



Credit Suisse Research Institute:
Thought leadership from Credit Suisse Research
and the world's foremost experts

**Credit Suisse
Global Investment
Returns Yearbook 2010**

Contents

05 Emerging markets

13 Economic growth

21 Value in the USA

27 Country profiles

28 Australia

29 Belgium

30 Canada

31 Denmark

32 Finland

33 France

34 Germany

35 Ireland

36 Italy

37 Japan

38 Netherlands

39 New Zealand

40 Norway

41 South Africa

42 Spain

43 Sweden

44 Switzerland

45 United Kingdom

46 United States

47 World

48 World ex-US

49 Europe

50 Authors

51 Imprint/Disclaimer

The [Credit Suisse Global Investment Returns Yearbook 2010](#) offers more than 100 years of data on financial market returns in 19 countries, putting into long-run perspective the current outlook for asset prices at a time of global economic recovery and high levels of country indebtedness. This year Elroy Dimson, Paul Marsh and Mike Staunton of London Business School add Finland and New Zealand to their database of long-term returns and risks, alongside the 17 markets previously covered. The scale of analysis extends far beyond what can be contained in this [Yearbook](#), so an accompanying volume ([the Global Investment Returns Sourcebook](#)) contains detailed tables, charts, listings, background, sources and references for every country.

More specifically, in the context of the already strong growth in emerging markets and the rebuilding of developed economies, they examine two issues – first, what kinds of return and risk levels should we expect from emerging market equities and, second, what the relationship between stock returns and economic growth is. While emerging market equity returns in 2009 were spectacular, this analysis suggests that, throughout history, emerging market returns have been closer to developed markets than many investors would now expect. The crucial issue is the extent to which emerging markets have undergone a structural improvement in terms of their risk/return profile and the levels of economic growth they now enjoy.

The second article in the [Yearbook](#) helps to shed some light here. While we observe a positive correlation between long-term economic growth and stock returns, historic per capita GDP growth has a negative correlation with both stock returns and dividend growth. If anything, stock market moves are a much better indicator of future GDP growth. In fact, paradoxically, an investment strategy of investing in countries that have shown weakness in economic growth has historically earned high returns. 2009 is a case in point.

In addition, the [Yearbook](#) contains an assessment by Jonathan Wilmot, Chief Global Strategist for Investment Banking, of the fundamental outlook for the US market in the context of a globalized world. He notes that the US market is strongly linked to emerging world growth as nearly a quarter of total US profits and about 30% of S&P 500 sales are generated abroad. He concludes that the outlook for US equities is positive, given continuing globalization, emerging world growth and rapid technological change.

We are proud to be associated with the work of Elroy Dimson, Paul Marsh and Mike Staunton, whose book [Triumph of the Optimists](#) (Princeton University Press, 2002) has had a major influence on investment analysis. The [Yearbook](#) is one of a series of publications from the Credit Suisse Research Institute, which links the internal resources of our extensive research teams with world-class external research.

Giles Keating

Head of
Private Banking Global Research
giles.keating@credit-suisse.com

Stefano Natella

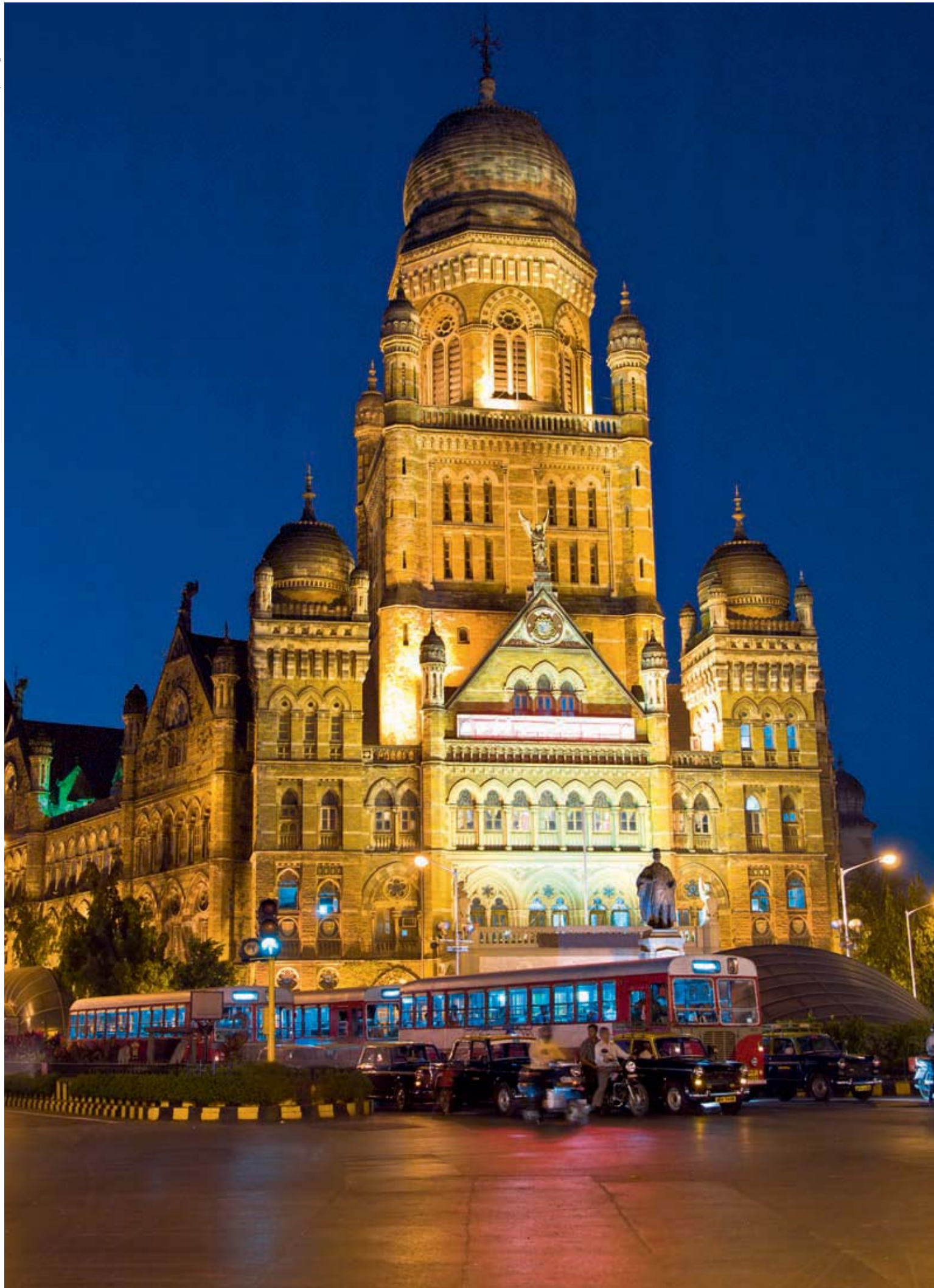
Head of Global Equity Research,
Investment Banking
stefano.natella@credit-suisse.com

For more information on the findings of the [Credit Suisse Global Investment Returns Yearbook 2010](#), please contact either the authors (see contact information on page 51) or:

Richard Kersley, Head of Equity Research Europe Product at Credit Suisse Investment Banking,
richard.kersley@credit-suisse.com

Michael O'Sullivan, Head of UK Research, Global Asset Allocation at Credit Suisse Private Banking,
michael.o'sullivan@credit-suisse.com

To order printed copies of the [Yearbook](#) and the [Sourcebook](#), see page 51.



Emerging markets

The opening years of the twenty-first century have been a lost decade for equity investors, with the MSCI world index giving a return close to zero. However, emerging markets have been a bright spot, with an annualized return of 10%. Looking ahead, can we expect this differential to persist? And what role should emerging markets now have in investors' portfolios? Answering this question is crucial for all individuals who take a global view of stock-market opportunities.

Elroy Dimson, Paul Marsh and Mike Staunton, London Business School

Emerging markets have been the hot topic of the past year, but the story line has evolved. In the turmoil of 2008 and early 2009, they crashed along with, and more than, other risk assets, shaking investors' faith in the decoupling theory and in diversification as a way of safeguarding portfolio values.

In the staggering equity market recovery since March 2009 (see Figure 1), the picture changed. Belief in decoupling was back as emerging markets recovered sooner, faster and further, and became the world's engine of growth and recovery. The belief that "future growth means higher returns" gained momentum. Meanwhile, the financial crisis shattered the preconception that the USA and other developed markets were relative safe havens. Investors now viewed the risk gap between emerging and developed markets as much smaller.

Are these perceptions correct, and have events been so paradigm-changing that emerging markets are now the only game in town? In this article, we seek to answer these questions by putting the spotlight on the performance of emerging markets, and their role in a global equity portfolio.

In doing so, and consistent with the aims of the *Yearbook*, we take a long-run view. A short-term focus on current perceptions and market beliefs can seriously detract from investment performance. Those who follow the herd are destined to sell markets after they have fallen, and to buy after a rise.

By examining markets over the longest possible period, modern events can be put in their proper context. This is the role of the *Yearbook*, with its 110 years of stock-market history now expanded to cover 19 countries, and the even broader database of 83 developed and emerging markets that we have assembled for this and the accompanying article.

What is an emerging market?

There is no watertight definition of emerging markets. The term was coined in the early 1980s by the International Finance Corporation (IFC) to refer to middle-to-higher income developing countries in transition to developed status, which were often undergoing rapid growth and industrialization, and which had stock markets that were increasing in size, activity and quality.

In practice, it is the major index providers, in consultation with their clients, who define which markets are deemed emerging and which are developed. FTSE International distinguishes between advanced and secondary emerging markets, while S&P and MSCI identify a category of pre-emerging, frontier markets. But the key distinction is between emerging and developed. Index providers judge this using their own criteria, such as gross domestic product (GDP) per capita, the regulatory environment, and market size, quality, depth and breadth. Yet, despite the different criteria, the resultant classifications are almost identical.

Figure 1

Emerging markets' performance since March 2009 and over the decade 2000–09

Source: MSCI Barra; FTSE International

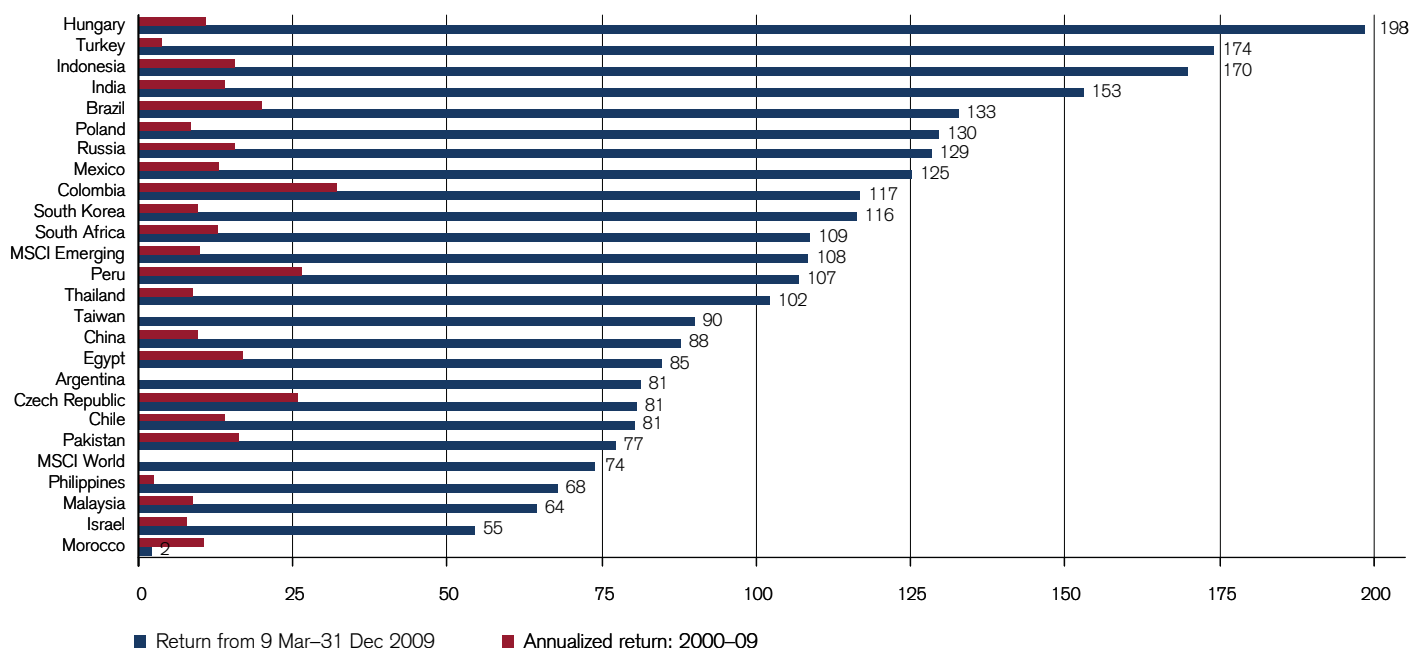


Figure 1 lists the 24 countries currently classified as emerging markets by the major index providers. MSCI views 22 of these as emerging, while the remaining two, Argentina and Pakistan, are classified as emerging by FTSE, with both MSCI and S&P deeming them to be frontier markets. The S&P and FTSE taxonomies are otherwise almost identical to MSCI's, the exceptions being that S&P views Colombia as a frontier market; FTSE upgraded Israel to developed in 2008, with MSCI following in 2010; and FTSE promoted South Korea in 2009, while S&P also categorizes it as developed, but retains it in their Emerging Plus BMI index.

In the 30 or so years since emerging market indices first appeared, there have been few upgrades to developed status. Apart from Israel and Korea, currently in transition, only Portugal and Greece have advanced, and Greece is now on some watch lists for downgrade. Indeed, more emerging markets have been downgraded to frontier than have been upgraded to developed. S&P's downgrades include Argentina, Colombia, Jordan, Nigeria, Pakistan, Sri Lanka, Venezuela and Zimbabwe. Clearly several markets have failed to emerge as rapidly as once hoped.

Despite multiple factors used by index compilers to determine the boundary between emerging and developed status, a single variable does an excellent job of discrimination: GDP per capita. Using the most recent IMF projections for end-2009, we ranked over 100 countries with active stock markets by their GDP per capita. A cut-off point of USD 25,000 effectively marked the boundary between emerging and developed markets. The only emerging market listed in Figure 1 with GDP per capita higher than this was Israel (USD 29,700), which is already in transition to developed status. The only developed markets with lower GDP per capita are Portugal (USD 20,600) and Korea (USD 16,500) which are a 2001 promotion and a transitional case, respectively.

Although the term "emerging markets" dates back only to the early 1980s, emerging markets are not new. Indeed, during much of the nineteenth century, the United States would have been regarded as a classic emerging market. The notion that emerging status can largely be captured by a ranking of GDP per capita allows us to revisit countries back in 1900 at the start of the *Yearbook* coverage to see which stock markets existing then might have been deemed emerging at that time.

To do this, we rank all countries by their estimated GDP per capita in 1900 using Maddison's historical database. We assess the cutoff by taking the same percentile (30%) of the distribution that corresponds to the USD 25,000 cutoff in 2010. Using this criterion, only seven of the 38 countries with equity markets in 1900 changed status over the following 110 years. Five markets moved from emerging to developed: Finland, Japan and Hong Kong plus, more recently, Portugal and Greece. Two moved from developed to emerging: Argentina and Chile. Of the remaining 31 countries, 17 would have been deemed developed in 1900 and remain developed today, while 14 were emerging and are still in that category 110 years later.

Singapore, whose stock market opened in 1911, has also moved from emerging to developed status. This gives a total of six promotions over 110 years, plus Israel and Korea, currently in transition. Thus, although most countries have grown considerably in terms of GDP per capita, their relative rankings on this metric have changed far more slowly.

There are numerous historical reasons why many emerging markets have emerged slowly, and why others have suffered setbacks. These include dictatorship, corruption, civil strife, wars, disastrous economic policies and hyperinflation, and communism. A combination of several of these factors helps to explain why Argentina, which in 1900 had a GDP per capita similar to that of France, and higher than Sweden and Norway,

is now categorized by MSCI as just a frontier market. Many other markets that were on the brink of becoming developed in the early twentieth century, such as Hungary, Czechoslovakia, Poland and Russia, suffered the double blow of wartime destruction and the post-WWII communist yoke. Since the fall of the Berlin Wall twenty years ago, these, and many other countries, including China, have joined the ranks of the rapidly re-emerging markets.

How important are emerging markets?

Emerging and frontier markets are far too big to ignore. They account for more than 70% of the world's population (over five times that of developed markets), 46% of its land mass (twice that of developed markets), and 31% of its GDP (almost half that of developed markets). And, taken as a group, their real GDP growth has been much faster than in developed markets.

In the following article, we cite a set of projections for future GDP growth provided to us by PricewaterhouseCoopers as an update to their recent report on economic growth (see page 14). These projections show the by now familiar consensus view that key emerging markets, especially the BRICs, will continue to grow rapidly, with China expected to displace the USA as the world's largest economy by around 2020, and with India overtaking the USA by 2050.

These are, of course, just projections. While they broadly reflect the consensus view, emerging markets have been accident prone in the past, and could suffer setbacks in future. Nor should we write off the prospects for the developing world and its stock markets. Nevertheless, it is clear that the world order is changing fundamentally and quite rapidly.

Market weightings

In Forbes' 2009 ranking of the top global companies, three of the five constituents with the largest market capitalizations are from emerging markets. No fewer than 11 of the top 100, ranked by total market capitalization, are from China – more than from any other country in the world apart from the USA.

Perhaps surprisingly, therefore, the weighting of emerging markets in the all-world indices published by MSCI and FTSE is only some 12%. This is because these indices reflect the free-float investable universe from the perspective of a global investor. In many markets, there are still restrictions on which stocks foreigners can hold, with, for example, Chinese 'A' shares still being inaccessible to most investors. Similarly, many large emerging market stocks have only a small proportion of their shares in public hands. Petrochina, which is currently China's largest company and the second largest oil company in the world after ExxonMobil, has a free float weighting of just 2.5%.

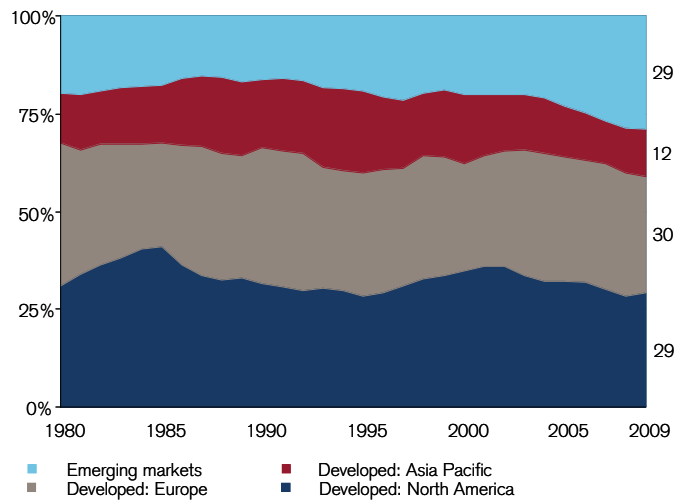
Over an interval of three decades, Figure 2 compares the weighting of emerging equity markets to that of developed markets on two criteria: in the upper panel market size is measured by GDP, and in the lower panel by market capitalization. The upper panel shows how the emerging markets' share of global GDP has grown discernibly to the point where a worldwide GDP-weighted portfolio would now hold almost 30% of assets in emerging markets. The lower panel confirms the dramatic increase in the market capitalization of emerging markets from some 2% in 1980 to 12% by end-2009.

Figure 2

Alternative emerging market weights, 1980–2010

Source: Adapted from Jacobs et al, "How Should Private Investors Diversify?", Mannheim University 2009; GDP information is from Mitchell, Maddison and IMF; market capitalization data is from S&P, MSCI and FTSE; frontier markets are excluded

(a) GDP weights



(b) Market capitalization weights

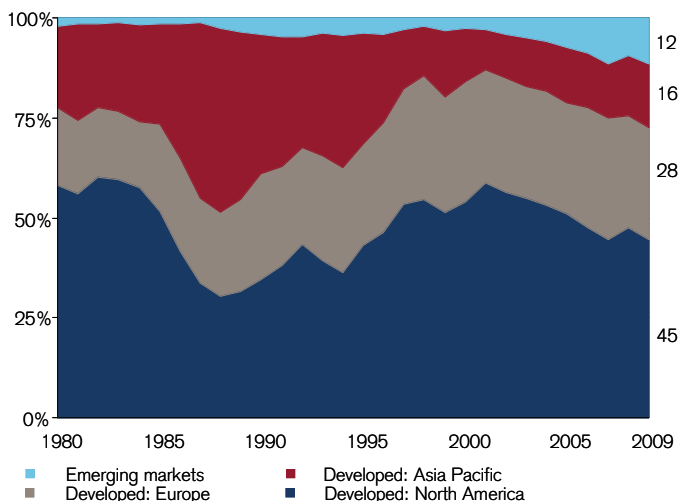
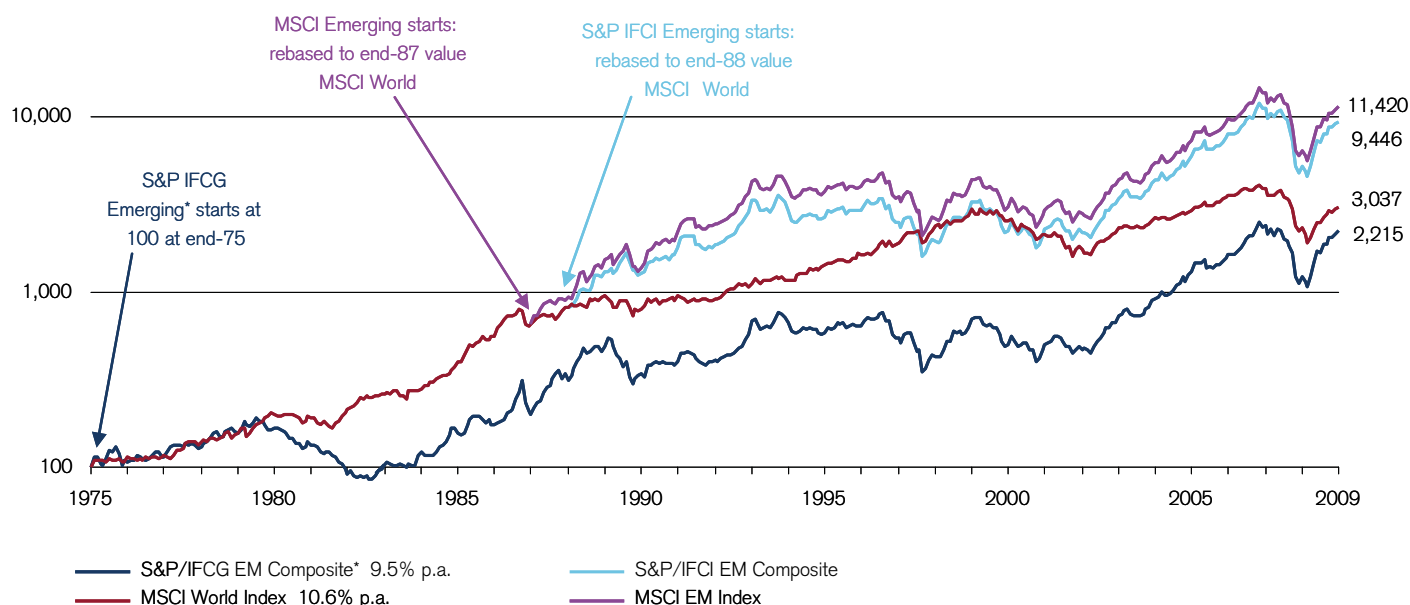


Figure 3
Emerging markets performance, 1975–2009

Source: Standard & Poor's; MSCI Barra; Authors' analysis.

