ABN·AMRO

February 2008

Global Investment Returns Yearbook 2008: Synopsis

A message from Rob Bate, ABN AMRO's Head of European Research:

We are proud to present the latest – the ninth – edition of the annual *Global Investment Returns Yearbook* (*GIRY*). Again, we present an updated global returns database with its unmatched breadth and historical perspective.

This year's thematic studies are about momentum, a subject of importance to all investors, whether their investment style favours it or not. We show that momentum profits in equities have been large and pervasive across time and markets, and present findings from the longest momentum study ever undertaken. We also discuss how supply and demand as well as financing mechanisms can work as important multipliers of momentum for real estate and for commodity prices. Our focus throughout is on the practical implications for investors. In short, as always with *GIRY*, we hope to stimulate an interesting and productive debate.

The Global Investment Returns Yearbook was launched in 2000. It is produced for ABN AMRO by London Business School experts Elroy Dimson, Paul Marsh and Mike Staunton, with a contributed chapter by Rolf Elgeti, ABN AMRO's former Head of Equity Strategy. This synopsis outlines the contents of the 2008 *Yearbook* and highlights some of its key findings.

The core of the *Yearbook* is provided by a long-run study covering 108 years of investment since 1900 in all the main asset categories in Australia, Belgium, Canada, Denmark, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, South Africa, Spain, Sweden, Switzerland, the United Kingdom, and the United States. These markets today make up some 85% of world equity market capitalisation. *GIRY* also reviews recent performance in a wider set of 29 markets comprising 98% of world capitalisation. With the unrivalled quality and breadth of its database, the *Yearbook* is the global authority on long-run stock, bond, bill and foreign exchange performance.

In the 2008 *Yearbook*, the authors address some of the most important questions in investment.

- **Chapter 1** analyses the performance of global markets over 2007 and over the first eight years of the current decade, highlighting what happened and why.
- **Chapter 2** provides a comprehensive update on the long-term record of stocks, bonds, bills, inflation, currencies and risk premia around the world.
- **Chapter 3** focuses on momentum in equity markets, and shows that momentum profits have been large and pervasive across time and markets, drawing on findings from the longest momentum study ever undertaken.
- **Chapter 4,** by Rolf Elgeti, develops this theme by discussing how supply and demand as well as financing mechanisms can work as important multipliers of momentum for real estate and for commodity prices.
- **Chapters 5–24** cover each of the 17 countries, plus the combined world and world ex-US indices, providing in-depth analysis for each of five asset classes spanned by the authors' 108-year history of asset returns.
- **Chapter 25** provides a bibliography.

ABN AMRO distributes the *Global Investment Returns Yearbook* to its institutional investment clients, journalists and the media. Institutional clients should contact abnamroresearch@abnamro.com. Journalists should contact Aoife Cliodhna Reynolds (aoife.cliodhna.reynolds@uk.abnamro.com).

London Business School distributes the *Yearbook* to all other users, who should contact Stefania Uccheddu (succheddu@london.edu).

ISBN 978-0-9537906-8-5. The price of the *Global Investment Returns Yearbook 2008* is £150.

250 Bishopsgate, London EC2M 4AA, United Kingdom

Overview of Chapter 1: Recent Investment Returns

The *Global Investment Returns Yearbook* starts by providing detailed statistics on, and analysing the recent performance of, equities and bonds in all the major world markets. Chapter 1 focuses on 2007 and the first eight years of this decade.

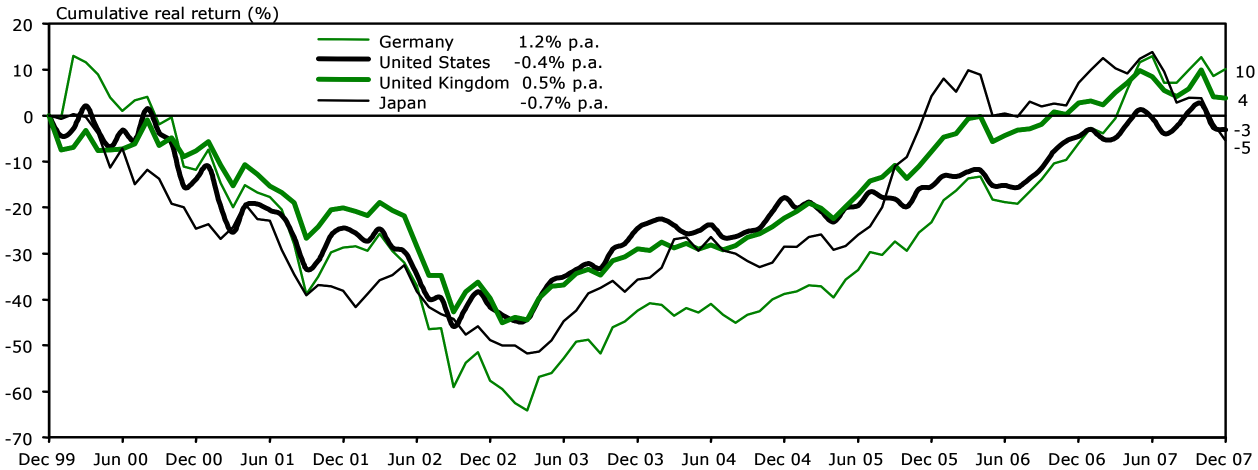
Key findings for 2007:

- Despite the turmoil in the credit markets, stock markets performed reasonably well in most countries. Emerging markets did best.
- Volatility accelerated from a low base at the start of 2007.
- Sector exposures had a larger impact than in recent years, with resource stocks doing particularly well, and financials suffering.
- The tide turned for small-caps, which suffered a reversal after four years of outperformance. Value stocks also disappointed, and they underperformed growth stocks.
- While the US (and world) bond indices did well, most government bond markets gave a negative real return.
- Commodities, notably oil, generally performed well.
- The second half of 2007 witnessed a real estate slowdown in many countries, and a sharp collapse in the US.
- Currency mattered. The US dollar was again weak, and nearly all currencies were performance enhancing. Most countries had satisfactory USD returns, but their Euro returns were markedly lower.

As Figure 1 shows, by end-2007 stock markets had largely eliminated the losses from the savage, start-of-century bear market. This is remarkable since, at the trough in March 2003, US stocks had fallen 45%, UK equity prices had halved, and German stocks had fallen by two-thirds. The *Yearbook* shows that:

- Annualised real equity returns over 2000-07 remain negative in only three of the 17 *Yearbook* countries, the US (-0.4%), Japan (-0.7%) and The Netherlands (-1.3%). However, returns remain low in several other markets, including the UK (0.5%), Germany (1.4%), France (1.2%), Italy (0.9%) and Sweden (1.4%).
- The annualised USD real return on the *GIRY* world index over 2000–07 is just 1.3%. Over this period, bonds beat equities (and bills) in 10 out of 17 countries, including all the largest markets. Realised equity risk premia over this period remain low by historical standards.

