REACTIONS WELCOME

Abstract - After the Credit Crisis - the Future of Sustainable Investing

by Nick Robins, Cary Krosinsky & Stephen Viederman

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Sustainable investing is an investment discipline that explicitly considers *future* social and environmental trends in financial decision making, in order to provide the best risk-adjusted and opportunity-directed returns for investors. By anticipating these trends ahead of the market, sustainable investing seeks to identify 'predictable surprises' that can help ensure shareowner value over the long-term.

One year after the publication of our book *Sustainable Investing: The Art of Long Term Performance* we review anew the investment performance of the sustainable fund universe, and found once more, that the class has been outperforming conventional peer strategies, up through the first half of 2009.

We also take a look at what some might call the grandfather of behavioral and long-term investing, John Maynard Keynes, and whose turbulent experience as a market practitioner contributed powerfully to his prescriptions for the reform of capitalism in the Great Depression, and how that relates to current times.

We propose two hypotheses—the 'reasonable person hypothesis', and the' resilient markets hypothesis'—in place of the ideals of efficiency and rationality as a more durable basis for investment success.

And with evidence mounting that sustainable investing offers the best chance of outperformance in the modern age, we then move to a review of the barriers that remain to incorporation by any investor, and what strategies could be considered towards encouraging maximum adaptation accordingly.

Key Words: sustainable investing, Keynes, ‘reasonable person hypothesis’. ‘resilient market hypothesis’, SI financial performance, barriers, strategy

After the Credit Crisis - the Future of Sustainable Investing

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1. Winning the battle, but losing the war?

Sustainable investing is an investment discipline that explicitly considers *future* social and environmental trends in financial decision making, in order to provide the best risk-adjusted and opportunity-directed returns for investors. By anticipating these trends ahead of the market, sustainable investing seeks to identify 'predictable surprises' that can help ensure shareowner value over the long-term.

In our book, *Sustainable Investing: The Art of Long-Term Performance* (Krosinsky & Robins, 2008), we showed how this burgeoning investment philosophy had become a powerful force, consistently outperforming conventional strategies in global equity markets and attracting ever-increasing funds under management. We had started the book as credit markets crunched, and finished it in July 2008 as once famous names in the investment world, such as Bear Stearns, buckled under the strain. We concluded that sustainable investing had now completed its apprenticeship, arguing that the challenge ahead lay not in becoming more like the 'mainstream' but in replacing it. Then came the collapse of Lehman Brothers and with it the end of the short era of financialization, which had driven the global economy since the late 1970s. As if waking from a drug, the world has realized that markets are neither perfect nor efficient, that investors are not always rational or far-sighted, nor fully considering all relevant risk

factors and opportunities, and that decisive public intervention is an essential prerequisite for capital markets.

One of the enduringly positive aspects of the financial landscape over the past 12 months has been the continued rise of sustainable investing. We are wary of semantic battles and definitional boundary disputes between socially responsible investing, responsible investment and sustainable investing. For us, we believe one of the key distinguishing features of sustainable investing is its forward-looking, prospective methodology which we argue will systematically add value over time. Our hypothesis rests on two assumptions:

The first is that the best way of generating returns in the 21st century, both risk-adjusted and opportunity-directed, is to acknowledge long-term economic, social and environmental realities and integrate these into investment and ownership decision-making ('the reasonable investor hypothesis').

The second is that capital markets themselves need to be recast to confront the risks of financial collapse posed by long-term economic, social and environmental realities ('the market resilience hypothesis').

If the first assumption above speaks the language of financial value at the micro-level, the second refers to the imperative of structural reform at the macro-dimension. Sustainable investing thus provides an agenda for action for purely financially motivated investors eager to mitigate risk and benefit from upside opportunities, as well as for governments seeking long-run economic development and civil society organizations aiming to achieve social and environmental progress.

One year on, we have reviewed the investment performance of the sustainable fund universe on a global basis, and found once again, that the class has outperformed conventional peer strategies, up through the first half of 2009. For us, this result comes as no surprise.

Sustainable investors start from the premise that today's markets are deeply flawed, failing to reflect long-term social, economic and environmental value in asset prices. As a result, they can achieve a significant information advantage by analyzing these values and integrating them both into asset selection decisions, as well as through the exercising of ownership rights - in effect anticipating underlying changes in the economy long before the mainstream.

The tragic reality, however, is that this relative outperformance cannot hide an absolute loss for sustainable investors over the course of 2008. The structural failings in financial markets simply overwhelmed the fund-level advantages secured by sustainable investors. Reflecting on the current crisis, we believe that the credit crunch is just one manifestation of a much deeper crisis of unsustainability in the global economy encompassing severe imbalances in demographics, geopolitics, natural resource use, pollution, labor and human rights, as well as wealth distribution. Unless sustainable investors rise to the challenge of market reform so that asset prices tell the truth and owners become fully accountable, then they risk winning the micro battle, but losing the macro war. With the prospect of runaway climate change, this is not a war we would wish to lose. To avoid this, the failed financial theories that underpinned the market practice that resulted in the current crisis need to be discarded in favor of a new

synthesis that brings together the best insights of behavioral finance with the socio-ecological perspectives of sustainable investment.

This paper takes up where *Sustainable Investing* left off, updating the performance analysis of sustainable investment funds, extending our scope to examine the systemic failings of today's financial markets, and highlighting some necessary avenues for reform to upgrade sustainability from a simple question of investor taste to one of fundamental market integrity.

