “great and the good” from the Green Movement) spelled out their purpose in the following terms:

“The global economy is facing a “triple crunch”. It is a combination of credit-fuelled financial crisis, accelerating climate change and soaring energy prices underpinned by an encroaching peak in oil production. These three overlapping events threaten to develop into a perfect storm, the like of which has not been seen since the Great Depression. To help prevent this from happening, we are proposing a Green New Deal.”

I will return to the issue of “soaring energy prices” below, but at the heart of the Green New Deal lies the assumption that governments find themselves with an unparalleled opportunity, precisely because of the severity of the recession, to start implementing the kind of practical, low-carbon programmes that have proved so elusive to date.

#### **4.2.1 Addressing the Carbon Crunch**

In November 2008, the UK government’s Climate Change Act passed into Statute – the first legislative measure of its kind anywhere in the world. It called for a reduction of CO<sub>2</sub> of at least 80% (on 1990 levels) by 2050. There is every chance that the rest of the EU will take up that sort of long-term target (it’s already agreed to a reduction of at least 20% by 2020), and Barack Obama has committed the United States to the same goal of 80% cuts by 2050. That takes us out of the “have our cake and eat it” zone of doing everything we’re currently doing, just in marginally more “climate-friendly” ways. It takes us into the zone of urgent, radically decarbonisation. An 80% cut by 2050 means reductions of somewhere between 3% and 3.8% every year between now and 2050.

Yet it’s astonishing how many otherwise very intelligent people continue to ignore or even deny the true implications of what these targets are now telling us. Such clarity certainly simplifies things. It means we have to focus on just four imperatives: Energy Efficiency; Renewables; Carbon Capture and Storage; and Reducing Emissions from Deforestation and Degradation (as in the last section). Everything else (including nuclear power – fission or fusion – or distant dreams of a hydrogen economy) may or may not have a role to play in the future, but the contribution they can make to today’s “urgent, radical decarbonisation challenge” is nugatory. As such, the ongoing controversies that these technologies continue to excite are just a self-indulgent distraction from getting on with what we have to do today.

And the starting point here has to be energy efficiency. The studies done by McKinsey’s for both Europe and the US demonstrate that investment in energy efficiency (in terms of tonnes of CO<sub>2</sub> abated) substantially outperform every other kind of investment that can be made. Especially in an economy as chronically inefficient as ours. The Government’s own

(somewhat cautious) estimates indicate we could reduce total energy consumption by at least 30% without any diminution in people's standard of living. And many people believe that this could be a much higher figure in America, which has been living off "the back of the energy hog" for so long that people just don't know what energy efficiency means. This is not the place to re-run those arguments; there's literally nothing between us and those kind of reductions in energy consumption other than the lack of political will.

The same is true of renewables. For all the brave words and bold targets (the latest in the UK being our share of the EU's new renewables target so that's 15% of all our energy (not just electricity) is to come from renewables by 2020), the truth of it is that the UK still languishes third from the bottom of the EU's renewables league table – with only Malta and Liechtenstein below us.

Whatever else a Green New Deal may include, it certainly entails massively and urgently ramping up our investments in both energy efficiency in our homes, schools, hospitals, offices, factories, shopping malls and all forms of transportation and in renewables (both large-scale – particularly onshore and offshore wind – and micro generation). Housing is obviously a critical focus area. Happily, there's a growing focus on existing housing stock, rather than new build, where even the most ambitious targets (such as the Government's very bold target for zero carbon housing by 2016) would only get us a small way towards the 2050 target. The Green New Deal consortium puts it as follows:

"We are calling for a programme of investment as urgent and far-reaching as the US New Deal in the 1930s, and the mobilisation for war in 1939. This means executing a bold new vision for a low-carbon energy system that will include making 'every building a power station'. The energy efficiency of tens of millions of properties will be maximised, as will the use of renewables to generate electricity. It also means creating and training a 'carbon army' of workers to provide the human resources for a vast environmental reconstruction programme. We want to see hundreds of thousands of these new jobs created in the UK."

The language may be a little over the top, but the level of ambition is spot on. The reference to "mobilising for war in 1939" is telling, and there are many who believe that we may indeed need to move onto "a war footing" to engender a sense of shared purpose and national (indeed global) unity. Somewhere along the line, Lord Stern's crystal clear message that we need to invest up to 1% of GDP in a low-carbon economy in the near term to avoid what could be as much as 5-20% of GDP in the long term, seems to have got lost in the thicket.