Figure 1: Equity performance in selected world markets in real, local-currency terms



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart3, Dow Jones Wilshire and Thomson Financial Datastream

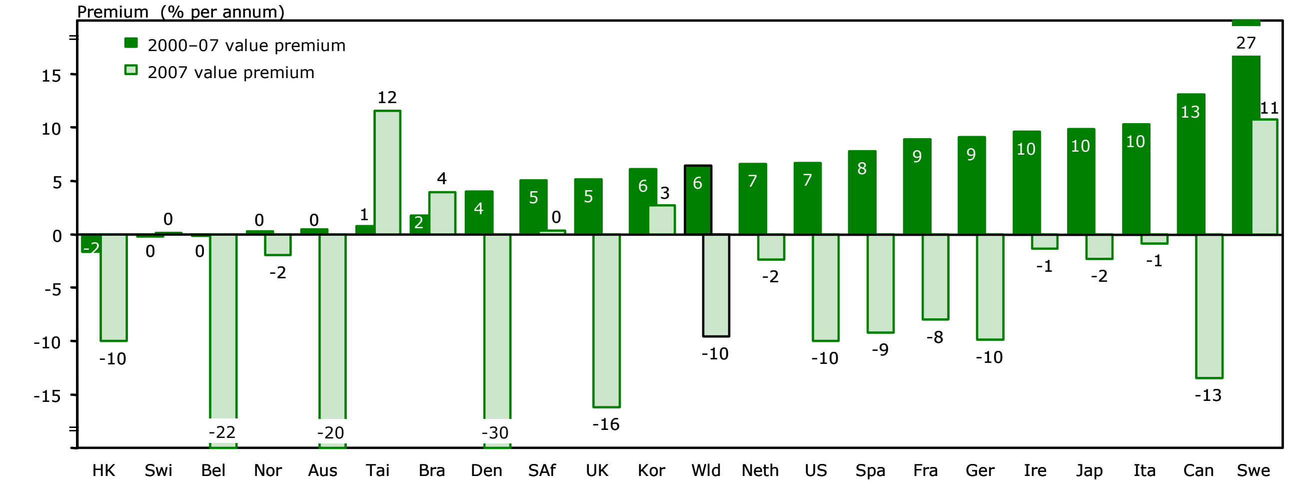
In recent years, there have been remarkable shifts worldwide in relative performance according to size, style and sector. The *Yearbook* documents and analyses these factors to shed light on the underlying causes of performance.

Findings over 2000-07 include:

- Despite 2007 being generally disappointing for small-caps, over 2000–07 they nevertheless beat large-caps in every *Yearbook* country except Norway (and, marginally, Taiwan). In most countries, those who invested in 2000 in small-caps are more than 50% richer than large-cap investors.

- The poor return in 2007 from value stocks did not eliminate the 2000-07 value premium. Figure 2 reports the value premium: the performance of value stocks relative to growth stocks. It shows that, over 2000-07, value stocks beat growth stocks in every *Yearbook* country except Hong Kong (and, marginally, Switzerland). In most markets, those who invested in 2000 in value stocks are more than 50% richer than growth-stock investors.

Figure 2: Value-growth premia around the world during 2007 and 2000–08



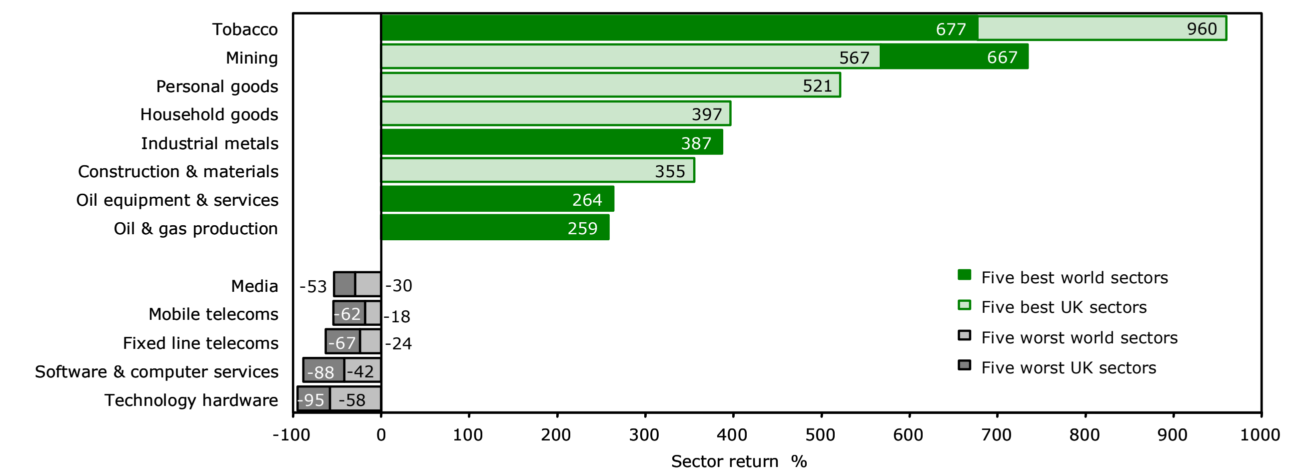
Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart7 and MSCI style-based indices

- Momentum trading has provided large potential profits in virtually every equity market. A strategy of buying stock market winners, while avoiding (or taking a short position in) stocks that have performed poorly, has provided a large premium since 2000-07. We also analyse momentum investing, in detail, in Chapter 3.

- A major factor is the investor's choice of reference currency. Over the eight years since 2000, the US dollar has fallen against all *Yearbook* currencies except two (the South African Rand and the Yen). Since 2002, the dollar has fallen against every *Yearbook* currency—by 39% in the case of the Euro.

- A huge gap has now opened up in sector performance since the tech-bubble burst in March 2000. Figure 3 highlights the best and worst performing sectors, showing that an investment in the top performing UK sector—tobacco—would now be worth 212 times more than an equivalent amount invested in the worst performing sector—technology hardware.

Figure 3: Returns on best and worst performing sectors from mid-March 2000 until end-2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, Chart 5 and Nomura/FTSE International All-World Review

Chapter 1 delves into what happened in 2007 and over 2000-07, and why. The authors dissect the sources of global returns, revealing whether performance reflects skill, luck, or a combination of the two. While *GIRY* may inadvertently serve the "market for excuses", its main aim is to help investors diagnose the market exposures that can enhance or hinder performance.

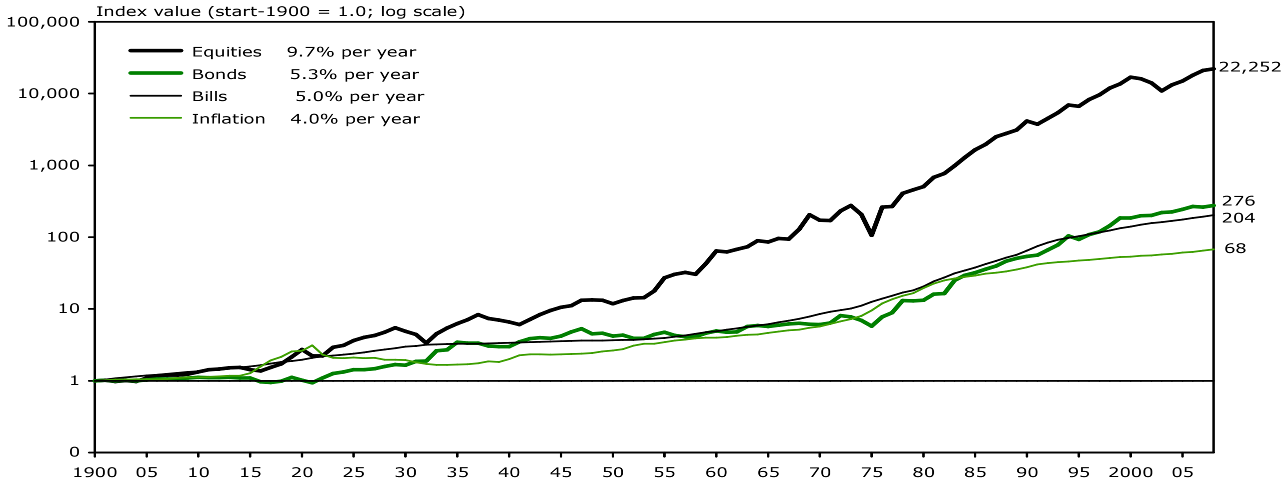
One—or even eight—years is a brief interval in investment. To form a meaningful judgement about the future we need to look not only at the recent past, but also at the long run. That is the subject of Chapter 2, which provides a comprehensive global analysis of the long-term record of stocks, bonds, bills, inflation, currency and risk premia.

