The Economist

# GUIDE TO INVESTMENT STRATEGY

## How to understand markets, risk, rewards and behaviour

*Third edition*

**Peter Stanyer**

**A sampler including**
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# Foreword

INTEREST RATES HAVE COLLAPSED. Savers who put aside money now, to spend in the future, will earn little by way of interest. To accumulate a target lump sum, they need to save more than they once planned. Retirees, who wish to live on their savings, can now expect to receive a smaller income from their investments. They must adjust to having less to spend than they expected.

Of course, low interest rates and low bond yields were for some time clear for all to see. It was less obvious that low interest rates imply low prospective returns on all assets, including equities. Because investors require some compensation for the higher risk of the stockmarket, equity returns must be equal to the interest rate plus a "risk premium". It follows that, other things being equal, a world with low interest rates must also be a world in which stockmarket investors receive lower returns.

What are the implications of this dramatic change in the financial environment? Peter Stanyer's response is that every saver needs a coherent investment strategy. Strategy must be underpinned by an understanding of how markets move, how risk should be judged, how markets reward investors and how investors behave. In this third edition of his outstanding book, Peter Stanyer addresses these issues and elegantly surveys the entire field of investment.

He helps us to formulate an investment strategy that is realistic. The projections made by many asset managers, retail financial product providers, pension funds, endowments, regulators and governments are optimistic. Overly optimistic estimates of future returns are dangerous, not only because they mislead, but also because they can mask the need for action.

Investors vary in their need for liquidity, their tolerance for risk, and their capacity to follow a disciplined investment strategy. They therefore need to devise a strategy that reflects their salient characteristics. The strategy should be founded on three pillars. The first pillar is financial theory – how financial markets can be expected to behave; the second is empirical evidence – how markets actually do behave; and the third is the investment environment – the current condition of financial markets.

Peter Stanyer reviews the relevant aspects of financial theory in a highly accessible way. He extends our knowledge without resorting to complicated mathematics, explaining the central concepts of modern finance in a clear exposition of the arguments for and against different approaches. To better understand markets, he turns to the evidence of financial history, often interrogating the long-term, global dataset that my colleagues and I have compiled. He allows the record of securities markets to enlighten us about events in the past and to underpin informed judgments about the future.

To interpret the current investment environment, Peter Stanyer presents us with a wealth of data. Drawing together theory, evidence and information on the financial environment, he does not flinch from expressing a firm opinion. He presents valuable advice on how to construct a fixed-income portfolio, how to think about liquidity, what quantum of risk is acceptable for different investors, what factors influence investment performance, whether investments of passion are a store of value, and what behavioural biases investors should guard against.

There is something for everyone in this book. It is comprehensive, but never forbidding or opaque. The surveys of each of the main asset classes – equities and risky debt, alternative assets like hedge funds and private equity, and tangible assets like real estate and artworks – are highly informative and the complexities of modern investing are explained with great clarity. This book will help you meet the challenge of investing for your future.

Elroy Dimson
*December 2013*

# Introduction: lessons from the global financial crisis

THE YEARS SINCE THE CREDIT CRISIS of 2007–9 have seen a number of refreshingly simple investment messages gain traction that should enable investors to weather future storms in better shape. These messages are as relevant to individuals managing their own retirement savings as to the managers of the largest investment funds.

One, emphasised by Antti Ilmanen, is that the timing of investment volatility matters as much as its magnitude. Andrew Ang stresses this by asserting that the two most important words in investing are "bad times". This is a theme running through this edition and it has several aspects. One is that past performance patterns can easily give a falsely reassuring impression of the likelihood of "bad times". Another is that investors should initiate discussions about how an investment proposal might perform in bad times. If the investment will help mitigate losses of income or capital and give flexibility in bad times, it will be an attractive investment; if it might amplify them, and impose inflexibility, investors will need to be rewarded amply for that and to understand why the reward is expected to be sufficient, given their circumstances. This applies with particular force to the costs imposed by illiquid investments.

Almost all investment products offer an alluring combination of risk and return. When these offer a better prospect than normally offered by the market, investors should always ask, how? Better than market performance must reflect some combination of rare skill; exploiting a market anomaly (but see Chapter 6); or a reward for risk-taking (see Chapter 7). The victims of the Madoff fraud suffered because they or their advisers accepted the description of past apparent good performance with low volatility of his fraudulent funds as descriptions of how they did, and so would, perform. The victims' suffering was all the worse because their trust was betrayed by Madoff (see Chapter 1).

All investors need to ask for explanations of attractive performance. Low volatility strategies in equities and credit are always popular, and Chapters 7 and 8 encourage investors to suspect that obscure risk-taking may be the explanation. If it is, investors are forewarned that the attractive risk-return trade-off, which is a characteristic of normal times, might provide little protection in "bad times". This was a message of John Campbell and Tuomo Vuolteenaho's (2004) article "Bad Beta, Good Beta" (see Chapter 7). It is also the message that hedge funds and private equity are risk assets, and a usually reliable short cut is to see them as types of equity investing. They will probably not provide much help in "bad times", but might nevertheless provide interesting opportunities (Chapters 9 and 10).

After 2008, some complained that the poor diversification offered by strategies of risk assets could not reasonably have been anticipated. These investors had often been encouraged by the prospect of superior returns to abandon the safety of high-quality government bonds. In the event they provided the security of income and, largely, the diversification of capital values that would be expected of a safe harbour in a time of crisis. As André Perold wrote in 2009: "Risk is a choice rather than a fate."

Among those investors who emerged least scathed from the financial crisis were many whose strategy comprised an allocation to cash or government bonds (whose size was dictated by the investor's risk aversion), offset with an allocation to diversified equities. This approach echoes the portfolio separation theorem of the late James Tobin (see Chapter 5), and many financial advisers (and some institutional investors) served their clients well by adhering to this simple approach. However, the era of ultra-low interest rates in the years after 2008, and the purchase of one-third of the US national debt (and also large quantities of high-quality mortgages) by the Federal Reserve and of one-quarter of the UK's national debt by the Bank of England, forced cautious investors to take more risk and to scale back holdings of increasingly expensive government bonds. The dilemma of choosing between credit risk and interest-rate risk has hung over income-seeking investors of all types in the years since 2009. This dilemma underlies the debates about whether investors can hope to "time" markets and the role of fixed asset allocation models in Chapters 4 and 5.

Negligible interest rates have had an all-pervading impact. In Chapter 4, survey evidence is reported of substantial holdings of liquidity by high net worth individuals across different wealth bands. The loss of interest income by these wealthy families will have significantly lowered the opportunity cost of indulging in investments of passion. This almost certainly helps to explain the buoyancy of markets ranging from classic cars, stamps and vintage wine to fine art (see Chapter 12). The far-reaching influence on these markets of the Federal Reserve's response to the global financial crisis was reflected in an article in the *New York Times* in early 2013: "Whether he intended it or not, or even realises it, Ben S. Bernanke has become a patron of the arts."