There are only two ways that governments can respond to that challenge. The first (as advocated by Lord Stern himself) is to ensure that markets work efficiently and transparently by ensuring that every tonne of CO<sub>2</sub>

emitted is priced realistically; the second is for governments themselves, on behalf of the citizens, to invest in efficiency and renewables – given that today’s markets are still grotesquely biased towards the use of fossil fuels simply because no price as yet is being paid for the CO<sub>2</sub> that arises from their use. Given that it will probably take many years to get a truly realistic price on every tonne of CO<sub>2</sub>, the moral imperative to step in now is overwhelming. Yet that’s precisely what the UK government is not doing.

#### **4.2.2 Addressing the Oil Crunch**

2008 has seen unprecedented volatility in the price of oil (see graph), with prices down from a high of \$147 in July to below \$50 by the end of last year. The return to a low price (or more accurately, a relatively low price, as it wasn’t very long ago that even \$50 would have been thought of as a high price!) is an inevitable consequence of the global economic recession. Simply stated, less economic activity means reduced demand for oil. This has led to two equally inevitable consequences: first, OPEC has decided to cut production in order to boost prices; second, those who believe that there is no serious issue regarding availability of oil supplies into the medium-term have gone straight back into the usual “told you so” complacency. Just listen to former Energy Minister Malcolm Wicks:

“Global oil reserves are sufficient to prevent total global oil production peaking in the foreseeable future, provided sufficient investment in both upstream and downstream is forthcoming in order for production to keep pace with the growing global oil demand. This is consistent with the assessment made by the International Energy Agency in its 2007 World Energy Outlook.”

The reference to the IEA is interesting. Though it is indeed true that this is what the World Energy Outlook was indicating through 2007, their messages through 2008 were very different indeed.

The 2008 World Energy Outlook slashes its estimates for global oil production for 2030 from 116 million barrels a day to 106 million barrels a day (current production is around 80 million barrels a day). Its authors are up front in acknowledging that the era of cheap oil is definitively over. Yet it still thinks that this is as much a function of under investment by the industry in new refining capacity (with low oil prices providing a further disincentive to new investments) as a question of available resources per se – but it’s interesting that for the first time ever the IEA is now quoting lower figures for the remaining reserves in OPEC countries than the OPEC countries themselves. A wise move; OPEC’s estimates are viewed with extreme scepticism throughout the industry.

Furthermore, given the number of oil industry insiders who believe exactly the opposite of this kind of approach, it seems strange for any government to be in such total denial. As mentioned earlier, there are many people in business today who believe that total global oil production will start to

decline in the period between 2011 and 2013 (depending on the length and depth of the economic recession), and even the ever-bullish Shell believes that the era of “easy oil” will be over by 2015 and that production levels will only be maintained by massive investments in “unconventional sources” such as Alberta’s tar sands – whatever the consequences for climate change. It’s only the likes of ExxonMobil who assert that “peak oil production is nowhere in sight” – and we all know how credible a source they are given their legacy of evidence-denying deceit on climate change.

What’s more, whether it’s 2011, 2013, 2015 or even 2020 is totally immaterial. They are all literally “just around the corner”! And given the near-total dependence of large parts of our economy and our way of life on oil, this spells disaster. The continuing neglect of this issue by every major political party in the UK is astonishing.

From the point of view of a Green New Deal, however, this provides a unique opportunity to seize hold of this particular nettle. What needs to be done now to address the challenge of climate change is exactly the same as needs to be done to address the coming oil crunch. Massive investments in energy efficiency and renewables provide by far the surest defence against any threat to future security of supply here in the UK (and indeed in every other country in the world), be that threat physical (as in reduced access to diminishing supplies), geo-political (as in other nations using their indigenous energy resources to pursue national objectives at the expense of other countries), or related in one way or another to the war on terrorism.

#### **4.2.3 Green Jobs**

It has been argued for a long time by environmental economists that there is a “double dividend” available to governments in terms of all the new job opportunities that will be created by investing in a radically decarbonised economy. Countless reports have been written over the years to demonstrate just how substantial a dividend this could be, and both serving governments and opposition parties have enthusiastically pitched in with great gobbets of “double dividend” rhetoric. Gordon Brown has himself referred on a couple of occasions on the possibility of “up to a million new jobs”, though no detailed analysis has ever been forthcoming. All references to a still imminent “Green Industrial Revolution” contains some throwaway reference to the potential for new jobs, as in the latest report from the Aldersgate Group:

“Far from being an indulgence that would damage competitiveness, the low carbon economy is an essential component of the economic recovery. The Government must grasp this unique opportunity to reform unsustainable business practices, boost competitiveness and stimulate green jobs and wealth.”