Overview of Chapter 2: The Long-Run Perspective

Chapter 2 presents long-run evidence on asset returns over 108 years, and on stock market anomalies such as the size effect and the performance of value investing. Key findings are that:

- An investment in UK equities of £100 at the start of 1900 would, with dividends reinvested, have grown to over £2.2 million by the end of 2007, a return of 9.7% p.a. (see Figure 4). Long bonds and treasury bills gave lower annualised returns of 5.3% and 5.0%, respectively, although they beat inflation (4.0%).

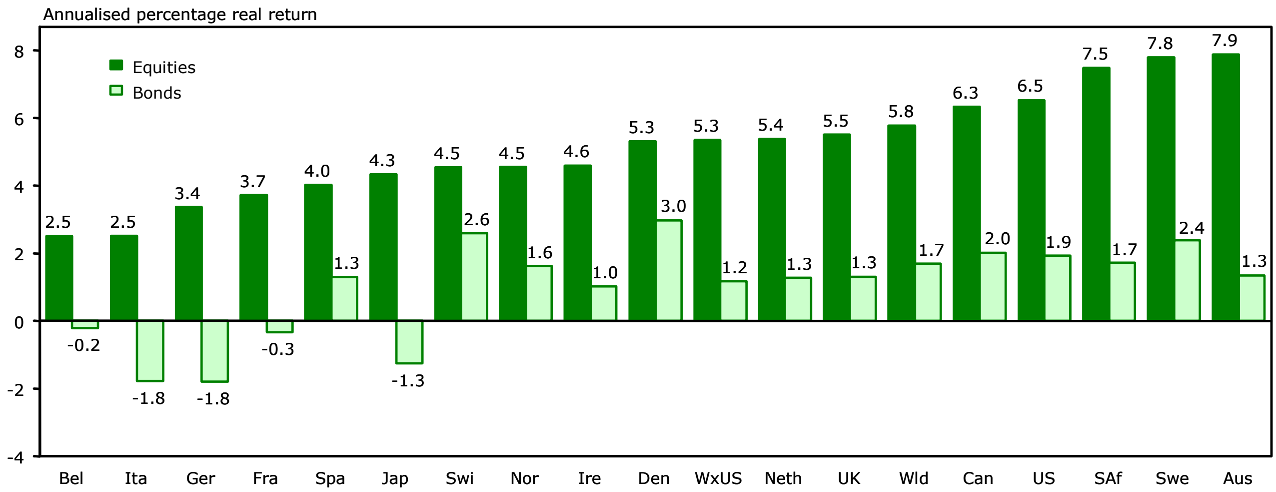
Figure 4: Cumulative returns on UK asset classes in nominal terms, 1900—2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 12

- The *Yearbook* provides charts similar to Figure 4, in both nominal and real terms, for all 17 countries plus the world and world ex-US indices (see the summary of chapters 5–24 below). They show that since 1900, equities are the best-performing asset class in every country, while bonds beat bills everywhere except Germany.
- Figure 5 shows that the best performing equity markets over the very long term are Australia and Sweden, with annualised real returns since 1900 of 7.9% and 7.8%, respectively, compared to a world average of 5.8%.

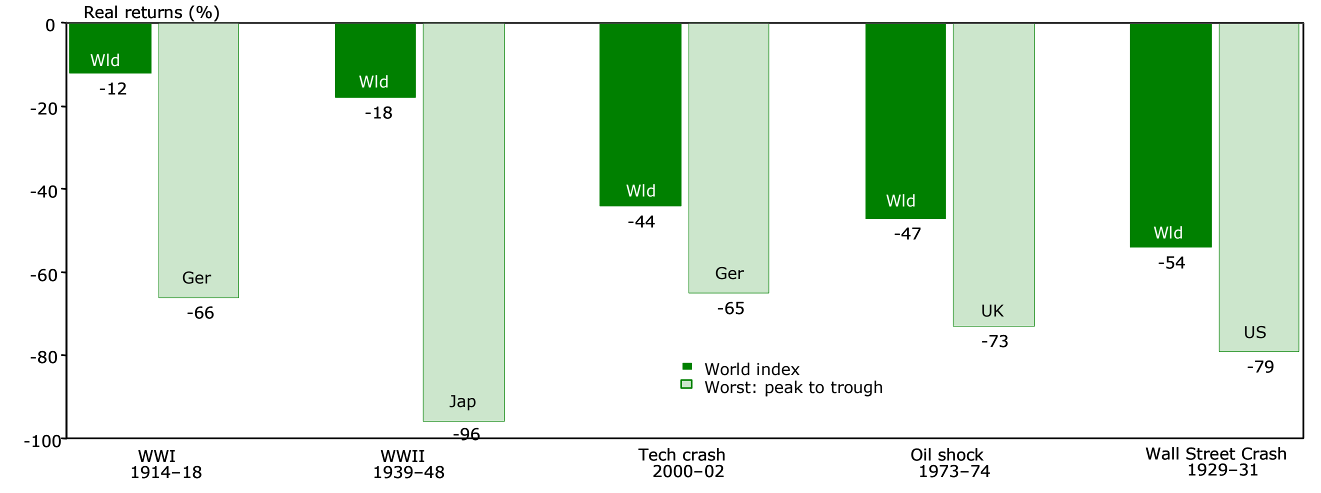
Figure 5: Real returns on equities versus bonds internationally, 1900—2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 14

- Equity returns were subject to considerable volatility. The UK's standard deviation of 19.8% places it alongside the US (20.0%) at the lower end of the risk spectrum. The highest volatility markets were Germany (32.3%), Japan (29.8%), and Italy (28.9%), reflecting the impact of wars and inflation.
- In contrast to the volatility levels of individual markets, the *GIRY* world portfolio has a standard deviation of just 17.1%, showing the risk reduction obtained from international diversification.
- History has witnessed several episodes of extreme losses for equities. Figure 6 shows that the three great bear markets inflicted far more damage on world equities than the world wars. Note that in each episode of turbulence, the losses experienced in the worst affected market were very large indeed.

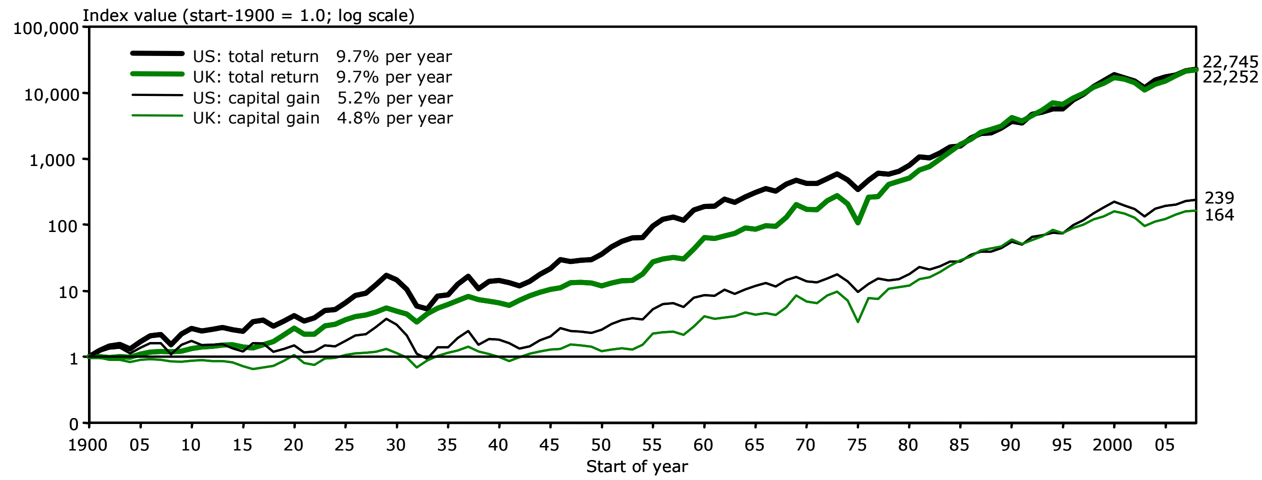
Figure 6: Extremes of equity market history, 1900-2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, Table 6