I would welcome any feedback and can be contacted at the following email address: peter@peterstanyer.com.

Peter Stanyer
*December 2013*

# 1 Setting the scene

## Think about risk before it hits you

Risk is about bad outcomes, and a bad outcome that is expected to arrive at a bad time is especially damaging and requires particularly attractive rewards. Investors and their advisers have typically judged the riskiness of an investment by its volatility, but in the words of Antti Ilmanen, author of *Expected Returns: An Investor's Guide to Harvesting Market Rewards*, not all volatilities are equal, and the timing of bad outcomes matters for risk as much as the scale of those bad outcomes. A theme throughout this book is that investors should think about how investments might perform in bad times as the key to understanding how much risk they are taking. There is little discussion of what constitutes a bad time, which will vary from investor to investor, but it is best captured by Ilmanen, who defines it as a time when an extra dollar of ready cash feels especially valuable.

What constitutes a bad outcome is far from simple. It is determined by each investor (and not by the textbooks). It varies from one investor to another and from investment to investment. If an investor is saving for a pension, or to pay off a mortgage, or to fund a child's education, the bad outcome that matters is the risk of a shortfall from the investment objective. This is different from the risk of a negative return. In Chapter 5, the distinction is drawn between threats to future income (which is of concern to a pensioner) and threats to the value of investments (which matter to a cautious short-term investor). This shows that the short-term risk of losing money is inadequate as a general measure of risk.

Risk is about failing to meet particular objectives. But it is also about the chance of anything happening before then which undermines an investor's confidence in that future objective being met. Since those working in the investment business are uncertain about market relationships, it is reasonable for investors to be at least as uncertain. It is also reasonable for their confidence to be shaken by disappointing developments along the way, even if those developments are not surprising to a quantitative analyst. Investors' expectations are naturally updated as time evolves and as their own experience (and everyone else's) grows. So far as the investor is concerned, the perceived risk of a bad outcome will be increased by disappointments before the target date is reached, undermining confidence in the investment strategy.

The pattern of investment returns along the way matters to investors, not just the final return at some target date in the future. This focus on the risk of suffering unacceptable losses at any stage before an investor's target date has highlighted the dangers of mismeasuring risk. An investor might accept some low probability of a particular bad outcome occurring after, say, three years. However, the likelihood of that poor threshold being breached at some stage before the end of the three years will be much higher than the investor might expect. The danger is that the investor's attention and judgment are initially drawn only to the complete three-year period. As the period is extended, the risk of experiencing particularly poor interim results, at some time, can increase dramatically.

The insights from behavioural finance (see Chapter 2) on investor loss aversion are particularly important here. Disappointing performance disproportionately undermines investor confidence. The risk of this, and its repercussions for the likelihood of achieving longer-term objectives, represents issues that investors need to discuss regularly with their advisers, especially when they are considering moving to a higher-risk strategy.

Research findings from behavioural finance emphasise that investors often attach different importance to achieving different goals. The risk of bad outcomes should be reduced, as far as possible, for objectives that the investor regards as most critical to achieve, and, ideally, any high risk of missing objectives should be focused on the nice-to-have but dispensable targets. Investors may then be less likely to react adversely to the disappointments that inevitably accompany risk-based strategies. They will know that such targets are less critical objectives.

Risk is about the chance of disappointing outcomes. Risk can be managed but disappointing outcomes cannot, and surprising things sometimes happen. However, measuring the volatility of performance, as a check on what the statistical models say is likely, can be helpful in coming to an independent assessment of risk. But it will always be based on a small sample of data. Thus we can attempt to measure risks we perceive. Risks that exist but that we do not have the imagination or the data to measure will always escape our metrics. There is no solution to this problem of measuring risk, which led Glynn Holton to write in *Financial Analysts Journal* in 2004: "It is meaningless to ask if a risk metric captures risk. Instead, ask if it is useful."

More often than not, the real problem is that unusual risk-taking is rewarded rather than penalised. We need to avoid drawing the wrong conclusions about the good times as well as the bad times. This theme is captured by a photograph at the front of Frank Sortino and Stephen Satchell's book *Managing Downside Risk in Financial Markets*. It shows Karen Sortino on safari in Africa, petting an intimidating rhino. The caption underneath reads: "Just because you got away with it, doesn't mean you didn't take any risk."

## The Madoff fraud

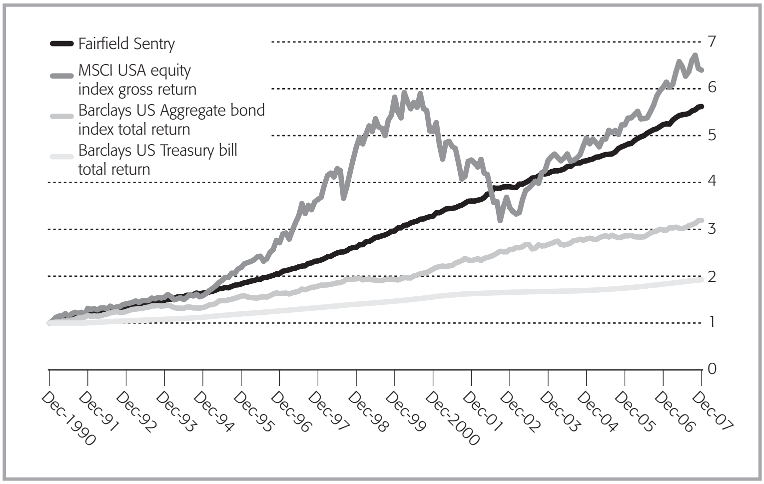
If risk is about bad outcomes, to be a victim of fraud is a particularly bad outcome. But when we look after our own savings and investments we are often our own worst enemies. Many people expect savings and investments, in which they have no particular fascination, to be a difficult subject that they do not expect to understand. Any opportunity that presents itself to take a short cut and, in the words of Daniel Kahneman, a Nobel laureate in economics and Eugene Higgins emeritus professor of psychology at Princeton University, to "think fast", which easily leads to avoidable mistakes, rather than "thinking slow", which requires some concentration and effort, will be tempting. Our lazy inclination to "think fast" (see Chapter 2) is readily exploited by fraudsters who are attracted to our money and our behavioural weaknesses like bees to a honey pot. The enormous Madoff fraud that unravelled in December 2008 provides salutary lessons for us all.

At the end of November 2008, the accounts of the clients of Bernard L. Madoff Investment Securities LLC, an investment adviser registered by the US Securities and Exchange Commission (SEC), had a supposed aggregate value of $64.8 billion invested in the supposedly sophisticated investment strategy run by Bernie Madoff. His firm had been in operation since the 1960s and it is thought that his fraud started sometime in the 1970s. It lasted until 11th December 2008 when he was arrested and his business was exposed as a huge scam, probably the largest securities fraud the world has ever known.