In fact, few countries have ever really done the hard graft to secure that kind of double dividend. Germany is perhaps the most important exception, and it's significant that when German politicians are talking about the importance of the far-reaching measures they have introduced to ensure that they meet their Kyoto targets, "new jobs created" feature as prominently as "tonnes of CO<sub>2</sub> abated". The boom in "green collar jobs" in Germany is now estimated to amount to around 250,000 new jobs in the renewables industry and the hugely ambitious programme Germany is now rolling out to retro-fit existing housing stock – having long ago come to the conclusion that focussing exclusively on achieving ever higher standards in new build is really missing the point, given that new build comprises only 1% of total housing in any one year and a lot less in economic recession. It is by no means clear that this message has got through to the UK Government, notwithstanding the massive opportunity available to it to allow Gordon Brown to turn his own fine words into reality:

"Our economic and social prosperity, today and in the next generation requires us to reduce progressively our dependence on oil. All the needs of our country, all the goals as an economy point in exactly the same direction – to tackle climate change, to improve energy security, to create jobs and to stimulate business to grow."

The harsh truth is that scaled interventions by governments directly to stimulate the jobs market has not really been part of the deal for more than two decades. With unemployment in OACD countries staying low, and economies continuing to grow at a reassuring 2-3% per annum, it would have been ideological heresy to suggest that the government in the UK should be incentivising (let alone specifically pump-priming) a massive expansion in green collar jobs. Not so today. As unemployment tipped 2 million by the end of 2008, with every indication of surging up to at least 3 million by the end of 2009, "increased job intensity" will become as critical an indicator of any successful recovery package as "reduced CO<sub>2</sub> intensity". Yet again, Gordon Brown need only look to the United States to see how aggressively Barack Obama is promoting that kind of "win-win". Even though US citizens have at last woken up to the importance of climate change, there's still no way that Barack Obama's recovery package could ever lead on any climate imperative: a combination of energy security and new jobs, however, will clearly hit all the right buttons.

There's no doubt that the consensus around some kind of "double dividend" is growing all the time. In October 2008, the United Nations Environment Programme brought out the most definitive report to date: "Green Jobs: Towards Decent Work In A Sustainable Low Carbon World". With the active support of the International Trades Union Confederation, the International Labour Organisation and the International Organisation of Employees, the report focuses on the five priority sectors likely to generate the biggest transition in terms of economic returns:

- Clean energy and clean technologies (including recycling)
- Rural energy (including renewables and sustainable biomass)

- Sustainable agriculture (including forests)
- Ecosystem infrastructure
- Sustainable cities (including planning, transportation and green buildings)

The report is unapologetic in asserting the legitimacy of both public sector investments as well as private sector investments. It pointedly reminds new-liberal cynics that the global economy they've presided over for the last two decades has in fact been awash with government subsidies of every kind, most of which are still systematically undermining healthy ecosystems – with more than \$300 billion a year still subsidising global agriculture, and around \$280 billion supporting fossil fuels and nuclear power. Achim Steiner, UNEP's Executive Director, summed up the potential for a total rethink in investment strategy:

“The financial, fuel and food crises of 2008 were in part a result of speculation and a failure of governments to intelligently manage and focus markets. But they are also part of a wider market failure triggering ever deeper and disturbing losses of natural capital and nature-based assets, coupled with an over-reliance on finite, often subsidised fossil fuels. There are moments in history when an idea's time has come – and this has to be the time for a comprehensive green economy initiative.”

#### **4.2.4 Decoupling “For Real”**

The whole “Green New Deal” approach is dependent on the notion of “decoupling” – securing the benefits of continuing economic growth whilst avoiding all the disbenefits in terms of pollution, inefficient resource use and the accelerating build up of greenhouse gases in the atmosphere. That means, quite simply, dramatically reducing the “ecological footprint” of annual GDP as the only means by which we can sustain any kind of growth-based economy. Understandably, decoupling strategies lie theoretically at the heart of the Government's Climate Change programme, promising all the goodness off growth with just a fraction of the current footprint.

Indeed, decoupling has been the standard bearer of the whole eco-efficiency movement going back to the mid 1980s, when companies like 3M introduced their “Pollution Prevention Pays” programmes and were able to demonstrate that basic resource efficiency led to increased profitability. These company-specific examples were then incorporated into the advocacy of organisations like the World Business Council for Sustainable Development, and are now commonplace in both government and business thinking on sustainable wealth creation. An ongoing win-win for the global economy and society at large.