- Chapter 2 shows that over the long run, small-caps have outperformed in most countries. Similarly, value stocks have beaten growth stocks. When these factors are analysed together, small-value did best of all.
- Long-run returns are heavily influenced by reinvested dividends. After 108 years, $1 invested in US equities in 2000 would have grown to $22,745 with dividends reinvested, but to just $239 on a capital gains only basis.

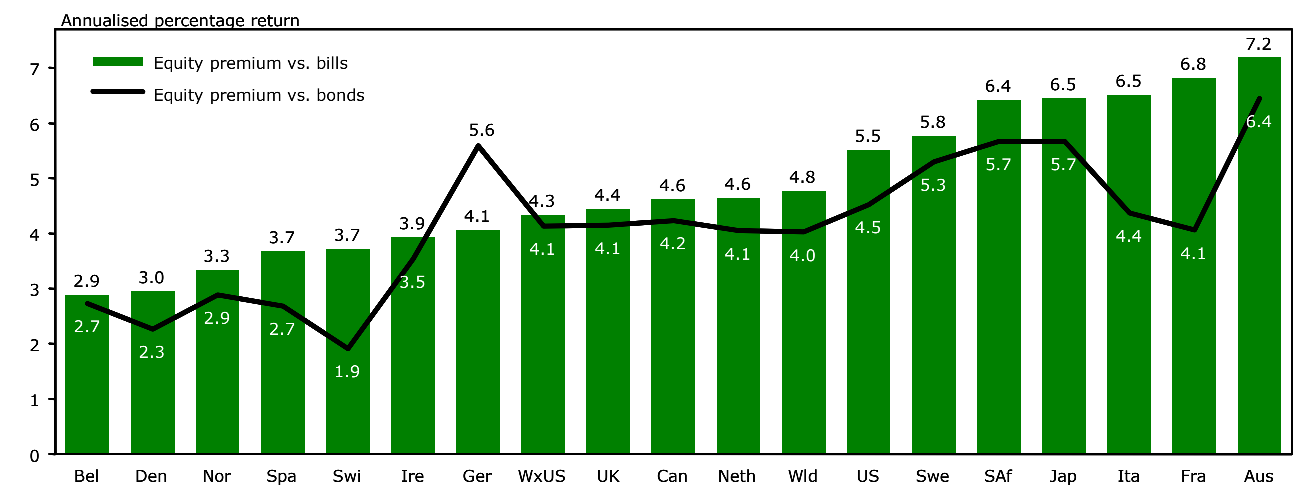
Figure 7: Impact of reinvested dividends on cumulative UK & US equity local-currency returns, 1900—2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 18

- Figure 8 shows the annualised (geometric) equity risk premia realised over the last 108 years.

Figure 8: Worldwide annualised equity risk premia relative to bonds and bills, 1900—2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 20

- The equity risk premium is the difference in performance between equities and bills (or bonds). As can be seen in Figure 8, from 1900–2007 the annualised equity risk premium relative to bills was 5.5% for the US, 4.4% for the UK, and 4.8% for the world index—somewhat lower than was previously believed.
- The authors' latest research, just published in 2008, decomposes historical returns into four components. They are the historical dividend yield, dividend growth, re-rating, and real currency movements. Chapter 2 of the *Yearbook* provides a breakdown of these components for all 17 countries and the world index.
- Drawing on their analysis, the London Business School team estimate that a plausible, forward-looking risk premium for the world's major markets would be around 3–3½% relative to bills on a geometric mean basis. The corresponding arithmetic mean risk premium is around 5% (references are at the end of this synopsis).

Overview of Chapter 3: Momentum in the Stock Market

Momentum, or the tendency for stock returns to trend in the same direction, is a major puzzle. In well-functioning markets, it should not be possible to make money from simply buying past winners and selling past losers. Yet Chapter 3 provides extensive evidence, across time and markets, that momentum profits have been large and pervasive. This evidence comes both from previous studies and from unique new London Business School research.

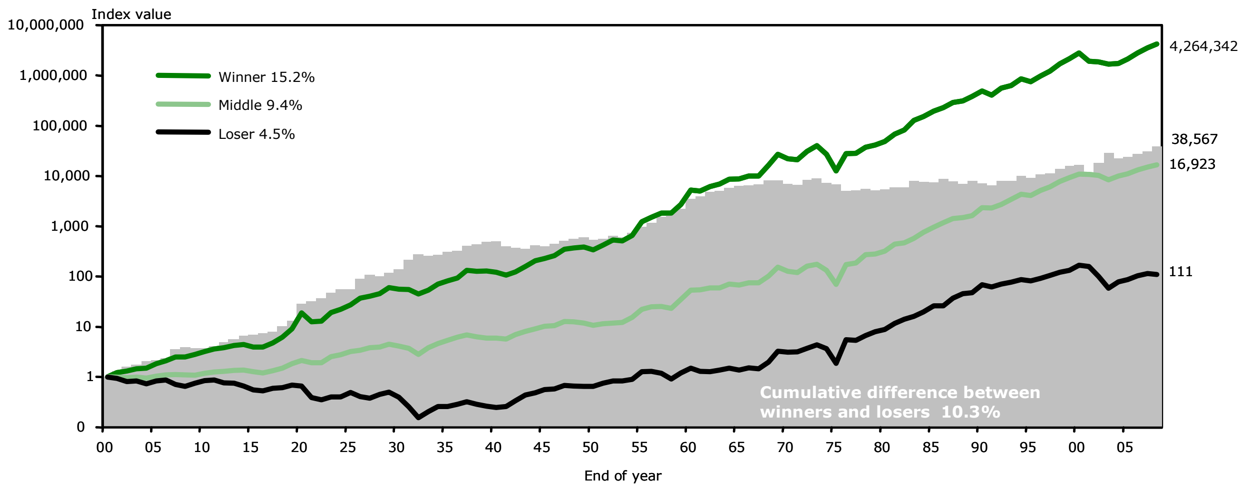
Momentum matters because most investors have styles that favour, or conflict, with momentum. Those "following" momentum include many hedge funds, quant strategies and growth investors. Practices like letting winners run or cutting losses also implicitly play to momentum. However, value investors, small-cap funds and contrarians tend to suffer from momentum. Whatever their style, momentum is highly relevant to all investors.

Pure momentum strategies involve ranking stocks into winners and losers based on past returns over a *ranking period*. One then buys the winners and short-sells the losers, over a *holding period*. To ensure implementability, there is usually a *wait period* before investing. Strategies are thus described as "**r**/**w**/**h**". For example, a 12/1/1 strategy **r**anks returns over the past 12 months, **w**aits 1 month, and then **h**olds for 1 month until rebalancing.