The amounts that Madoff's investors thought they owned had been inflated by fictitious investment performance ever since they had first invested, and the amount that Madoff actually controlled was further reduced because early investors, who then withdrew money, were paid their inflated investment values with billions of dollars provided by later investors. The court-appointed liquidator has estimated the actual losses to investors of money they originally invested to be around $17.5 billion. Nevertheless, at one stage investors believed that they had assets – which, unknown to them, were mostly fictitious – worth $65 billion invested with Madoff. By September 2013, the liquidators had recovered or entered into agreements to recover, often from early beneficiaries of the fraud, $9.5 billion or 54% of the estimated losses of amounts invested with the firm, and actual distributions to investors totalled $5.6 billion. It is likely that the trustee for the liquidation, Irving S. Picard, will succeed in recovering much more than was initially feared of the amounts originally invested. Nevertheless, investors have been left nursing huge losses from what they believed was their wealth. Unless they remain alert, others are in danger of repeating the mistakes that led so many to lose so much. So how can investors protect themselves?

Madoff's investment strategy seemingly offered the attractive combination of a long-run performance comparable to the

FIG 1.1 **If it looks too good to be true, it probably is**
Madoff's fictitious cumulative performance compared with market indices, Dec 1990–Nov 2007, Dec 1990=100




**Sources:** Barclays, Fairfield Sentry client reports; MSCI

stockmarket but, supposedly thanks to clever use of derivatives, with little volatility.

Marketing material from fund distributors presented the track record of Madoff's fraud in the way shown in Figure 1.1 for Fairfield Sentry, a so-called feeder fund which was entirely invested in Madoff's scam. It showed the seductive combination of apparently low risk and high, but perhaps not outrageous, returns. But an experienced adviser or investor should immediately recognise that the track record shown for Fairfield Sentry looks odd. It is always safe to assume that no investment strategy can deliver such smooth returns well in excess of the guaranteed rate on Treasury bills and that there are no low-risk routes to returns well above the return on cash.

Madoff's strategy was a simple Ponzi scheme, whereby a fraudulent rate of return is promised, seemingly verified in this case by the experience of those early investors who had been able to withdraw inflated amounts. So long as only a few investors demand their money back, they can be paid what they have been told their investment is now worth. But what they had been told was a lie, and the inflated returns were delivered to a few by redirecting cash from the most recent investors. As with any Ponzi scheme, Madoff relied on robbing Peter to pay Paul.

Ponzi schemes are named after an American fraudster of the 1920s, and they are usually built around a plausible-sounding investment story. However, these scams always collapse as soon as the demands of investors who want to sell their investments outweigh the cash provided by new investors. The Madoff fraud grew so large because it survived many years. Its undoing was the credit squeeze of 2008 when too many investors, who were presumably happy with Madoff's reported investment performance, had to withdraw funds to meet losses elsewhere. This caused the Madoff house of cards to collapse.

The victims were mostly based in the United States, but there were also many from around the world. They included wealthy individuals, charities and a number of wealth managers, but relatively few institutional investors. Many were introduced to Madoff through personal recommendations, which would have stressed his respectable community and business pedigree as a former chairman of the NASDAQ stock exchange and philanthropist.

A large part of the problem is that so many people can be seduced by the belief that they have found a low-risk way of performing surprisingly well. And yet, surprisingly good investment performance always involves risk.

Madoff is not the only instance of large-scale fraud or suspected fraud of the past few years and these episodes provide important lessons for investors and for their advisers. Some of Madoff's investors were following the recommendations of investment advisers, who appeared to take pride in their professional diligence in identifying good managers. The advisers could often point to the name of one of the leading accountancy firms as the auditor of the third-party so-called feeder fund that was the conduit to Madoff Investment Securities, but this provided no protection for investors.

How was someone who had followed the recommendation of an adviser or a friend supposed to identify the risks? Ten old lessons re-emerge:

1. The old and seemingly trivial saying that "if it looks too good to be true, it probably is" remains one of the most valuable pieces of investment advice anyone can give.
2. Returns in excess of the return offered by the government can be achieved only by taking risk.
3. Risk is most obvious when an investment is volatile and is least obvious when a risky investment has not yet shown much volatility. This is rarely mentioned in books on investment.
4. Investors should be particularly questioning when an adviser recommends a low volatility investment that offers superior returns.
5. Do not invest in something you do not understand simply because a group of your peers is doing so. A desire to conform can explain many decisions that we would otherwise not take.
6. Whatever your adviser says, make sure that your investments are well diversified. But keep in mind that diversification is most difficult to assess when risky investments are not obviously volatile.
7. Pay particular attention if an adviser gives you inconvenient cautious advice (such as a recommendation to avoid something that you would like to invest in).
8. Social status may not be a good indicator of honesty.
9. Do not assume that because an investment firm is regulated by the authorities they have been able to check that everything is all right.
10. The ability to rely on good due diligence on investment managers is the key to minimising exposure to risk of fraud. An authoritative post-mortem report on the Madoff affair is called "Madoff: a riot of red flags". Most private investors would not spot these red flags, but it was not by chance that few institutional investors lost money with Madoff. A challenge for private investors is to ensure that they also have access to good-quality manager due diligence.

## Betrayal aversion

The Madoff fraud puts a spotlight on the relationship between advisers and clients. Investors are at their most vulnerable in their dealings with advisers, and yet establishing a bond of trust with one or more advisers is probably the most important ingredient for the successful management of wealth. Iris Bohnet and Richard Zeckhauser, respectively professor of public policy and Ramsey professor of political economy at Harvard University's Kennedy School of Government, have found that individuals systematically require a premium return to compensate for the risk that they might be betrayed by an agent who is supposed to be working for them. This premium is greater than the premium that would be asked to accept the same probability of a poor outcome where there is no likelihood of betrayal. As Bohnet has written:

> *People care not only about outcomes, but about how outcomes came to be … that doesn't strike anyone but an economist – like me – as a surprise.*

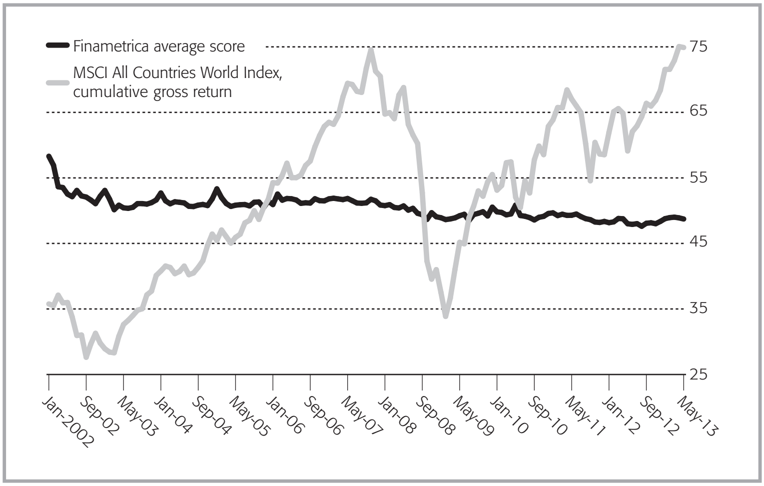
This highlights the importance of trust in the adviser–client relationship, and the psychological gains that flow where it is present and the psychological and possibly financial damage that results when it is not.