Unfortunately, it's not quite as simple as that. Whilst it can of course be demonstrated that many individual companies have made great strides in

reducing both carbon intensity (in terms of CO<sub>2</sub> emissions per unit of value added or profitability) and resource intensity (in terms of raw material “inputs” required to generate the same level of “outputs”), these efficiency gains have often been cancelled out by increased levels of production. In other words, we’ve seen relative reductions in net ecological footprint, but not absolute reductions. And the same is true at the level of national economies. Whilst one can point to significant reductions in resource and energy consumption per unit of GDP (in fact, the amount of energy required to fuel each unit of global economic output has been on a downward trajectory for the last 40 years), most of the gains have been wiped out by year-on-year increases in the scale of economic activity.

This difference between relative and absolute decoupling lies at the heart of the ongoing stand-off between today’s techno-optimists (who remain persuaded that improvements in technology-driven productivity will be sufficient to get us to the desired end goal of a sustainable society by the end of the century) and a growing number of “sustainability realists” who just don’t see how the sums add up. The techno-optimists focus almost exclusively on the massive potential for relative decoupling; the sustainability realists talk about absolute decoupling – not least because the human population itself continues to grow by a net 70 million people a year, and it remains the pre-eminent macro-economic goal of all countries, rich or poor, to drive up average income, year on year through increased economic growth. Tim Jackson succinctly captures that distinction:

“The condition for absolute decoupling is very simple: in a growing population with an increasing average income, the rate of relative decoupling must be at least as fast as the rates of increase in population and average income combined.”

Two things remain to be said about the decoupling challenge: the first is that it would be good to have a real crack at it! In reality there’s not a government in the world that has even begun to work out what today’s energy and resource “descent paths” actually look like. The challenge of climate change is beginning to strip away that ludicrous complacency, but it’s noticeable that the enthusiasm politicians have for setting long-term targets (for instance, 80% reduction in emissions of greenhouse gases by 2050) is in no way matched by an equivalent enthusiasm for working out, in detail, how to get there. Depending on who’s estimates you’re using, an 80% reduction in greenhouse gases by 2050 means an absolute minimum of a 3% reduction every year, and a much more realistic figure (taking all things into account) of 8%. There’s not a mainstream politician in the UK able to demonstrate how even 3% could be achieved – despite them happily signing up to the 2050 target. And it’s sobering to be reminded that the UK is still seen to be one of the more progressive nations in addressing climate change, despite so little real progress in reducing greenhouse gases or in any way getting serious about decoupling strategies.

Secondly, the “window of opportunity” available to us to reconcile “material progress through continuing economic growth” on the one hand, and “genuine biophysical sustainability with increased equity” on the other, is closing down on us all the time. If we miss that window of opportunity, those same challenges will need to be addressed very differently indeed.

### **4.3 Sustainable Economies**

This is clearly not the place for any detailed “reprise” of the kind of transformation that will be required to put our economies onto a genuinely sustainable footing. For the last forty years, a distinguished but largely ignored cohort of economists have sought to demonstrate to politicians that “the pursuit of material progress through exponential economic growth” was an unattainable goal even when it was first adopted back in the 1950s, and remains as unattainable as ever today. Few politicians had any time for such counter-intuitive unorthodoxy in the 1950s; these days, with oil prices having gone to \$147 a barrel before the economic recession set in, and with the threat of “runaway” climate change very much in our minds, there are few people who feel quite so complacent about the non-negotiable realities of creating wealth on a finite planet.

It’s impossible to see how we can put off for much longer a proper debate about these “clashing paradigms of progress”. However, pending that dawn of enlightenment, there’s much to be done in the short term in response to today’s economic crisis without jeopardising what will need to be done in the long term.

#### **4.3.1 Re-regulating Capital Markets**

Where you stand on the “continuum of blame” (from the minimalist contrition of a handful of leading bankers to the kind of full-frontal critique articulated in this pamphlet) will determine the level of enthusiasm you have for how best to re-regulate global capital markets – minimalist or full-frontal. In that context, one may question whether a Prime Minister who little more than a year ago was still eulogising the astonishing achievement of the likes of Alan Greenspan and city whizz-kids in general really has it in him to put an end to the kind of excess, criminal irresponsibility and outright greed that has characterised our economy since 1997. One currently detects little contrition in his constant refrain that the current recession is all the fault of the United States and it’s mis-management of the sub-prime mortgage market when any fool can see that there’s a whole lot more to it than that. And that the UK was second to none in its whoring after the ephemeral promiscuities of deregulated get-rich-quick financial capitalism. But the startling side of the Leader of the Tory Party coming out so strongly in favour of “holding to account those in the city on whose watch this all happened”, and of some fairly serious new regulatory measures may just put a little steel up his backbone.