*From 31 December 1975 until 31 December 1984, the S&P/IFCG EM Composite index has been constructed from the S&P/IFCG country back histories and weights; from 31 December 1984 until 31 October 2008, it is the S&P/IFCG Emerging Markets Composite index; from 31 October 2008 onwards, it is the S&P Emerging Plus BMI Index



If the PwC projections are realized, today's emerging and frontier markets will become major constituents of the all-world portfolio of 2050. Even if emerging market capitalization grew only in line with GDP, it would account for around 30% of the world total by 2050. However, the ratio of country capitalization to GDP tends to rise as markets develop due to increased equity issuance and IPOs. Markets tend to become more open to foreign investment and free-float rises as firms become less closely held. Given these factors, today's emerging markets could easily account for 40%–50% of total world capitalization by 2050.

Looking ahead, one might decide to invest in national markets in proportion to each country's GDP. However, this strategy is impossible for global investors in total, who by definition must hold each market in proportion to its free-float capitalization.

Long-term performance and emerging market indices

Emerging markets are often sold on the basis of superior returns compared to developed markets, but does the long-term record match up to these performance claims? The IFC pioneered the first emerging market indices in 1981. Its IFCG (Global) indices, later renamed S&P/IFCG, aimed to cover 70%–80% of each country's capitalization. The S&P/IFCG Composite starts at end-1984 with 17 constituent countries. We extended it back to end-1975 using IFC country back-histories, and continue after its demise in 2008 by linking it to its successor, the S&P Emerging Plus BMI Index. The resulting 34-year record of emerging market returns, while brief by Yearbook 110-year standards, is lengthy by emerging market norms.

The dark blue line in Figure 3 shows that USD 100 invested at end-1975 in emerging markets became USD 2,215 by end-2009, an annualized return of 9.5%. The red line shows that an equivalent investment in developed markets proxied by the MSCI World index gave a terminal value of USD 3,037 and

an annualized return of 10.6%. Thus, over the entire 34-year period, emerging markets slightly underperformed.

However, this is not the full picture. In the late 1980s, the S&P/IFCI (Investable) indices were launched, comprising S&P/IFCG constituents that were legally and practically open to foreign investors. MSCI and FTSE also introduced similar series. The purple line in Figure 3 shows the MSCI Emerging Markets index and the light blue line shows the S&P/IFCI Composite, both with index values rebased to the level of the MSCI World on the respective index start-dates. From launch through 1991, the investable emerging market indices greatly outperformed the S&P/IFCG and MSCI World, largely because they categorized Korea and Taiwan as non-investable. From 1992 onward, there have been no appreciable deviations between the performances of the broader S&P/IFCG and the two investable indices.

Overall, emerging markets underperformed over the period 1976–87, but outperformed on a cumulative basis since. However, the outperformance was smaller than some might imagine, and has varied depending on the chosen end-date. For example, by end-1998, emerging markets were behind their developed counterparts. Then, until end-2002, they were mostly ahead, but the gap was narrow. This was followed by five years of strong performance, but by mid-2008 the gap was again small. In the 2009 recovery, emerging markets pulled ahead. It is possible that long-term performance is flattered by the attention awarded to emerging markets in the light of their recent high returns.

One can also ask who has earned this higher return from emerging markets. Many investors chase past performance, and buy more of an asset after its valuation has risen. Consequently, money-weighted performance is inferior to index returns. In addition, while trading costs shrink when emerging markets are hot, liquidity dries up and costs expand after a decline. This is a further drag on achievable emerging market returns.

Growth and stock returns

The recent excellent performance from emerging market equities, coupled with their robust GDP growth, has led to a resurgence of the “future growth means higher returns” story.

The first caveat is that, while emerging markets as a whole have enjoyed higher economic growth, individual markets can be exceptions. By 1980, IFC was compiling indices for 11 emerging markets. Of these, three grew more slowly than developed markets over the next 30 years, while Argentina and Zimbabwe suffered a real decline in GDP. The group as a whole enjoyed faster growth, but outpaced developed markets by only 0.7% per year. By end-1994, emerging market indices were being calculated for a much wider set of 29 markets, which now included China and Russia. Over the 15 years since, the GDP of these 29 markets has grown 4% per year faster than for developed markets. Despite this truly impressive overall growth, four emerging markets fell behind their developed counterparts.

The second, and fundamental caveat is that, perhaps surprisingly, the fact that emerging markets are projected to grow does not indicate that they will provide superior investment returns. First, we are referring to growth in each country’s real economy, which is not the same as growth in stock-market capitalization. Second, even growth in market capitalizations may not provide returns to investors. Third, global investors are often unable to share in emerging market returns. Fourth, the companies that benefit from emerging market growth may be in the developed world. Fifth, if there is a consensus that emerging market growth will be higher, then this ought already to be reflected in stock prices. And last, the link between GDP growth and stock returns is empirically far weaker than many suppose.

Turning to the first of these assertions, GDP reflects the level of real activity in the economy, and could in principle grow in the absence of a stock market. Only two decades ago, Germany and Japan were cited as premier models of how GDP can grow through bank, and not stock-market, financing. Conversely, the Alternative Investment Market in the UK has grown significantly in market capitalization by attracting foreign companies that contribute to the GDP of countries other than Britain.

Second, increases in market capitalization are not the same thing as portfolio appreciation. Market capitalization can grow through privatization, demutualization, deleveraging, acquisition, initial public offerings, equity issuance by listed companies, and – as mentioned above – listings by companies that might otherwise be traded elsewhere. None of these factors is necessarily a source of added value for holders of listed shares.

Third, as discussed earlier, particular emerging market companies may be non-investable or have limited free-float. While government, family, cross-holding or domestic investors may enjoy value increases, global investors are unable to share fully in these companies’ performance.

Fourth, there is no clear correspondence between a company’s nationality and its economic exposure. Emerging market companies that trade internationally may be dependent on growth in the developed world. Similarly, multinationals in leading economies may be relying on growth in emerging countries.

Fifth, the strong past and projected economic growth of emerging markets has been common knowledge for many years.

It seems inconceivable that investors have not yet woken to this story, or that the implications of this are not already fully impounded in emerging market stock prices. Investors can be expected to trade until there are about as many who think an asset is overpriced as underpriced. For example, investors who favor China can be expected to bid stocks up to a level that impounds expected growth. If investors wait until there is a consensus that growth will be high, they will have to pay more, and that will impair portfolio returns.

Sixth, as we show in our companion article, the supposed link between economic growth and stock-market performance is statistically weak and often perverse. Unless an investor is blessed with clairvoyance, there is no evidence that GDP growth is useful as a predictor of superior stock-market returns.

Risk and return

Traditionally, emerging markets have been viewed as riskier than developed markets. The credit crash, with its epicenter in developed markets, has shifted perceptions, and the risk gap is now seen as smaller. Some have even claimed that developed markets are now riskier. To investigate this, we look at the data.

Figure 4 shows the historical return and risk from emerging and developed markets. The gray bars show the emerging markets index, namely, the S&P/IFCG Composite from 1976–86 and the MSCI Emerging thereafter, while the dark blue bars show the MSCI World index of developed markets. The left hand side of Figure 4 shows the returns by decade. In the late 1970s, emerging markets gave similar returns to those of developed markets, but they underperformed in the 1980s and 1990s. In the 2000s, however, they beat developed markets by 10% per year.

The equivalent bars on the right hand side of Figure 4 show that the emerging markets index has been consistently more volatile than the MSCI World. Although the gap has narrowed somewhat, even over the most recent decade, emerging market returns had an annualized standard deviation of 25%, compared with 17% for the MSCI World. Holding a diversified portfolio of emerging markets is still appreciably riskier than a diversified portfolio of developed countries.

Individual emerging markets (light blue bars) are on average much riskier than individual developed markets (red bars), although their risk has fallen steadily from the 1980s through to the current decade. Despite this decline, over the most recent decade, the average emerging market had a volatility of 32.5% versus 23.5% for the average developed market. Indeed, it is this volatility that explains why the equally weighted average emerging market return can diverge so much from the weighted index return (compare the light blue bars with the gray bars on the left hand side of the figure). This is due to the outlying returns from a few, smaller emerging markets.

For global investors, the high volatility of individual markets does not matter, as long as they hold a diversified portfolio of emerging markets. Indeed, even the higher volatility of the emerging markets index need not in itself concern them. What matters is how much an incremental holding in emerging markets contributes to the risk of their overall portfolio. This is measured by the beta or sensitivity of the emerging markets index to global markets.

Figure 4
Emerging market risk and return, 1976–2009

Source: MSCI Barra; S&P; Authors' analysis

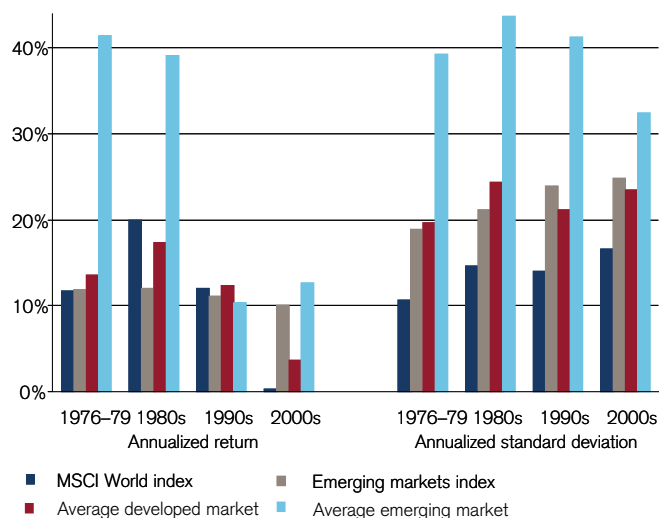
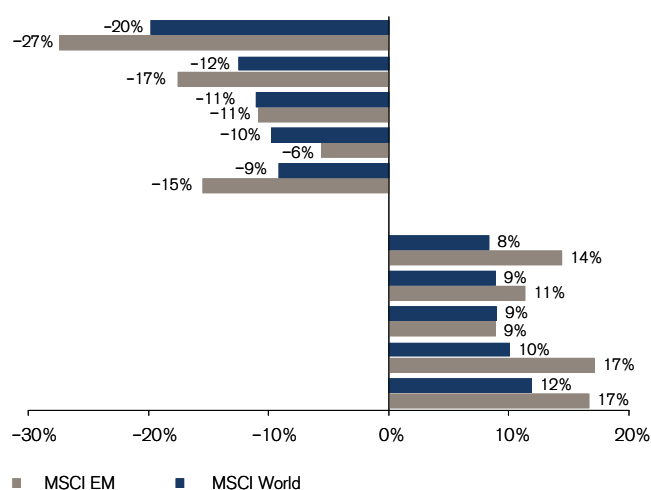


Figure 5
Returns in extreme months, 2000–2009

Source: Index returns in the most extreme months for the World index using data from MSCI



While emerging markets sometimes decouple from developed economies, they remain sensitive to global markets. Figure 5 examines months during 2000–09 in which the MSCI World boomed or collapsed. The upper panel shows the five worst months, and the lower panel, the five best. In bullish months, emerging markets tend to outperform, and in bearish months to underperform: their beta over the decade was 1.30. This above-average beta is consistent with emerging markets' poor relative performance during the tech-crash and credit crunch, and superior recoveries after the lows of March 2003 and March 2009.

A higher beta implies a higher expected return. In the related [Sourcebook](#), we argue that investors can expect an annualized long-run risk premium relative to cash of 3%–3½% from global equities. A beta of 1.3 would imply a higher premium of approximately an extra 1½% per annum. As a long-run estimate, this represents the top end of our expectations, as emerging markets are likely to mature and become more like developed markets, and for the technical reason that future betas tend to be closer to 1.0 than historical estimates.

We should therefore expect a modestly higher return from emerging markets. This higher return arises not from the spurious growth argument, but from a financial argument as old as time, namely that investors require higher returns for higher risk.

Diversification benefits

Diversification benefits provide a strong motive for investing across both developed and emerging markets. The benefits are greatest when correlations between markets are low. Figure 6 shows how rolling five-year correlations have changed over time. The light blue line shows that the average correlation between pairs of emerging markets has risen sharply from close to zero to 0.55 today. But despite this rise, 0.55 remains a low correlation, showing there are still huge benefits to holding diversified portfolios of emerging markets, rather than selecting just one or two.

The other lines in Figure 6 reveal a similar pattern. The dark blue line shows the average correlation between pairs of developed markets, while the gray line shows the average across all pairs of emerging and developed markets. However, for a global investor, the key metric is the red line showing the correlation between the emerging markets index and the MSCI World.

Figure 6 shows that all correlations have risen sharply, with a step jump upward over the most recent five-year period. Two factors are at work. First, there has been a secular increase in globalization and growing interconnectedness between markets. Second, it is well known that correlations increase greatly during turbulence or following big downside moves. This explains the recent upward jump, since during the credit crash, all risk assets fell together, causing investors to complain that diversification had let them down just when they needed it most.

For investors who were forced sellers at the market lows of autumn 2008 or March 2009, this was a major issue. However, knowledge of long-term capital market history should have warned them that precipitous declines are to be expected from time to time, and that when they occur, most risk assets fall together. For longer term holders, however, while the expectation of such episodes does lower the overall benefits of diversification, the loss is quite small.

This analysis therefore suggests that the most recent correlation estimates shown in Figure 6 almost certainly overstate prospective correlations over the next five years – unless markets encounter a further shock of the same magnitude as the credit crash. But even taken at face value, the correlation of 0.91 between developed and emerging market indices still indicates scope for meaningful risk reduction from diversification between emerging and developed markets.

The attractions of investing in emerging markets depend on an investor's starting point. Consider an equity investor whose holdings are entirely in developed markets. A small position in emerging markets will disproportionately reduce portfolio volatility. For example, a 1% reallocation to emerging equities will reduce portfolio volatility by more than 1%. Even if emerging equities offer the same expected return as developed equities, it is worth reallocating some of a portfolio to emerging markets.

The position of an investor located in an emerging market, whose holdings are entirely in that country's market, is different. For this individual, there is a potentially large benefit from reallocating assets to other worldwide markets. The reduced volatility of a global strategy is so appealing that it will be worth pursuing even if the expected return from foreign markets is lower.

Understanding the emerging world

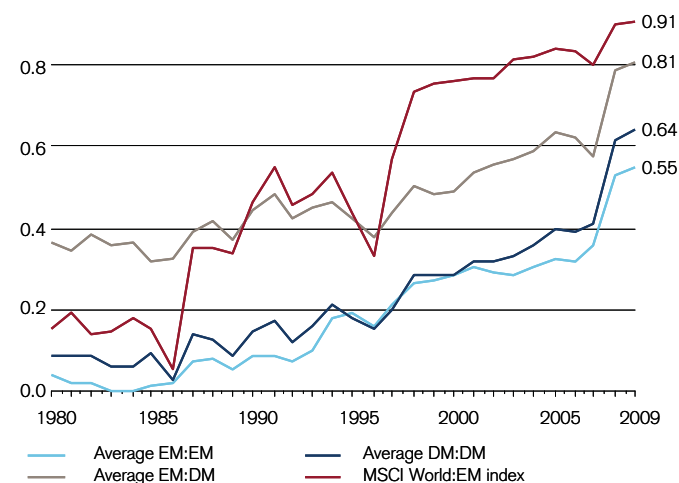
Emerging markets are now mainstream investments with a key role and essential position in global portfolios. Furthermore, the importance of today's emerging markets will continue to rise, as will their weightings in world indices. Emerging markets, both individually and as an asset class remain riskier than developed markets, but the gap has narrowed. Meanwhile, they offer diversification benefits through exposure to different economies and sectors at different stages of growth. This can help to reduce overall portfolio risk when emerging markets are blended with a portfolio of developed market securities.

At the same time, the case for emerging markets is often oversold. Almost certainly, the implications of their faster growth are already impounded in market valuations. Their longer term returns have been less stellar than many imagine. And while they have outperformed developed markets by 10% per annum over the last decade, it would be unwise to expect this to persist. On the assumption that emerging markets have not currently overreached themselves, we estimate that, over the long run, their expected outperformance will be closer to 1½% per annum – and this reflects compensation for their higher risk.

Nor would it be sensible to write off the prospects for developed markets, despite the gloom surrounding their current state. They should remain the main focus of analytical effort, as global investment will remain weighted towards today's developed markets for at least the next two decades. However, it is clearly no longer possible to assess developed market prospects without a deep understanding of the emerging world.

Figure 6
Correlations between markets, 1976–2009

Source: The rolling 5-year correlations were computed by the authors using data from S&P and MSCI Barra





Economic growth

In 2009, stock markets rallied. Should investors now focus on countries that still hope for recovery, or on those that are experiencing high economic growth? This is the old value-versus-growth dilemma, but on a global scale. Looking at 83 countries over 110 years, we find no evidence that investing in growth economies produced superior returns. However, we do find that stock markets incorporate predictions of future economic growth. When markets recover, economies tend to follow.

Elroy Dimson, Paul Marsh and Mike Staunton, London Business School

The past year saw a remarkable recovery in global equities with the MSCI world index rising 74% from its March low. This was partly fueled by relief that financial Armageddon had been averted and partly by anticipation of a rapid return to growth. However, these market movements must have seemed deeply puzzling to the average citizen of the developed world, where economies remained weakened and fragile.

Last year also saw a two-speed world. Emerging market equities greatly outpaced their developed counterparts, while parts of the emerging world, especially China, enjoyed robust growth, while other economies still languished (see Table 1).

These observations raise two key questions. First, is economic growth a reliable predictor of future equity returns? Second, are equity markets a reliable predictor of future growth?

To many investors the answer to the first question is self-evident. They have decided to “follow the growth” because “higher growth means higher returns”. However, this strategy is now more expensive to implement. Switching from the higher growth markets in the top part of Table 1 to the more distressed economies shown in the lower part would today buy less than three-quarters of the holdings in “growth” markets that could have been purchased in March 2009. Switching in the other direction would today buy a 35% larger holding in the distressed

economies than could have been bought in March 2009. As so often happens, just when growth looks more assured, stock prices have risen. The growth markets offer participation in expanding economies, but at a higher price. If prices go too high, then the slow-growing markets will offer better value.

Looking back, many high-growth economies have enjoyed high equity returns, and vice versa. If we were clairvoyant, we would favor equities in countries that are destined to prosper.

Table 1
Real GDP growth and annualized equity returns

Source: IMF, DMS, S&P. All data is local currency, real terms, annualized.

(* In the final column, Indonesia is from 1990, and China and Sri Lanka are from 1993)

Country	Jan–Dec 2009		2000–2009		1985–2009*	
	GDP %	Return %	GDP %	Return %	GDP %	Return %
China	8.7	68	9.9	7.7	9.9	2.6
India	5.6	72	7.0	9.5	6.2	11.2
Indonesia	4.0	96	5.1	6.8	4.7	0.4
Sri Lanka	3.0	111	4.9	9.4	4.7	2.2
Brazil	–0.4	67	3.2	13.9	2.9	11.1
France	–2.3	28	1.5	–1.8	1.9	8.7
USA	–2.5	25	1.9	–2.7	2.8	7.3
UK	–4.8	28	1.8	–1.0	2.4	6.7
Germany	–4.8	24	0.8	–2.5	1.8	6.1
Japan	–5.3	9	0.7	–4.8	1.9	0.2

Economic growth and stock-market performance

The conventional view is that, over the long run, corporate earnings will constitute a roughly constant share of national income, and so dividends ought to grow at a similar rate to the overall economy. This suggests that fast-growing economies will experience higher growth in real dividends, and hence higher stock returns. Consistent with this, the 19 *Yearbook* countries had a positive correlation (0.41) between their 110-year real growth rate for overall GDP and their annualized real equity returns.

However, growth in GDP has two components: growth in per capita GDP and population increases. While many European countries, such as the UK, France, Belgium, and Ireland, experienced modest (50%–60%) population growth between 1900 and 2009, the New World grew much faster. The US population expanded by 308%, and the increase was even larger in Australia (479%), New Zealand (423%), Canada (524%), and South Africa (953%). In common with other researchers, when making long run economic growth comparisons, we therefore focus on changes in GDP per capita. This controls for population growth thus providing a more direct measure of growth in prosperity.

Figure 2 ranks the real equity return of the 19 *Yearbook* countries over the period 1900–2009, from lowest to highest. It shows that there is a high correlation (0.87) between real equity returns and real dividend growth across the 19 countries. However, the claim that real dividends grow at the same rate as real GDP is clearly incorrect. Real dividend growth has lagged behind real GDP per capita growth in all but one country, averaging just –0.1%, and the correlation between the two is –0.30. Even more importantly, Figure 2 shows that the supposed association between long-run real growth in GDP per capita and real equity returns is simply not there (the correlation is –0.23).

There are many possible explanations for these findings. For example, Rob Arnott and William Bernstein have pointed out that the growth of listed companies contributes only a part of a nation's increase in GDP. In entrepreneurial countries, new private enterprises contribute to GDP growth but not to the dividends of public companies. There is thus a gap between long-term economic growth and dividend and earnings growth. It also helps explain why the relationship between GDP growth and stock returns is so noisy. The relationship may be further complicated by the fact that successful countries attract immigrants, which impacts on their GDP per capita.

Similarly, Jeremy Siegel has pointed out that the largest firms quoted on most national markets are multinationals whose profits depend on worldwide, rather than domestic, economic growth. He has also argued that markets anticipate economic growth, but that in some cases (e.g. Japan) investors' expectations subsequently proved overly optimistic.