## How much risk can you tolerate?

The assessment of investor risk tolerance is a fundamental step in designing any investment strategy, but advisers and academics approach it in different ways. Academic economists use mathematical assumptions to model risk aversion. These assumptions are attractive to them in part because they can be used in models (and also because they can be tested empirically). Meanwhile, behavioural finance stresses the importance of loss aversion rather than risk aversion, and the asymmetry of response between gains and losses which is revealed in behaviourist studies (see Chapter 2).

Wealth managers have for a long time used questionnaires to categorise their clients by their attitudes to risk-taking. These questionnaires typically cover investors' circumstances (age, family,

FIG 1.2 **Risk tolerance scores and equity market returns**
Jan 2002–May 2013




**Sources:** Finametrica Pty Ltd; MSCI

income, wealth, expenditure plans, and so on) as well as their attitude to risk. One problem is that questions posed by wealth managers about risk may use language and concepts that are unfamiliar to non-experts. Anecdotal evidence suggests that people who are not familiar with investments often expect a risk questionnaire to be difficult to complete. They may therefore ask their advisers to help them answer the questions. This introduces errors and also seems to introduce systematic bias, as investment advisers appear to be more tolerant of risk than their clients. For these reasons, conventional risk questionnaires may fail standard criteria for assessing people's attitudes.

In recent years psychometric profiling services have developed to address these concerns, making use of focus groups to make sure that their questions are easily understood. For example, Finametrica, an Australian consultancy, has built up a database of over 520,000 responses from around the world to its questionnaire, which itself grew out of research by psychology academics in the United States. These responses reveal some interesting patterns. For example, Finametrica reports that the pattern of responses does not vary much by country; individuals' tolerance for risk is, on average, fairly stable over time; women tend to be more cautious than men (which is important for investing family wealth); and investment professionals tend to be more tolerant of risk than their clients (who in turn tend to be marginally more tolerant of risk than the population as a whole). The database also shows quite a wide variation of responses for individuals around these average characteristics.

The finding (which is repeatedly found) that investment advisers are on average more tolerant of risk than their clients may help to explain instances of investors saying to their advisers: "I didn't realise we were taking that much risk." This greater tolerance of risk might be interpreted as reflecting advisers' greater understanding of investment risk than that of their clients. Separate survey findings (also from Australia) suggest that investor education (for example, through attendance at seminars) has little impact on the risk tolerance of investors, even though it can be effective in persuading employees to save more for retirement. This suggests that investment advisers may think it reasonable to take more risk than most people would wish, not because they have a better understanding of investment risk, but because their nature is to enjoy the proximity to volatile markets. It seems that cautious people probably cannot be educated out of their disposition to be cautious, and it also seems likely that well-designed psychometric testing may help to categorise the risk appetite of investors better than ad hoc questionnaires.

However, a single score on a risk-tolerance questionnaire, even a well-designed one, will not be an adequate guide to an investor's willingness or capacity to take risk. An investor is likely to have different financial accounts for different purposes: one or more may be critical to achieve and another purely aspirational; one may be for a short-term objective and another for a long-term one (such as pension saving). A well-designed risk score might provide a starting point for discussing risk-taking, but it will not give the differentiated answers that are probably needed, nor will it cope with the different ways that investors respond to the experience or threat of losses, sometimes by increasing risk-taking (see Chapter 2).

## Attitudes to risk and the financial crisis

A suggestion that investors became much more risk averse during the financial crisis of 2008 would be accepted as self-evident by many economists. Risk asset prices declined because investors were no longer as comfortable holding them; in other words, they became more risk averse. An alternative explanation is that prices fell because earnings expectations declined, justifying lower stock prices (and also wider spreads between the rates at which companies and creditworthy governments borrow). But the spike in the VIX index of stockmarket volatility in 2008 (see Figure 4.1) indicates that the stockmarket became more risky, and so investors with a given degree of risk aversion might reasonably feel uncomfortable with their existing allocations to risk assets unless they had a strong view that the increase in risk was a temporary phenomenon. These alternative perspectives are important for investors, and those who have benchmark allocations to risky and cautious assets will typically find themselves underweight risk assets after a decline in equity markets. These investors may then rebalance back to benchmark weights, but if they do this they will be taking on more risk when others wish to take less (see Chapter 4).

These considerations contrast with the data that emerge from psychometric tests, which suggest that investors' tolerance for risk was, on average, surprisingly stable during the financial crisis, although there are indications that their assessment of stockmarket risk was increased. (In other words, they might be equally willing to tolerate risk, but less willing to tolerate stockmarket risk, because it had increased.)

As with much in finance, the relationship between assessments of risk tolerance, risk aversion and loss aversion (see Chapter 2) remains an unresolved issue.

### Know your niche

The style of involvement in decision-making is one of the most important things that investors need to decide. How hands-on or hands-off do they wish to be, and what are their preferences and special areas of investment expertise? This is a natural starting point for discussions between any investor and a new investment adviser.

Some investors like to devote much time and personal effort to their investments. Others prefer to delegate as much as possible to someone they trust. Neither policy is inherently superior, so long as keen investors have grounds for believing that their interventions are likely to add value (or to save value), and disinterested investors are sure that their advisers properly understand their investment objectives and that a reliable process of review has been established.

Successful entrepreneurs often have specialist skills that put them in a privileged position in the assessment of new business opportunities in their specialist areas. This role as potential informed investors is likely to open doors to investment opportunities that are not available to others. But it will be unclear how these investments should fit into an overall investment strategy and how the entrepreneur should weigh the risks.

Such investors need to consider whether and how far to diversify away from their niche area to provide a downside layer of protection (see Chapter 2), or a safety net for at least part of their wealth. How much should be allocated to such rainy-day investments depends on personal circumstances, preferences and willingness to tolerate extreme disappointment. For example, there is great scope for disappointment from individual venture capital investments, even when skilfully selected. For successful venture capitalists, it is likely that the risk of an individual investment failing is greater than the likelihood of that investment being a runaway success. But one runaway success will more than pay for several failures. One temptation for specialist investors will be to try to diversify into related areas. In these cases, a quiet review of the behavioural biases that commonly affect decision-making could prove invaluable (see Chapter 2). Investors should ask themselves the following questions:

- Am I moving away from my natural habitat where I am confident of my "edge"?
- Do my skills and specific expertise translate to this new market?
- Will I have the same degree of control?

- Do I have the same degree of confidence in my access to information and in my feel for these new businesses?

If an investor cannot be confident of replicating the ingredients of success that were successfully used in the original niche, there will be no basis for expecting the extra performance needed to justify the risk that goes with this pattern of concentrated private investments. In any event, an investor should ask whether this new venture provides the diversification of risk that is being sought. It may be better to seek a professionally managed approach to financial investments for part of the overall wealth. If all goes well, it is most likely that the "natural habitat" investments will perform better than the diversified investments. But this simply reflects the old saying that to become wealthy, it is necessary to concentrate expertise, but that to conserve wealth, it is necessary to diversify. However, risk concentration where there is no information advantage is a recipe for ruin.