Re-regulation does not mean a return to the command and control economies of a few decades ago. We must retain a commitment to market-based economics. But what it does mean is that those capital markets must be subjugated – in other words made servant to the kind of economy that we now need rather than be allowed over the economy. Even Hank Paulson (former Treasury Secretary and CEO of Goldman Sachs) would seem to acknowledge the need for a radical re-think:

“Once we stabilise the markets, we then have to take action to make sure this doesn’t happen again. We have a regulatory system that is broken. It’s outmoded. It just doesn’t fit the world we live in.”

But I wonder how much of the following he’d be prepared to go along with:

“Re-introduce strict limits on leverage ratios. Repeal the 2007 Basel II Standard of Capital Adequacy which left it up to the banks to develop their own risk-assessment models depending on the ‘independent’ assessments of the rating agencies.

When it collapsed, Bear Sterns had reserves of \$11.8 billion and outstanding loans of \$395 billion – a leverage ratio of 33.5. Lehman Brothers (with debts of \$613 billion was in a very similar position).

- De-merge all financial conglomerates that have become ‘too big to fail’ particularly in terms of separating out retail banking from investment banking.
- Outlaw all speculative practices such as short-selling.
- Regulate to ensure that all derivative instruments should be brought onto the balance sheet, and should be subject to the same kind of regulatory capital requirements as standard banking practice.
- Abolish all off-balance sheet financing, and re-write the listing and disclosure rules of stock-markets.

(There are many who now believe that the system collapsed as much because of its complexity and ‘indecipherability’ as anything else. Regulators weren’t just found wanting in terms of the inadequacy of their interventions, but in terms of their basic lack of knowledge).

“Return control of all interest rates (including interbank lending rates) to central Banks.

Similar measures were taken in the wake of the Wall Street crash in the 1930s – and it took neo-conservatives in America the best part of 60 years to get those measures repealed. The \$4 trillion hit on the global economy to stitch it back together again is quite simply the price we’re

all having to pay for having handed over such unparalleled political power to a fundamentalist sect that made little pretence of the fact that it's principal purpose was to further enrich the already rich rather than help create wealth for the benefit of all.

And that's why many would go further than this. There's a growing campaign to strip banks of their right to create credit (and then charge interest on it), and to return that right to central banks. Few people realise that 97% of all money in circulation (including "credit") is effectively "created out of thin air" by banks in the form of loans to people and companies. John Bunzl, one of today's leading campaigners for this radical shift, insists on spelling out exactly what this means as it does seem quite extraordinary to most people, once explained, that we've put up with this situation for quite so long:

"Like most people and businesses, you probably think that when you take out a bank loan, the money comes from hard cash that others have deposited in the bank. Wrong! The money you borrow actually never existed before, and is simply created "out of nothing". Banks lend out many, many times more money than they actually hold as physical deposits. This lending "out of nothing" is what the bankers call "fractional reserve banking", or the "credit multiplier"; suitably technical-sounding terms designed to make your eyes glaze over while the banks practice what is, effectively, legalised fraud. Let me state it boldly, they create the money out of nothing by writing it into your bank statements even though they had only a fraction of that amount in their vaults as hard cash. It costs them next to nothing yet you'll have to pay the full amount back plus the interest. If you can't, they'll take your house. Heads they win, tails you lose."

Bunzl accurately describes this as "the world's largest pyramid scheme" which all governments have allowed themselves to get caught up in having historically permitted private banks to take over the right to create credit – a right which should always have been reserved to governments alone. Putting an end to "fractional reserve banking" (in effect, insisting that banks would only be able to make loans if they were 100% backed by deposits would obviously have a massive impact on the profitability of those banks – but might that not be a very reasonable price to pay for a much more equitable and stable system?

#### **4.3.2 Progressive Public Finances**

It may be a sign of things to come that the Labour Party rediscovered the principle of "Fair Taxation" in its 2008 Pre-budget Report, raising Income Tax for highest earners. Whether or not this changes our position in the EU's "Lowest Top Rate of Tax" league table (where we currently come second only to Luxembourg) is a matter of some speculation.