Whatever the explanation, the absence of a clear-cut relationship between economic growth and stock returns should give investors pause for thought. But at the same time, this finding should emphatically not be interpreted as evidence that economic growth is irrelevant. The prosperity of companies, and the investors who own them, will clearly, at any point in time, depend on the state of both national economies and the global economy. To verify this, we look next at the relationship over time between stock returns and GDP growth focusing on the US market.

Figure 2

Returns, dividends, and GDP growth, 1900–2009

Source: Dimson, Marsh, Staunton, *Triumph of the Optimists*; authors' updates

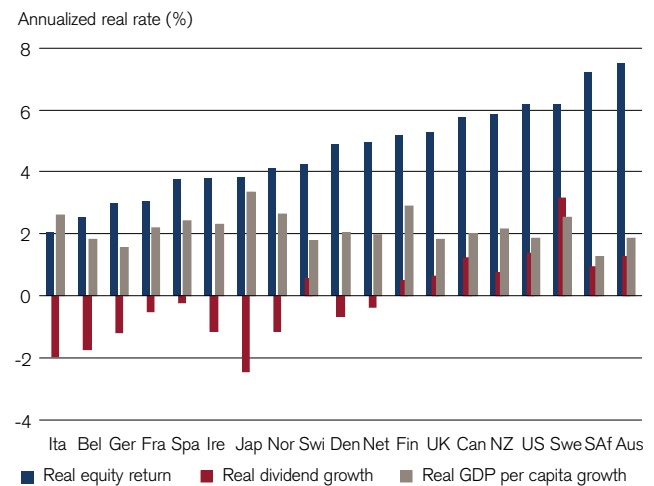


Figure 3
US equity returns vs. GDP growth, 1947–2009

Source: Quarterly data from US Bureau of Economic Analysis; Dimson, Marsh, Staunton

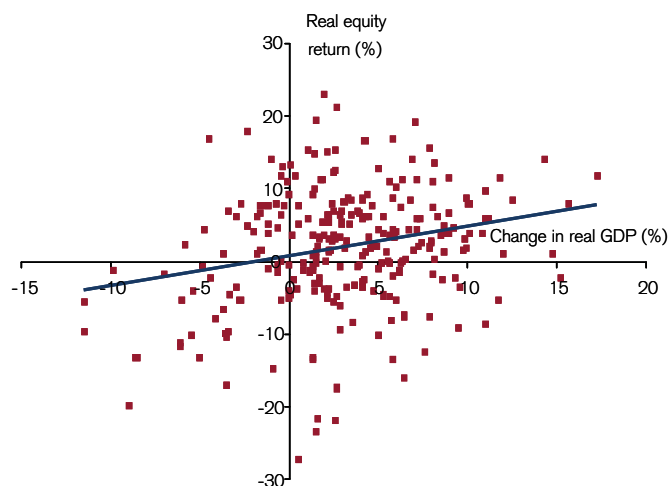


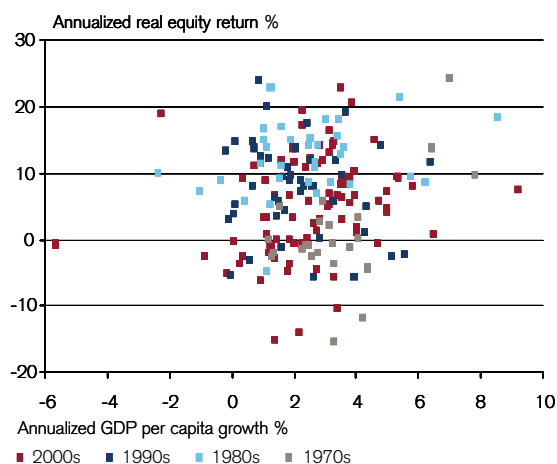
Table 2
Regression of US returns on quarterly GDP growth

Source: US Bureau of Economic analysis; Dimson, Marsh, Staunton

Return during the quarter	GDP growth in same quarter	GDP growth in prior quarter	GDP growth 2 quarters before
Slope coefficient	0.41	0.29	−0.00
(t-statistic)	(3.91)	(2.72)	(−0.04)
No. of quarters	250	249	248
Adjusted R-squared (%)	5.4	2.5	−0.0

Figure 4
Global equity returns vs. GDP growth, 1970–2009

Source: S&P; MSCI Barra; Morningstar; Global Financial Data; Mitchell; Maddison; DMS



Stock returns and GDP growth over time

Figure 3 shows the contemporaneous impact of quarterly GDP changes on the level of the US stock market. The line of best fit (in blue) has a slope coefficient of 0.41, indicating that a 2.5% increase in the GDP growth rate is associated with an equity return that is higher by one percentage point ($0.41 \times 2.5\% = 1.0\%$). The regression relationship is statistically significant (the t-statistic is 3.90) and the adjusted R-squared is 5%.

In practice, this contemporaneous relationship cannot be used to predict investment returns. This is because GDPs are not published until after the quarter, and are then extensively revised, with revisions that are often of the same magnitude as the announced growth figure. The final figures plotted in Figure 3 would not have been known until several quarters later.

A more formal analysis is presented in Table 2. GDP data for the same quarter explains a useful proportion of this quarter's equity return (i.e., it has an R-squared of 5.4%). GDP data for the prior quarter explains something (2.5%), too. But when regressing returns on the GDP change from two quarters earlier, the model's explanatory power drops to zero (see the last column). In summary, accurate predictions of GDP growth could be informative about stock market movements, but realized GDP growth rates are no use for predicting quarterly market returns.

Figure 4 extends our analysis to longer investment intervals and multiple markets. We compile data on 83 national markets: the 19 Yearbook countries plus an additional 64 stock markets for which total returns (including dividends) are available. For 20 different countries, there is well over half a century of data; for 40 there is at least a quarter century of data; for 78 there is more than a decade of data; and for five the dataset spans just ten years. Our world equity index has a 110-year history

Figure 4 plots per capita real GDP growth against real equity returns over 183 investment periods, each lasting a decade. Over the 1970s (in gray), there was a correlation across 23 countries of 0.61. During the 1980s (in light blue) there was a correlation across 33 countries of 0.33. In the 1990s (in dark blue), the correlation across 44 countries was −0.14. Finally, over the 2000s (in red) the correlation across 83 countries was 0.22. Pooling all observations in Figure 4, the low correlation (0.12) between growth in per capita real GDP and real equity returns is statistically insignificant. The R-squared of one percent (0.12^2) reveals that 99% of the variability of equity returns is associated with factors other than changes in GDP. Even over an interval of a decade, the association between economic growth and stock-market performance is tenuous.

To sum up, we find no evidence of economic growth being a predictor of stock market performance. Our second question is whether stock markets are informative about future growth.

Does the market predict economic growth?

To address our second question, we blend our single country perspective (Figure 3) with our longer-term international analysis (Figure 4). We run regressions to predict annual GDP growth from equity returns for all 83 individual markets and for the world index – for brevity, we report only the latter – and for a pooled sample of all markets (measured here in common currency, USD terms) commencing in both 1900 and 1950.

We have already noted that countries do not issue GDP statistics at the year-end, and instead publish delayed estimates that are subject to revision. We find that there is no relationship between annual GDP growth rates and contemporaneous stock market returns. Regressions of individual countries' annual GDP growth on local-currency real returns, have an adjusted R-squared that is on average zero and in most cases negative.

To infer GDP expectations from equity returns in prior years, we therefore estimate regressions that employ prior-year market returns to predict GDP growth. For nearly all of the 83 countries, the equity return over the prior year is positively related to subsequent GDP growth. The t-statistic is on average 1.84, which is high considering how short many time series are.

Table 3 reports regression coefficients for the world index and for a pooled dataset of all individual markets. The world index reveals a relationship between GDP growth and equity return in the preceding year, with a highly significant t-statistic (2.8). The market's performance in the year before that is not significant. For individual markets, the pooled regression shows that, as for the world, there is a highly significant relationship between GDP growth and the equity return in the previous year. The coefficient on the return two years previously is closer to zero and, for the full 110-year period, non-significant. Local currency regressions for the 83 individual countries (not reported here) have an adjusted R-squared that averages 13%.

In Table 4, we analyze portfolio performance based on historical GDP growth measured over a prior interval. For each year, we assemble quintiles ranging from the lowest to the highest growth economies. We use these GDP quintiles to make portfolio decisions based solely on knowledge of past GDPs. There is no evidence of outperformance by high-growth economies. Historically, the total return from buying stocks in the low-growth countries has equaled or exceeded the return from buying stocks in the high-growth economies.

There has been greater variability from investing in economies with particularly high or low growth than from mid-ranked economies. Consequently, over the entire 110 years, the Sharpe Ratio (the ratio of excess return on the portfolio to its annual standard deviation) is relatively similar across strategies, as can be seen in Table 5. Only in the post-1972 subsample (the rightmost column), when stocks in low-growth economies subsequently performed well, is there a record of superior risk-adjusted outperformance. Much of this outperformance may be attributed to the emerging markets.

The patterns of equity returns reported in these tables are similar whether economic growth is measured over an interval of one, two, three, four, or five years. The results are robust to the length of holding period and to whether performance is measured in common currency (e.g. USD) or in real local currency.

Profits from prescience

Buying growth markets fails to outperform because markets anticipate economic growth. But if that is the case, a perfect forecast of next year's economic growth could be very valuable. In Table 6, we calculate the US dollar return that would have been achieved by an equity investor who presciently buys each portfolio with foresight about next year's GDP. This hypothetical strategy did, indeed, offer outstanding performance.

Table 3

Regression of annual GDP growth on equity returns

Source: Dimson, Marsh and Staunton analysis using data from S&P; MSCI Barra; Morningstar; Global Financial Data; Mitchell; Maddison; DMS. All data in USD.

(* Regressions using country/year dummies. † 99.9% significance level. ‡ not significant at 95%)

Independent variable measured in real USD	World index 1900–2009	All markets 1900–2009*	All markets 1950–2009*
Return 1 year before	0.10 [†]	0.01 [‡]	0.02 [‡]
Return 2 years before	–0.06 [‡]	0.00 [‡]	0.00 [‡]
No. of observations	108	3249	2337
Adjusted R-squared (%)	6	6	30

Table 4

Returns on markets ranked by past GDP growth

Source: Dimson, Marsh and Staunton analysis using data from S&P; MSCI Barra; Morningstar; Global Financial Data; Mitchell; Maddison; DMS. All data in USD.

(* GDP data commencing as close as possible to 1900 or to 1972)

GDP ranked by 5-year past growth	19 countries 1900–2009	83 countries 1900–2009*	83 countries 1972–2009*
Lowest growth	10.9	14.1	25.1
Lower growth	9.3	11.7	18.6
Middling growth	10.1	10.6	16.2
Higher growth	7.8	9.0	11.9
Highest growth	11.1	13.1	18.4

Table 5

Sharpe ratios for markets ranked by past growth

Source: Dimson, Marsh and Staunton analysis using data from S&P; MSCI Barra; Morningstar; Global Financial Data; Mitchell; Maddison; DMS. All data in USD.

(* GDP data commencing as close as possible to 1900 or to 1972)

GDP ranked by 5-year past growth	19 countries 1900–2009	83 countries 1900–2009*	83 countries 1972–2009*
Lowest growth	0.51	0.56	0.85
Lower growth	0.53	0.61	0.84
Middling growth	0.59	0.57	0.73
Higher growth	0.47	0.52	0.57
Highest growth	0.55	0.60	0.69

Table 6

Returns on markets ranked by future GDP growth

Source: Dimson, Marsh and Staunton analysis using data from S&P; MSCI Barra; Morningstar; Global Financial Data; Mitchell; Maddison; DMS. All data in USD.

(* GDP data commencing as close as possible to 1900 or to 1972)

GDP ranked by 1-year future growth	19 countries 1900–2009	83 countries 1900–2009*	83 countries 1972–2009*
Lowest growth	7.5	9.5	12.0
Lower growth	9.1	9.6	11.7
Middling growth	10.1	10.6	15.8
Higher growth	10.7	13.0	20.9
Highest growth	11.7	13.7	27.9



On the left-hand side of Table 6, we display the annualized returns for quintiles 1–5 of the 19 *Yearbook* countries; in the middle the corresponding quintile returns since 1900 for all 83 countries; and on the right-hand side the quintile returns since 1972 for the 83 countries. For the 19 *Yearbook* countries, buying the equities of next year's highest-growth economies would have generated an 11.7% annualized real return, compared to 7.5% for next year's lowest-growth economies. For all 83 countries over the period 1972–2009, buying the equities of next year's highest-growth economies would have generated an annualized real return of 27.9%, compared to 12.0% for the lowest-growth economies.

Accurate predictions of future economic growth would therefore be of great value. In reality, however, investors cannot divine future growth. They do not even know the growth rate for a year that has recently ended because national statistical offices require sometimes lengthy periods to finalize the year's GDP. Investors have no choice but to extrapolate economic growth into the future. This is tricky because markets already anticipate future growth, and it is challenging to beat investors' consensus growth predictions.

Why has low growth beaten high growth?

The recent economic downturn has been the deepest in many countries since the 1930s. Yet from their low in early March 2009, most stock markets have rallied sharply and, for some countries, economic growth has been restored.

Many investors have reverted to the view that investing in fast-growing economies will generate superior equity returns. But historically, that strategy has failed to deliver superior performance. Over the long run, there is not a positive association between a country's real growth in per capita GDP and the real returns from its stock market. In recent decades, investors have historically earned the highest returns – though with greater risk – by adopting a policy of investing in countries that have shown recent economic weakness, rather than investing in those countries that have grown most rapidly.

What explains the disappointing returns from investing in high-growth economies? The simplest explanation is that, in a horse race between low-growth and high-growth economies, there had to be a winner, but the outcome may simply be a matter of luck. For example, low-growth economies may have had resources that – with hindsight – were undervalued by investors; or they may have had a high probability of collapse, whereas the outcome was survival by more of them than investors had anticipated.

A second, behaviorally motivated, explanation is that investors shun the equities of distressed countries, and bid up the prices of assets in growing economies to unrealistic levels. Even if this over-valuation of growth assets is apparent to sophisticated investors, it is hard to take advantage of it. Short-selling the stocks of fast-growing countries may be costly and risky.

A third explanation is that stock prices reflect projected cash flows and their riskiness. When an economy grows, divi-

dends are likely to rise and risk is reduced, and the equity risk premium shrinks. So stocks should appreciate, partly because the forward-looking equity risk premium has become smaller. With a smaller equity risk premium, subsequent equity returns should be expected to be lower. In other words, if the market functions effectively, stock returns should decline after economic growth, and should increase after economic decline. That is what we find.

At the same time, the stock market discounts anticipated economic conditions. In other words, if the market is effective, we should also find that stock prices are a predictor of future economic growth. That, too, is what we find.

Markets are a potentially useful leading indicator of future economic growth, though their predictive power is limited. If future growth were known, then investors should buy the stocks of these growing economies. Past economic growth, however, does not act as a leading indicator of superior stock returns.

Seeking value in international markets

This article has revealed the consistency between strategies that have performed well within markets and those that have performed well across markets. Within markets, value investing has prevailed. Value stocks – which have low growth prospects and a low share price relative to fundamentals – have achieved superior long-run returns. Growth stocks – which have a share price that is high relative to fundamentals – have had inferior long-run returns.

Internationally, investors can choose between low-growth or high-growth countries. The low-growth countries are making poor progress economically or are experiencing setbacks that may be overcome. The high-growth countries are expected to achieve speedy and sustained economic advancement. We find that investing in economies that have achieved high growth rates has failed to deliver better long-run investment returns.

This does not mean that investors should avoid growth investing. Within a single country's stock market, investors gain diversification benefits from holding a broad spread of securities in their portfolios. The same is true internationally. Investors should ensure that their global portfolio is diversified across slow and fast-growing economies.



Value in the USA

As recently as 1890, the US and Chinese economies were about the same size, each accounting for about 13% of world GDP. Today China's share is back to its 1890 level, but rising rapidly, while the US share is about 20%, but falling slowly. Even so, the broad US equity market still accounts for around 40% of world equity market capitalization – three times bigger than all emerging markets plus Hong Kong. Moreover, nearly a quarter of total US profits and about 30% of S&P 500 sales are generated abroad. So the US market is still far and away the biggest equity market in the world and strongly linked to emerging growth. It is unlikely that the emerging world can prosper if the USA fails, and vice versa.

Jonathon Wilmot, Chief Global Strategist, Credit Suisse Investment Banking

Persistence and overshooting are the two most striking features of the long-run US data. Trend GDP growth has gradually declined from 3¾% per annum in the early 19th century to below 3% per annum more recently, as population growth has slowed. But productivity, profits and equity returns exhibit roughly linear growth for at least the last 100 years, (about 2% per annum for the first two, over 6% p.a. for the latter).

Cyclical fluctuations around these long trends can be very large. At the peak of the tech bubble in March 2000, real equity returns were 2.4 standard deviations above trend, or about 13 years of trend performance ahead of themselves, worse than in 1929. At their extreme trough in 1932, real returns were 3.4 standard deviations below trend, some 19 years behind. And particularly extreme falls in corporate earnings were experienced from 1916 to 1921, and in the banking panic of 2008/9.

Despite these huge overshoots, the core trends have survived – among other things – several major banking panics, four major oil shocks, three depressions, two world wars, nuclear competition with the Soviet Union, protectionism, the swinging sixties, race riots, imperial overstretch in Vietnam, big government, small government and countless prophecies of decline.

Talk of American decline is back in fashion and claims that US equities are expensive after their dramatic post-crash rebound are common. At the time of writing, for example, the front

cover of "The Economist" sports the headline "Bubble Warning" and the subtitle "Why assets are overvalued." So here we examine what "persistence" and "overshooting" can tell us about the valuation debate and the case for (global) equities going forward.

A macro slant on valuation

In theory, the correct price of any asset is simply "the present value of all expected future cash flows from that asset." The hard part is to figure out what the expected cash flows are – especially since these cash flows may stretch out 30 years or more – and to apply a suitable discount rate. And this is where human psychology enters in. Given the size of the overshoots of earnings and returns, there is a natural human tendency to be over-pessimistic at market troughs and over-optimistic at market peaks. And the most vocal pundits seldom admit that certainty about future cash flows, and even about the right discount rate to apply, is not a human prerogative.

What we can say in real time is more limited: namely that after certain episodes of rapid earnings growth and prosperity "expected future cash flows" can become dangerously unbounded, to the point of irrationality (for example, projecting corporate earnings or dividend growth to exceed nominal GDP growth more or less indefinitely). Equally, and especially perhaps when nominal or real bond yields are very low, bubble valuations

Figure 1
US real GDP per capita

Source: Credit Suisse

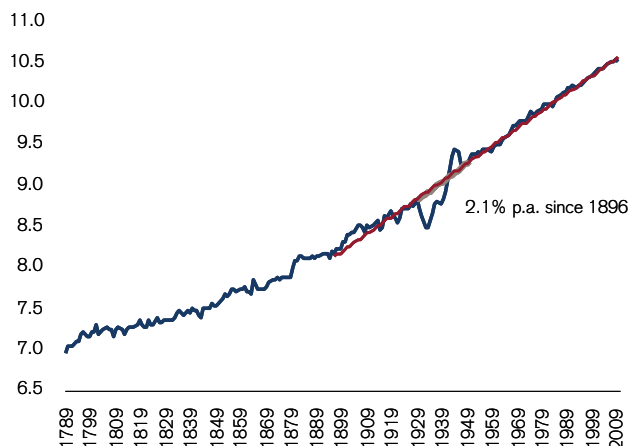
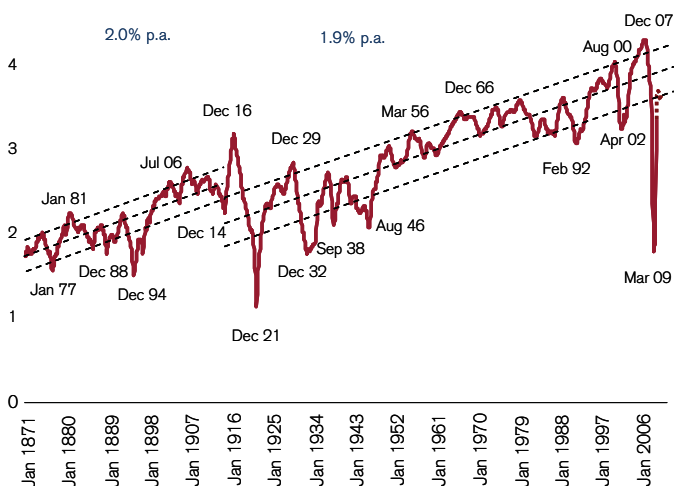


Figure 2
US real earnings per share (log levels)

Source: Credit Suisse



might be the result of applying an implausibly low discount rate to quite sensible expectations of future cash flows. Exactly opposite conclusions apply after major negative shocks or when real bond yields are unusually high. To us, however, the long-term data can be used to help lean against this natural human tendency to feel what the crowd feels and to mistake cyclical overshoots for changes in the secular trend. The first line of defense is to make the simplifying, though simplistic, assumption that the long-run trend in US real equity returns is indeed about 6% per annum, as shown in Figure 3. The extreme overshoots are identified in the charts and tables.

Persistence and overshooting

While this “persistence” is puzzling to many fundamental analysts, we used it in 1999/2000, at the peak of the tech bubble, to suggest that the US market looked even more overvalued than in 1929. This was of course not a popular message at the time. In the event, US real equity returns between March 2000 and March 2009 were lower than in any previous 9-year period, producing negative returns even greater than the period from October 1929 to October 1938 (US equities also managed to clock up a dismal record for the worst decade ever).