But first we turn back to the last century and investigate the evolving strategies of that grandfather of behavioral and long-term investing, John Maynard Keynes, whose turbulent experience as a market practitioner contributed powerfully to his prescriptions for the reform of capitalism in the Great Depression.

2. How to Lose a Fortune (Three Times) and Save the World

No decent analysis of the current crisis can escape a few choice references to Keynes, a man for all crashes. In most cases, the focus is on Keynes' recommendations for macro-economic intervention to deal with the persistence of boom and bust in modern capitalism. He has thus become the unwitting grandfather of economic stimulus plans across the world - and by extension, the promotion of a 'green recovery'. Far fewer examine how his experience as an active investor over many decades informed his broader beliefs about economic management. According to Keynes' biographer, Robert Skidelsky, Keynes was 'a spectacularly successful investor', even though he suffered three major setbacks in 1920-1, 1928-9 and 1937-8 (Skidelsky, 2004). But he was an investor who fundamentally changed his strategy for generating returns, an

epistemological break that was crucial for his role as theoretician and policy maker. From his own investment ups and downs, Keynes appreciated that to first understand and then improve capitalism, it is important to start with capital, in other words the behavior of investors.

For Keynes, familiarity with real world investors bred something close to contempt. In the *Treatise on Money*, he concluded that investors "do not possess even the rudiments of what is required for a valid judgment and are the prey of hopes and fears easily aroused by transient events and as easily dispersed". In this, he was in tune with Adam Smith's own less than complimentary comments about merchants. Like Smith, Keynes recognized the necessary utility of the market economy to drive human development. But over time, experience taught him that the 'invisible hand' would often miss the catch, potentially losing the game.

Immediately following the First World War, Keynes and his investment partner, Foxy Falk, started to play the money markets, forming a syndicate to take long and short positions in a basket of international currencies. At the time, he was described by Gaspard Farrer of Barings as "a man who is governed largely by pure reason and thinks others are governed in like manner and he is apt to omit to human equation" - a surprising conclusion given Keynes' subsequent emphasis on the power of 'animal spirits' (Kynaston, 2000). For all this, by February 1920, he had generated book profits of £18,525 on an investment of £200,000. In March, he went long dollars, buying £150,000. He was still on a high in April when he wrote that "win or lose, this high stake gambling amuses me". By May, however, he was ruined, losing all his capital, and with massive debts outstanding. But for an emergency loan of £5,000 from Sir Ernest Cassel, Keynes would have been bankrupt. Yet by 1922, Keynes had paid off his debts, generating some £25-30,000 for himself. Later in the decade, he turned to the

commodity markets, boosting his assets to £44,000 in 1927. But he was caught out again, missing the mounting imbalances in the markets as the decade closed, and by the end of 1929, his own wealth had slumped along with the global economy to just £7,815. Worst of all, he even had to put up for sale two of his treasured impressionist paintings by Matisse and Seurat. From the raw experience of these two profound investment failures, Keynes made an about turn and adopted the policy of 'faithfulness', investing in a few favored shares and sticking to them through thick and thin. A decade spent trying to "beat the market had convinced him that this was the only rational response to uncertainty". (Skidelsky, 2004).

Buying into Wall Street in 1932, his capital had grown twenty-three times by 1936, the year of the publication of his masterpiece, *The General Theory of Employment, Interest and Money*. In his celebrated Chapter 12 of the General Theory, Keynes looked deep into the mind of the investor, and found a fundamental tension between alternative investment strategies: the first, a momentum-driven approach to beat the market in an endlessly reflexive beauty contest ('speculation'), and the second, a value-led quest for long-term yield ('enterprise'). It was the predominance of the first approach that resulted in the eternal instability of capitalism, which Keynes was quite clear rested "on the bad faith of investors". From bitter experience, he recognized that "it is the long-term investor, he who most promotes the public interest, who will in practice come in for the most criticism wherever investment funds are managed by committees or boards or banks" (Keynes, 1978).

Indeed, the following year, however, Keynes was once again left exposed by a turn in the markets, losing two-thirds of his own money. This time, his General Theory at least provided the justification for his policy of 'hanging on for a rise' to the range of institutions he advised: King's College, Cambridge as well as the Provincial Insurance

company, and the National Mutual. In a combative mood, Keynes defended his policy to Francis Curzon, chair of the National Mutual. “I feel no shame”, he wrote “at being found still owning a share when the bottom of the market comes. I do not think it is the business of a serious investor to cut and run on a falling market.... I would go much further than that. I should say that it is from time to time the duty of a serious investor to accept the depreciation of his holdings with equanimity and without reproaching himself. Any other policy is anti-social, destructive of confidence and incompatible with the working of the economic system. An investor is aiming or should be aiming primarily at long period results and should be solely judged by these.” Curzon and the rest of the board were unconvinced, however, and Keynes resigned in October 1938. By the end of the year, his own net assets had fallen from a high of £506,222 at end of 1936 to just £181,244 by the end of 1938. Yet, at the time of his death in 1946 - and following the ravages of the Second World War - Keynes position had recovered to £479,529.