But I don't think we need feel too concerned for the few tens of thousands of individuals who will be affected by this. According to the Hay Group, the UK will have little difficulty remaining right at the top of another league table – “Highest CEO Salary and Bonus Package” – in which our CEOs come in at a staggering £5.2 million a year. And most people in the city would clearly like it to stay that way: a spokesperson for HBOS (which only avoided humiliating bankruptcy through a forced marriage with Lloyds TSB) informed concerned customers just before Christmas 2008 that “we do not intend to change the fundamental design of our incentive schemes”. Even Stephen Green (Chairman of HSBC) who has had the decency to acknowledge that massively over-inflated remuneration packages was one of the causes of the credit crunch, has come to this realisation just a little late in the day. In 2007, HSBC's top 3 executives were awarded £18 million between them in terms of pay and shares. Mr Green's salary is already in excess of £3 million, which may cause some people to raise an ironic eyebrow on hearing his justification for this grotesque excess:

“It is a company's responsibility to pay market rates. It isn't us who set our bonuses, it was the Remuneration Committee of the Board. The overall performance of the company was up, not down, but our bonus-base compensation was flat.”

There's no doubt that the inequity of the mutual back-scratching that goes on through the system of Remuneration Committees is clearly something that the FSA will need to have a long hard look at. Reality now tells us that these “Masters of the Universe” were worth a great deal less than their fellow Directors had judged them to be at the time. No wonder even David Cameron feels it's now safe for a leader of the Conservative Party to lash out at the City's “bonus culture” pointing to a growing battery of evidence demonstrating that bonuses and performance-related pay have a much smaller impact on performance than has been claimed. This culture is also a great “accelerator of inequality”: according to the Income Data Services, chief executives earned 62 times the pay of their average employee in 2000, but they now pay themselves 104 times as much.

I suspect it will still be quite a while before the true extent of the redistribution of wealth that has been going on over the last 20 years or so is fully revealed. In most OECD countries, most people have ended up working longer hours for small, if any, increases in relative income. The huge increase in the number of households where both men and women are earning has masked the relatively static position of the principal income-earner. Here in the UK, average pay has barely risen over the last 3 years – at exactly the time when the super-rich were getting even richer. And the poor have seen their relative position decline even further. At £5.72 an hour, the minimum wage is still stuck well below the living wage of £7.45, and this continues to decline relatively as annual increases are set below the rate of inflation.

The case for a more redistributive approach to tax has been ignored for so long that it will take a while for people to remember that this was once “a

given” in terms of progressive public policy. But as the recession deepens and more and more people become a great deal angrier at what’s been going on, this government’s wholly inadequate efforts to crack down on systematised tax avoidance strategies on the part of the rich will become less and less acceptable. It will be interesting to see if Peter Mandelson can persuade the Treasury to start taking tax avoidance seriously. His infamous comment that he was “intensely relaxed about people getting filthy rich” was in fact accompanied by an important qualification: “so long as they pay their taxes”. Indeed.

Maybe it will be time to think even more radically about non-fiscal mechanisms for reducing disparities and wealth. Having sorted out a minimum wage entitlement for the very poorest in the UK, there are now a number of Labour MPs who want the party to explore some kind of “maximum wage”. It’s now more than 100 years since JP Morgan (one of the pioneers of “red in tooth and claw” capitalism!) first proposed that no company should have a differential of more than 10 between the highest paid and the lowest paid.

As well as personal taxation, this is surely the time to re-think the whole question of corporate taxes, and in particular, their use of tax havens. This has increased rapidly over the last few years, with “capital mobility” now largely unfettered, and some estimates tell us that more than half of global trade is routed through tax havens. There are various estimates as to the extent of corporate earnings that escape proper taxation as a direct consequence of this development: Christian Aid’s figure is \$160 billion (this is the lowest figure), whereas both the World Bank and the research group Global Financial Integrity put the total nearer to \$900 billion. These are just the corporate flows; over and above that are flows from High Net Worth Individuals, which are believed to be well in excess of \$5 trillion.