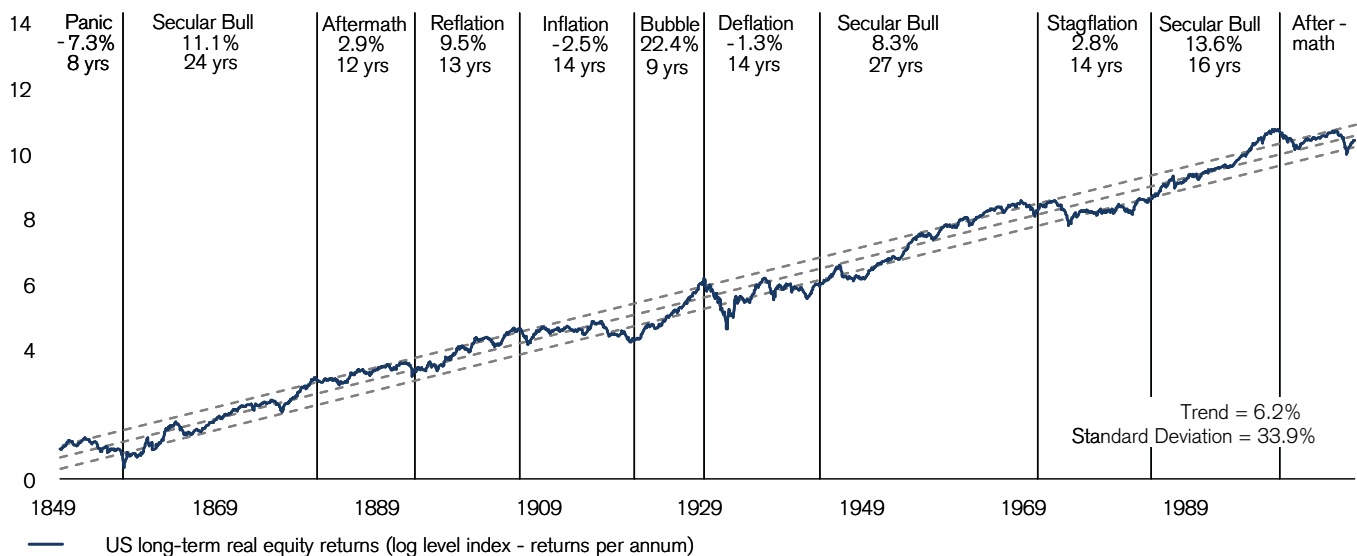
Assuming “persistence,” what can be said now? First, that the market appeared very but not outrageously “cheap” in February/March last year, when the authorities managed to restore funding liquidity to the financial system and prevent a complete breakdown of the global banking and credit system. Second, that even after rebounding some 70%, real returns are still slightly below trend: there is no sign from this metric that equities are in a bubble. And third, that the historical pattern shows quite clearly how little time the market spends in the vicinity of its long-term trend. This is also true for many other more recognized valuation measures, suggesting that it is seldom useful to base one’s investment strategy on valuation arguments, unless and until they are at genuine extremes.

Another possible line of defense for investors is to triangulate across different valuation measures. For example, it is interesting to compare our real returns series with Tobin’s Q. Colloquially, this can be thought of dividing how much it would cost to “buy” the existing private sector capital stock through the equity market by its estimated replacement cost. As with many other valuation measures there are some tricky measurement issues, but Figure 4 compares the most widely cited version of Tobin’s Q for the US market with the log deviation of real equity returns from trend. The two measures move roughly in tandem, but with a tendency for Tobin Q to trend up relative to the deviation of returns measure.

A possible explanation for this is that the common measures of Tobin’s Q will underestimate replacement cost when there is a significant element of “intangible capital” built into the share price. For individual firms, this can mean knowledge, goodwill, unexploited patents or technology, and so on. For the market as a whole, it could be extended to include the possibility of positive network effects or externalities from evolving technologies or innovation. Either way, measured Tobin’s Q is more likely to exceed 1 in a knowledge-based economy in which intangible capital is increasingly important, but hard for accountants to measure accurately. That description seems to fit the evolution of the US economy rather well, and might lead one to expect a (steady)

Figure 3
US real equity returns

Source: Credit Suisse



upward drift in its average value. But even if that were not true, estimated Tobin's Q is currently around 1, and nowhere near the bubble extremes of 1999/2000.

Technology and future earnings growth

Thinking about Tobin's Q highlights the potential role of intangible assets and technological progress in driving future earnings growth. Intuitively, one might expect any persistent trend in real earnings and dividend growth to be linked to trend growth in GDP per capita. At first sight, this does not appear to be true. But, as Figures 1 and 2 show, both earnings growth and productivity seem to have trended up at about 2% p.a. for the past 100 years or more, if one allows for a "one-off" level shift in real earnings after World War I.

Dividends have grown a little more slowly than earnings per share, but that may largely reflect the growing importance of technology companies on the one hand and efforts to return cash to shareholders in a more tax efficient way on the other. But the more fundamental point is that the persistence of productivity and earnings growth over a very long period suggests one should not lightly dismiss the idea that it will continue. Only if it does not can we clearly say that equities are overvalued.

So "rational pessimists" might argue that the equity markets are now overvalued because the ageing population, or global warming, or the inherent instability of the current capitalist system, or the fragility of globalization, or a looming scarcity of essential resources make it almost certain, in their view, that future output and productivity growth will in practice be (much) lower than long-term historical trends would suggest.

Alternatively, one could question the market's implied discount rate. For example, one could worry that the very same factors cited above imply that we need a higher-than-usual risk premium, or that current policies mean that the risk-free rate is unsustainably low. Or even that the "risk-free" rate can no longer be regarded as risk free, because the probability of major sovereign defaults has gone up enormously after this crisis.

Figure 4
USA: Tobin's Q vs. real equity returns deviation from trend

Source: Credit Suisse

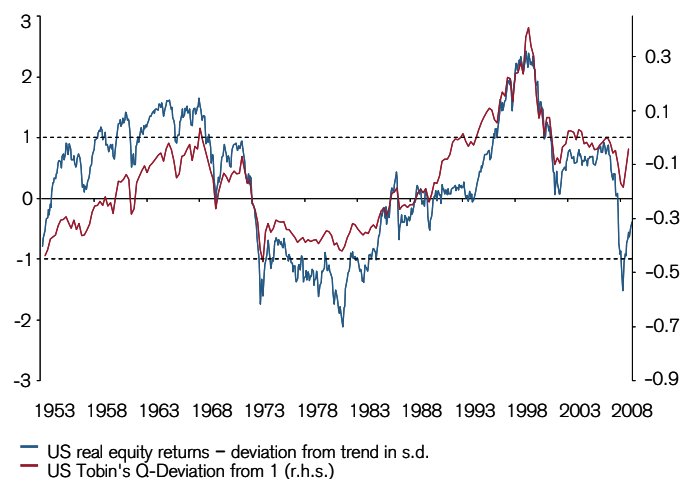


Figure 5
US real equity returns deviations from trend

Source: Credit Suisse

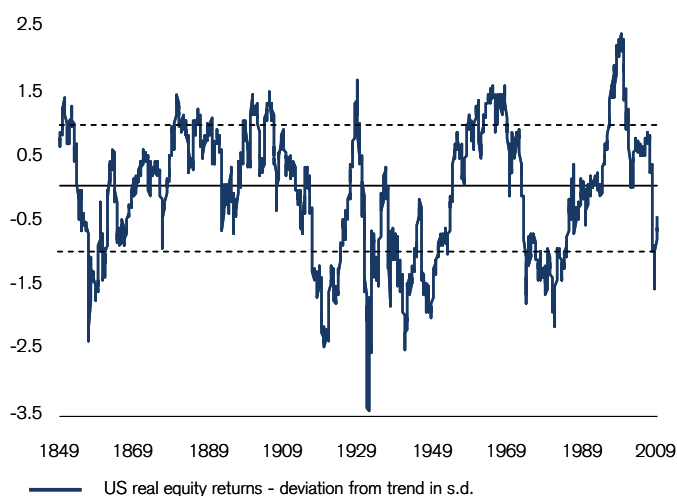


Table 1
Secular undershoots

Source: Credit Suisse

Year	Trough in real equity returns (no. of years behind trend)	Multiple of trend earnings at trough
1857	13.1	—
1932	19.1	5.9
1938	10.1	11.0
1942	13.8	6.8
1974	9.7	10.2
1982	11.9	7.3
2009	8.5	13.1

Table 2
Secular overshoots

Source: Credit Suisse

Year	Trough in real equity returns (no. of years ahead trend)	Multiple of trend earnings at peak
1881	8.5	19.6
1906	8.5	20.4
1929	9.8	30.8
1968	9.2	25.2
1998	10.8	34.3
2000	13.4	39.5
2007	4.8	29.2

Optimism and pessimism

All of these points are arguable – indeed several books could be written on each one of them. But here we confine ourselves to three observations. First, optimism and pessimism are highly social and contagious phenomena: even highly intelligent and experienced investors tend to become excessively optimistic after a good run of growth, wealth creation and prosperity, and excessively pessimistic after a crash. Moreover, as Jeremy Siegel has noted: "A history of the market suggests that there is far more "irrational despondency" at market bottoms than "irrational exuberance" at market peaks."¹

Second, much of the current obsession with bubbles is policy related, and directly relates to the fear that ultra-low interest rates will foster another bubble if left in place too long. But most developed-world yield curves are steep, and longer-dated forward yields (both nominal and real) are both considerably higher than rates are today and in line with longer-term growth rates of the economy (the UK index-linked market is a notable exception here). For the most part, therefore, investors are unlikely to be using an inappropriately low risk-free rate in their present value calculations.

Third, we know from the simpler versions of the dividend discount model that the value of an individual equity or of a stock market goes up exponentially as the discount rate and expected future growth rate of cash flows start to converge. This is much more likely to be true in emerging Asia, where structurally high growth rates are combined with structurally low interest rates. If anything, emerging equities are probably more bubble prone than developed markets right now.

US market trading at a plausible multiple

By contrast, a simple regression relating real government or corporate bond yields to the "trend P/E" ratio shown in our last chart indicates that the US market is trading at a plausible multiple at the moment. Moreover, the current multiple is within the middle range – albeit at the top end – of historical experience.

Once again, historic periods of overvaluation or undervaluation are clearly visible. Periods of extreme cheapness (1932, 1942 and 1982) are defined by trend multiples of six to seven times. Other major troughs (1938, 1974 and 2009?) are defined by multiples in the 10–13 range. Extreme overvaluation is defined by multiples of 30–40 times trend earnings (1929, 2000 and arguably 2007).

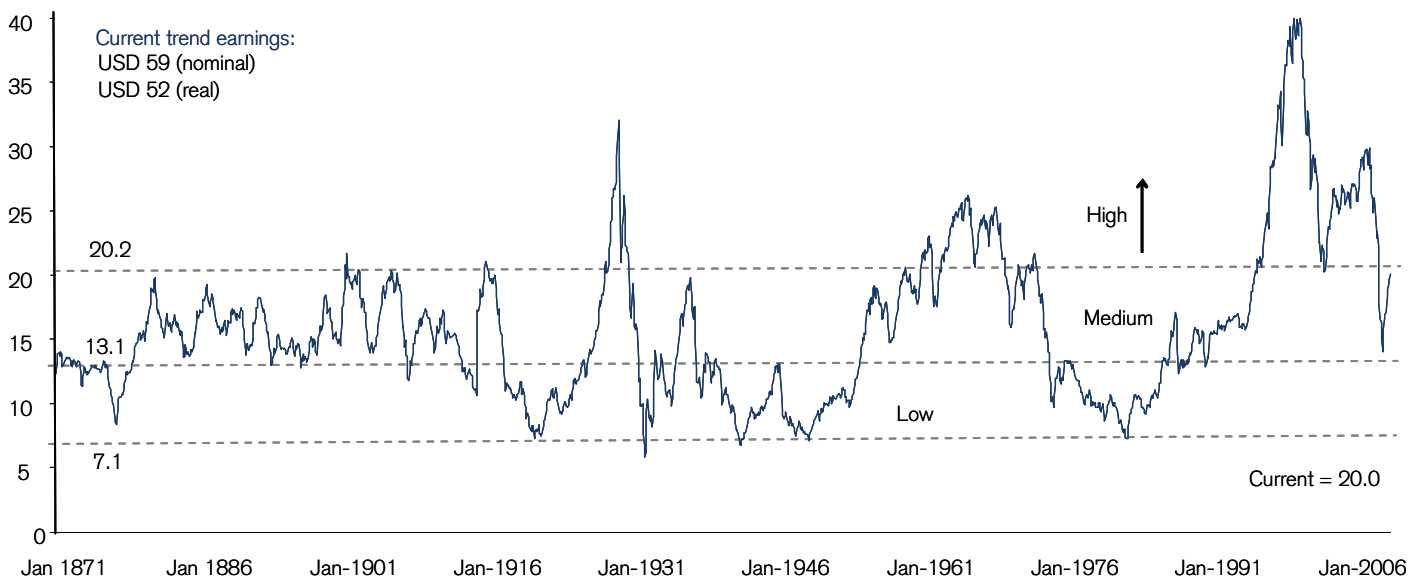
Figure 6 also suggests that there have been "eras" of positive or negative sentiment towards equities: the 1940s and 1950s stand out as an era of low multiples, and so do the 1970s. The 1960s are a period of optimism and, even more obviously, so is the period from the mid-1990s to just before the failure of Lehman Brothers. Perhaps it is no coincidence that 1995 was precisely the moment when the technology sector exploded into life and productivity growth started to re-accelerate.

In summary, we would draw five conclusions from the patterns reviewed here. First, the long-term trend in US real earn-

¹ Jeremy J. Siegel "What is an Asset Price Bubble? An Operational Definition," European Financial Management, 2003

Figure 6
US equity market P/E based on trend earnings

Source: Credit Suisse



ings growth has been remarkably close to the long-term trend in productivity growth, once you allow for a one-off level shift in real earnings just after World War I.

Taxation and a change in industry mix may partly account for the fact the dividend payout ratio has trended down since 1940 or so, but, looking forward, it is more likely that real dividends and earnings will grow in line. Hence, past and expected future productivity growth may indeed help narrow the range of plausible estimates for “trend” earnings and dividend growth – and by extension for cyclically adjusted or “trend” P/E. The real question is whether the current extreme shock to earnings will cause another “permanent” downshift in the level of trend earnings.

Second, if you believe that America will likely renew itself yet again and deliver trend productivity growth of 2% p.a. in the future then US equities are arguably closer to “fair value” than normal, and nowhere near bubble territory. Equally, if you do not believe in “persistence,” they are indeed overvalued, but not quite in the sense that most analysts mean. Fundamentally, this is more of a macro question than a micro one, in our view.

Third, if bad policy or sheer bad luck soon leads to a severe relapse into debt deflation – followed perhaps by protectionism and capital controls – it is quite plausible to believe that the equity risk premium will get stuck in an abnormally high range for many years. Or, to put it differently, trend multiples could get stuck in an abnormally “pessimistic” range of 7–13 times, even if past productivity trends did in fact persist. In round numbers, this translates to 400–800 for the S&P 500 over the next few years. Perversely, this might actually mean that the US market was genuinely cheap for those few longer-term investors who had the courage and spare cash to increase equity weightings!

Fourth, given the size of the American market, its importance to emerging country exports and the risk of protectionism in a bad scenario, investing in emerging equities would likely provide no hedge against a steep drop in US consumption, GDP and equity returns. Indeed, rather the opposite, as we saw in 2008/09. Meaningful decoupling from disaster might just work in

20 years time, but not today when emerging world consumption is still only 20% of the global total.

Fifth, for the rise of China, India and the other big emerging countries to be sustainable it cannot in the end be a zero sum game. Indeed, for both political and economic reasons it is almost certainly impossible for a set of countries this big to become prosperous mostly by taking export market share from other (richer) countries. Their growth may, like the USA in the 19th century, be punctuated by some big upheavals, but the only sustainable way for them to grow will be via domestic demand that ultimately expands the global market for US and other developed country exports. Once again, this leads us to a complex macro judgment, not a microeconomic debate about valuation.

The next decade for US equities

The overriding common interest of China, India, Russia and the developed world is to find technological and political solutions to the challenges of energy security, climate change and the rebalancing of global demand. But free trade and free capital flows did not in fact survive the replacement of the UK by the USA as the world’s leading economic power, and this directly contributed to the Great Depression and huge undershoot in global equity returns of the 1930s. History warns that this could happen again, despite a strong common interest in “mutually assured prosperity.” However, this is just another way of saying that it is macro factors rather than micro ones that are most germane to the valuation debate.

When people assert that the market is overvalued, they are really expressing their skepticism about the future of US productivity growth and/or the future of globalization. Logically enough, the reverse is also true: if you believe in the potential benefits of accelerating technological change and the dramatic rise of the emerging world, then the next decade for US equities is likely to be a bright one.



Guide to the country profiles

Individual markets

The *Credit Suisse Global Investment Returns Yearbook* has been expanded to cover 22 countries and regions, all with index series that start in 1900. Two countries appear for the first time in the 2010 *Yearbook*: Finland and New Zealand. Figure 1 shows the relative sizes of world equity markets at our base date of end-1899. Figure 2 shows how they had changed by end-2009. Markets that are not included in the *Yearbook* dataset are colored in black. As these pie charts show, the *Yearbook* covered 89% of the world equity market in 1900 and 85% by end-2009.

In the country pages that follow, there are three charts for each country or region. The upper chart reports, for the last 110 years, the real value of an initial investment in equities, long-term government bonds, and Treasury bills, all with income reinvested. The middle chart reports the annualized premium achieved by equities relative to bonds and to bills, measured over the last decade, quarter-century, half-century, and full 110 years. The bottom chart compares the 110-year annualized real returns, nominal returns, and standard deviation of real returns for equities, bonds, and bills.

The country pages provide data for 19 countries, listed alphabetically starting on the next page, and followed by three broad regional groupings. The latter are a 19-country world equity index denominated in USD, an analogous 18-country world ex-US equity index, and an analogous 13-country European equity index. All equity indexes are weighted by market capitalization (or, in years before capitalizations were available, by GDP). We also compute bond indexes for the world, world ex-US and Europe, with countries weighted by GDP.

Extensive additional information is available in the *Credit Suisse Global Investment Returns Sourcebook 2010*. This 200-page reference book is available through London Business School (see the inside back cover for contact details). The underlying data are available through Morningstar Inc.

The Yearbook's global coverage

The *Yearbook* contains annual returns on stocks, bonds, bills, inflation, and currencies for 19 countries from 1900 to 2009. The countries comprise two North American nations (Canada and the USA), eight euro-currency area states (Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, and Spain), five European markets that are outside the euro area (Denmark, Norway, Sweden, Switzerland, and the UK), three Asia-Pacific countries (Australia, Japan, and New Zealand), and one African market (South Africa). These countries covered 89% of global stock market capitalization in 1900 and 85% by the start of 2010.

Figure 1

Relative sizes of world stock markets, end-1899

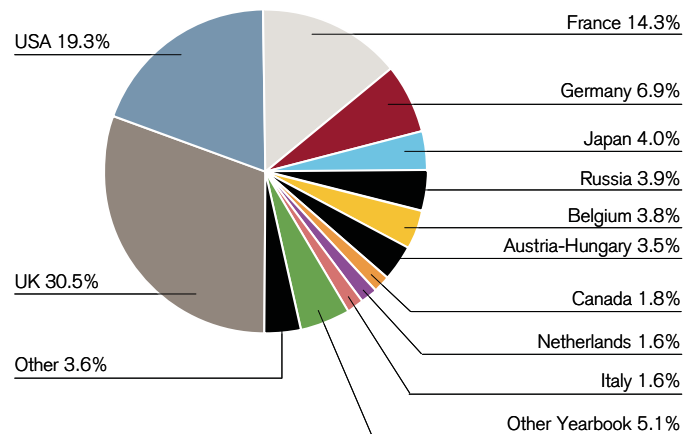
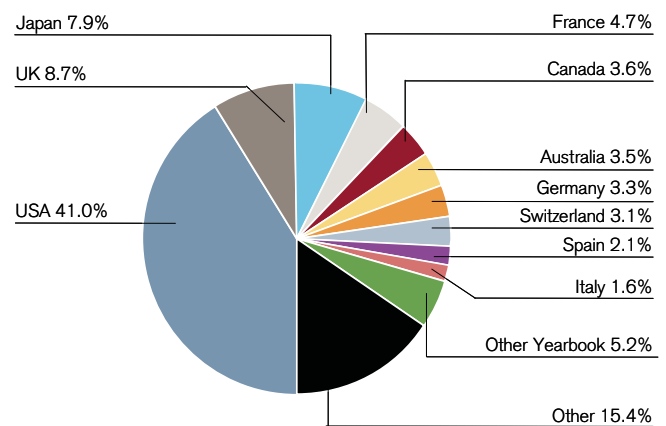


Figure 2

Relative sizes of world stock markets, end-2009



Source: Elroy Dimson, Paul Marsh and Mike Staunton, *Credit Suisse Global Investment Returns Sourcebook 2010*

Bibliography and data sources

1. Dimson, E., P. R. Marsh and M. Staunton, 2002, *Triumph of the Optimists*, NJ: Princeton University Press
2. Dimson, E., P. R. Marsh and M. Staunton, 2008, The worldwide equity premium: a smaller puzzle, R Mehra (Ed.) *The Handbook of the Equity Risk Premium*, Amsterdam: Elsevier
3. Dimson, E., P. R. Marsh and M. Staunton, 2010, *Credit Suisse Global Investment Returns Sourcebook*
4. Dimson, E., P. R. Marsh and M. Staunton, 2010, *The Dimson-Marsh-Staunton Global Investment Returns Database*, Morningstar Inc. (the "DMS" data module)



Australia

The lucky country

Australia is often described as “the Lucky Country” with reference to its natural resources, prosperity, weather, and distance from problems elsewhere in the world.

This luck has extended to equity investors. Australia has been the best performing equity market over the 110 years since 1900, with a real return of 7.5% per year. More than 50% of Australia’s adult population own shares in publicly listed companies.

The Australian Securities Exchange (ASX) has its origins in six separate exchanges, established as early as 1861 in Melbourne and 1871 in Sydney, well before the federation of the Australian colonies to form the Commonwealth of Australia in 1901. The ASX is now the world’s eighth-largest stock exchange. Its principal sectors are banks (28%) and mining (20%), while the largest stocks are BHP Billiton, Westpac and Commonwealth Bank of Australia.

Australia also has a significant government and corporate bond market, and is home to the largest financial futures and options exchange in the Asia-Pacific region. It has the world’s seventh-largest forex market and the Australian dollar is the world’s sixth most heavily traded currency. Sydney is a major global financial center.