Keynes’ struggles to develop a successful investment strategy for his own money had profound implications for his macro-economic analysis, and still have a deep resonance today. We should certainly not deify an economist who lived and worked in another age - but we should also not be resistant to learning lessons from the past, particularly when we have taken a half century detour away from his insights. As Peter Bernstein has ably shown, the ‘capital ideas’ that have dominated investment theory and practice in recent decades have owed little to Keynes, resting on the utopian assumption that “investors have no difficulty in making optimal choices in the bewildering jumble of facts, rumors, discontinuities, vagueness, and black uncertainty that makes up the real world” (Bernstein, 2007). Amid the wreckage that these ideas have generated, Keynes provides some footholds for the next phase of making ‘capital ideas’ sustainable. In particular, Keynes highlighted:

first, that human emotions - his famed ‘animal spirits’ - have a profound impact on the actions of investors and thereby market movements, making him one of the first exponents of behavioral finance;
second, that investment and speculation are radically different, and that investors like government policymakers - should aim for long run returns, and fight the “mania for liquidity”; and
third, that investment has a social as well as a private purpose, which he eloquently described as focused on defeating “the dark forces of time and ignorance that envelop our future.”

3. Sustainable Investing Practices and Performance – an update

The first funds with a sustainable investing strategy were launched in the late 1980s. *O*ver the past 20 years, sustainable investing has grown from small beginnings to becoming a powerful force in investment markets. One of the core themes it shares with Keynes’ approach is a focus on long-term, real world drivers of value.

Back in the 1930s, Keynes observed that it was the long-term investor that “should be eccentric, unconventional and rash in the eyes of average opinion”, and so it has often been with sustainable investing. Keynes added that “if he is successful, that will only confirm the general belief in his rashness; and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy.”

John Kenneth Galbraith echoed some of the same thoughts: “Only after the speculative collapse does the truth emerge. What was thought to be unusual acuity turns out to be

only a fortuitous and unfortunate association with assets. Over the long years of history, the result of those who have been misjudged (including invariably, by themselves) has been opprobrium followed by personal disgrace or a retreat into the deeper folds of obscurity, or in modern times, at least moderately uncomfortable confinement" (Galbraith, 1990).

In our book, we originally highlighted the practices and outperformance of sustainable investing vs. both mainstream as well as purely negative strategies, for the 1-, 3- and 5-years leading up to the end of 2007. However, by the time our book was published in November 2008, deep market declines had been underway, extending into 2009.

It was therefore quite heartening to discover upon further examination of the performance of the funds studied in the book, that sustainable investing strategies had been outperforming both ethical and mainstream strategies leading up to the end of 2008, as well as in the first half of 2009. This further extends our previous finding that sustainable investing has already been a winning strategy. Even with the hard times of 2008 factored in, long-term returns have been best served by the application of a sustainable investment philosophy.

In 2008, on average, sustainable investing held its own (-39.3%) with some funds faring better than others, while slightly underperforming negative strategies (-36.3%) and the S&P 500 (-37.0%) but outperforming the MSCI World (-42%). Of course, specific 2008 performance was universally poor, but it is useful to note that sustainable investing on average did not do worse than any other equity strategy.

Through the first half of 2009, as markets fell further and then recovered, sustainable investing was easily the out performer, returning on average 7.63%, with some of the worst performing sustainability minded funds of 2008 bouncing back. Negatively screened funds delivered 6.75%, both of which were better than the S&P 500's 4.97% and MSCI World's 4.76% respectively. In both cases, that represents flat index returns so these results would be even better vs. actual investable versions of these indices.

The outperformance of sustainable investing also emerged when extending the study to what is now 6- years leading up to the end of 2008, adding one year to the previous study, with sustainable investing returning on average 9.5%, as well as the 5- years leading to end 2008, when the S&P 500, for example, returned a negative 2.19%.

One other performance related metric that we would like to reiterate is that between portfolio turnover and fund performance. Our book highlighted the fact that across all 11 strands of socially responsible investing, those funds which had the lowest turnover (those funds which in effect traded least often), performed best, and those which traded most frequently, performed worst of all. A graphic to this effect, with additional granularity, illustrates this quite clearly (see Figure 1).