No country in the world bears a heavier responsibility for this than the UK; over a quarter of the world’s tax havens are British, including Jersey, Guernsey, The Isle of Mann and the Cayman Islands. The Tax Justice Network has highlighted not just the direct loss to national exchequers that is caused by this abuse, but the indirect consequences: the lack of transparency, the uncertainty about who owns what, the deliberately engineered complexity. All these contribute to the lack of trust that these “secrecy jurisdictions” have created, and it’s this lack of trust that finally undid the entire system. Richard Murphy, the founder of the Tax Justice Network, does not pull his punches:

“The offshore world created the conditions that led to this crisis, and unless the offshore world is tackled, it will undermine all efforts to deal with it. Gordon Brown and his predecessors have ignored this. As a result, they have knowingly permitted the harm that secrecy jurisdictions wreak on the poor at home and abroad. Unless they are tackled, tax havens will sabotage any efforts to build global governance and international co-operation.”

One of the most obvious ways of eliminating those aspects of tax haven abuse caused by transfer pricing by multinational companies (which is little more, in effect, than the legalised denial to states of the revenues due to them) would be to change international accountancy rules to compel all companies to produce annual accounts on a country by country basis. The EU should co-operate immediately with the incoming Obama Administration to ensure our efforts in this regard are fully aligned with the proposals outlined in the new President's "Stop Tax Haven Abuse Act". This would at least get things moving in the right direction. Emboldened by reclaiming from multinational companies what is rightfully due to their citizens, governments might then think again about the potential impact of introducing some kind of currency transaction tax (often referred to as the Tobin Tax) to secure a new flow of global revenues which could be deployed to help developing countries cope with their own transition to a low-carbon world. Nothing would send out a stronger signal to emerging and developing economies that the OECD really is serious about global collaboration in the face of accelerating climate change. And as the New Economics Foundation points out, the rationale for this is by now well accepted:

"A small tax on international currency transactions would discourage short-term, high-frequency trading (the tax would be paid every time the trade was done), but leave longer-term, real investment unaffected. It is estimated that, globally, a tax of just 0.005% would raise tens of billions of dollars annually, while also "throwing sand in the wheels" of the global currency markets and reconnecting the financial and real economies."

I suspect that much more is going to have to be done to reconnect the financial and real economies. Again, this is not the time to revisit the hugely powerful conclusions of Lord Stern's report on "The Economics of Climate Change", but governments around the world will need a lot of reminding in the teeth of a deep and very dark recession that there is an even deeper and darker one just around the corner that can only be avoided by investing now in the technologies and infrastructures of a low-carbon global economy. Al Gore has referred to this as "the emergency rescue of human civilisation itself", and is currently working with President Obama to bring in a recovery package amounting to at least \$150 billion over ten years – creating in the process up to 5 million new "green collar jobs". Many believe that it will require a far bigger package to have the desired effect – both in terms of stimulating economic recovery and securing substantive and rapid reductions in greenhouse gases. The eminent economist Paul Krugman has suggested an investment programme of closer to 4% of US GDP for the next ten years.

A similar percentage here in the UK would amount to many tens of billions. But the state of public finances here in the UK rules out any such commitment. Though it's true that (at 40% of GDP) the level of national debt in the UK remains much lower than in most of our European partners, there are already grave concerns about levels of indebtedness here in the

UK. The steep decline in the value of the pound over recent months demonstrates just how fine a balancing act it is that the government has to pull off in terms of any UK-specific “Green New Deal”.

This strengthens the case for a dramatic redirection rather than for constant unsustainable increases. Unlikely though it now is, the obvious starting place for such a redirection is to rethink the proposed reduction in VAT for the 09/10 tax year (which will cost more than £12 million) into serious investment in a low-carbon economy rather than forlorn and misguided efforts to stimulate further consumption.

Beyond that, there’s no shortage of opportunities to recoup tens of billions of pounds on “big ticket” items like the proposed identity card and a raft of IT mega-schemes. Top of the list should be a proposal to axe Labour’s deeply immoral plans to renew our Trident nuclear deterrent. The reluctance of the Labour Party even to discuss the issue of Trident shows just how far it has to go in terms of understanding the impact of climate change on literally every aspect of government policy – including defence and security.

#### **4.3.3 Prosperity Beyond Growth**

Perhaps understandably, 99.9% of governments’ efforts around the world is focussed on stabilising the still precarious state of global capital markets and on avoiding anything quite as painful as the prolonged depression of the 1930s. “Understandable” because nobody wants to see that level of economic and social trauma impacting on the lives of billions of people all around the world. But there’s a paradox here. The recession will mean that emissions of CO<sub>2</sub> and other greenhouse gases will fall markedly until the global economy picks up again. After the collapse of the Soviet Union, emissions from Russia fell by around 5% per annum over a number of years, precisely following the overall decline in economic activity. But because nothing was done during that time to improve levels of efficiency, Russia’s emissions leapt up again as soon as its economy started to recover. There seems little doubt therefore that a three or four year 1930s-style global slump would see emissions of greenhouse gases at least stabilising and possibly even falling – but the real question is for how long?