Capital market returns for Australia

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 2844.1 as compared to 4.7 for bonds and 2.1 for bills. Figure 2 shows that, since 1900, equities beat bonds by 6.0% and bills by 6.8% per year. Figure 3 shows that the long-term real return on Australian equities was an annualized 7.5% as compared to bonds and bills, which gave a real return of 1.4% and 0.7% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

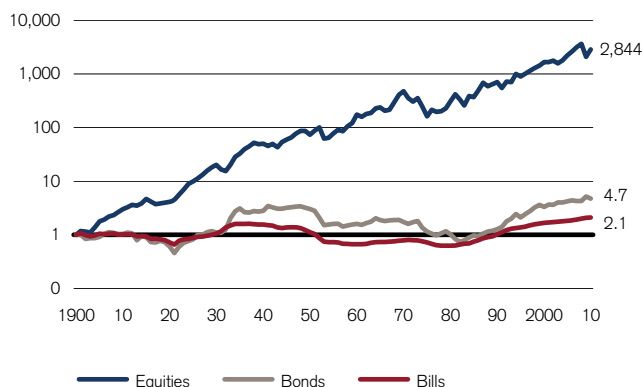


Figure 2

Equity risk premium over 10 to 110 years

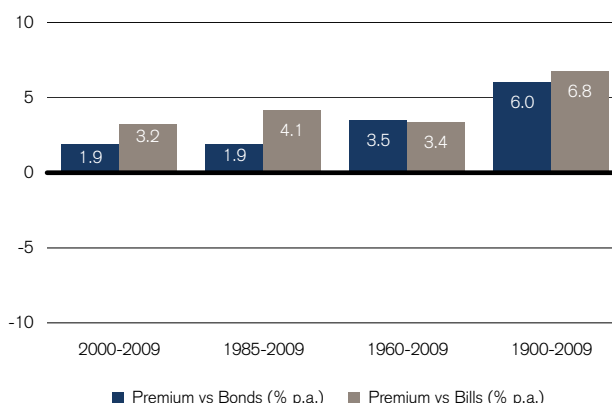
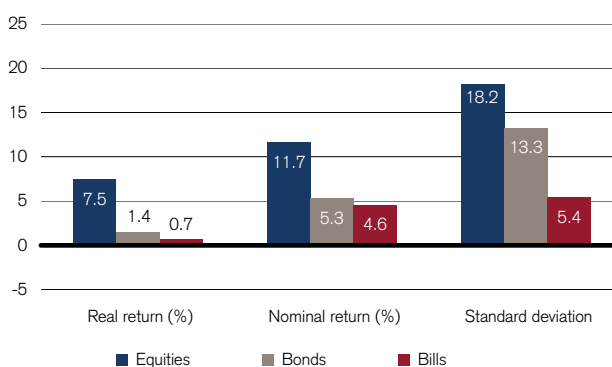


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Belgium

At the heart of Europe

Lithuania claims to lie at the geographical heart of Europe, but Belgium can also assert centrality. It lies at the crossroads of Europe's economic backbone and its key transport and trade corridors, and is the headquarters of the European Union. In 2010, Belgium was ranked the most globalized of the 181 countries that are evaluated by the KOF Index of Globalization.

Belgium's strategic location has been a mixed blessing, making it a major battleground in two world wars. The ravages of war and attendant high inflation rates are an important contributory factor to its poor long-run investment returns – Belgium has been one of the two worst-performing equity markets and the sixth worst performing bond market.

The Brussels stock exchange was established in 1801 under French Napoleonic rule. Brussels rapidly grew into a major financial center, specializing during the early 20th century in tramways and urban transport.

Its importance has gradually declined, and Euronext Brussels now ranks 26th among world exchanges by size. It suffered badly during the recent banking crisis. Three large banks made up over half its market capitalization at start-2008, but they now comprise around one-tenth of the index. The three largest stocks at end-2009 were Anheuser-Busch, Fortis, and KBC.

Capital market returns for Belgium

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 15.6 compared to 0.9 for bonds and 0.7 for bills. Figure 2 shows that, since 1900, equities beat bonds by 2.6% and bills by 2.9% per year. Figure 3 shows that the long-term real return on Belgium equities was an annualized 2.5% compared to bonds and bills, which gave a real return of –0.1% and –0.3%, respectively. For additional explanations of these figures, see page 27.

Figure 1
Annualized performance from 1900 to 2009

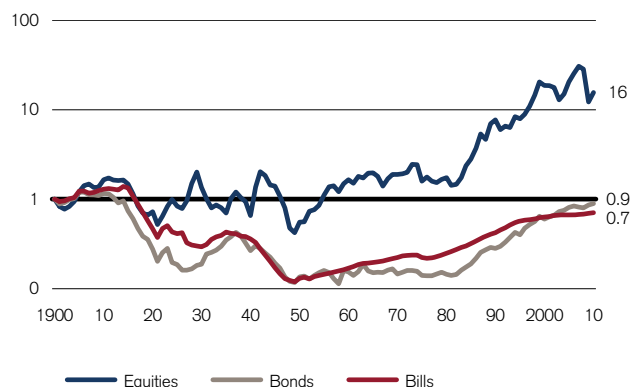


Figure 2
Equity risk premium over 10 to 110 years

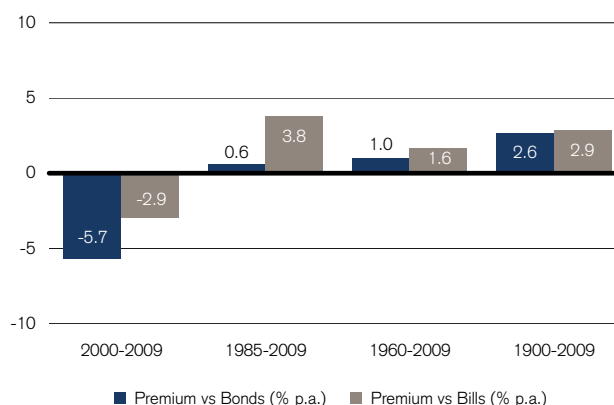
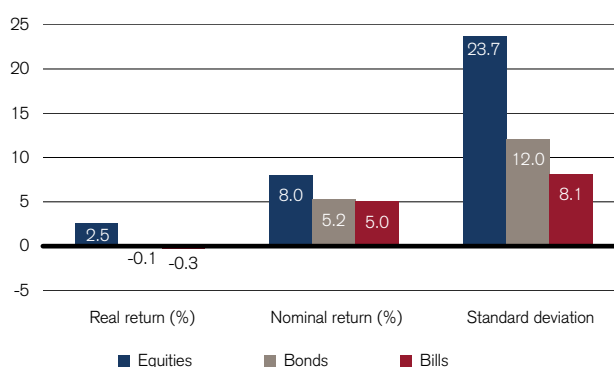


Figure 3
Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Canada

Resourceful country

Canada is the world's second-largest country by land mass (after Russia), and its economy is the tenth-largest. It is blessed with natural resources, having the world's second-largest oil reserves, while its mines are leading producers of nickel, gold, diamonds, uranium and lead. It is also a major exporter of soft commodities, especially grains and wheat, as well as lumber, pulp and paper.

The Canadian equity market dates back to the opening of the Toronto Stock Exchange in 1861 and is the world's fifth-largest, accounting for 3.6% of world capitalization.

Given Canada's natural endowment, it is no surprise that oil and gas and mining stocks have a 35% weighting in its equity market, while a further 26% is accounted for by financials. The largest stocks are currently Royal Bank of Canada, Toronto-Dominion Bank and Suncor Energy.

Canadian equities have performed well over the long run, with a real return of 5.8% per year. The real return on bonds has been 2.0% per year. These figures are remarkably close to those for the United States.

Capital market returns for Canada

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 479.5 compared to 9.1 for bonds and 5.8 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.7% and bills by 4.1% per year. Figure 3 shows that the long-term real return on Canadian equities was an annualized 5.8% compared to bonds and bills, which gave a real return of 2.0% and 1.6%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

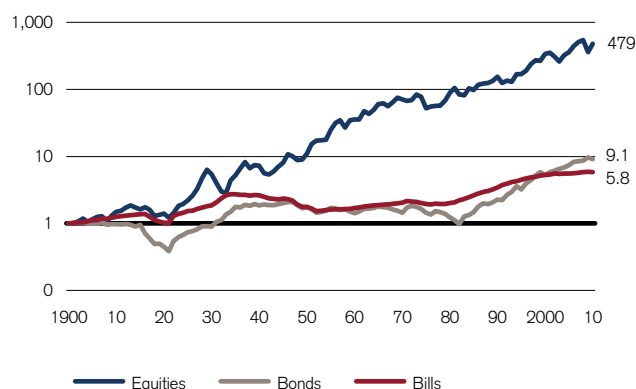


Figure 2

Equity risk premium over 10 to 110 years

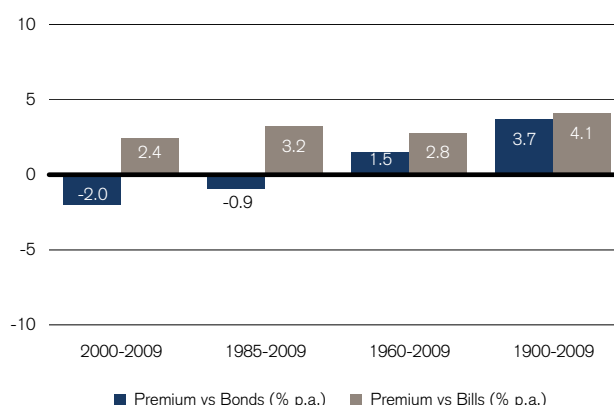
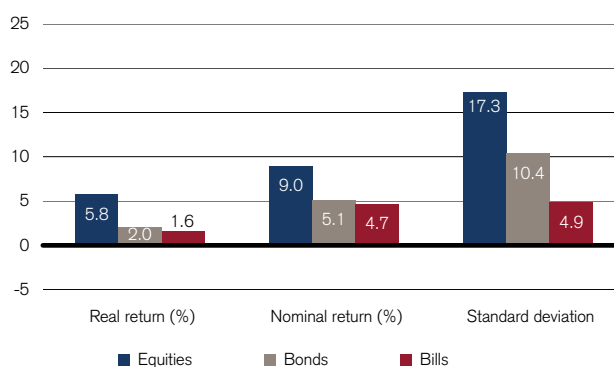


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Denmark

Happiest nation

In a recent global survey of citizens' happiness, Denmark was ranked "happiest place on earth," closely followed by Switzerland and Austria, with Zimbabwe, understandably, ranked "least happy."

Whatever the source of Danish happiness, it does not appear to spring from outstanding equity returns. Since 1900, Danish equities have given an annualized real return of 4.9%, which, while respectable, is below the world return of 5.4%.

In contrast, Danish bonds gave an annualized real return of 3.0%, the highest among the [Yearbook](#) countries. This is because our Danish bond returns, unlike those for the other 18 countries, include an element of credit risk. The returns are taken from a study by Claus Parum, who felt it was more appropriate to use mortgage bonds, rather than more thinly traded government bonds. The country with the highest returns for truly default-free bonds is Sweden.

The Copenhagen Stock Exchange was formally established in 1808, but can trace its roots back to the late 17th century. The Danish equity market is relatively small, ranking as the world's 25th largest. It has a high weighting in healthcare (42%) and industrials (19%), and the largest stocks listed in Copenhagen are Novo-Nordisk, Danske Banking, and Vestas Wind Systems.

Capital market returns for Denmark

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 191.9 compared to 25.6 for bonds and 12.0 for bills. Figure 2 shows that, since 1900, equities beat bonds by 1.8% and bills by 2.5% per year. Figure 3 shows that the long-term real return on Danish equities was an annualized 4.9% compared to bonds and bills, which gave a real return of 3.0% and 2.3%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

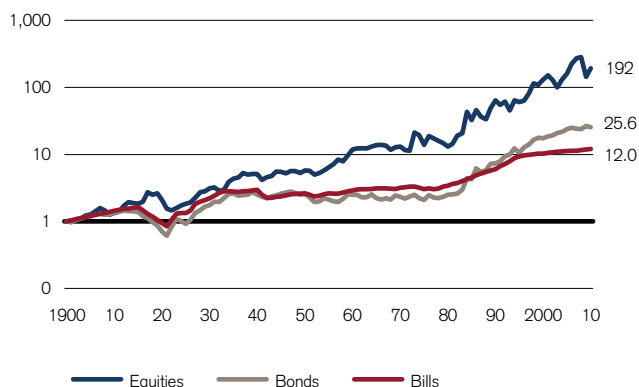


Figure 2

Equity risk premium over 10 to 110 years

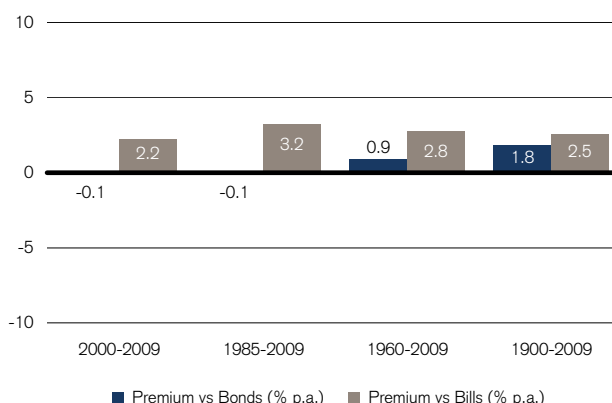
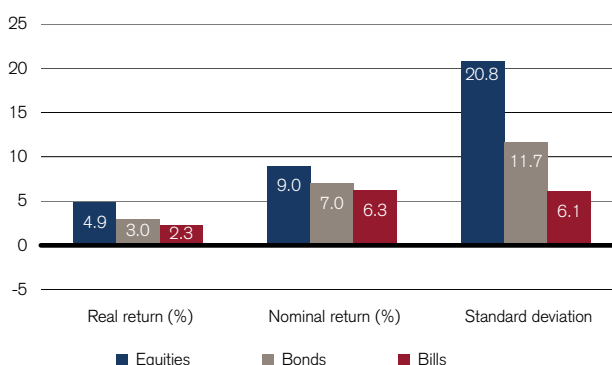


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Finland

East meets West

With its proximity to the Baltic and Russia, Finland is a meeting place for Eastern and Western European cultures. This country of snow, swamps and forests – one of Europe's most sparsely populated nations – was part of the Kingdom of Sweden until sovereignty transferred in 1809 to the Russian Empire. In 1917, Finland became an independent country.

The Finns have transformed their country from a farm and forest-based community to a diversified industrial economy operating on free-market principles. The OECD ranks Finnish schooling as the best in the world. Per capita income is among the highest in Western Europe. A member of the EU since 1995, Finland is the only Nordic state in the euro currency area.

Finland excels in high-tech exports. It is home to Nokia, the world's largest manufacturer of mobile telephones, which is rated the most valuable global brand outside the USA. Forestry, an important export earner, provides a secondary occupation for the rural population.

Finnish securities were initially traded over-the-counter or overseas, and trading began at the Helsinki Stock Exchange in 1912. Since 2003, the Helsinki exchange has been part of the OMX family of Nordic markets. At its peak, Nokia represented 72% of the value-weighted HEX All Shares Index, and Finland is a highly concentrated market. The largest Finnish companies are currently Nokia, Sampo, and Fortum. Nokia's value fell during 2009 by 20%, which damaged Finland's stock-market performance.

Capital market returns for Finland

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 250.6 as compared to 0.7 for bonds and 0.6 for bills. Figure 2 shows that, since 1900, equities beat bonds by 5.4% and bills by 5.6% per year. Figure 3 shows that the long-term real return on Finnish equities was an annualized 5.1% as compared to bonds and bills, which gave a real return of –0.3% and –0.4% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

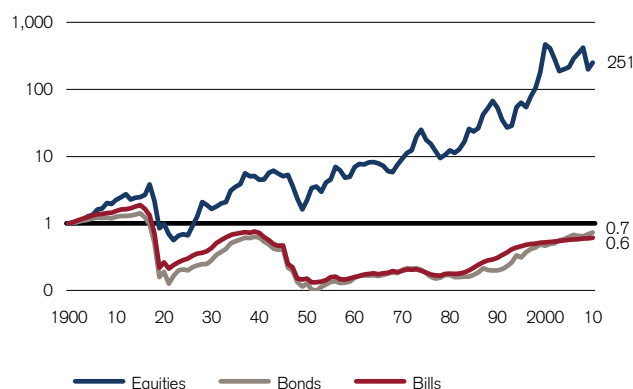


Figure 2

Equity risk premium over 10 to 110 years

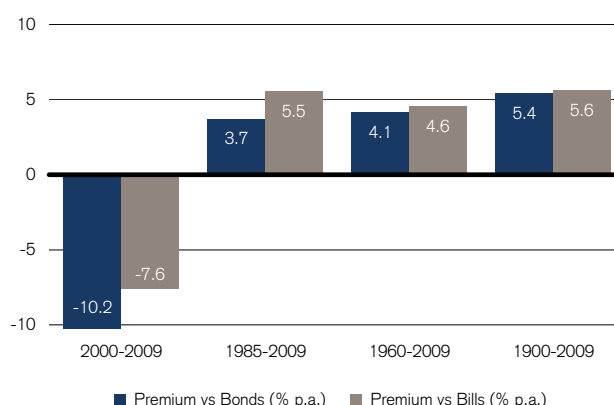
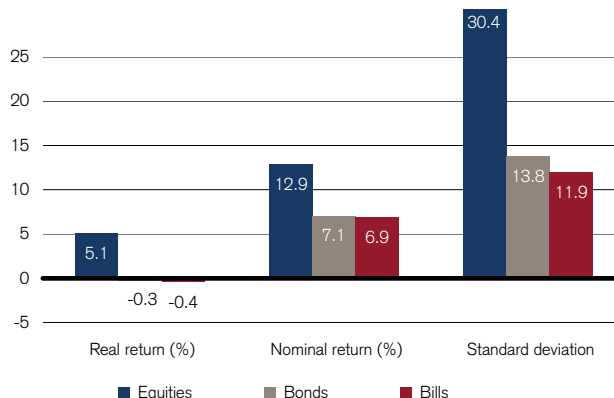


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



France

European center

Paris and London competed vigorously as financial centers in the 19th century. After the Franco-Prussian War in 1870, London achieved domination. But Paris remained important, especially, to its later disadvantage, in loans to Russia and the Mediterranean region, including the Ottoman Empire. As Kindelberger, the economic historian put it, "London was a world financial center; Paris was a European financial center."

Paris has continued to be an important financial center while France has remained at the center of Europe, being a founder member of the European Union and the euro. France is Europe's second-largest economy and the fifth-largest in the world. It has Europe's second largest equity market, ranked fourth in the world. It has the fourth-largest domestic bond market in the world.

Long-run French asset returns have been disappointing. France ranks 16th out of the 19 [Yearbook](#) countries for equity performance, 15th for bonds and 18th for bills. It has had the third-highest inflation, hence the poor fixed income returns. However, the inflationary episodes and poor performance date back to the first half of the 20th century and are linked to the world wars. Since 1950, French equities have achieved mid-ranking returns.

Capital market returns for France

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 27.8 compared to 0.8 for bonds and 0.04 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.3% and bills by 6.1% per year. Figure 3 shows that the long-term real return on French equities was an annualized 3.1% compared to bonds and bills, which gave a real return of -0.2% and -2.8%, respectively. For additional explanations of these figures, see page 27.

Figure 1
Annualized performance from 1900 to 2009

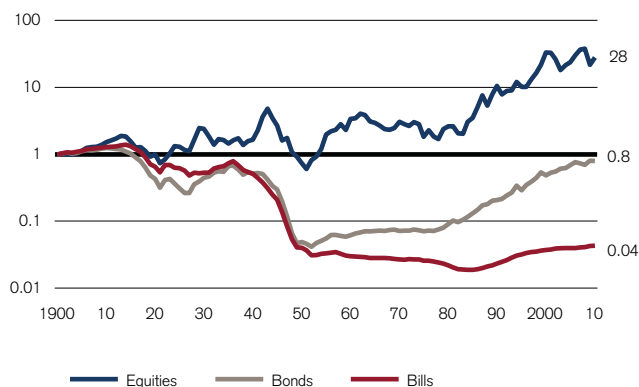


Figure 2
Equity risk premium over 10 to 110 years

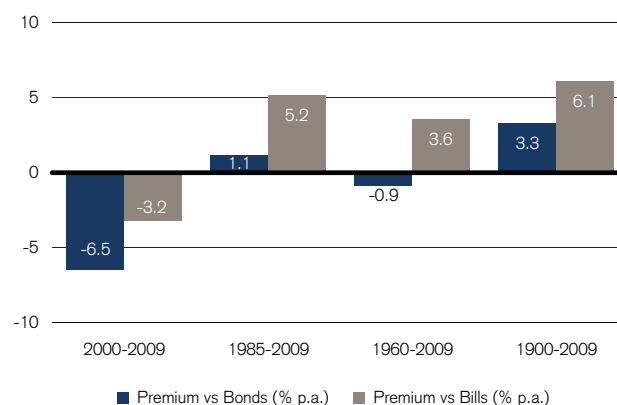
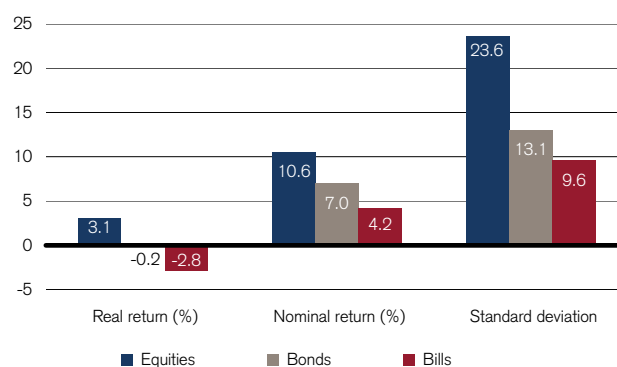


Figure 3
Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Germany

Locomotive of Europe

German capital market history changed radically after World War II. In the first half of the 20th century, German equities lost two-thirds of their value in World War I. In the hyperinflation of 1922–23, inflation hit 209 billion percent, and holders of fixed income securities were wiped out. In World War II and its immediate aftermath, equities fell by 88% in real terms, while bonds fell by 91%.

There was then a remarkable transformation. In the early stages of its “economic miracle,” German equities rose by 4,094% in real terms from 1949 to 1959. Germany rapidly became known as the “locomotive of Europe.” Meanwhile, it built a reputation for fiscal and monetary prudence. From 1949 to date, it has enjoyed the world's lowest inflation rate, its strongest currency (now the euro), and the second best-performing bond market.

Germany is Europe's largest economy. It lost its position as the world's top exporter to China, and is now ranked second biggest exporter in the world. Its stock market, which dates back to 1685, ranks seventh in the world by size, while it has the fifth-largest domestic bond market in the world.

The German stock market retains its bias towards manufacturing, with weightings of 15% in consumer goods, 17% in industrials, 18% in basic materials, and 14% in utilities (15.7%). The largest stocks are Siemens and E.ON.