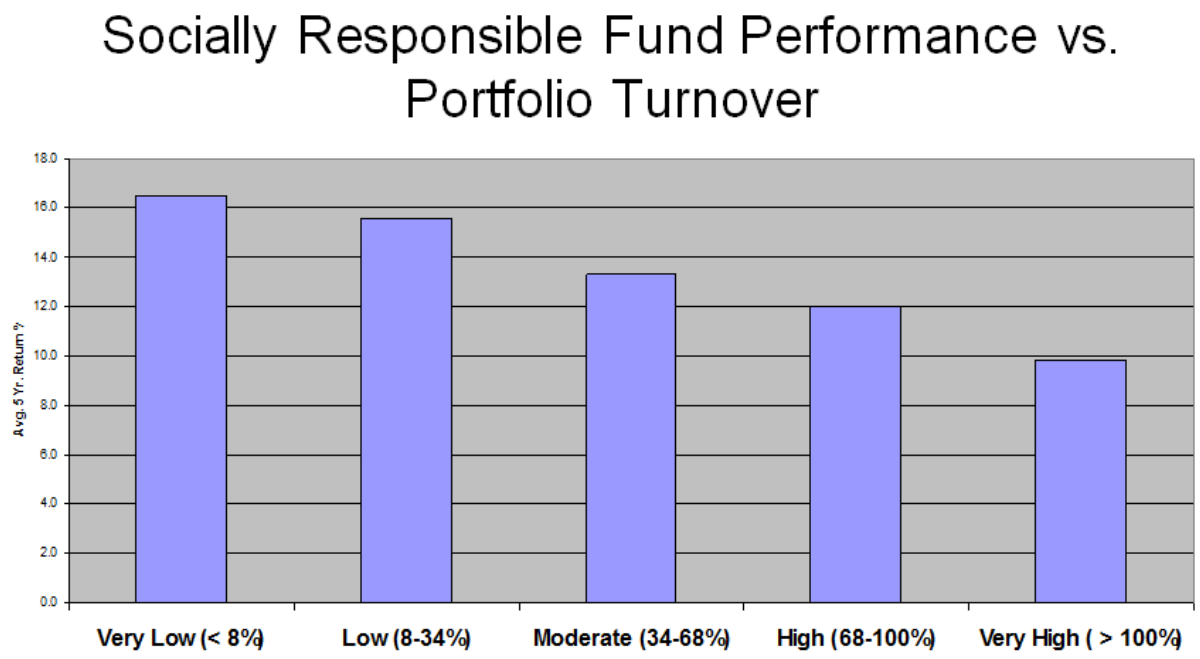

Figure 1. Krosinsky, April-May 2008

A range of other studies published in 2009 have further correlated & confirmed these findings. In terms of sustainable investing, for example, SAM's 'Alpha from Sustainability' report concluded that there was "a positive correlation between Corporate Sustainability and financial performance measured by stock returns, and that the investment strategy based on SAM's Corporate Sustainability data delivered positive information ratios in bull and bear markets, highlighting its effectiveness as an all-weather approach" (SAM, 2009).

And so, as the evidence mounts that sustainable investing offers the best chance of outperformance in the modern age, the question becomes what barriers remain to incorporation within mainstream investment practice, and what strategies could be considered towards encouraging maximum adaptation.

4. Where the Dog is Buried - Explaining the crisis of financial unsustainability

The world is awash with interpretations of the current crisis and prescriptions for change. Many of these explanations and proposals are not new - suggesting a remarkable ability on the part of the financial establishment to ignore warnings and resist essential reform. From the equity market mania of the 1990s, we learned of the follies of 'irrational exuberance' (Shiller, 2000) and the persistence of 'infectious greed' (Partnoy, 2004) leading to a veritable 'battle for the soul of capitalism' (Bogle, 2005) requiring investors to develop out a 'Wall Street self-defense manual' (Blodget, 2007). With many of these problems unresolved - indeed exacerbated - the current crisis has led us to experience the profound shocks 'when markets collide' (El-Erian, 2008), painfully relearn the importance of Keynes' 'animal spirits' (Akerlof & Shiller, 2009), suffer the consequences of 'chasing alpha' (Augar, 2009) through the pursuit of 'fool's gold' (Tett, 2009) and recognize the fundamental importance of 'rethinking capital' (Chapple, 2009).

From these insights and our own analysis as markets practitioners, we identify the key flaws in conventional financial markets - and the elements for a more sustainable financial system. The task ahead is to create a new synthesis combining the best of behavioral finance - with its significant empirical strengths in revealing the human dimension of investment - with a macro theory of sustainable investment to inform both market design as well as investment practice.

The end of neo-classical finance

The credit crunch probably spells the death-knell for the dominant neo-classical approach to investment theory. Indeed, it is difficult now to find a good word said about

the core beliefs that have dominated investment practice for the past three decades, most notably the Efficient Market Hypothesis (EMH) on which rests Modern Portfolio Theory (MPT). For leading behavioral financial analyst, James Montier, “EMH is the financial equivalent of Monty Python’s dead parrot. No matter how much you point out that it is dead, the believers simply state that it is just resting” (Montier, 2009).

EMH assumes that rational actors act in a self-regarding way so that market prices reflect all available information and tend towards equilibrium. The reality is of an electronic herd grazing across global assets creating one bubble after another with benefits narrowly distributed and costs widely shared.

The artificiality of the hypothesis rests on at least two fundamental flaws:

first, human beings do not fit the abstract model of rationality. This does not mean that we are necessarily irrational or stupid. The human brain simply does not operate in the way the model suggests. For the EMH to be true, “every single one of us would have to know and *understand* everything, completely, and at once”, according to Daniel Kahneman, a pioneer in behavioral finance [emphasis in the original] (quoted in Bernstein, 2007). Leading economist John Kay goes further and describes EMH as “illuminating but not true” (Kay, 2009). A more empirically based theory of finance would acknowledge modern psychological and neurobiological understandings which highlight the importance of emotional drivers that “motivate us, help us to think and make life meaningful”, indeed which act as “core drivers of our capacity to act” (Tuckett, 2009). Moreover, markets are driven by hard to quantify but very real factors such as confidence, fairness and corruption, all of which create systemic risks poorly understood by conventional investors. Our ability to act rationally is also bounded or constrained by

a series of systematic biases such as framing, group think and herding, which when compounded with market flaws help explain the persistence of manias.

second, markets aren't perfect - indeed are fundamentally unstable, as first Keynes and then Hyman Minsky identified decades ago (Minsky, 1992). Markets suffer from profound asymmetries of information and conflicts of interest, which in many ways have been exacerbated by the process of consolidation and conglomeration in financial markets over the past 50 years. According to Richard Thaler, "we have now had three enormous price distortions in recent memory. They led to misallocations of resources measured in the trillions, and in the latest bubble, a global meltdown. If asset prices could be relied upon to be always "right" then these bubbles would not occur" (Thaler, 2009). New insights in market dynamics are being gained from analyzing out of equilibrium natural systems such as earthquake prone areas which are subject to abrupt upheavals. Starting from the assumption of market fallibility seems to yield more fruitful avenues of enquiry than presuming perfection.