And that’s why the current strategy (which can be characterised quite simply as “getting back to as high a level of economic growth just as fast as possible”) is indeed deeply irresponsible if not immoral – as the Church of England is now arguing with increased intensity. In their bones, world leaders know that if the global economy keeps growing at around 5% per annum (as it has done over the last couple of decades), then it’s game-over for human civilisation as we now know it. Runaway climate change would become unavoidable; resource wars would destabilise already fragile relations within and between countries. But world leaders also know that their electorates have become so wedded to the theoretical benefits of

year-on-year economic growth that it's going to be incredibly difficult to "wean them off it" without profound social and economic dislocation.

This meta-dilemma is mapped out with extraordinary clarity in Professor Tim Jackson's new report for the Sustainable Development Commission, "Prosperity Beyond Growth":

"In examining global data on life expectancy, infant mortality and participation in education, it remains possible that growth is a necessary condition for flourishing. The clearest conclusion is that economic resilience matters. Basic capabilities are threatened when economies collapse. Growth has been (until now) the default mechanism for preventing collapse. This leads to an uncomfortable and deep-seated dilemma: growth may be unsustainable, but "de-growth" appears to be unstable. Our inability to confront this dilemma may be the single biggest threat to sustainability that we face."

Uncomfortably, the report lays bare just how ill-prepared we are in terms of addressing this dilemma. Through all the years of plenty, even as the evidence of overshoot and worsening unsustainability grew and grew, no serious work has been done on thinking through any kind of alternative paradigm. The Treasury (and every other equivalent department around the world) just sat on its hands hoping the dilemma would go away. There is currently no macro economic model anywhere in the world for achieving economic and social stability in the absence of economic growth.

Worse yet, the dilemma deepens when we look at what it is that currently provides much of that growth in the OECD countries: credit-fuelled consumption. There is no longer any doubt that governments around the world have "facilitated" if not positively enabled a massive expansion of credit (accompanied, obviously, by increased levels of personal debt) to fuel consumption in order to drive economic growth. In the US today, for instance, consumer activity accounts for about 70% of all economic activity. US consumers spend around \$9 trillion a year – more than 120% of their annual income. In other words, as Tim Jackson says:

"The market was not undone by isolated practises carried out by rogue individuals. Or even by the turning of a blind eye by less than vigilant regulators. It was undone by growth itself."

On top of those transparently unsustainable levels of personal debt, are equally unsustainable levels of public debt. As we've seen, David Walker, the former US Comptroller General, has extended the official figure for US public debt (at around \$10 trillion) to around \$50 trillion once huge "invisible items" such as the Medicare program, the wars in Iraq and Afghanistan, and the true extent of the bank bail-out are factored in. That's the equivalent of £175,000 for every American citizen – which makes their own personal debts look modest by comparison. And although the US might be "out in front" on public debt, it is not alone. Italy and Germany have debts of more than \$2 trillion; Japan around \$9 trillion; the UK and France more

than \$1 trillion. Even countries like India, China and Brazil have all racked up debts in excess of half a trillion dollars.

So how are we going to pay it all back? Economic growth, of course! Even though we now know that much of the growth we've seen over the last few years has either been an illusion (in terms of growth in "paper" or virtual assets), or generated at the expense of the natural capital and eco-system services on which our wellbeing depends. In a paper for the Sustainable Development Commission, Herman Daly has spelled this out with painful clarity:

"The current financial debacle is really not a "liquidity crisis" as it is often euphemistically called. It is a crisis of over growth of financial assets relative to growth of real wealth – pretty much the opposite of too little liquidity. Financial assets have grown by a large multiple of the real economy – paper exchanging for paper is now twenty times greater than exchanges of paper for real commodities. It should be no surprise that the relative value of the vastly more abundant financial assets has fallen in terms of real assets. Real wealth is concrete; financial assets are abstractions – existing real wealth carries a lien on it in the amount of future debt. And the value of present real wealth is no longer sufficient to serve as a lien to guarantee the exploding debt. So can the economy grow fast enough in real terms to redeem the massive increase in debt? In a word, no."

Herman Daly has long been predicting a meltdown of this kind. The fact that it hasn't happened before now has given a lot of people a lot of comfort. But for how much longer?

**Word Count: 22,034**