Capital market returns for Germany

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 25.2 as compared to 0.11 for bonds and 0.07 for bills. Figure 2 shows that, since 1900, equities beat bonds by 5.4% and bills by 5.8% per year. Figure 3 shows that the long-term real return on German equities was an annualized 3.0% as compared to bonds and bills, which gave a real return of –2.0% and –2.4%, respectively. 1922–23 is included only for real equity return. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

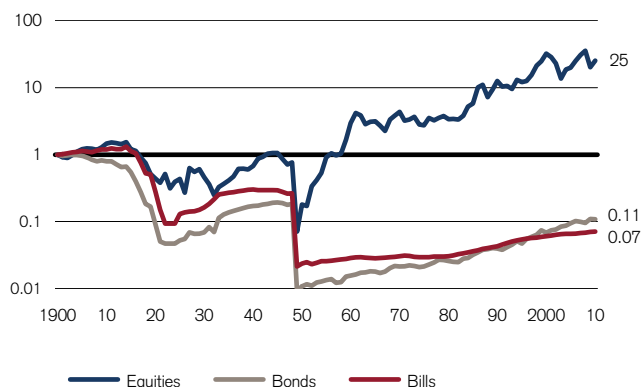


Figure 2

Equity risk premium over 10 to 110 years

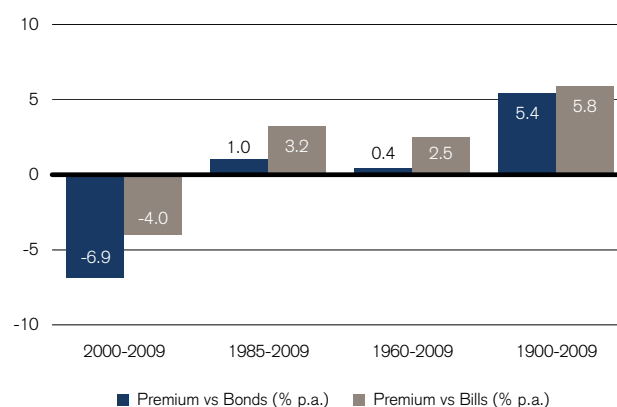
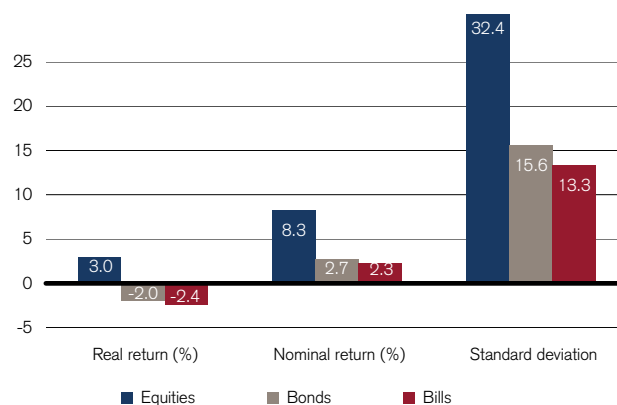


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Ireland

Celtic Tiger

Ireland gained its independence from the United Kingdom in 1922. However, stock exchanges had existed in Dublin and Cork since 1793, so in order to monitor Irish stocks from 1900 (22 years before independence), we constructed an index for Ireland based on stocks traded on these two exchanges.

In the period following independence, neither economic growth, nor equity returns were especially strong. During the 1950s, Ireland experienced large-scale emigration. It joined the European Union in 1973, and from 1987 the economy improved.

The 1990s saw the beginning of unprecedented economic success, and Ireland became known as the Celtic Tiger. By 2007, it had become the world's fifth-richest country in terms of GDP per capita, the second-richest in the EU, and was experiencing net immigration. Over the period 1987–2006, Ireland had the second-highest real equity return of any *Yearbook* country.

Ireland is one of the smallest markets covered by the *Yearbook*, and sadly, it has shrunk since 2006. Too much of the market boom was based on real estate, financials and gearing, and Irish stocks fell 75% in real terms in 2007–08. At the end of 2006, the Irish market had a 57% weighting in financials, but these fell by 95% during 2007–08; by 2010 they represented just 10% of the market. The tiger now has a smaller bite.

Capital market returns for Ireland

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 60.6 compared to 3.5 for bonds and 2.2 for bills. Figure 2 shows that, since 1900, equities beat bonds by 2.6% and bills by 3.1% per year. Figure 3 shows that the long-term real return on Irish equities was an annualized 3.8% compared to bonds and bills, which gave a real return of 1.1% and 0.7%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

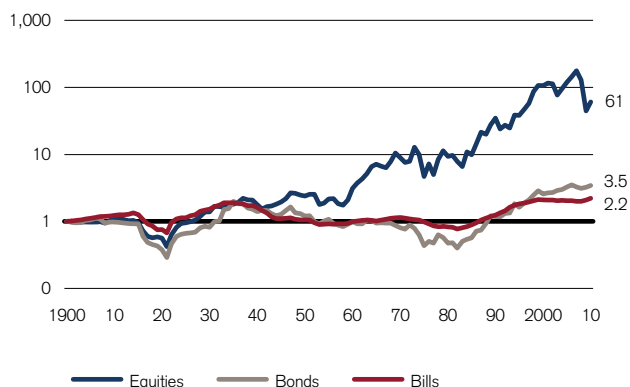


Figure 2

Equity risk premium over 10 to 110 years

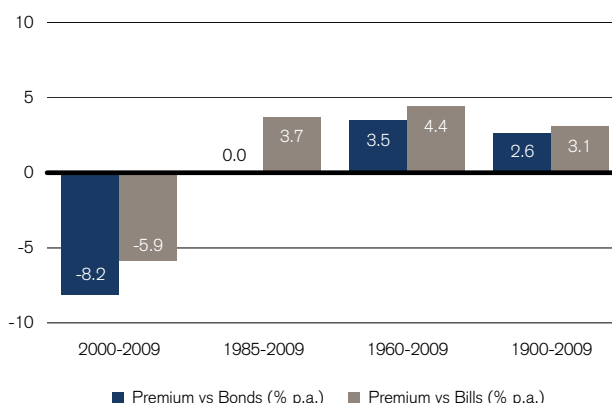
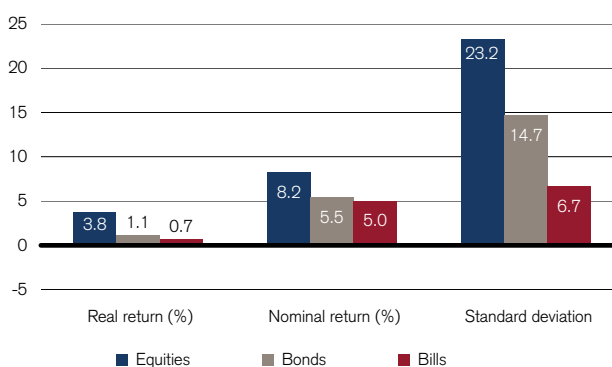


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Italy

Banking innovators

While banking can trace its roots back to Biblical times, Italy can claim a key role in the early development of modern banking. North Italian bankers, including the Medici, dominated lending and trade financing throughout Europe in the Middle Ages. These bankers were known as Lombards, a name that was then synonymous with Italians. Indeed, banking takes its name from the Italian word "banca," the bench on which the Lombards used to sit to transact their business.

Italy retains a large banking sector to this day, with financials accounting for 43% of the Italian equity market. Oil and gas accounts for a further 20%, and the largest stocks traded on the Milan Stock Exchange are Eni, Generali Assicurazio and Unicredit.

Sadly, Italy has experienced some of the poorest asset returns of any *Yearbook* country. Since 1900, the annualized real return from equities has been 2.1%, the lowest return out of 19 countries. Apart from Germany, with its post-World War I and post-World War II hyperinflations, Italy has experienced the second-worst real bond and worst bill returns of any *Yearbook* country (see Figure 1 opposite), and the highest inflation rate and weakest currency.

Today, Italy is the world's seventh-largest economy. Its equity market is the world's 13th largest, while its highly developed domestic bond market is the world's third-largest.

Capital market returns for Italy

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 9.5 compared to 0.2 for bonds and 0.02 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.8% and bills by 5.9% per year. Figure 3 shows that the long-term real return on Italian equities was an annualized 2.1% compared to bonds and bills, which gave a real return of -1.6% and -3.7%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

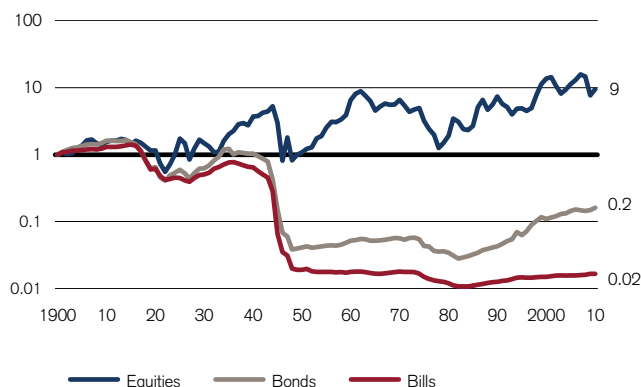


Figure 2

Equity risk premium over 10 to 110 years

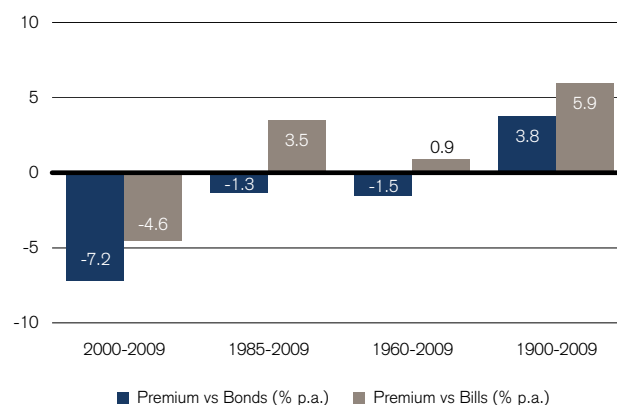
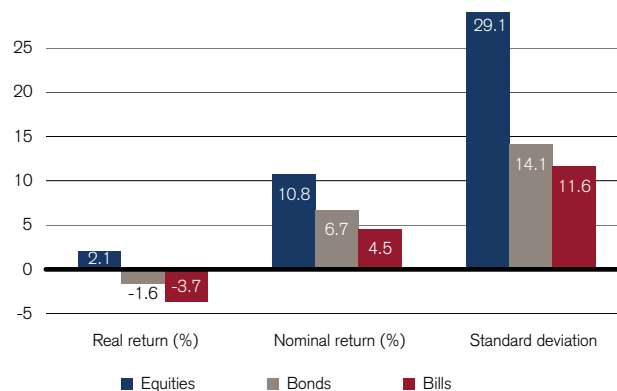


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Japan

Birthplace of futures

Japan has a long heritage in financial markets. Trading in rice futures had been initiated around 1730 in Osaka, which created its stock exchange in 1878. Osaka was to become the leading derivatives exchange in Japan (and the world's largest futures market in 1990 and 1991) while the Tokyo stock exchange, also founded in 1878, was to become the leading market for spot trading.

From 1900 to 1939, Japan was the world's second-best equity performer. But World War II was disastrous and Japanese stocks lost 96% of their real value. From 1949 to 1959, Japan's "economic miracle" began and equities gave a real return of 1,565%. With one or two setbacks, equities kept rising for another 30 years.

By the start of the 1990s, the Japanese equity market was the largest in the world, with a 40% weighting in the world index versus 32% for the USA. Real estate values were also riding high and it was alleged that the grounds of the Imperial palace in Tokyo were worth more than the entire State of California.

Then the bubble burst. From 1990 to 2009, Japan was the worst-performing stock market, losing two-thirds of its value in real terms. Its weighting in the world index fell from 40% to 8%. Meanwhile, Japan suffered a prolonged period of stagnation, banking crises and deflation. Hopefully, this will not form the blueprint for other countries over the coming decade.

Despite the fallout from the bursting of the asset bubble, Japan remains a major economic power, with the world's second-largest GDP. It has the world's third-largest equity market as well as its second-biggest bond market. It is a world leader in technology, automobiles, electronics, machinery and robotics, and this is reflected in the composition of its equity market.

Capital market returns for Japan

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 63.4 as compared to 0.3 for bonds and 0.1 for bills. Figure 2 shows that, since 1900, equities beat bonds by 5.1% and bills by 5.9% per year. Figure 3 shows that the long-term real return on Japanese equities was an annualized 3.8% as compared to bonds and bills, which gave a real return of -1.2% and -1.9%, respectively. For additional explanations of these figures, see page 27.

Figure 1
Annualized performance from 1900 to 2009

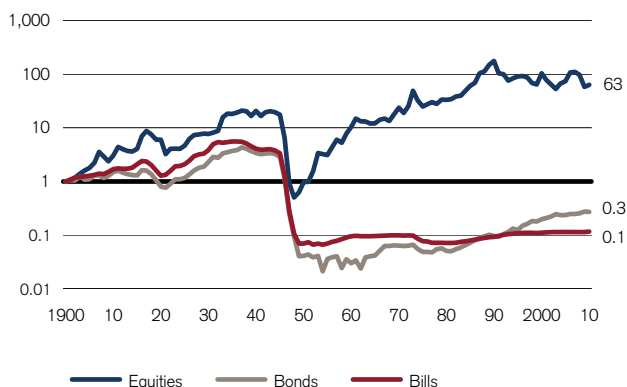


Figure 2
Equity risk premium over 10 to 110 years

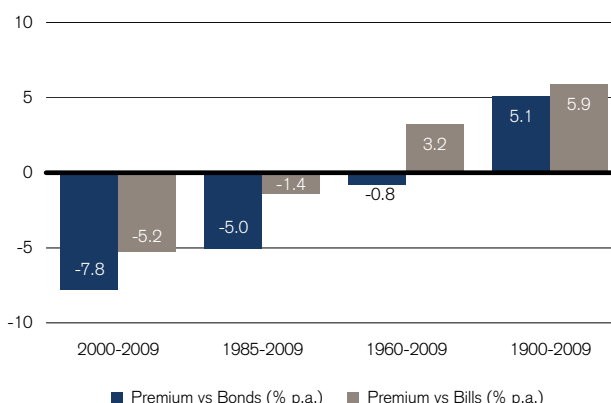
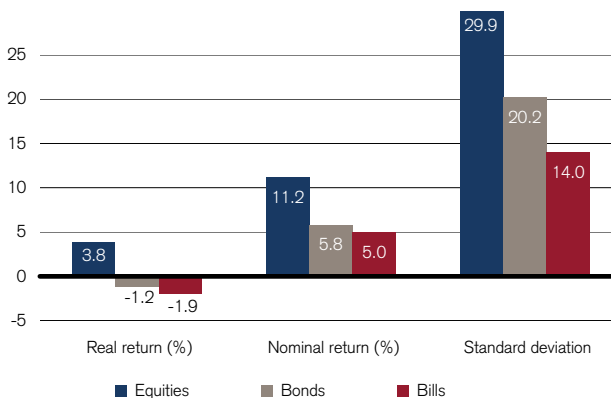
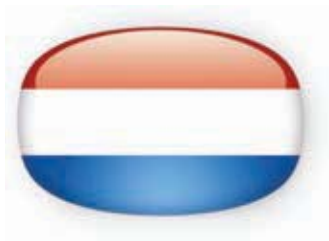


Figure 3
Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Netherlands

Exchange pioneer

Although some forms of stock trading occurred in Roman times, organized trading did not take place until transferable securities appeared in the 17th century. The Amsterdam market, which started in 1611, was the world's main center of stock trading in the 17th and 18th centuries. A book written in 1688 by a Spaniard living in Amsterdam (appropriately entitled *Confusion de Confusiones*) describes the amazingly diverse tactics used by investors. Even though only one stock was traded – the Dutch East India Company – they had bulls, bears, panics, bubbles and other features of modern exchanges.

The Amsterdam Exchange continues to prosper today as part of Euronext. It is the world's 17th largest equity market and, over the years, Dutch equities have generated a mid-ranking real return of 4.9% per year. The Netherlands has traditionally been a low inflation country and, since 1900, has enjoyed the second-lowest inflation rate among the *Yearbook* countries (after Switzerland).

The Netherlands has a prosperous open economy, which ranks 16th in the world. For a small country, the Netherlands hosts more than its share of major multinationals, including Unilever, Royal Dutch Shell, Philips, ArcelorMittal, Heineken, TNT, Ahold, Akzo Nobel, Reed Elsevier and ING Group.

Capital market returns for the Netherlands

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 200.7 compared to 4.4 for bonds and 2.2 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.5% and bills by 4.2% per year. Figure 3 shows that the long-term real return on Dutch equities was an annualized 4.9% compared to bonds and bills, which gave a real return of 1.4% and 0.7%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

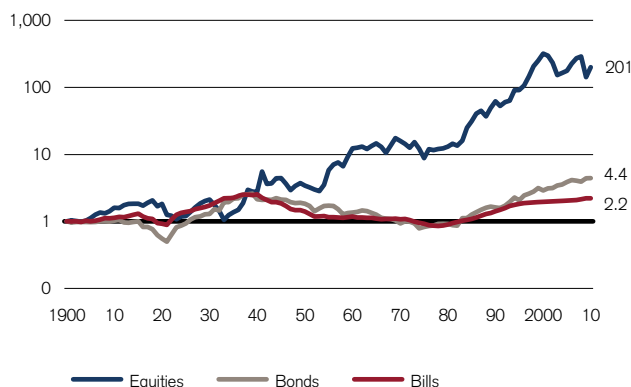


Figure 2

Equity risk premium over 10 to 110 years

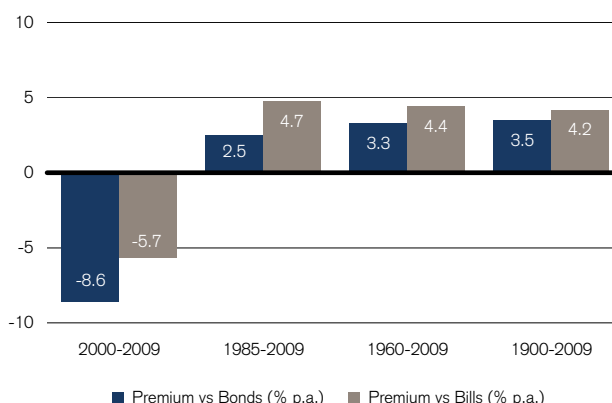
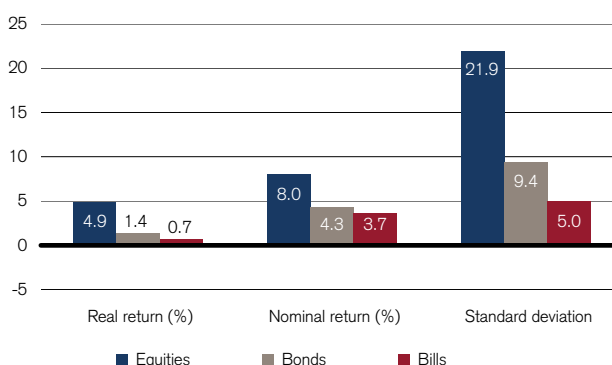


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



New Zealand

Purity and integrity

For a decade, New Zealand has been promoting itself to the world as “100% pure” and Forbes calls this marketing drive one of the world's top ten travel campaigns. But the country also prides itself on honesty, openness, good governance, and freedom to run businesses. According to Transparency International, New Zealand is perceived as the least corrupt country in the world. The Wall Street Journal ranks New Zealand as the best in the world for business freedom.

The British colony of New Zealand became an independent dominion in 1907. Traditionally, New Zealand's economy was built upon on a few primary products, notably wool, meat, and dairy products. It was dependent on concessionary access to British markets until UK accession to the European Union.

Over the last two decades, New Zealand has evolved into a more industrialized, free market economy. It competes globally as an export-led nation through efficient ports, airline services, and submarine fiber-optic communications.

The New Zealand Exchange traces its roots to the Gold Rush of the 1870s. In 1974, the regional stock markets merged to form the New Zealand Stock Exchange. In 2003, the Exchange demutualized, and officially became the New Zealand Exchange Limited. The largest firms traded on the exchange are Fletcher Building, and Telecom Corporation of New Zealand.

Capital market returns for New Zealand

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 537.5 as compared to 8.5 for bonds and 6.2 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.8% and bills by 4.1% per year. Figure 3 shows that the long-term real return on New Zealand equities was an annualized 5.9% as compared to bonds and bills, which gave a real return of 2.0% and 1.7% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

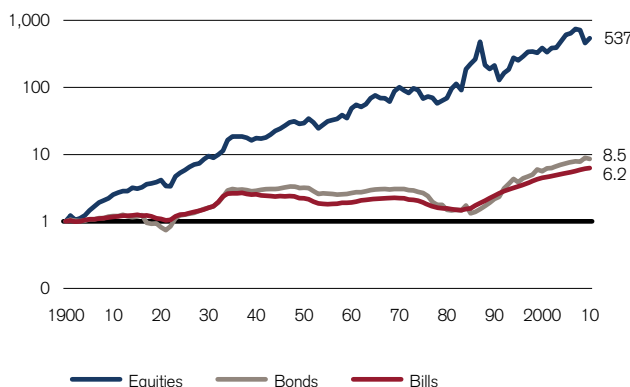


Figure 2

Equity risk premium over 10 to 110 years

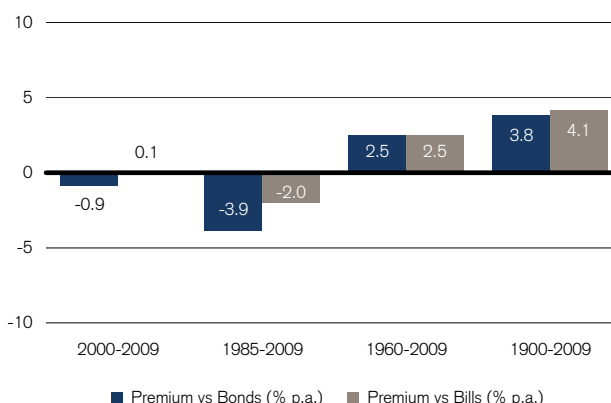
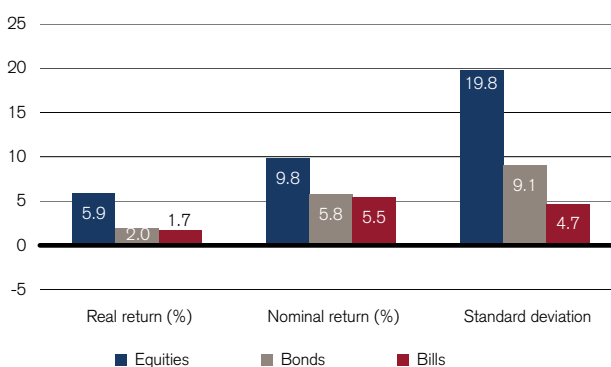


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Norway

Nordic oil kingdom

Norway is a very small country (ranked 115th by population and 61st by land area) surrounded by large natural resources that make it the world's fourth-largest oil exporter and the second-largest exporter of fish.

The population of 4.8 million enjoys the second-largest GDP per capita in the world and lives under a constitutional monarchy outside the Eurozone (a distinction shared with the UK). The United Nations, through its Human Development Index, ranks Norway the best country in the world for life expectancy, education and standard of living.

The Oslo stock exchange (OSE) was founded as Christiania Bors in 1819 for auctioning ships, commodities and currencies. Later, this extended to trading in stocks and shares. The exchange now forms part of the OMX grouping of Scandinavian exchanges.