Wealthy individuals are often entrepreneurs, and their own businesses will often represent the bulk of their wealth. Although the risks and opportunities of each business will vary considerably, when considering overall investment risk, it is usually appropriate to treat the business, which will typically be a private company, as if it represents a concentrated exposure to equity market risk. A mistake that is often made is to allow familiarity with a business to cloud perceptions of that business's intrinsic risk. Just because it is not possible to observe the volatility of the stock price of a private company does not mean that its value is not highly volatile. Whether a company is quoted or unquoted, an investor's familiarity with it – even the knowledge that the company is well managed – is no guide to its lack of volatility or risk as an investment.

Successful entrepreneurs often have such investments dominating their risk profile. Allowances need to be made for this when setting investment policy for financial investments that are held separately from the business. Typically, and depending upon financial needs, this will result in cautious recommendations for such investments, even if the investor is tolerant of financial uncertainty. Not surprisingly, most investors are concerned to conserve as well as to accumulate, to have a layer of downside protection as well as upside potential.

### War chests and umbrellas

Where financial investments are being managed alongside business investments, they may constitute a liquid war chest to help fund future new opportunities, which may arise at short notice. In this case, the time horizon is likely to be short, with a premium put on liquidity and the stability of capital values, no matter how tolerant of risk the investor might be in other contexts.

Alternatively, a family with a volatile business may wish to build up a rainy-day umbrella fund, either to help the business through tough times which the family expects to be short-lived, or to provide an alternative source of income should the business fail. Many family-business investors have learned not to trust the umbrella of loan facilities willingly extended by banks during good times to be available when it starts raining seriously and have therefore arranged financial "umbrellas" from their own resources. In such cases, a low-risk umbrella investment strategy would be expected to include a significant allocation to investment grade bonds, no matter how risk-tolerant their risk profile assessment might be.

## Base currency

Most investors have no difficulty defining their base currency. This is the currency of their home country: the currency in which they measure their wealth and in which they formulate their expenditure plans. Anything outside this base represents foreign currency and entails a risk of adverse fluctuations against the base currency.

The position is more ambiguous for many investors. Most private investors in Latin America, the Middle East and parts of East Asia use the US dollar as the accounting currency for their investments. But a convenient accounting currency is not necessarily a base currency. For many of these investors, the role of the US dollar will be different from the role it plays for a purely domestic US investor. Meanwhile, there are now tens of thousands of expatriate international executives, many of whom have earnings and residency in one currency and nationality and perhaps also retirement plans in another. This ambiguity alters the benchmark for measuring success or disappointment from investment returns. It is also particularly important in constructing appropriate investment strategies to meet particular commitments in different currencies. Consider, for example, a European working in New York, subject to severe earnings volatility and with alimony payments in euros, or a financially constrained foundation with commitments to support projects in more than one country. In both cases, the concept of base currency and currency risk management need addressing.

Discussions with international investors whose investments are typically accounted for in US dollars suggest that this currency ambiguity is rarely considered an important issue in Latin America or Africa, but it is recognised as a potential issue in the Middle East and is regarded as a material concern by many investors in Asia. Asian investors may have their investments reported and measured in US dollars, but they are concerned by any marked depreciation of the US dollar against the yen, the won or other Asian currencies. One practical and easy way to address this is to diversify holdings of cash across currencies in a way that approximately meets their particular needs. For example, the Monetary Authority of Singapore has for many years pursued a policy of stabilising the value of the Singapore dollar against a basket of currencies of Singapore's major trading partners and competitors. In other words, account is taken of fluctuations in the yen, the euro, sterling, other Asian currencies and the US dollar. Likewise, international families may feel more comfortable with their safe-harbour investments, especially cash, spread among currencies in which the family has obligations, rather than exclusively in the US dollar.

Appendix 3

# Trusting and aligning with your adviser

CHOOSING AN ADVISER is the most important investment decision that investors make. Good investment advice is extremely valuable, so investors must be willing to pay for it. Giving good advice will involve teasing out from investors their objectives and their motivations as well as their aversion to incurring losses or failing to meet objectives. Such discussions can be intensely personal, and for the relationship to be successful, the investor needs to be frank with an adviser. For this, there needs to be respect between the investor and the adviser. A successful advisory relationship is rarely restricted to investment advice. If self-advised investors or investors who are advised by pure investment advisers fail to account for the full range of financial planning issues (including, for example, tax and generational planning), they may not know if they are meeting their objectives, or if they are doing so efficiently.

Two features of investment advice are particularly important for the relationship between advisers and their clients. One concerns the scope for potential conflicts of interests. The other, which is less obvious but also important, is the investment style of the adviser; in other words, how does the adviser think that investments should best be managed, or what are the adviser's "investment beliefs" (see below)? Over periods of time, both these aspects of investment advice are important for success in managing wealth, and the investment beliefs of the adviser need to be well-aligned and suitable for meeting the objectives of the investor.

## Investment beliefs

Different advisers embrace different approaches to investment which often reflect deeply held beliefs about how best to invest. For example, some advisers will look at the roller-coaster path taken by equity markets in the ten years after 2000 and conclude that investors have to try to time markets, to avoid the "bad times" and to pay quite high fees to invest in funds which try to do this. Others will be more sceptical, and suggest that net of fees, this is unlikely to be rewarding, and will more naturally stick to a pre-agreed strategy, perhaps anchored on the security of government bonds. A third group will from time to time suggest revisions to strategy if they are convinced that one or other market is markedly overpriced or underpriced. These three options represent important differences of approach, which will be reflected in different levels of activity in a portfolio, and potentially quite different investment outcomes. As discussed in Chapters 4 and 5, these are areas of debate on which advisers may have strong views, which would be reflected in their investment advice. Another major area of difference is whether an adviser expects to identify skilled managers who can, net of fees, with some consistency outperform in particular markets. Related to both of these is the issue of whether to invest in high-cost investment vehicles, such as private equity or hedge funds.

These differences of opinion are reflected in debates about how the largest and also the most modest investors should invest, and institutional investors often describe their views on these debates as their "investment beliefs". Many institutional investors take time to record their beliefs, and publish them, as a form of public accountability. These are tailored to their understanding of the opportunities presented by markets and their own particular circumstances, and they reflect (or should reflect) the way they invest.

Investment beliefs are implicit in how an investor invests. The same applies to the different recommendations that different advisers make to investors. These will reflect differences of opinion – for example, on the costs and benefits of paying high or low fees, or accepting illiquidity, and on the ability to time markets – and, more generally, differences in style of investing. An important part of building trust in a relationship with an adviser is for investors to have an understanding of their adviser's investment beliefs, and to find them both credible and appropriate for their particular circumstances.