Key findings of Chapter 3 include:

- Winners (defined as the top 20% past returns) beat losers (bottom 20%) by 10.8% per year across the entire UK equity market from 1956–2007 (the period for which comprehensive data is available).
- With equal, rather than capitalisation, weights, the difference was even greater at 12.0%. And with winners/losers defined as the top/bottom 10% (rather than 20%), the gap was greater still.
- The winner-minus-loser (WML) gap was smaller at 7.0% p.a. when investment was limited to just the Top 100 UK stocks. However, within this group of highly liquid stocks, the strategy was much easier to implement.
- In the longest momentum study ever conducted, covering the Top 100 stocks over 108 years, Figure 9 shows that winners beat losers by 10.3% per year. £1 invested at start-1900 in the winner portfolio would have grown to more than £4¼ million (15.2% p.a.). £1 invested in the losers would have grown to only £111 (4.5% p.a.).

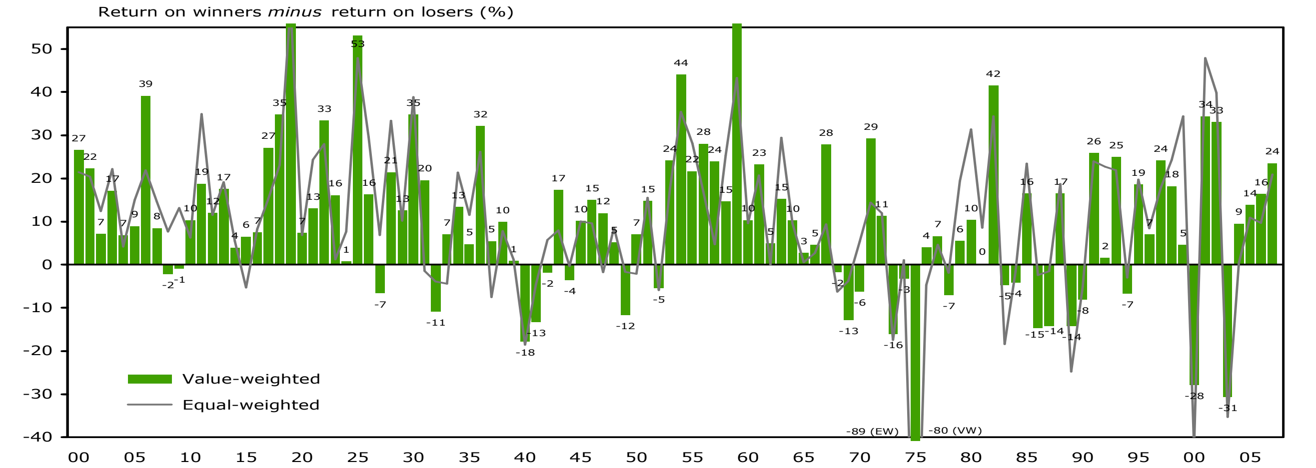
Figure 9: Annual value-weighted momentum portfolio returns for the Top 100 UK equities 1900-2007



This chart shows value-weighted returns for winner and loser portfolios among the Top 100 equities, defined with breakpoints at the 20th and 80th percentiles. The shaded area is the cumulative difference between winners and losers, and measures the value of a long-short WML portfolio. The momentum process followed here is a 12/1/1 strategy. Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 26

- Stock market research always needs a holdout period—to check whether the effect persists over a period other than the one used to "discover" it. The 108-year study uses the longest holdout period ever—56 years of virgin data from 1900–55, collected especially for *GIRY*. Momentum proved even stronger over this holdout period.
- Momentum returns were remarkably robust to the choice of ranking period, holding period, weighting scheme, definition of winners, and choice of sample. All strategies achieved a high level of statistical significance.
- However, there are important caveats. First, as Figure 10 shows, there are numerous periods when winners underperform losers, sometimes by a dramatic margin. Pure momentum plays are not for the faint hearted.

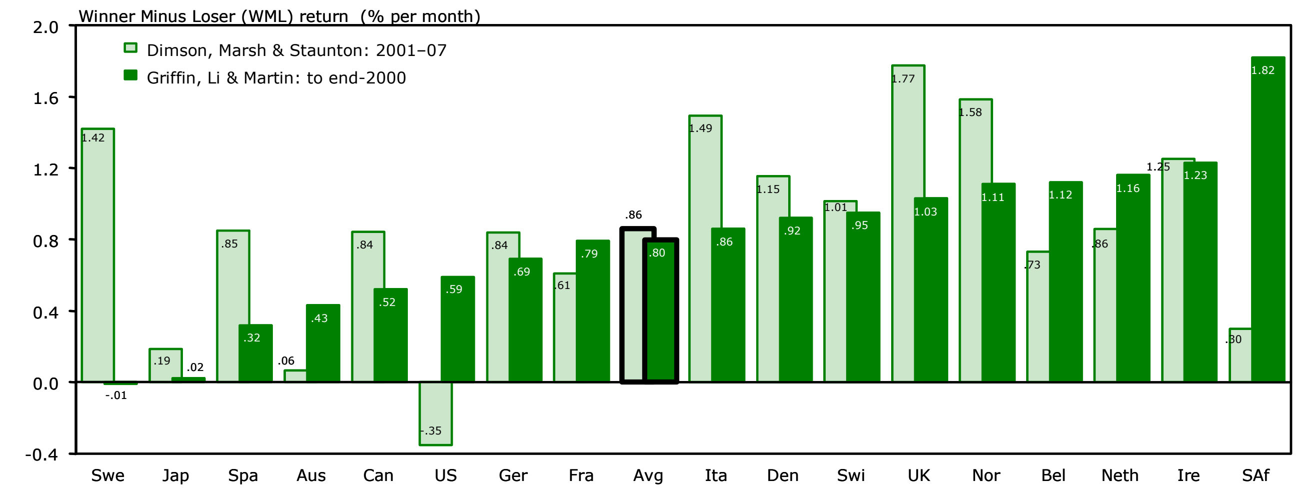
Figure 10: Return on winners minus losers for Top 100 UK equities, annually 1900-2007



This chart shows value-weighted WML returns based on portfolios with momentum breakpoints at the 20th and 80th percentiles. The momentum process followed here is a 12/1/1 strategy. Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 27

- Second, turnover can be very high, especially with monthly rebalancing. For the 12/1/1 strategy, winner and loser turnover averages 31% and 33% per month. Transactions costs can seriously dent performance.
- Chapter 3 also presents up-to-date evidence on worldwide momentum covering 33 years for most *GIRY* markets. The dark bars in Figure 11 show that the average WML return in the 17 *GIRY* countries was 0.80% per month up to end-2000, as estimated by Griffin, Ji, and Martin (*Journal of Finance*, 2003).
- The light bars in Figure 11 show the equivalent returns from 2001–07. Over this "holdout" period, the average monthly return was even higher at 0.86%. The US was the only market for which WML returns were negative.

Figure 11: Monthly momentum returns in 17 stock markets, up to 2000 and 2001–2007



This chart shows the winner-minus-loser (WML) return from a 6/1/6 momentum strategy, following the methodology described in Griffin, Ji and Martin (2003). The breakpoints are the 20th and 80th percentiles. The Griffin, Ji and Martin sample period begins in 1975 (or, for a few countries, a different year) and ends in 2000. The subsequent period runs from start-2001 to end-2007. Data is from the LSPD (for the UK) and Datastream (other countries). Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, chart 29, Griffin, Ji and Martin (2003) and Thomson Financial Datastream.