It has taken a crash of monumental proportions to reveal the flimsiness of this theoretical framework. Part of the problem has been, as John Kenneth Galbraith observed almost two decades ago, that "markets are theologically sacrosanct….Some blame [for bubbles] can be placed on the more spectacular or felonious speculators, but not on the recently enchanted (and now disenchanted) participants. The least important questions are ones most emphasized…. Accepted in reputable market orthodoxy . . . is the inherent perfection of the market" (Galbraith, 1990).

The current crisis has certainly shaken the faith of investment practitioners in efficient markets and the 'rational man' - and one hopes permanently. According to a poll

conducted by the UK Chartered Financial Analyst (CFA) group of its members, two-thirds no longer believe that market prices reflect all available information, and 77 per cent of respondents “strongly” or “very strongly” disagreed that investors behave rationally (Tett, 2009b). Looking back, this myth of market perfection is a perfect example of what Keynes described as ‘conventional judgment’. In the process, many market practitioners became ‘rational fools’ in Amartya Sen’s damning phrase, over-emphasizing what could be modeled and quantified even if this diverged dangerously from reality; many market regulators also became foolish abdicating their proper role to the equilibrium of the markets.

EMH is not a victimless theory - it has severely disabled the investment profession and prevented structural reforms that would have controlled asset bubbles: under EMH, bubbles can’t occur and so countervailing regulation is unnecessary. This conventional wisdom has served to slow the adoption of sustainable investment practices in spite of the growing empirical evidence of success. The assertion that the ‘price is always right’ allowed many to claim without fear of denial that if environmental, social or governance factors are material then there are already in the price, and therefore no further analysis or investigation is required. Furthermore, the ‘no free lunch’ aspect to EMH - that it is difficult, if not impossible, to ‘beat the market’ - has led to a proliferation of backward-looking index tracking and benchmarking hugging strategies that profoundly limit the willingness and ability of fund managers to deviate from accepted asset allocation strategies. Again, Keynes had it right when he noted that “worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally”. Index funds can certainly offer good value for money to investors, but in return they disengage from the process of price discovery, and as a result, argues Steven Lydenberg, makes the market more speculative, amplifying pricing irrationalities. A new generation of

forward-looking sustainable investing indices - such as SAM's DJSI - can counter these downside impacts.

Blinded to social realities

By over-emphasizing the quantifiable monetary dimensions of investment performance, conventional theory has blinded practitioners to a suite of social, economic and ecological realities. For Financial Times writer Gillian Tett, "the finance world's lack of interest in wider social matters cuts to the very heart of what has gone wrong." (Tett, 2009a) Prevailing financial theories have not just caused immense damage, but also blunted reform, she adds: "elites maintain their power not simply by garnering wealth but by dominating mainstream ideologies both in terms of what is said, and also what is not discussed. Social 'silences' serve to maintain power structures in ways that participants often barely understand, let alone plan".

Behavioral economists George Akerlof and Robert Shiller highlight, for example, the importance of 'fairness' as a motivation for action that can "override the effects of rational economic calculation" (Akerlof & Shiller, 2009). Behavioral economics shows that the "most beneficial trade may occur between mutually supportive and trusting individuals" (Lunn, 2009). If behavioral finance offers a theoretical framework for appreciating the human dimension, sustainable investment provides the tools, analyzing the importance of understanding supply chain quality, employee engagement, community relations and consumer satisfaction as drivers of investment returns: tracking the 'invisible handshake' as well as the 'invisible hand'. For the mainstream, this blinkered vision has had real consequences: the credit crunch arose directly out of the provision of inappropriate banking products to low income ('subprime') consumers who lacked both the financial knowledge to understand and the financial depth to

weather economic shocks. Sustainable research analysts, such as those at Innovest and The Corporate Library, by contrast, were among the few that were alert to the criticality of irresponsible lending. Even with these signals, many sustainable investors were insufficiently assertive to protect their portfolios from exposure to the banking sector, often for the same benchmark hugging mentality that afflicts conventional management.

A failure of governance

Akerlof and Shiller also highlight the darker side of human psychology - the eternal tendency towards bad faith, corruption and fraud. The traditional guard against those entrusted with other people's money - whether corporate executives, pension fund directors as well as managers of mutual funds - has been good governance. And for Keith Ambachtsheer "the fundamental cause of the crisis is a widespread failure of financial sector governance mechanisms in both governments and the private sector" which have "manifested themselves in undisciplined and value-destroying risk-taking, fuelled by inappropriate, poorly conceived compensation schemes" (Ambachtsheer, 2009). Back in 1949, Benjamin Graham described stockholders as "a complete washout" (Graham, 1949). Sixty years on, things have not got much better with a vacuum in ownership resulting in failures right along the investment chain, resulting in:

a significant shift in value added from savers to the fund management and investment industries;

collusion between institutional investors and corporate executives to entrench excess remuneration packages that fail to drive performance and defy 'fairness'; and

uncritical acceptance of flawed investment theories and performance management strategies that have accentuated trading over ownership, exacerbating market risk in the process.

Certainly, the basic architecture of ‘shareowner democracy’ remains primitive. In the UK, for example, “shareholders are not, in the eyes of the law, part owners of the company.” And the question remains whether if shareholders became full owners that they would actually exercise these rights and obligations in a responsible manner.