One risk for self-advised investors is that they may not have properly thought through their attitudes to investment markets. This can be particularly dangerous if they fail to account sufficiently for the likelihood of "bad times" in how they design their strategy. Furthermore, in bad times, having a trusted adviser to consult, and to remind them why the strategy is designed as it is, can be of great value. A poorly self-designed strategy that, for example, generates income in good times only by incurring risks of loss of capital and income in bad times can easily prove to be an irreversible mistake. The recent history of tumultuous markets gives scope to ask advisers for references from clients who should be able to testify to the skills shown by those advisers in helping investors through bad times.

## Conflicts of interest

Regulation in a number of countries is pushing advice towards explicit advisory fees and away from transaction commissions. This is helpful for encouraging an advice-driven rather than a sales-driven culture in the management of wealth. However, both good and poor advice can come from either approach to remunerating advisers.

The potential for conflicts of interest between investors and their advisers is often known as the principal–agent problem, or more loosely as “agency issues”. These arise because the principal (the investor) has inferior access to information than the agent (the investment adviser) does. This can encourage advisers to use superior information in a way that serves their own interest rather than the best interest of the investor. Although institutional investors typically have structures that can mitigate this, such conflicts are common. One way investors can reduce their exposure to these conflicts is to distance themselves from much of the detailed investment decision-making, and employ discretionary investment managers whose remuneration is transparent and who are (depending upon the jurisdiction) under an obligation to provide best execution to their clients. However, this can easily lead to advice which is less well tailored to the circumstances of an investor, and some investments, which best suit particular investors, may be available only on an advisory basis.

Many private clients prefer an advisory relationship where they retain control over each investment decision. The danger is that this can also lead to the accumulation of a portfolio of ad hoc investments, each of which “seemed a good idea at the time”. However, with good advice this can be avoided, and effective management of overall risk and balance in a strategy maintained.

The danger, though, is that investors will be sold what an adviser wishes to sell rather than deciding to buy what they need for their investment strategy. The best safeguard is for investors to satisfy themselves that their interests and those of their advisers are appropriately aligned, and that conflicts of interest are in the open. In practice, reassurance on this will depend more on the characters of the individuals concerned than the institutional arrangements within which they work.

Ultimately, no advisory business model will be successful if it fails to put the establishment and nurturing of trust between clients and their advisers first. However, investors must always be aware that conflicts of interest are endemic in the financial services industry. The key to unlocking the problem of these conflicts is to have transparency of fee arrangements and then to decide on a case-by-case basis how to proceed. The general message is "buyer, beware". For some categories of investor (or investor account) in some jurisdictions, regulators insist on disclosure of all sources of investment management or private bank remuneration from a client account. Clients should request information on the adviser's (or the bank's) financial interest in a proposed transaction.

Lastly, remember that good advice is valuable, and when the going gets tough, simple handholding by an adviser which prevents short-term mistakes may be the most valuable service that the adviser provides. Superficially it will come for free – but there is a relationship that provides fee income for the adviser and access to advice for the investor. The self-advised investor misses out on this. Know what you are paying, and review but don't quibble over each item. Make sure that you are comfortable with the overall level of fees, and do, from time to time, ask your advisers whether they would make a recommended investment on their own account. Low fees do not ensure that good advice is being offered, or that an investment strategy is sensible or that risk-taking is appropriate, but over periods of years, differences in fee levels can make a significant difference to wealth accumulation.

## Appendix 4

# Sources and recommended reading

### Part 1: The essentials

### 1 Setting the scene

There are a number of investment classics which provide a general background to the first part of this chapter (and other parts of the book). *Manias, Panics and Crashes* (6th edition, Wiley, 2011) by the late Charles Kindleberger and Robert Z. Aiber is always worth re-reading, never more so than in the light of the 2007–09 credit crunch and the scandals which it helped to uncover. The discussion in Chapter 1 on the Madoff scandal draws on extensive discussions with wealth management professionals.

Other classics that should adorn any investor's bookshelf include:

Bernstein, P.L., *Against the Gods: The Remarkable Story of Risk*, John Wiley & Sons, 1998

Carswell, J., *The South Sea Bubble*, 3rd edition, Sutton Publishing, 2001

Galbraith, J.K., *The Great Crash*, Penguin Books, 1992

Mackay, C., *Extraordinary Popular Delusions and the Madness of Crowds*, Wordsworth Editions, 1995

The introduction to risk draws on:

Kritzman, M.P., *The Portable Financial Analyst: What Practitioners Need to Know*, 2nd edition, John Wiley & Sons, 2003

Kritzman, M. and Rich, D., "The Mismeasurement of Risk", *Financial Analysts Journal*, May/June 2002

The discussion of risk tolerance and its relation to risk aversion and loss aversion draws on a number of different sources, including conversations with financial planners and academics. Some particularly useful sources are:

Guillemette, M.A., Finke, M. and Gilliam, J., "Risk Tolerance Questions to Best Determine Client Portfolio Allocation Preferences", *Journal of Financial Planning*, July 2012

Kahneman, D., "The Myth of Risk Attitudes", *Journal of Portfolio Management*, Fall 2009
Roszkowski, M.J. and Davey, G., "Risk Perception and Risk Tolerance: Changes Attributable to the 2008 Economic Crisis", *Journal of Financial Service Professionals*, July 2010

## 2 Understand your behaviour

This chapter draws heavily on Daniel Kahneman's magisterial *Thinking Fast and Slow* (Farrar, Straus and Giroux, 2011), which provides a retrospective assessment of the progress made in recent decades (often led by Kahneman and his colleague, the late Amos Tversky) in understanding the strengths and weaknesses of how we take decisions.

Other useful sources include:

Barberis, N. and Thaler, R., "A Survey of Behavioral Finance", in Constantinides, G.M. *et al.* (eds), *Handbook of the Economics of Finance: Financial Markets and Asset Pricing*, Elsevier/North-Holland, 2003
Lo, A., "The Adaptive Markets Hypothesis", *Journal of Portfolio Management*, 30th anniversary issue, 2004
Statman, M., *What Investors Really Want: Know What Drives Investor Behavior and Make Smarter Financial Decisions*, McGraw-Hill, 2010
Thaler, R.H. and Sunstein, C.R., *Nudge: Improving Decisions About Health, Wealth and Happiness*, Penguin Books, 2009

## 3 Market investment returns

The section titled "Are government bonds risk free?" draws on Carmen Reinhart and Kenneth Rogoff's *This Time is Different: Eight Centuries of Financial Folly* (Princeton University Press, 2009). Some of the historical examples of default they cite appear to have been misclassified. In the UK, instances of the government exercising its option to refinance marketable debts (gilts) to take advantage of low market interest rates in 1932 and also in the 19th century are listed as "*de jure*" defaults. The prospectus for the 1932 debt conversion indicates that this was voluntary, with an option to redeem at par. The prospectus can be found at: www.dmo.gov.uk/docs/gilts/public/prospectus/announcement300632.pdf. The steps that the UK government took in the late 19th century to refinance debt were described by A.C. Miller in his 1890 article "The Conversion of English Debt", which is available from: http://qje.oxfordjournals.org.