The authors, Elroy Dimson, Paul Marsh and Mike Staunton of London Business School, conclude: "The momentum effect, both in the UK and globally, has been pervasive and persistent. Though costly to implement on a stand-alone basis, all investors need to be acutely aware of momentum. Even if they do not set out to exploit it, momentum is likely to be an important determinant of their investment performance."

Overview of Chapter 4: Momentum in Real Estate

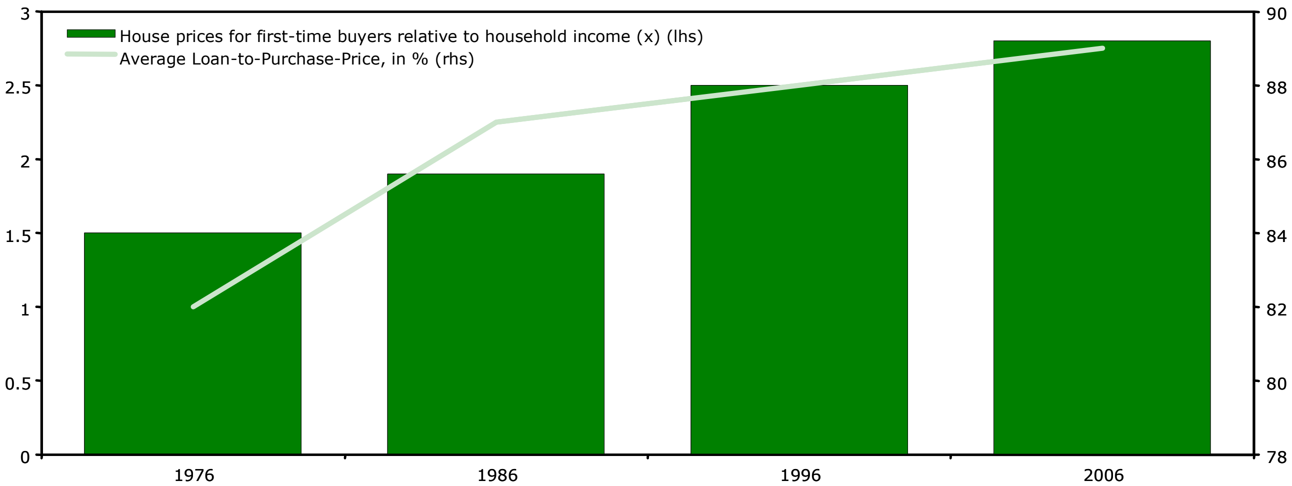
Momentum has become an important factor in many markets. In addition to equities, the *Yearbook* looks at other asset classes. An illiquid asset, like real estate, is more vulnerable to price momentum because of the time delays between transactions. In Chapter 4, Rolf Elgeti discusses momentum in real estate.

Elgeti's starting point is that investors are drawn to assets that go up in price, and that momentum is driven not only by buyers and sellers, but also by third parties who intervene in the market and affect supply and demand. This includes:

- Mortgage banks, which behave pro-cyclically, strengthening momentum in real estate – in either direction.
- First-time buyers, the number of whom rises in a buoyant market, even though affordability may actually worsen. Again, this reinforces momentum, creating a gradual structural change in the demand-pull of the market.
- House builders, who might be expected to increase the housing supply when prices rise and to stop when prices fall, but whose response can be untimely and with considerable regional differences.

In Figure 12, Elgeti examines the US market, noting how a small change in banking policy can influence what people pay for their first house. Over the past 30 years, US mortgage banks increased lending to first-time buyers from an average 82% (in 1976) to 89% (in 2006). The 7 percentage points of increased leverage resulted in first-time buyers paying much more: about 2.75x their income in 2006, versus about 1.5x their annual income in 1976.

Figure 12: Affordability and LTVs for first-time buyers in the US



Source: Federal Reserve Bank of Chicago

If banks were acting counter-cyclically, they would argue, "When houses cost about 1.5 times income we lent 82%; now they cost nearly 3 times their income risk is higher, so we should lend less." But the opposite has been the case, and banks raised their loan-to-purchase-price ratios, despite houses becoming not only more expensive but less affordable. Banks' behaviour thereby accentuates momentum in real estate prices.

Elgeti also offers evidence to support his claims in relation to first-time buyers and house-builders, drawing evidence from a number of countries. He notes similar momentum effects that may be found in other markets, such as commodities.

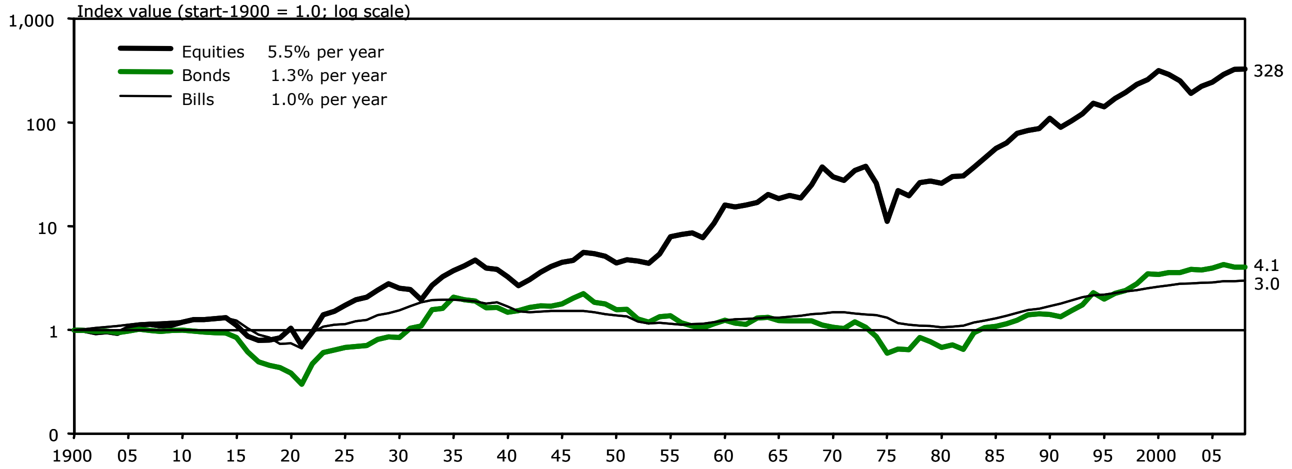
Overview of Chapters 5–24: Individual Markets

These chapters present detailed in-depth statistical analysis of the performance of each of five asset classes in each of the 17 *GIRY* countries over the full 108-year history from 1900–2007. Chapter 5 provides an introduction to the country Chapters. Chapters 6–22 then cover each country in turn, while Chapters 23 and 24 provide equivalent statistics for the combined world ex-US and world indices. Each country chapter contains:

- An introductory section describing the authors' data sources.
- A summary table, providing an overview of asset returns and risk premia for that country.

- Charts portraying both the cumulative returns, and the year-to-year returns for each country in both nominal terms (Figure 4 above) and real terms (Figure 13).