Ill-prepared for structural change

Neither the economy nor investment stands still. From a strategic perspective, sustainable investment is a response to three long-run disruptions: technological, geopolitical and ecological. The first is the continuing ramifications of the information technology revolution that began in the 1970s. According to Carlota Perez, technological revolutions and financial markets are closely interlinked, following a recurrent sequence of irruption, frenzy, rethinking, synergy and maturity. The dot.com crash in 2000 marked the end of the frenzy phase of the IT revolution, when financial markets became inebriated with the growth potential of the ‘new economy’. The frenzy phase is also a time when financial capital takes off on its own, “a time of extremely unbalanced prosperity and of polarization on all fronts”, creating a permissive atmosphere for ethical softening and outright illegality (Perez, 2002). Following the crash, Perez argues that economies have potential for expanding the new technology across the economy through a process of re-regulation that brings the spread of positive externalities.

In the investment sphere, the full investment implications of the information technology revolution have yet to be fully understood or confronted. One immediate impact has been the way in which the combination of market deregulation and greatly enhanced computing power has driven down the costs of trading - with the inevitable, but perhaps unintended, consequence of increased trading boosting transaction costs and depressing the incentive to evaluate consequences of long-term factors. Stock market turnover has increased in the US, for example, from 25% in 1986 to 150% in 2004 (Bogle, 2005). Processing power has also provided the bedrock of much financial innovation over recent decades which has progressed without the requisite 'technology assessment' to assess and manage systemic risk - belatedly realizing that "not all innovation is socially useful" (Turner, 2009).

In the case of innovation, sustainability thinking has much to teach financial markets, not least in the application of the 'precautionary principle' to risk management. Furthermore, sustainable investors have appreciated that the continuing roll-out of the 'knowledge economy' enabled by information technology has placed a new premium on the quality of human resources. Labeled by the mainstream as 'intangibles' (and thereby of limited relevance to investors focusing on the 'numbers'), sustainable investors regard them as tangible and fundamental drivers of value in areas such as employee engagement and intellectual capital.

Intersecting with this technological revolution is the wider geopolitical transformation generated by the spectacular rise of emerging markets. For Mohammed El-Erian, co-chair of PIMCO, "the present turmoil is neither the beginning nor the end of the transformation", but a regime change that will impact four key variables that impact investment strategies: growth, trade, price formation and capital flows (El-Erian, 2008). From this perspective, the credit crunch can be seen to flow from the structural rise of

emerging markets, generating excess capital that could not be accommodated through traditional market adjustments (such as exchange rate appreciation and/or a refocusing of growth from export-led to domestic-driven development strategies). This provided the capital for a surge in cheap finance for speculative activity in developed economy housing markets, notably in the US and the UK - against all the predictions of economic theory. El-Erian highlights the difficulty of distinguishing long-term signals from the noise of the markets, with conventional investors often labeling the conundrums they face as 'aberrations' and 'anomalies' which they trust that the market's tendency to 'mean reversion' will eventually eliminate.

Sustainable investors have generally focused on the downside ethical and operational risks implied by globalization, focusing on human rights management. A few have sought out new investment opportunities that have opened up by providing access to essential goods and services to those at the 'base of the pyramid', notably microfinance. But, by and large, sustainable investors in Europe and North America have been as immune to the investment disruptions flowing from the 'emerging market century' as the investment mainstream (IFC, 2009a). As with other sources of innovation in a global world, the drive for sustainable investing in emerging markets is no longer coming from the developed world, with Brazil in particular demonstrating considerable momentum among asset owners, asset managers and equity markets (IFC, 2009b).

What El-Erian and Perez have in common is their appreciation that structural change forces the redundancy of existing institutional structures that have been established to manage the challenges of a previous era. For El-Erian "structural transformations have enabled - and will continue to do so - new activities that cannot as yet be supported. As a result, it will be inevitable that there will be a series of collisions between the world of yesterday and that of tomorrow" (El-Erian, 2008). Nowhere is this threat of collision

greatest than in the conflict between routine investment practice and the planet's social and environmental realities.

The missing planet problem

In a refreshing way, the world of finance is shedding the obsolete mechanistic metaphors that have driven neo-classical economics in favor of new insights from biology. Thus, Andrew Haldane, executive director for financial stability at the Bank of England, argues that the financial system has "shown itself to be neither self-regulating nor self-repairing. Like the rainforests, when faced with a big shock, the financial system has at times risked becoming non-renewable" (Haldane, 2009). Michael Mainelli and Bob Giffords have also revealed the damaging implications for system resilience of declining diversity in financial markets brought about through the process of "deluded demutualization" and the "rising monoculture of reckless self-interest" (Mainelli & Giffords, 2009). But when it comes to the ecological resource base that underpins all wealth generation, there is a yawning gulf. Strong synergies undoubtedly exist between new behavioral finance and the social and governance dimensions of sustainable investing. But in the case of the environment, there is a 'missing planet problem'.

One obvious example of this is the way in which the world of finance appears to exempt itself from nature. Warren Buffett observes, "In nature, every action has consequences, a phenomenon called the butterfly effect" (Buffett, 2009). His own investing, however, does not appear to consider the risks and opportunities of social and environmental issues (Piller, 2007). The same is true of his billion-dollar donor peers Bill Gates, George Soros, Gordon Moore, Eli Broad and Michael Dell. They leave these allegedly

non-financial issues for their philanthropy. This separation of vocation and avocation appears all too common and is reflected in the boardrooms and finance committees of many institutional investors. This “bounded awareness” encompasses “a variety of psychological processes, all of which lead to the same error: a failure to see, seek, use, or share important and relevant information that is easily seen, sought, used or shared.”(Chugh & Bazerman, 2007) It reflects a closed mind to new ideas - and also to “predictable surprises” (Bazerman, 2006). As the term implies, these are events, such as climate risk, or the onset of the housing bubble, which could have been foreseen (and in these cases were) well before their onset was felt. Predictable surprises are different from “black swans” where the probably of a particular event occurring is low, and is not expected.