The title for the box "A country called Europe" comes from a series of broadcasts and speeches on the prospects for European monetary union which were given in the late 1990s by Peter Jay, then the BBC's economics editor.

Other important sources include the following:

### The term structure of real and nominal interest rates

Buraschi, A. and Jiltsov, A., "Inflation Risk Premia and the Expectations Hypothesis", *Journal of Financial Economics*, Vol. 75, Issue 2, February 2005

Campbell, J.Y., Shiller, R.J. and Viceira, L.M., "Understanding inflation-indexed bond markets", Brookings Papers on Economic Activity, Spring 2009

Ilmanen, A., *Expected Returns: An Investor's Guide to Harvesting Market Rewards*, John Wiley & Sons, 2011

Ilmanen, A., *Expected Returns on Major Asset Classes*, CFA Institute 2012

Pflueger, C.E. and Viceira, L.M., "Inflation-Indexed Bonds and the Expectations Hypothesis", Harvard Business School Working Paper H-11–095, 2011

### The equity risk premium

Brett, H.P., Leibowitz, M.L. and Siegel, L.B. (eds), *Rethinking the Equity Risk Premium*, CFA Institute, 2011

"Credit Suisse Global Investment Returns Sourcebook", 2013

"Credit Suisse Global Investment Returns Yearbook", 2013

Dimson, E., Marsh, P. and Staunton, M., *Triumph of the Optimists: 101 Years of Global Investment Returns*, Princeton University Press, 2002

Dimson, E., Marsh, P. and Staunton, M., "Irrational Optimism", *Financial Analysts Journal*, January/February 2004

Siegel, J., *Stocks for the Long Run*, 5th edition, McGraw-Hill, 2014

## 4 How should and how do investor strategies evolve?

The provocative article underlying this chapter is the late Peter L. Bernstein's 2003 article "Are Policy Portfolios Obsolete?" in the *Economics and Portfolio Strategy* newsletter. In recent years, whether market returns predictably vary from one period to another has been the subject of extensive published research. A good summary is provided by Antti Ilmanen's *Expected Returns* (2011).

The second part of this chapter looks at how investors have altered portfolios since 2007. This is an area that is fraught with statistical difficulties, from which it is easy to draw spurious conclusions. The chapter draws on the IMF's 2011 report, *Long-Term Investors and Their Asset Allocation: Where*

*Are They Now?* as well as the data sources listed in Table 4.1, the Money Management Institute and industry sources.

## 5 The time horizon and the shape of strategy: keep it simple

The chapter opens with the suggestion, which arises from James Tobin's "separation theorem", that investment strategy for any investor can be reduced to an appropriate balance between just two investments: an allocation to risk-free assets and an allocation to the market portfolio of risk assets. (The market portfolio is often, as in the first part of this book, proxied by the global equity market.) Tobin set out his theorem in a 1958 article, "Liquidity preference as behaviour towards risk", in the *Review of Economic Studies* which explained how investors, with different attitudes to risk, choose to allocate monetary assets between cash and volatile assets. The separation theorem, which is also known as the "two fund money separation theorem" or the "mutual fund separation theorem", relies on strong assumptions. Thus if the global market for risky investments is fully represented by listed equities (which it is not) and if the prices of risky investments are determined efficiently (which they are not) and if expected returns in excess of the risk-free rate are constant (which they are not), then using an investor's degree of risk aversion to select appropriate proportions of risk-free and risk assets will provide a suitable strategy for any investor.

In practice, to address the shortcomings of the highly simplified approach requires high-fee actively managed investment strategies, whereas Tobin's two-investment approach can be proxied by low-cost global equities and cash (or government bonds). The costs of the more complicated versions, which seek to address the criticisms of Tobin's simplified model, place them at a significant disadvantage to the simplicity of the low-cost two-portfolio approach. The simplified allocation between diversified equities and cash or government bonds remains a useful reference strategy for investors, and, in effect, reflects practice for many financial advisers. The discussion in the chapter (and here) reflects discussions with Stephen Satchell and Mark Ralphs of the Financial Planning Corporation.

John Campbell and Tuomo Vuolteenaho's "Bad Beta, Good Beta" (*American Economic Review*, Vol. 94, No. 5, December 2004) is one of those occasional articles that develops a simple investment idea that then has powerful policy (as well as investor education) implications. It is the inspiration for this chapter's discussion of good and bad price declines as well as Chapter 7's discussion of apparent stockmarket anomalies. In a similar vein is Zvi Bodie's "Thoughts for the Future: Life-Cycle Investing in Theory and Practice" (*Financial Analysts Journal*, January/February 2003), where the different strands of traditional and behavioural finance are synthesised into designing suitable strategies for loss averse investors.

Other important sources for this chapter include:

Campbell, J.Y. and Viceira, L.M., *Strategic Asset Allocation: Portfolio Choice for Long-Term Investors*, Oxford University Press, 2002

Swensen, D., *Pioneering Portfolio Management: An Unconventional Approach to Institutional Investment*, 2nd edition, Free Press, 2009

The analysis of bond ladders in managing retirement income forms a core part of this book and builds on discussions about bond ladders and the US municipal bond market with Jeffrey Bryan of Merrill Lynch's Private Banking and Investment Group and Norman Deitrich of High Tower Advisors. Hildy Richelson and Stan Richelson's *Bonds: The Unbeaten Path to Secure Investment Growth* (2nd edition, Bloomberg Press, 2007) gives a guide to the practical aspects of managing and establishing bond ladders.

The title of the box "Models behaving badly" is taken from Emanuel Derman's 2011 book of the same title.

## Part 2 Implementing more complicated strategies

### 6 Setting the scene

The discussion of the costs of liquidity draws heavily on the work of Andrew Ang, for example, "Illiquid Assets" (*CFA Institute Conference Proceedings Quarterly*, Vol. 28, No. 4, 2011). During the credit crisis, it was immediately evident that illiquidity was imposing heavy costs on investors; see, for example, Laurence B. Siegel's article "Alternatives and Liquidity: Will Spending and Capital Calls Eat Your 'Modern' Portfolio?" (*Journal of Portfolio Management*, Fall 2008). There is nothing new about the dangers of illiquidity, which were amply highlighted in, for example, Dan Borge's *The Book of Risk*, published in 2001 (John Wiley & Sons).

The major changes in the costs of liquidity from before 2007 to the period of the crisis and the maintenance of historically high transaction costs after 2008 have been highlighted by investment managers – see, for example, Blackrock Investment Institute's 2012 report *Got liquidity?* and comments in Chapter 5 on changes in investment patterns in the US municipal bond market.

Analysis of arbitrage opportunities in this chapter relies heavily on Nicholas Barberis and Richard Thaler's survey of behavioural finance (see Chapter 2 sources above).