In the 1990s, the Government established its petroleum fund to invest the surplus wealth from oil revenues. This has grown to become the largest fund in Europe and the second-largest in the world. The fund invests predominantly in equities, and its asset value is now comparable to that of the Oslo stock exchange.

The largest OSE stocks are Statoil, DnB NOR, and Telenor.

Capital market returns for Norway

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 86.3 compared to 6.2 for bonds and 3.6 for bills. Figure 2 shows that, since 1900, equities beat bonds by 2.4% and bills by 2.9% per year. Figure 3 shows that the long-term real return on Norwegian equities was an annualized 4.1% compared to bonds and bills, which gave a real return of 1.7% and 1.2%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

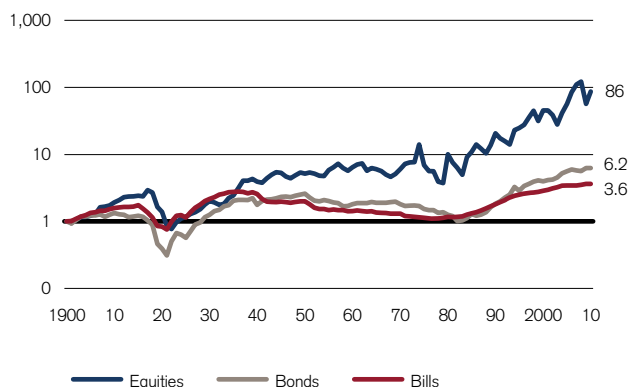


Figure 2

Equity risk premium over 10 to 110 years

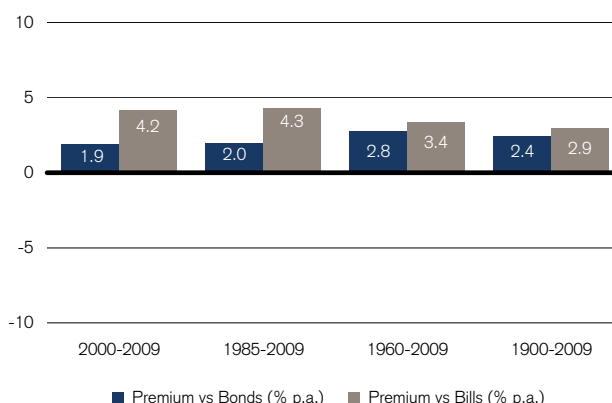
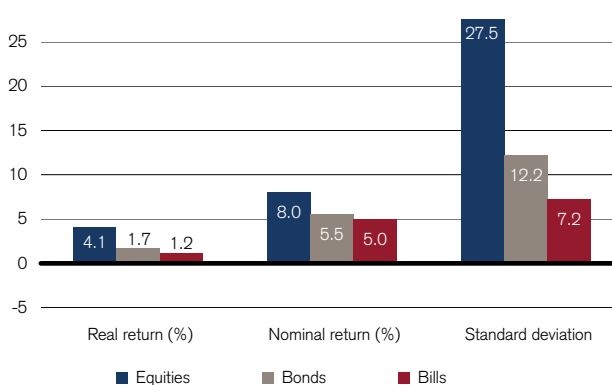


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



South Africa

Golden opportunity

The discovery of diamonds at Kimberley in 1870 and the Witwatersrand gold rush of 1886 had a profound impact on South Africa's subsequent history. Today, South Africa has 90% of the world's platinum, 80% of its manganese, 75% of its chrome and 41% of its gold, as well as vital deposits of diamonds, vanadium and coal.

The 1886 gold rush led to many mining and financing companies opening up, and to cater for their needs, the Johannesburg Stock Exchange (JSE) opened in 1887. Over the years since 1900, the South African equity market has been one of the world's most successful, generating real equity returns of 7.2% per year, the second-highest return among the *Yearbook* countries.

Today, South Africa is the largest economy in Africa, with a sophisticated financial structure and the world's 17th largest equity market. Back in 1900, South Africa, together with several other *Yearbook* countries, would have been deemed an emerging market. According to index compilers, it has not yet emerged, and it today ranks as the sixth-largest emerging market.

Gold, once the keystone of South Africa's economy, has declined in importance as the economy has diversified. Resource stocks, however, are still a third of the JSE's capitalization. The largest JSE stocks are MTN, Sasol, and Standard Bank.

Capital market returns for South Africa

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 2126.9 as compared to 6.3 for bonds and 3.1 for bills. Figure 2 shows that, since 1900, equities beat bonds by 5.4% and bills by 6.1% per year. Figure 3 shows that the long-term real return on South African equities was an annualized 7.2% as compared to bonds and bills, which gave a real return of 1.7% and 1.0% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

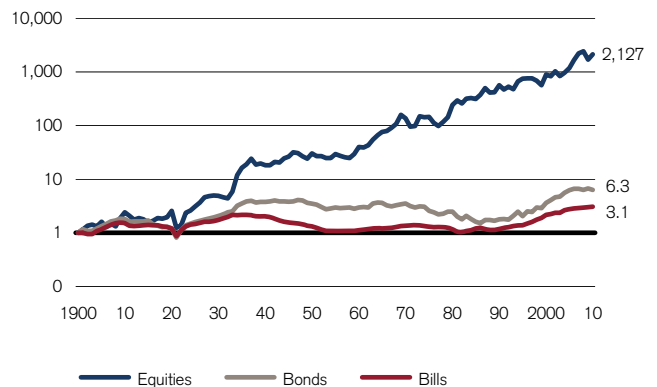


Figure 2

Equity risk premium over 10 to 110 years

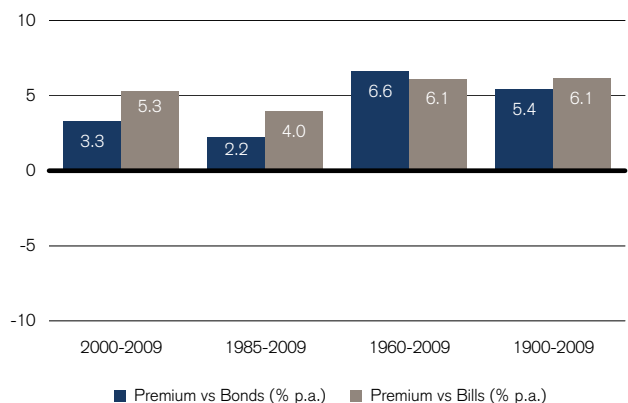
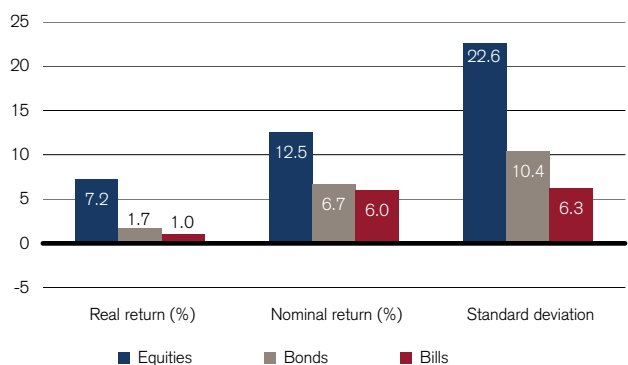


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Spain

Key to Latin America

Spanish is the most widely spoken international language after English, and has the fourth-largest number of native speakers after Chinese, Hindi and English. Partly for this reason, Spain has a visibility and influence that extends way beyond its Southern European borders, and carries weight throughout Latin America.

The modern style of Spanish bullfighting is described as daring and revolutionary, and that is an apt description of real equity returns over the century. While the 1960s and 1980s saw Spanish real equity returns enjoying a bull market and ranked second in the world, the 1930s and 1970s saw the very worst returns among our countries.

Though Spain stayed on the sidelines during the two world wars, Spanish stocks lost much of their real value over the period of the civil war during 1936–39, while the return to democracy in the 1970s coincided with the quadrupling of oil prices, heightened by Spain's dependence on imports for 70% of its energy needs.

The Madrid Stock Exchange was founded in 1831 and it is now the 11th largest in the world, helped by strong economic growth since the 1980s. The major Spanish companies retain strong presences in Latin America combined with increasing strength in banking and infrastructure across Europe. The largest stocks are Banco Santander, Telefonica, and BBVA.

Capital market returns for Spain

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 58.7 compared to 4.5 for bonds and 1.5 for bills. Figure 2 shows that, since 1900, equities beat bonds by 2.4% and bills by 3.4% per year. Figure 3 shows that the long-term real return on Spanish equities was an annualized 3.8% compared to bonds and bills, which gave a real return of 1.4% and 0.4%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

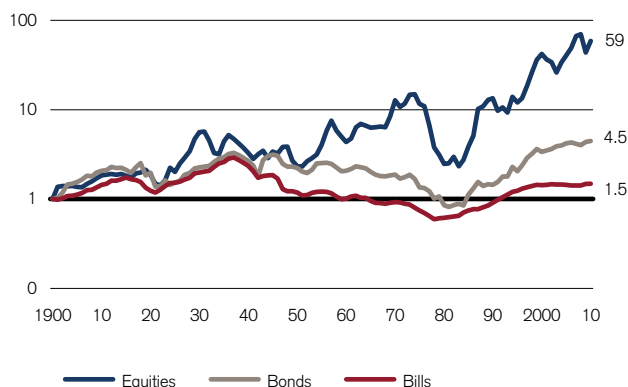


Figure 2

Equity risk premium over 10 to 110 years

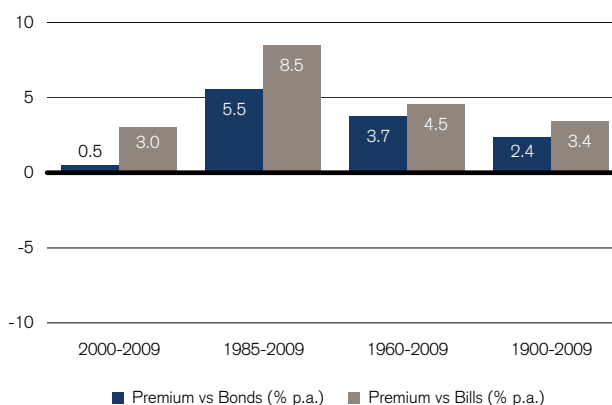
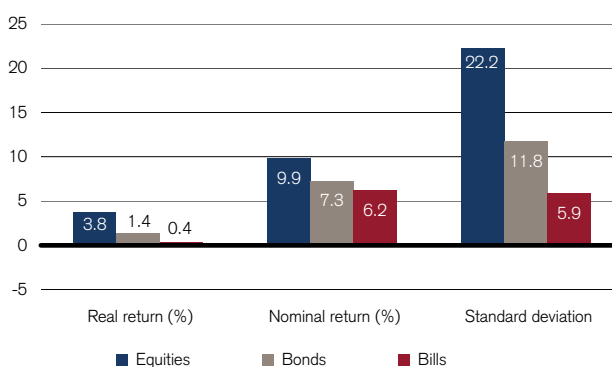


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Sweden

Nobel prize returns

Alfred Nobel bequeathed 94% of his total assets to establish and endow the five Nobel Prizes (first awarded in 1901), instructing that the capital be invested in safe securities. Were Sweden to win a Nobel prize for its investment returns, it would be for its achievement as the only country to have real returns for equities, bonds and bills all ranked in the top three.

Real Swedish equity returns have been supported by a policy of neutrality through two world wars, and the benefits of resource wealth and the development, in the 1980s, of industrial holding companies. Overall, they have returned 6.2% per year, behind the two highest-ranked countries, Australia and South Africa.

The Stockholm stock exchange was founded in 1863 and is the primary securities exchange of the Nordic countries. It is the world's 19th largest equity market and, since 1998, has been part of the OMX grouping. The largest SSE stocks are Nordea Bank, Ericsson, and Svenska Handelsbank.

Despite the high rankings for real bond and bill returns, current Nobel prize winners will rue the instruction to invest in safe securities as the real return on bonds was only 2.5% per year, and that on bills only 1.9% per year. Had the capital been invested in domestic equities, the winners would have enjoyed immense fortune as well as fame.

Capital market returns for Sweden

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 730.9 compared to 14.5 for bonds and 8.2 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.6% and bills by 4.2% per year. Figure 3 shows that the long-term real return on Swedish equities was an annualized 6.2% compared to bonds and bills, which gave a real return of 2.5% and 1.9%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

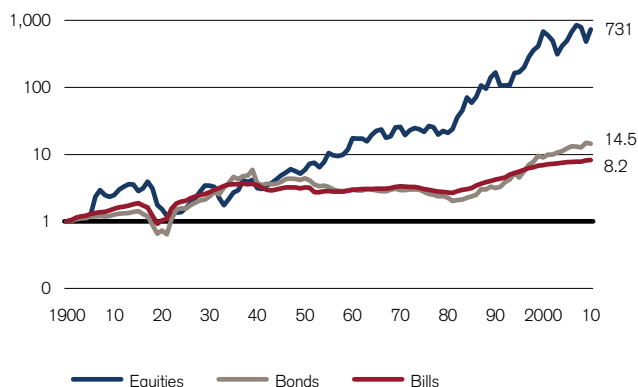


Figure 2

Equity risk premium over 10 to 110 years

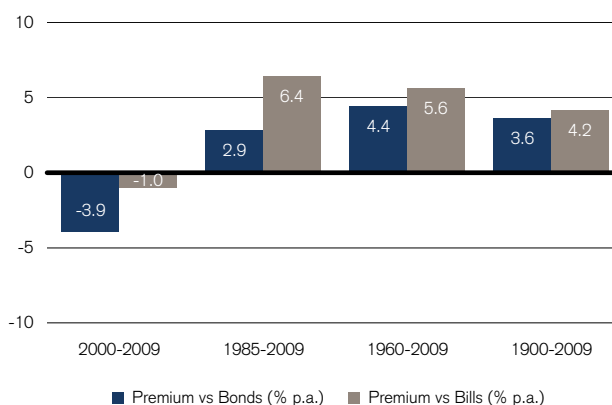
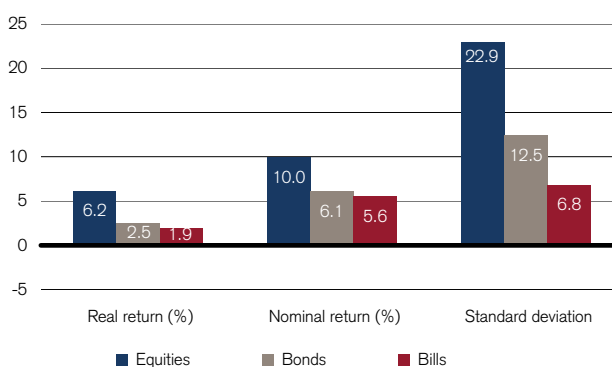


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Switzerland

Traditional safe haven

For a small country with just 0.1% of the world's population and 0.008% of its land mass, Switzerland punches well above its weight financially and wins several gold medals in the global financial stakes.

The Swiss stock market traces its origins to exchanges in Geneva (1850), Zurich (1873) and Basel (1876). It is now the world's eighth-largest equity market, accounting for 3.1% of total world value. Major listed companies include world leaders such as Nestle, Novartis and Roche.

Since 1900, Swiss equities have achieved a mid-ranking real return of 4.3%, while Switzerland has been one of the world's three best-performing government bond markets, with an annualized real return of 2.1%. Switzerland has also enjoyed the world's lowest inflation rate: just 2.3% per year since 1900. Meanwhile, the Swiss franc has been the world's strongest currency.

Switzerland is, of course, one of the world's most important banking centers, and private banking has been a major Swiss competence for over 300 years. Swiss neutrality, sound economic policy, low inflation and a strong currency have all bolstered the country's reputation as a safe haven. Today, close to 30% of all cross-border private assets invested worldwide are managed in Switzerland.

Capital market returns for Switzerland

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 97.8 compared to 9.6 for bonds and 2.4 for bills. Figure 2 shows that, since 1900, equities beat bonds by 2.1% and bills by 3.4% per year. Figure 3 shows that the long-term real return on Swiss equities was an annualized 4.3% compared to bonds and bills, which gave a real return of 2.1% and 0.8%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

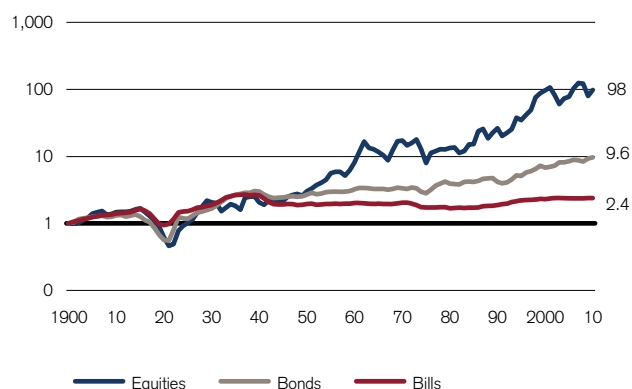


Figure 2

Equity risk premium over 10 to 110 years

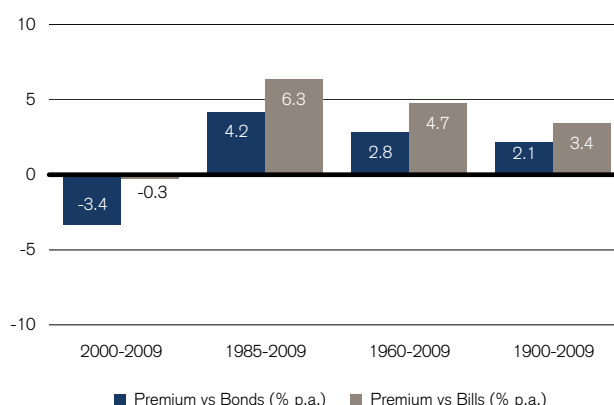
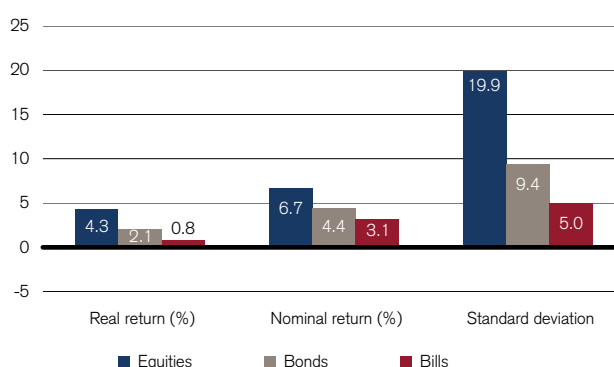


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



United Kingdom

Global center

Organized stock trading in the UK dates from 1698. This mostly took place in City of London coffee houses until the London Stock Exchange was formally established in 1801. By 1900, the UK equity market was the largest in the world, and London was the world's leading financial center, specializing in global and cross-border finance.

Early in the 20th century, the US equity market overtook the UK, and nowadays, both New York and Tokyo are larger than London as financial centers. What continues to set London apart, and justifies its claim to be the world's leading international financial center, is the global, cross-border nature of much of its business.

Today, London is the world's banking center, with 550 international banks and 170 global securities firms having offices in London. The London foreign exchange market is the largest in the world, and London has the world's third-largest stock market, third-largest insurance market, and sixth-largest bond market.

London is the world leader for derivatives traded over-the-counter, with 36% of global turnover. It is the world's largest fund management center, managing almost half of Europe's institutional equity capital, and is home to some 1,000 hedge funds. More than half of the global foreign equity market and 70% of Eurobonds are traded in London. It is also a major center for commodities trading, shipping, and many other services.

Capital market returns for the United Kingdom

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 286.9 compared to 4.3 for bonds and 3.1 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.9% and bills by 4.2% per year. Figure 3 shows that the long-term real return on UK equities was an annualized 5.3% compared to bonds and bills, which gave a real return of 1.3% and 1.0%, respectively. For additional explanations of these figures, see page 27.

Figure 1
Annualized performance from 1900 to 2009

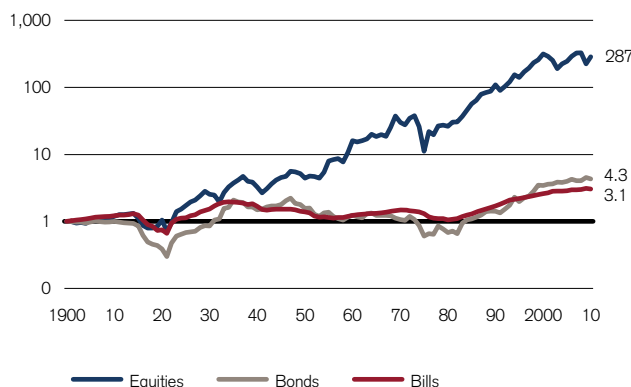


Figure 2
Equity risk premium over 10 to 110 years

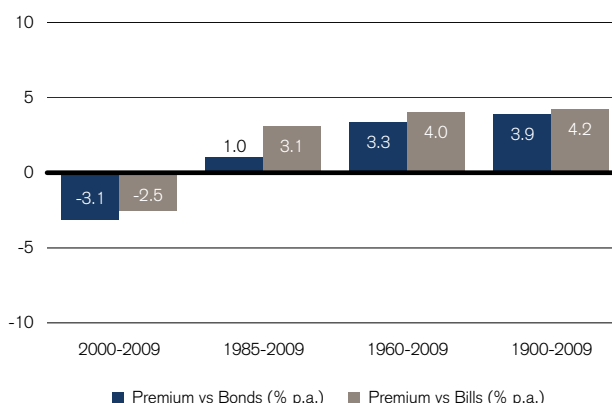
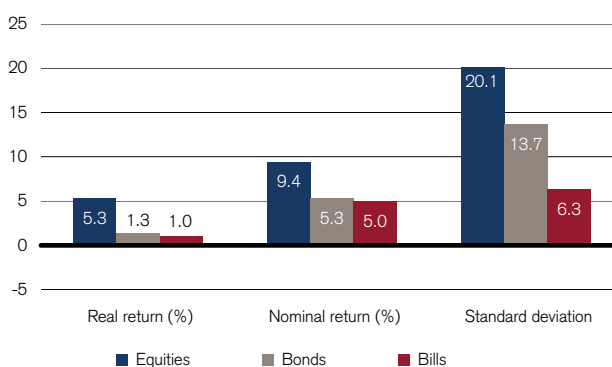


Figure 3
Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



United States

Financial superpower

In the 20th century, the United States rapidly became the world's foremost political, military, and economic power. After the fall of communism, it became the world's sole superpower.

The USA is also a financial superpower. It has the world's largest economy, and the dollar is the world's reserve currency. Its stock market accounts for 41% of total world value, which is over five times as large as Japan. The USA also has the world's largest bond market.

US financial markets are also the best documented in the world and, until recently, most of the long-run evidence cited on historical asset returns drew almost exclusively on the US experience. Since 1900, US equities and US bonds have given real returns of 6.2% and 1.9%, respectively.