Asset prices in financial markets still fail to ‘tell the social and ecological truth’. Climate change, for example, is recognized as the world’s ‘greatest market failure’ (Stern, 2006) - and is as much a failure of capital markets as a failure to adequately price the external costs created by greenhouse gas emissions. The shift to a low carbon economy is no longer a matter of uncertainty that investors can ignore, or a risk that can be managed away, but a reality that is already and will increasingly determine asset values. Yet, standard financial analysis of fundamental value using ‘discounted cash flow’ models still largely fails to appreciate this: we know that all terminal values are wrong in the context of climate change, but not how wrong. We know that emissions of greenhouse gases need to peak and decline to prevent severe disruptions to the global economy and financial markets, yet fossil fuel reserves are still valued as assets in corporate balance sheets. We have seen how entire financial markets can be disrupted by failures in systemic risk management in core sectors such as banking, but have yet to

explore how markets could be equally destabilized by the mismanagement of climate risk.

Sustainable investors have, of course, been at the forefront of action to recognize the importance of ‘natural capital’ in capital market transactions driving up allocations towards sustainable energy five-fold in the past five years, and increasingly holding corporations to account for their climate performance. With the Copenhagen climate conference on the horizon, deeper thinking is required to make capital markets ‘fit for purpose’ for the decades ahead. One urgent issue is to work through the implications of the waning trust in efficient markets for policy tools such as carbon trading. If investors are not as rational and markets not as perfect as once thought, then reliance on a fluctuating carbon price as the primary driver of the transition to a low carbon economy looks increasingly unwise. Some observers have gone so far as to predict that a future involving robust global carbon markets and related arbitrage and leverage, could well lead to a repeat of inefficient markets and a ‘subprime carbon’ crisis (Chan, 2009).

Targeted action in terms of capital markets reform is also required in terms of listing rules, stress testing and risk assessment, so that investors are made mindful of the climate liabilities attached to their assets. In a complementary fashion, new institutions and new investment options will be required to drive the long-term transformation in energy and natural resource management. These include the need for ‘green reconstruction banks’ to crowd in capital for the long-term infrastructure underpinning the climate economy, as well as ‘green bonds’ to finance the expansion.

Beyond the problem of pollution as symbolized by climate change lies the system-wide financial implications of accelerating resource depletion. If a failure to appreciate the value of ‘fairness’ underpinned the irresponsible banking practices that resulted in the

subprime crisis and excess liquidity generated by global imbalances provided the fuel, then the oil price shock of 2007-8 provided the trigger for collapse. This chain of causation suggests that a more profound investigation of the implication of 'peak oil' and 'peak water' is required, with the impacts felt far away from the obvious sectors, assets or regions.

5. Rewarding Reason and Resilience: the Future of Sustainable Investing

Sophisticated it may have been, but the short era of financialization rested on an incomplete picture of human action and market purpose. In place of the ideals of efficiency and rationality, a more durable basis for investment success could be constructed from the theoretical insights of behavioral finance and the practical lessons of sustainable investment. Tentatively, this could be based on two revised hypotheses:

the first is the 'reasonable person hypothesis' which extends the narrow self-regarding, all-knowing archetype of neo-classical theory to encompass the full range of human motivations based on the ability of people to have 'sound judgment', reconnecting investment theory with the fiduciary duty of prudence. While a 'rational man' may not be able to appreciate the importance of fairness, integrity or environmental health, these factors can be quickly understood by the 'reasonable person' on the basis on evidence and argument.

the second is the 'resilient markets hypothesis' which, again, looks beyond the normative ideal of 'efficient markets' to acknowledge the inherent tendency to both instability and unsustainability, requiring rules, incentives, skills and behaviors that aggregate towards the ability of markets to prevent and withstand shocks. This starting

point enables investment practice and regulation to derive further benefit from the ongoing shift in scientific metaphor from mechanics to ecology.

For us, there is now an urgent need to develop strategies of research and market reform that can make sustainable investing the norm. We are heartened by the growing awareness of the need for a transformational shift towards sustainable investing after the credit crunch. As part of its recognition of the need for a fundamental 'reset' in the global economy, the world's largest corporation, General Electric (GE), has recently underscored the importance of sustainable investment. "Financial services will never return to its previous level as a proportion of the global economy — and never should", GE writes in its latest Corporate Citizenship report. "Financial markets remain crucial as the circulatory system for commerce, but they must be reset to enable long-term sustainable performance in the real economy. This means less leveraged finance, a fundamental re-pricing of risk, the ability to account for externalities like greenhouse gas emissions, and a realignment of executive responsibility and compensation with long-term performance" (GE, 2009).

But we are also well aware of a financial culture that exhibits a continuing failure or desire to see the new reality, a willful blindness (Kiernan, 2009). Preconceptions about ethical and sustainable investing have converged in a prevalent myth of underperformance. In addition, the alleged absence of multi-year data sets on the use of sustainability factors has become another excuse for inaction (Business for Social Responsibility, 2008). There is a sad irony in this as the market was brought down in 2008 by, among other things, financial instruments that seem to have been developed by the minute and with no track record and with no shortage of buyers and traders.