The discussion of taxation makes use of:

Evensky, H. and Katz, D. (eds), *The Investment Think Tank: Theory, Strategy, and Practice for Advisers*, Bloomberg Press, 2004

Poterba, J.M. and Samwick, A.A., "Taxation and Household Portfolio Composition: US Evidence from the 1980s and 1990s", *Journal of Public Economics*, Vol. 87, No. 1, January 2003

## 7 Equities

The treatment of the capital asset pricing model (CAPM) and the stockmarket anomalies draws on Eugene Fama and Kenneth R. French's article "The Capital Asset Pricing Model: Theory and Evidence" (*Journal of Economic Perspectives*, 2004), helpful suggestions from Stephen Satchell, and John Campbell and Tuomo Vuolteenaho's article "Bad Beta, Good Beta" (see Chapter 5 sources).

The discussion of equity investing draws on papers presented and debated at seminars sponsored by Norway's Ministry of Finance and Norges Bank Investment Management, in particular papers by Campbell Harvey (2011), Andrew Ang (2011), Elroy Dimson (2011 and 2013), and Jacquelyn Humphrey and David Tan (2013).

The discussion of whether to hedge international equity investments for investors whose base currencies might have "safe-haven" status during times of crisis draws on John Campbell, Karine Serfaty-de Medeiros and Luis Viceira's article "Global Currency Hedging" (*Journal of Finance*, February 2010).

## 8 Credit

Kay Giesecke, Francis A. Longstaff, Stephen Schaefer and Ilya Strebulaev's article "Corporate Bond Default Risk: A 150-year Perspective" (*Journal of Financial Economics*, 2011) provides the historical context for the discussion of corporate credit risk and reward in this chapter. By contrast, Kwok-Yuen Ng and Bruce Phelps, "Capturing the Credit Spread Premium" (*Financial Analysts Journal*, May/June 2011), and Antii Ilmanen (*Expected Returns*, 2011, especially Chapter 10, The credit risk premium) explain why many investors do not manage to turn the yield premium over government bonds on offer when they buy investment grade corporate bonds into corresponding superior performance.

The discussion of debt markets and instruments draws on market contacts and on Frank Fabozzi and Steven Mann (eds), *The Handbook of Fixed Income Securities* (8th edition, McGraw-Hill, 2011).

## 9 Hedge funds

This chapter draws on market contacts as well as industry reviews and academic analyses. A number of articles over the past decade have highlighted weaknesses in the reporting of hedge fund risk and return, and these seem as relevant in 2014 as when the articles were first written.

Useful sources include:

Asness, C., "An Alternative Future", *Journal of Portfolio Management*, 30th Anniversary Issue, 2004

Asness, C., "An Alternative Future II", *Journal of Portfolio Management*, Vol. 31, No. 1, Fall 2004

Getmansky, M., Lo, A.W. and Makarov, I., "An Econometric Model of Serial Correlation and Illiquidity in Hedge Fund Returns", *Journal of Financial Economics*, Vol. 74, No. 3, 2004

Goltz, F. and Schroeder, D., "Hedge fund reporting survey", EDHEC Risk and Asset Management Research Centre, November 2008

Gregoriou, G. and Lhabitant, F-S., "Madoff: A Riot of Red Flags", EDHEC Risk and Asset Management Research Centre, January 2009

Hasanhodzica, J. and Lo, A.W., "Can hedge fund returns be replicated?: The linear case", *Journal of Investment Management*, Vol. 5, No. 2, 2007

Kat, H. and Palaro, H., "Hedge Fund Returns: You Can Make Them Yourself!", *Journal of Wealth Management*, No. 8, 2005

Prequin, *Global Hedge Fund Report 2013*, provided an invaluable resource on industry trends

## 10 Private equity: information-based investment returns

A number of articles in recent years have sought to assess the costs of illiquidity, leverage, fees and agency issues that need to be addressed before making investments in private equity funds. These include Andrew Ang and Morten Sorensen, "Risks, Returns, and Optimal Holdings of Private Equity" (*Quarterly Journal of Finance*, Vol. 2, No. 3, 2012) and Ludovic Phalippou and Oliver Gottschalg, "The Performance of Private Equity Funds" (*Review of Financial Studies*, No. 22, 2009). Phalippou's 2011 report for the Norwegian Government Pension Fund (Global) provides an update to earlier evidence of persistence of outperformance by some private equity managers.

Steven Kaplan and Per Stromberg's article "Leveraged Buyouts and Private Equity" (*Journal of Economic Perspectives*, American Economic Association, Vol. 23, No. 1, Winter 2009) provides a review of how private equity firms seek to improve the performance of their investee companies. Issues in measuring risk of private equity funds are discussed in Susan Woodward, "Measuring

Risk for Venture Capital and Buyout Portfolios", *Journal of Performance Measurement*, Vol. 17, No. 1, 2012.

## 11 Real estate

This chapter draws on market contacts and published resources including the *Journal of Portfolio Management*'s special real estate issues of 2011 and 2007. Particularly relevant is an article by Shaun Bond, Soosung Hwang, Paul Mitchell and Stephen Satchell, "Will Private Equity and Hedge Funds Replace Real Estate in Mixed Asset Portfolios?" (*Journal of Portfolio Management*, special real estate issue, 2007) and Jim Clayton and others, "The Changing Face of Real Estate Investment Management" (*Journal of Portfolio Management*, special real estate issue, 2011). Ralph Block's *Investing in REITs: Real Estate Investment Trusts* (4th edition, Bloomberg Press, 2011) is an invaluable source on investing in REITs.

## 12 Art and collectibles

This chapter draws on discussions with a range of market and academic contacts. Recommended published sources include:

Baumol, W.J., "Unnatural value or art as a floating crap game", *American Economic Review*, Vol. 76, 1986

Dimson, E. and Spaenjers, C., "Ex Post: The Investment Performance of Collectible Stamps", *Journal of Financial Economics*, Vol. 100, No. 2, 2011

Dimson, E. and Spaenjers, C., "The investment performance of emotional assets", in Dempster, A. (ed.), *Risk and Uncertainty in the Art World*, Bloomsbury Press, 2014

Findlay, M., *The Value of Art*, Prestel, 2012

Goetzman, W., Renneboog, L. and Spaenjers, C., "Art and Money", *American Economic Review*, Vol. 101, No. 3, 2011, pp. 222–6

Grampp, W.D., *Pricing the Priceless: Art, Artists, and Economics*, Basic Books, 1989

Plattner, S., "A Most Ingenious Paradox: The Market for Contemporary Fine Art", *American Anthropologist*, Vol. 100, No. 2, 1998

Pownall, R., Satchell, S. and Srivastava, N., "The Estimation of Psychic Returns from Cultural Assets", mimeo, 2013

Reitlinger, G., *The Economics of Taste: The Rise and Fall of Picture Prices, 1760–1960*, Barrie and Rockliff, 1961

Renneboog, L. and Spaenjers, C., "Buying Beauty: On Prices and Returns in the Art Market", *Management Science*, October 2012

Satchell, S. (ed.), *Collectible Investments for the High Net Worth Investor*, Elsevier, 2009

Thompson, D., *The $12 Million Stuffed Shark: The Curious Economics of Contemporary Art*, Aurum Press, 2008

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