There is an obvious danger of placing too much reliance on the excellent long run past performance of US stocks. The New York Stock Exchange traces its origins back to 1792. At that time, the Dutch and UK stock markets were already nearly 200 and 100 years old, respectively. Thus, in just a little over 200 years, the USA has gone from zero to a 41% share of the world's equity markets.

Extrapolating from such a successful market can lead to "success" bias. Investors can gain a misleading view of equity returns elsewhere, or of future equity returns for the USA itself. That is why this *Yearbook* focuses on global returns, rather than just those from the USA.

Capital market returns for the United States

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 726.6 compared to 8.2 for bonds and 2.8 for bills. Figure 2 shows that, since 1900, equities beat bonds by 4.2% and bills by 5.2% per year. Figure 3 shows that the long-term real return on US equities was an annualized 6.2% compared to bonds and bills, which gave a real return of 1.9% and 0.9%, respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

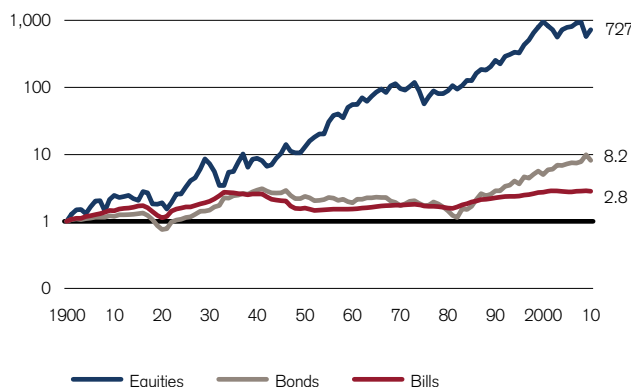


Figure 2

Equity risk premium over 10 to 110 years

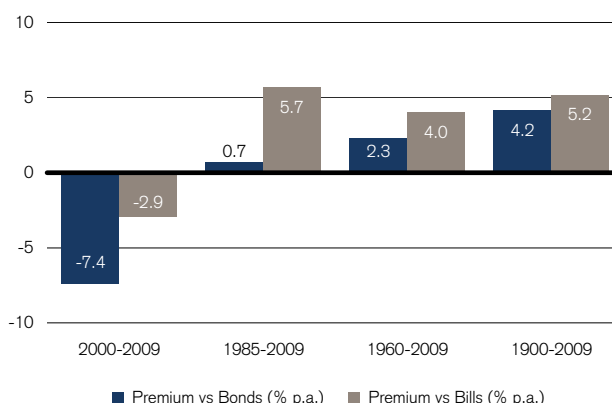
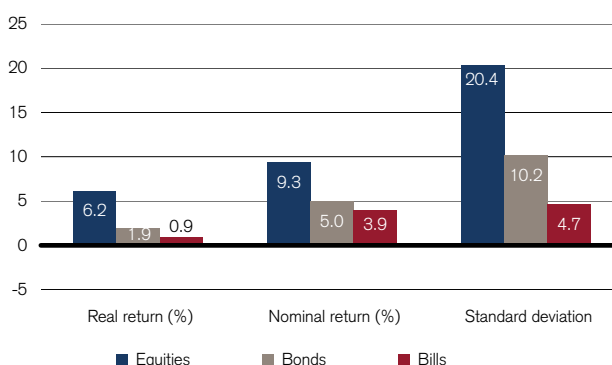


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



World

Globally diversified

It is interesting to see how the 19 *Yearbook* countries have performed in aggregate over the long run. We have therefore created a 19-country world equity index denominated in a common currency, in which each country is weighted by its starting-year equity market capitalization, or in years before capitalizations were available, by its GDP. We also compute a 19-country world bond index, with each country weighted by GDP.

These indexes represent the long-run returns on a globally diversified portfolio from the perspective of an investor in a given country. The charts opposite show the returns for a US global investor. The world indexes are expressed in US dollars; real returns are measured relative to US inflation; and the equity premium versus bills is measured relative to US treasury bills.

Over the 110 years from 1900 to 2009, Figure 1 shows that the real return on the world index was 5.4% per year for equities, and 1.7% per year for bonds. It also shows that the world equity index had a volatility of 17.8% per year. This compares with 23.5% per year for the average country and 20.4% per year for the USA. The risk reduction achieved through global diversification remains one of the last “free lunches” available to investors.

Capital market returns for World

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 331.4 as compared to 6.4 for bonds and 2.8 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.7% and bills by 4.4% per year. Figure 3 shows that the long-term real return on World equities was an annualized 5.4% as compared to bonds and bills, which gave a real return of 1.7% and 0.9% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

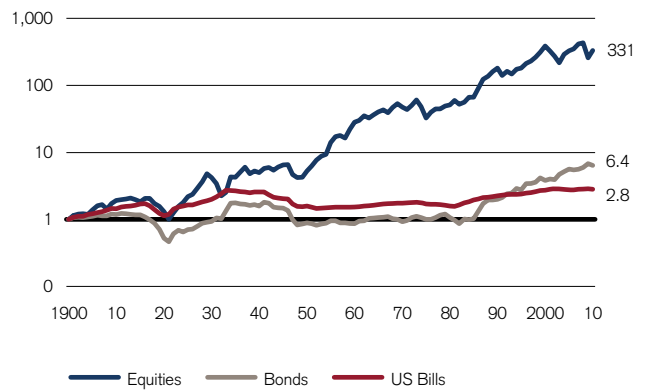


Figure 2

Equity risk premium over 10 to 110 years

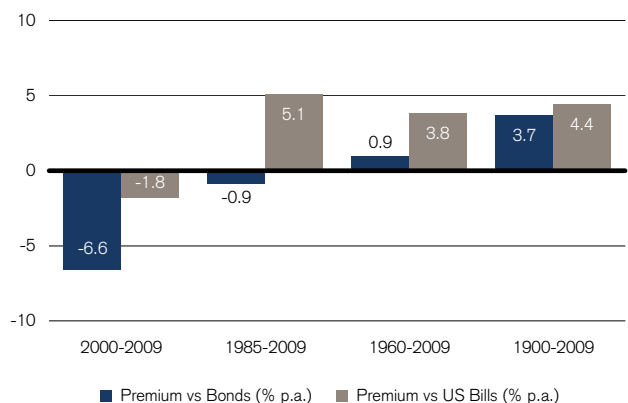
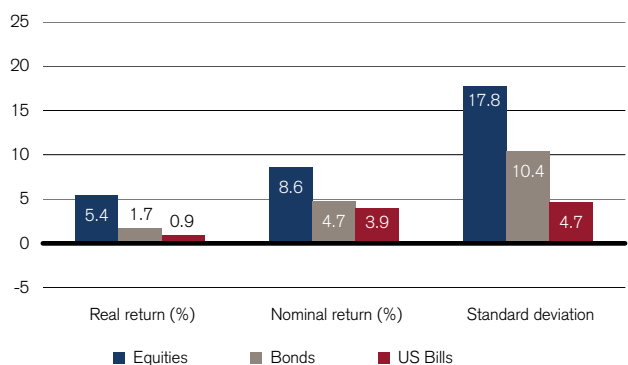


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



World ex-US

Rest of the world

In addition to the two world indexes, we also construct two world indexes that exclude the USA, using exactly the same principles. Although we are excluding just one out of 19 countries, the USA accounts for roughly half the total equity market capitalization of our 19 countries, so the 18-country world ex-US equity index represents approximately half the total value of the world index.

We noted above that, until recently, most of the long-run evidence cited on historical asset returns drew almost exclusively on the US experience. We argued that focusing on such a successful economy can lead to “success” bias. Investors can gain a misleading view of equity returns elsewhere, or of future equity returns for the USA itself.

The charts opposite confirm this concern. They show that, from the perspective of a US-based international investor, the real return on the world ex-US equity index was 5.0% per year, which is 1.2% per year below that for the USA. This suggests that, although the USA has not been a massive outlier, it is nevertheless important to look at global returns, rather than just focusing on the USA.

Capital market returns for the World ex-US

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 214.8 as compared to 3.7 for bonds and 2.8 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.8% and bills by 4.0% per year. Figure 3 shows that the long-term real return on World ex-US equities was an annualized 5.0% as compared to bonds and bills, which gave a real return of 1.2% and 0.9% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

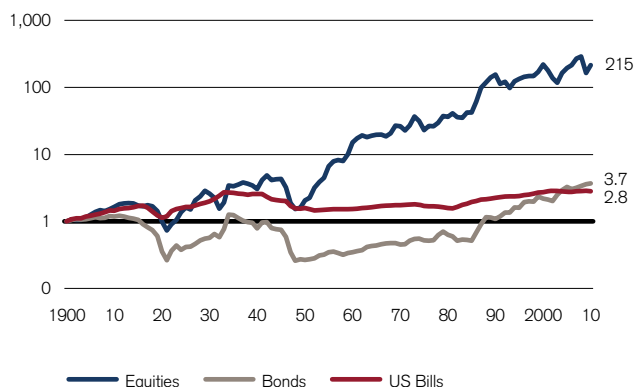


Figure 2

Equity risk premium over 10 to 110 years

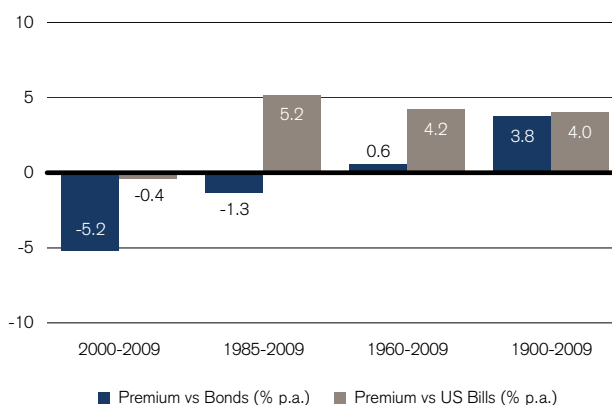
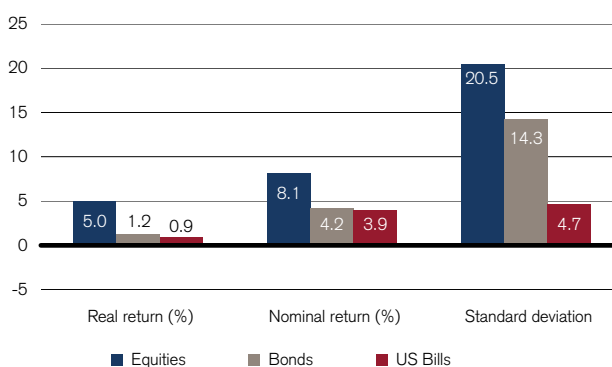


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010



Europe

The Old World

The *Yearbook* documents investment returns for 13 European countries. They comprise eight euro currency area states (Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands and Spain) and five European markets that are outside the euro area (Denmark, Sweden and the UK; and from outside the EU, Norway and Switzerland). Loosely, we might argue that these 13 countries come from the Old World.

It is interesting to assess how well European countries as a group have performed, compared with our world index. We have therefore constructed a 13-country European index using the same methodology as for the world index. As with the world index, this European index can be designated in any desired common currency. For consistency, the figures opposite are in US dollars from the perspective of a US international investor.

Figure 1 opposite shows that the real equity return on European equities was 4.8%. This compares with 5.4% for the world index, indicating that the Old World countries have underperformed. This may relate to the destruction from the two world wars, where Europe was at the epicenter; or to the fact that many of the New World countries were resource-rich; or perhaps to the greater vibrancy of New World economies.

Capital market returns for Europe

Figure 1 shows that, over the last 110 years, the real value of equities, with income reinvested, grew by a factor of 167.9 as compared to 2.5 for bonds and 2.8 for bills. Figure 2 shows that, since 1900, equities beat bonds by 3.9% and bills by 3.8% per year. Figure 3 shows that the long-term real return on European equities was an annualized 4.8% as compared to bonds and bills, which gave a real return of 0.8% and 0.9% respectively. For additional explanations of these figures, see page 27.

Figure 1

Annualized performance from 1900 to 2009

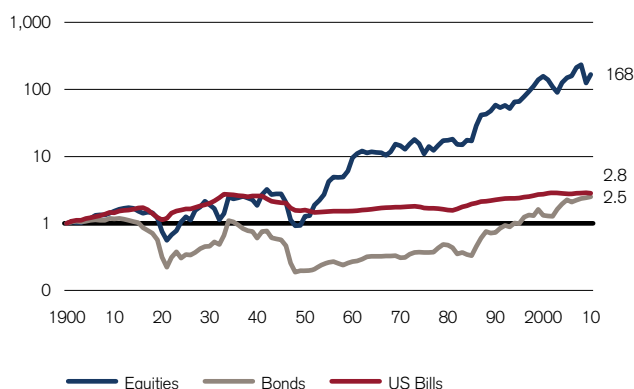


Figure 2

Equity risk premium over 10 to 110 years

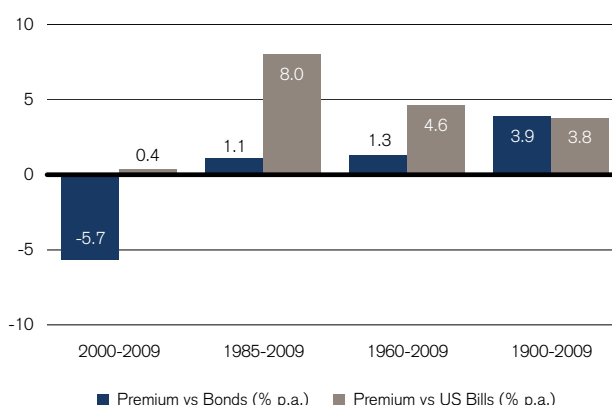
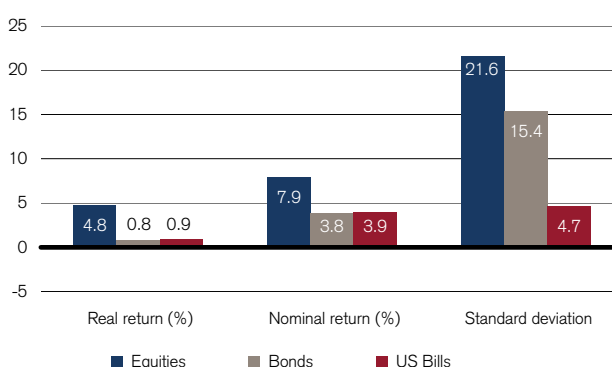


Figure 3

Returns and risk of major asset classes since 1900



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2010

About the authors

Elroy Dimson is Emeritus Professor of Finance at London Business School, where he has been an elected Governor, Chair of the Finance and Accounting areas, and Dean of the School's MBA and EMBA programmes. He holds board and investment committee positions with Guy's & St Thomas' Charity, The Foundation for Social Entrepreneurs, London University, and until recently, the Norwegian Government Pension Fund. He is a Director and Past President of the European Finance Association and has been elected to membership of the Financial Economists Roundtable. He has been appointed to Honorary Fellowships of the UK Society of Investment Professionals and of the Institute of Actuaries. Dr Dimson has published articles in Journal of Business, Journal of Finance, Journal of Financial Economics, Journal of Portfolio Management, Financial Analysts Journal, and other journals. His PhD in Finance is from London Business School.

Paul Marsh is Emeritus Professor of Finance at London Business School. Within London Business School he has been Chair of the Finance area, Deputy Principal, Faculty Dean, an elected Governor and Associate Dean Finance Programmes. He has advised on several public enquiries, and is currently a Director of Aberforth Smaller Companies Trust and, previously, of M&G and Majedie Investments, and has acted as a consultant to a wide range of financial institutions and companies. Dr Marsh has published articles in Journal of Business, Journal of Finance, Journal of Financial Economics, Journal of Portfolio Management, Harvard Business Review, and other journals. His PhD in Finance is from London Business School. With Elroy Dimson, he co-designed the FTSE 100-Share Index and ABN AMRO's Hoare Govett Smaller Companies Index, produced since 1987 at London Business School.

Mike Staunton is Director of the London Share Price Database, a research resource of London Business School, where he produces the London Business School Risk Measurement Service. He has taught at universities in the United Kingdom, Hong Kong and Switzerland. Dr Staunton is co-author with Mary Jackson of Advanced Modelling in Finance Using Excel and VBA, published by Wiley and writes a regular column for Wilmott magazine. He has had articles published in Journal of Banking & Finance, Financial Analysts Journal, and Journal of the Operations Research Society. His PhD in Finance is from London Business School.

Jonathan Wilmot is a Managing Director of Credit Suisse and Chief Global Strategist in the Investment Banking division of Credit Suisse. After reading Philosophy, Politics and Economics (PPE) at Oxford, Mr. Wilmot worked for Bank of America and Merrill Lynch as a foreign exchange economist and bond analyst before joining Credit Suisse First Boston in 1985. In the subsequent 25 years, he has established a reputation as one of the best and most original strategists in the industry. His work focuses on both secular and cyclical trends in the global economy, and their implications for policy, capital flows, and investment strategy across all major asset classes. He is a member of the group's Global Economics and Strategy group, and travels extensively in Europe, the Far East, and America to meet with the world's leading asset managers, pension funds, official institutions, and hedge funds.

General disclaimer / Important information

This document was produced by and the opinions expressed are those of Credit Suisse as of the date of writing and are subject to change. It has been prepared solely for information purposes and for the use of the recipient. It does not constitute an offer or an invitation by or on behalf of Credit Suisse to any person to buy or sell any security. Nothing in this material constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances, or otherwise constitutes a personal recommendation to you. The price and value of investments mentioned and any income that might accrue may fluctuate and may fall or rise. Any reference to past performance is not a guide to the future.

The information and analysis contained in this publication have been compiled or arrived at from sources believed to be reliable but Credit Suisse does not make any representation as to their accuracy or completeness and does not accept liability for any loss arising from the use hereof. A Credit Suisse Group company may have acted upon the information and analysis contained in this publication before being made available to clients of Credit Suisse.

Investments in emerging markets are speculative and considerably more volatile than investments in established markets. Some of the main risks are political risks, economic risks, credit risks, currency risks and market risks. Investments in foreign currencies are subject to exchange rate fluctuations. Before entering into any transaction, you should consider the suitability of the transaction to your particular circumstances and independently review (with your professional advisers as necessary) the specific financial risks as well as legal, regulatory, credit, tax and accounting consequences.

This document is issued and distributed in the United States by Credit Suisse Securities (USA) LLC, a U.S. registered broker-dealer; in Canada by Credit Suisse Securities (Canada), Inc.; and in Brazil by Banco de Investimentos Credit Suisse (Brasil) S.A. This document is distributed in Switzerland by Credit Suisse, a Swiss bank. Credit Suisse is authorized and regulated by the Swiss Financial Market Supervisory Authority (FINMA). This document is issued and distributed in Europe (except Switzerland) by Credit Suisse (UK) Limited and Credit Suisse Securities (Europe) Limited, London. Credit Suisse Securities (Europe) Limited, London and Credit Suisse (UK) Limited, both authorized and regulated by the Financial Services Authority, are associated but independent legal and regulated entities within the Credit Suisse. The protections made available by the UK's Financial Services Authority for private customers do not apply to investments or services provided by a person outside the UK, nor will the Financial Services Compensation Scheme be available if the issuer of the investment fails to meet its obligations. This document has been issued in Asia-Pacific by whichever of the following is the appropriately authorized entity of the relevant jurisdiction: in Hong Kong by Credit Suisse (Hong Kong) Limited, a corporation licensed with the Hong Kong Securities and Futures Commission or Credit Suisse Hong Kong branch, an Authorized Institution regulated by the Hong Kong Monetary Authority and a Registered Institution regulated by the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong); in Japan by Credit Suisse Securities (Japan) Limited; elsewhere in Asia-Pacific by whichever of the following is the appropriately authorized entity in the relevant jurisdiction: Credit Suisse Equities (Australia) Limited, Credit Suisse Securities (Thailand) Limited, Credit Suisse Securities (Malaysia) Sdn Bhd, Credit Suisse Singapore Branch and elsewhere in the world by the relevant authorized affiliate of the above.

This document may not be reproduced either in whole, or in part, without the written permission of the authors and CREDIT SUISSE. © 2010 CREDIT SUISSE GROUP AG

Imprint

Publisher

Credit Suisse Group AG
Credit Suisse Research Institute
Paradeplatz 8
CH-8070 Zurich
Switzerland

Production Management

Global Research Editorial & Publications
Markus Kleeb (Head)
Ross Hewitt
Katharina Schlatter

Responsible authors

Elroy Dimson, London Business School, edimson@london.edu
Paul Marsh, London Business School, pmarsh@london.edu
Mike Staunton, London Business School, mstaunton@london.edu
Jonathan J. Wilmot, Credit Suisse, jonathan.wilmot@credit-suisse.com

Editorial deadline

3 February 2010

Additional copies

Additional copies of this publication can be ordered via the Credit Suisse publication shop www.credit-suisse.com/publications or via your customer advisor. Copies of the Credit Suisse Global Investment Returns Sourcebook 2010 can be ordered via your customer advisor (Credit Suisse clients only). Non-clients please see below for ordering information.

Additional copies (internal)

For additional copies of this publication and the Credit Suisse Global Investment Returns Sourcebook 2010 (for clients only), please send an e-mail to GG.UH.Massenversand.

ISBN 978-3-9523513-2-1

The Credit Suisse Global Investment Returns Yearbook 2010 is distributed to Credit Suisse clients by the publisher, and to non-clients by London Business School. The accompanying volume, which contains detailed tables, charts, listings, background, sources and references, is called the Credit Suisse Global Investment Returns Sourcebook 2010. It is also distributed to Credit Suisse clients by the publisher, and to non-clients by London Business School. Please address requests to Patricia Rowham, London Business School, Regents Park, London NW1 4SA, United Kingdom, tel +44 20 7000 7000, fax +44 20 7000 7001, e-mail prowham@london.edu. E-mail is preferred.

Copyright © 2010 Elroy Dimson, Paul Marsh and Mike Staunton. All rights reserved. No part of this document may be reproduced or used in any form, including graphic, electronic, photocopying, recording or information storage and retrieval systems, without prior written permission from the copyright holders. To obtain permission, contact the authors with details of the required extracts, data, charts, tables or exhibits. In addition to citing this Yearbook, documents that incorporate reproduced or derived materials must include a reference to Elroy Dimson, Paul Marsh and Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns*, Princeton University Press, 2002. At a minimum, each chart and table must carry the acknowledgement Copyright © 2010 Elroy Dimson, Paul Marsh and Mike Staunton. If granted permission, a copy of published materials must be sent to the authors at London Business School, Regents Park, London NW1 4SA, United Kingdom.