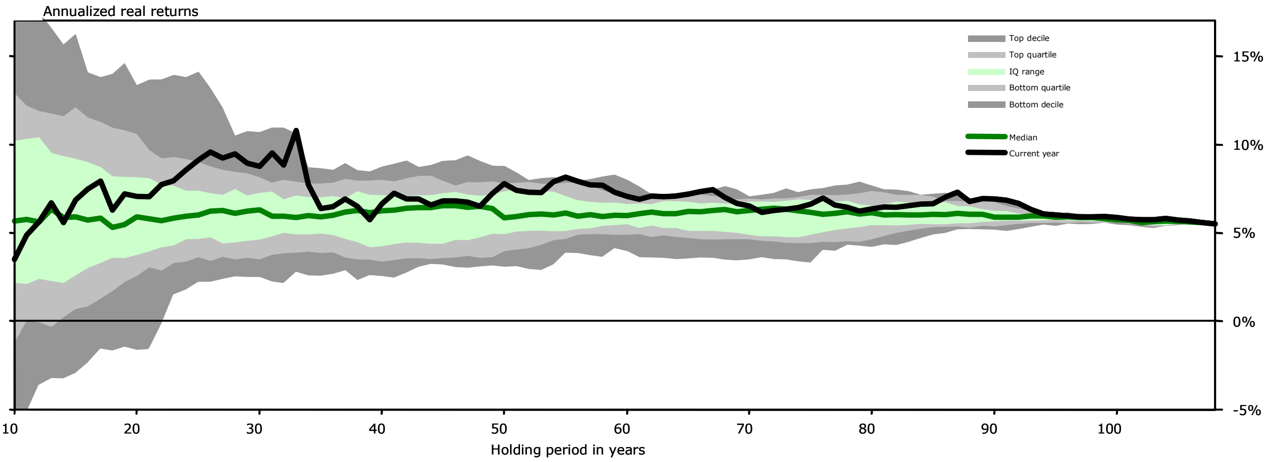
Figure 13: Cumulative returns on UK asset classes in real terms, 1900—2007



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, charts 13 and 117

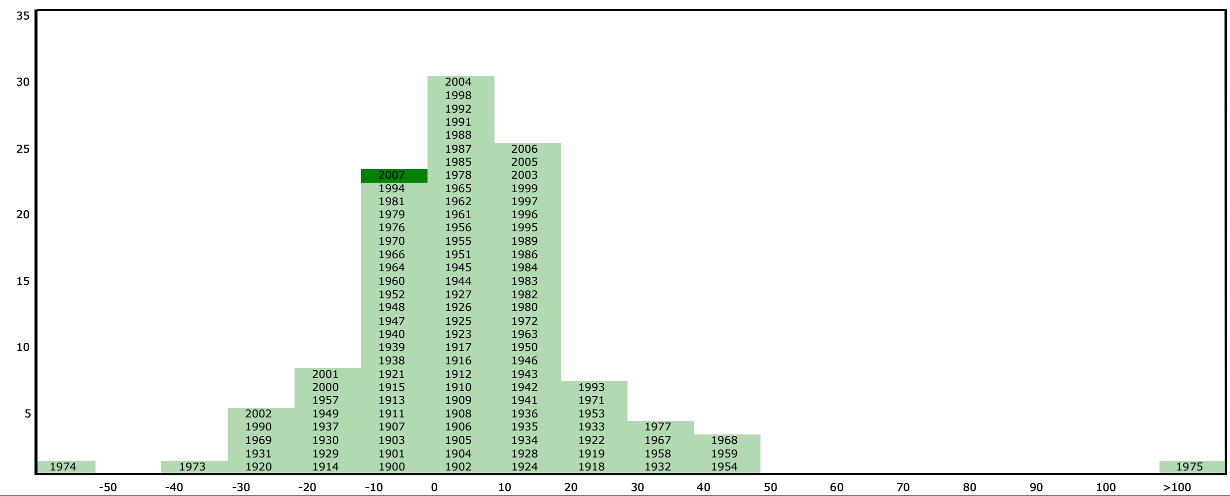
- Charts depicting the dispersion of returns over investment horizons of between 10 and 108 years (Figure 14).
- Histograms showing the distribution of annual risk premia (Figure 15)

Figure 14: Dispersion of real returns on UK equities over periods of 10-108 years



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, charts 119

Figure 15: UK equity risk premium relative to bills



Source: ABN AMRO/LBS Global Investment Returns Yearbook 2008, charts 121

- Tables of annualised return "triangles". The tables present returns over individual and multiple decades, and returns to date from an initial investment made at the start of 1900, 1910, and so on to the start of 2000. They cover each of the four asset categories in real terms (as well as real equity capital gains); the three risk premia relating to equities, bonds and bills; the real and nominal exchange rates against the dollar; and the annualised inflation rate, over all periods of 1, 2,...,10 decades.
- Tables listing index levels and returns for all the asset series in nominal and real terms, with index values provided at intervals of one decade from 1900 to 2000, and thereafter on an annual basis.

Further information

Further information on long run rates of return is provided in Elroy Dimson, Paul Marsh and Mike Staunton's book, *Triumph of the Optimists* (published by Princeton University Press, 2002). The authors have also analysed the equity risk premium, the long-run risks of equity investment, international diversification and many other strategic issues in investment.

Their most recent research, exploring more aspects of the Yearbook data, is published in *Financial Analysts Journal*, *Journal of Portfolio Management*, and *Journal of Applied Corporate Finance*. Their latest paper, The Worldwide Equity Premium: A Smaller Puzzle, is in Rajnish Mehra (Ed.) *Handbook of the Equity Risk Premium* (Elsevier, 2008). It is available at http://papers.ssrn.com/id=891620 (free download).

Obtaining a copy of the 2008 Yearbook

ABN AMRO distributes the *Global Investment Returns Yearbook 2008* to its institutional investment clients, journalists and the media. Institutional clients should contact abnamroresearch@abnamro.com.

Journalists should contact Aoife Cliodhna Reynolds (aoife.cliodhna.reynolds@uk.abnamro.com).

London Business School distributes the *Global Investment Returns Yearbook 2008* to all other users, who should contact Stefania Uccheddu (succheddu@london.edu).

Format: A4, 212 pages, 26 chapters, 78 tables, 136 charts.

ISBN 978-0-9537906-8-5.

Price £150 per copy.

Access to the underlying data:

The underlying data are distributed only through Morningstar. Request the *DMS data module* for the EnCorr system from Marc Buffenoir at marc.buffenoir@morningstar.com.

Background information on ABN AMRO and London Business School

ABN AMRO

Netherlands-based ABN AMRO is a leading international bank with total assets of EUR 1,120.1 bln (as at 30 June 2007). It has more than 4,000 branches in 53 countries, and has a staff of more than 99,000 full-time equivalents worldwide. ABN AMRO was acquired by the Consortium of RBS, Fortis and Santander in October 2007 and its various businesses will be divided among the three banks.

London Business School

London Business School is the pre-eminent global business school, nurturing talent and advancing knowledge in a multi-national, multi-cultural environment. Founded in 1965, the School graduated over 800 MBAs, Executive MBAs, Masters in Finance, Sloan Fellows and PhDs from over 70 countries last year. The School's executive education department serves over 6,000 executives on its programmes every year. London Business School is based in the most accessible and international city in the world and has twice been awarded the highest research rating of five-star (5*), by the Higher Education Funding Council for England, confirming the School as a centre of world-class research in business and management.

DISCLOSURES APPENDIX

Regulatory disclosures

None

Global disclaimer

This material was prepared by the ABN AMRO affiliate named on the cover or inside cover page. This document must be treated as a marketing communication for the purposes of Directive 2004/39/EC as it has not been prepared in accordance with legal requirements designed to promote the independence of research; and it is not subject to any prohibition on dealing ahead of the dissemination of investment research.
It is provided for informational purposes only and does not constitute an offer to sell or a solicitation to buy any security or other financial instrument. While based on information believed to be reliable, no guarantee is given that it is accurate or complete. While we endeavour to update on a reasonable basis the information and opinions contained herein, there may be regulatory, compliance or other reasons that prevent us from doing so. The opinions, forecasts, assumptions, estimates, derived valuations and target price(s) contained in this material are as of the date indicated and are subject to change at any time without prior notice. The investments referred to may not be suitable for the specific investment objectives, financial situation or individual needs of recipients and should not be relied upon in substitution for the exercise of independent judgement. The stated price of any securities mentioned herein is as of the date indicated and is not a representation that any transaction can be effected at this price. Neither ABN AMRO nor other persons shall be liable for any direct, indirect, special, incidental, consequential, punitive or exemplary damages, including lost profits arising in any way from the information contained in this material. This material is for the use of intended recipients only and the contents may not be reproduced, redistributed, or copied in whole or in part for any purpose without ABN AMRO's prior express consent. In any jurisdiction in which distribution to private/retail customers would require registration or licensing of the distributor which the distributor does not currently have, this document is intended solely for distribution to professional and institutional investors.