We should also be aware that language plays a powerful role, especially in institutional settings. ‘Social’, ‘ethical’, ‘responsible’, and in some places even ‘sustainable’, are all seen as suspect by the mainstream. Positive screening of ‘good companies’ or negative screening of ‘bad companies’, done every day on Wall Street for financial reasons somehow becomes suspicious when financially tangible social and environmental factors are used. Furthermore, outdated interpretations of fiduciary duty that places an undue burden of proof on investments that exhibit social and environmental parameters is often a limiting factor. The lawyers are asked, “can we …?” rather than “how can we ….?”, and the answer is all too often ‘no!’ Maximizing return gives precedence to short-term thinking rather than long-term investing The latest legal insights that challenge this ‘conventional wisdom’ have yet to impact the bedrock of investment opinion (Viederman, 2008; UNEP, 2009).

The UNEP report recommends that investors should ask their managers to include social; environmental and governance issues in financial-decision making. But given institutional cultures, there is no discussion of how to move the institution to make that request. This is the continuing dilemma.

The culture of finance within organizations also tends to replicate what they know, rather than what is needed for change. The internal incentive systems are not calibrated for environmental, social and governance issues. Board dynamics are crucial, but boards often have set patterns, providing too little time for real discussion of new issues and new ideas, for which there is no strong perception of need. (Clark, 2008) Consultants are more often than not gatekeepers for the old school of investing.

Relationships are where the value driver is perceived to be, rightly or wrongly, and fear of jeopardizing these is all too often the overriding motivation, so changing nothing is perceived as the best way of preservation. There are very few institutional consultants well versed in sustainable investing. If asked, many claim competencies that they do not actually possess - and some with a reasonable degree of competency do not offer it unless asked.

Designing breakthrough strategies

Investment managers and nonprofit organizations have produced shelves of documents, and attended conferences designed to encourage aspects of social and responsible investing. They are in varying degrees good 'how-to' manuals and events Dissemination, however, is not the same as utilization, and little attention seems to be paid to the myriad problems in the culture of institutions that often inhibit taking the first steps.

Researchers have addressed parts of the proverbial elephant, but the whole remains unexamined. Only a few papers that we are aware of examine impediments to adoption of sustainable investing. In short, attention has been more focused on tactics, rather than strategies that address systemic institutional change.(Viederman, 2004; Jurvale & Lewis, 2008; Robinson, 2008)

By definition, the decision-making system in any institution is multi-layered. A strategy is a plan of action, not a piece of paper, that sees the whole for all its complexity and links various activities by appropriate actors constructed around an analysis of the ecology of the social and political culture and power dynamics of the institution.

A strategy will seek to influence the behavior of the key decision-makers, both directly as well as through key influencers. This will require an understanding of the cultural and psychological barriers faced by the players. An analysis of the power dynamics within an institution is essential. For example, in US foundations, the finance committee, and particularly the chair are the locus of attention.

From our perspective, key elements for the design of a breakthrough strategy for sustainable investing will include:

- revamping business and financial education to take account of the failings of prevailing theoretical approaches and undertaking a fundamental reassessment of the structure of finance, and a redefinition of risk.

- drawing lessons from the regulation of other sectors (such as pharmaceuticals and water) to help ensure that financial innovation delivers social value

- changing investor rights (e.g. those related to voting and dividends) to reinforce the responsibilities of ownership

- linking the remuneration of investment professionals and corporate executives, not just to long-term performance, but to the imperatives of fairness and ecology

- encouraging long-termism, for example, through changes in the taxation of trading and capital gains, and incentive systems that reward related performance and not risk

- building on the behavioral insights surrounding ‘choice architecture’ and ‘choice editing’ to help make sustainable and responsible investing the ‘default option’

- learning from previous technological revolutions to better understand the ongoing disruptions created by emerging markets and the shift to a low carbon economy

- undertaking institutional changes to the structure of capital markets to reflect environmental and natural resource values

- redeploying the significant subsidies for savings and investment to deliver public goods in financial markets

- bringing a broader array of research approaches to bear on investment practice and sustainability

- deepening investor collaboration - such as the Investor Network on Climate Risk - to encompass questions of market design. (Thamotheram & Wildsmith, 2007; Guyatt, 2008)

- organizing consultations between investors and regulators to redefine fiduciary duty for the new age of sustainable investing

- raising the skills and awareness of consultants so that they become part of the solution rather than part of the problem

We don't pretend to have all the answers, but rather would like to issue a call to further dialogue on what additional steps our readers see as necessary for this transformation to be realized, and we welcome comments accordingly via the UN PRI Academic Network. It is time for all investors and asset owners to fully examine and seize this opportunity for change. Writing in the Financial Times, the eminent author and columnist Martin Wolf observed "Already the panic of the autumn of 2008 is fading. The period within which the lessons can be learned and changes made is closing. Yet without radical changes, another crisis is certain. It may not even be long delayed." His concern was inadequate attention to the reform of the banking system, but we share a similar concern about investment practice more generally.

The time for action is now. For this task, we can take inspiration once again from Keynes. Writing in 1929 in the face of academic and political obstinacy to change following the Great Crash, he wrote that:

"There is no reason why we should not feel ourselves to be bold, to be open, to experiment, to take action, to try the possibilities of things. And over against us, standing in the way, there is nothing but a few old gentlemen tightly buttoned up in their

frock coats, who only need to be treated with a little friendly disrespect and bowled over like ninepins. Quite likely they will enjoy it themselves" (Keynes, 1952).

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