Australia: Any report referring to equity securities is distributed in Australia by ABN AMRO Equities Australia Ltd (ABN 84 002 768 701, AFS Licence 240530), a participant of the ASX Group. Any report referring to fixed income securities is distributed in Australia by ABN AMRO Bank NV (Australia Branch) (ABN 84 079 478 612, AFS Licence 238266). Australian investors should note that this document was prepared for wholesale investors only.

Brazil: ABN AMRO Corretora de Cambio e Valores Mobiliarios S.A. is responsible for the part of this report elaborated by research analysts registered at Comissao de Valores Mobiliarios - CVM, as indicated. Investors resident in Brazil who receives this report should rely only on research prepared by research analysts registered at CVM. In addition to other representations contained in this report, such research analysts state that the views expressed and attributed to them accurately reflect solely and exclusively their personal opinions about the subject securities and issuers and/or other subject matter as appropriate, having such opinion(s) been produced freely and independently from any party, including from ABN AMRO or any of its affiliates.

Canada: The securities mentioned in this material are available only in accordance with applicable securities laws and may not be eligible for sale in all jurisdictions. Persons in Canada requiring further information should contact ABN AMRO Incorporated.

Denmark: ABN AMRO Bank N.V. is authorised and regulated in the Netherlands by De Nederlandsche Bank. In addition, ABN AMRO Bank N.V., Copenhagen Branch is subject to local supervision by Finanstilsynet, the Danish Financial Supervisory Authority. All analysts located in Denmark follow the recommendations from the Danish Securities Dealers Association.

Finland: ABN AMRO Bank N.V. is authorised and regulated in the Netherlands by De Nederlandsche Bank. In addition, ABN AMRO Bank N.V., Helsinki Branch is subject to local supervision by Rahoitustarkastus, the Finnish Financial Supervision Authority.

Hong Kong: This document is being distributed in Hong Kong by, and is attributable to, ABN AMRO Asia Limited which is regulated by the Securities and Futures Commission of Hong Kong.

India: Shares traded on stock exchanges within the Republic of India may only be purchased by different categories of resident Indian investors, Foreign Institutional Investors registered with The Securities and Exchange Board of India ("SEBI") or individuals of Indian national origin resident outside India called Non Resident Indians ("NRIs") and Overseas Corporate Bodies ("OCBs"), predominantly owned by such persons or Persons of Indian Origin (PIO). Any recipient of this document wanting additional information or to effect any transaction in Indian securities or financial instrument mentioned herein must do so by contacting a representative of ABN AMRO Asia Equities (India) Limited.

Italy: Persons in Italy requiring further information should contact ABN AMRO Bank N.V. Milan Branch.

Japan: This report is being distributed in Japan by ABN AMRO Securities Japan Ltd to institutional investors only.

Malaysia: ABN AMRO research, except for economics and FX research, is not for distribution or transmission into Malaysia.

New Zealand: This document is distributed in New Zealand to institutional investors by ABN AMRO Securities NZ Limited, an NZX accredited firm, and to retail investors by ABN AMRO Craigs Limited, an NZX accredited firm. ABN AMRO Craigs Limited and/or its partners and employees may, from time to time, have a financial interest in respect of some or all of the matters discussed.

Russia: The Russian securities market is associated with several substantial risks, legal, economic and political, and high volatility. There is a relatively high measure of legal uncertainty concerning rights, duties and legal remedies in the Russian Federation. Russian laws and regulations governing investments in securities markets may not be sufficiently developed or may be subject to inconsistent or arbitrary interpretation or application. Russian securities are often not issued in physical form and registration of ownership may not be subject to a centralised system. Registration of ownership of certain types of securities may not be subject to standardised procedures and may even be effected on an ad hoc basis. The value of investments in Russian securities may be affected by fluctuations in available currency rates and exchange control regulations.

Singapore: Any report referring to equity securities is distributed in Singapore by ABN AMRO Asia Securities (Singapore) Pte Limited (RCB Regn No. 198703346M) to clients who fall within the description of persons in Regulation 49 of the Securities and Futures (Licensing and Conduct of Business) Regulations and Regulations 34 and 35 of the Financial Advisers Regulations. Any report referring to non-equity securities is distributed in Singapore by ABN AMRO Bank NV (Singapore Branch) Limited to clients who fall within the description of persons in Regulations 34 and 35 of the Financial Advisers Regulations. Investors should note that this material was prepared for accredited investors only. Recipients who do not fall within the description of persons under Regulation 49 of the Securities and Futures (Licensing and Conduct of Business) Regulations or Regulations 34 and 35 of the Financial Advisers Regulations should seek the advice of their independent financial advisor prior to taking any investment decision based on this document or for any necessary explanation of its contents.

Sweden: ABN AMRO Bank N.V. is authorised and regulated in the Netherlands by De Nederlandsche Bank. In addition, ABN AMRO Bank N.V., Stockholm Branch is subject to local supervision by the Swedish Financial Supervisory Authority.

Thailand: Pursuant to an agreement with Asia Plus Securities Public Company Limited (APS), reports on Thai securities published out of Thailand are prepared by APS but distributed outside Thailand by ABN AMRO Bank NV and affiliated companies. Responsibility for the views and accuracy expressed in such documents belongs to APS.

United Kingdom: All marketing communications are distributed by ABN AMRO Bank NV, London Branch, which is authorised by De Nederlandsche Bank and by the Financial Services Authority; and regulated by the Financial Services Authority for the conduct of UK business. The investments and services contained herein are not available to private customers in the United Kingdom.

United States: Except for any documents relating to foreign exchange, FX or global FX, distribution of this document in the United States or to US persons is intended to be solely to major institutional investors as defined in Rule 15a-6(a)(2) under the US Securities Act of 1934. All US persons that receive this document by their acceptance thereof represent and agree that they are a major institutional investor and understand the risks involved in executing transactions in securities. Any US recipient of this document wanting additional information or to effect any transaction in any security or financial instrument mentioned herein, must do so by contacting a registered representative of ABN AMRO Incorporated, Park Avenue Plaza, 55 East 52nd Street, New York, N.Y. 10055, US, tel + 1 212 409 1000, fax +1 212 409 5222.

- Material means all information contained in any form including but not limited to hard copy, electronic form, presentations, e-mail, SMS or WAP.

The analyst or analysts responsible for the content of this marketing communication certify that: (1) the views expressed and attributed to the analyst or analysts in the report accurately reflect their personal opinion(s) about the subject securities and issuers and/or other subject matter as appropriate; and, (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views contained in this report. On a general basis, the efficacy of recommendations is a factor in the performance appraisals of analysts.

For a discussion of the valuation methodologies used to derive our price targets and the risks that could impede their achievement, please refer to our latest published reports on those stocks at www.abnamroresearch.com.

Disclosures regarding companies covered by ABN AMRO group can be found on ABN AMRO's research website at www.abnamroresearch.com.

Should you require additional information please contact the relevant author(s) of this report.