The Outlook for Equity Market Volatility, Implications for Funds Management and Alternatives to Capitalisation-Weighted Benchmarks.

Abstract

For much of the decade leading to 2008, economic and market conditions displayed remarkable stability. It had appeared that the Great Moderation was upon us. More recently, this belief has been shattered by a range of significant global financial developments that have required war-like fiscal expenditure to mollify. In turn, this response, together with the build up of extreme levels of debt in the private sector and changes to the underlying structure of monetary flows and the economy more generally imply that heightened volatility and, potentially, lower growth rates are in store. How should investors adjust to these developments? What sources of alpha are likely to be most successful? What does it mean for the risk management of equity portfolios? Are market capitalisation weighted benchmarks less appropriate? We outline some of our key thoughts on these issues.

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August 2010

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Acknowledgements:

The authors wish to thank the following colleagues for helpful comments and assistance: Simon Brinsmead, Russ Koesterich, Ritch Longmire, Paddy McCrudden and Libby O'Sullivan. All opinions expressed are those of the authors and do not necessarily represent those of BlackRock. All errors are our own.

Summary

Key findings

- The medium term outlook is for volatility levels to exceed the average of that experienced in the last 20 years, and for GDP growth in most western nations to be muted with risks to the downside. This is expected to create risk-seeking behaviour from market participants and company management. Circumstances conducive to behaviourally sourced financial anomalies are likely to re-assert themselves.

- Successful equity fund managers, in the anticipated market, will gradually divide themselves into two groups:
    - those who perceive the world as an integrated network of economic entities, and structure themselves accordingly. Successful fund managers in this category will compete on the basis of their understanding of economic and financial linkages, together with data acquisition and application, to capture and profit from information insights; and
    - those who continue to pursue traditional stock picking methods on companies driven by highly idiosyncratic factors with simple value chains.

- In an environment of increased volatility and in combination with disappointing returns from equities more generally, some investors may pursue alternatives to capitalisation-weighted benchmarks. For them, some new ideas (fundamental index, minimum variance portfolios, maximum diversified portfolios) about equity portfolio construction may warrant consideration. These are particularly attractive to investors who are less concerned with relative peer rankings.

This report provides a comprehensive review into the major events, longer term trends and themes that impacted equity market volatility expectations over the last 40 years. This provided a concrete basis from which the causes of changes in volatility expectations could be observed.

A broad range of issues which were thought to be relevant for risk estimation in the medium term have also been considered. Such factors included political imperatives, monetary conditions, geo-political risks, demographic profiles and business models.

In combination, the above analysis suggested that the outlook for market volatility in the medium term is towards the higher end of the range experienced in the last 20 years. If compelled to select an historical period which potentially captures the current circumstances best 1997-2001 is most qualitatively similar. In this period, inflation expectations were well anchored, but the world was unwinding excesses of investment in Asia, high leverage in Long Term Capital Management (LTCM), experiencing low corporate profit growth and yet embarked on a speculative bubble in the form of the Tech boom. Naturally, there are many features of conditions today that were not present in history.

One of the key conclusions of this report mirrors that reached by the regulatory authorities around the world charged with ensuring ongoing financial system stability. This conclusion is that network thinking has become necessary for successful funds management in the period ahead, particularly for participants on the larger scales. Simply, the extent of economic and financial integration, coupled with more complex value-chains and diverse customer bases, has demonstrably reached a point where it is necessary to envisage listed companies as being one part of a wider economic system. The basic operations of companies and movements in their security prices also take place within a broader context of powerful monetary forces which are on hair-trigger as many parts of the western world reverse from the precipice of excessive fiscal indebtedness.

Large scale investors will increasingly compete on the basis of the accuracy of their understanding of economic and financial linkages throughout the value-chains of companies, and the context of their competitive processes. Information acquisition and application is the primary route to resolve the myriad of uncertainties that will arise as participants compete to assess outlooks. A global context is a pre-requisite, as is an understanding of portfolio risks on this basis.

Nonetheless, it is envisaged that there will still be alpha opportunities available for traditional stock pickers undertaking bottom-up analysis. They will have to focus on a diminishing pool of companies that are driven by highly idiosyncratic factors for a sustainable edge.

Elevated volatility levels, lower profitability and the experience of largely disappointing equity market returns may encourage some investors to ask whether portfolios explicitly managed against capitalisation-weighted benchmarks are the best way to obtain equity market exposure. Although this is a dominant practice, there are some innovative alternatives that warrant consideration. These include fundamental indexation, minimum variance portfolios and maximum diversification portfolios.

Introduction

In the echoes of the acute phase of the global financial crisis of 2007-2009, market commentary and opinion have become more aligned in the belief that the "new normal" (see El-Erian 2008) for financial markets will be characterised by:

- Declining government, corporate and personal leverage;
- Some potential retracement or slow-down in the pace of global integration;
- Increased regulatory influence in markets; and
- Slower growth and increased volatility in the economy and markets more generally.

It is increasingly common to hear medium term expectations for the economy characterised as being more similar to the 1970s and 1980s than the more recent decades.

In this report, the sources of volatility surges and contractions in the last 20 years are outlined, although a brief comment on the 1970s and 80s is also given. There have been two full multi-year cycles of volatility in the last 20 years. An examination of these should provide some context about what can be expected in the coming period.

Next, a wide range of factors that may influence the economy, market outlook and behaviour of stock prices within the market in the coming period were considered. This provided a guide towards how best to position funds management resources in the anticipated environment in order to generate alpha.

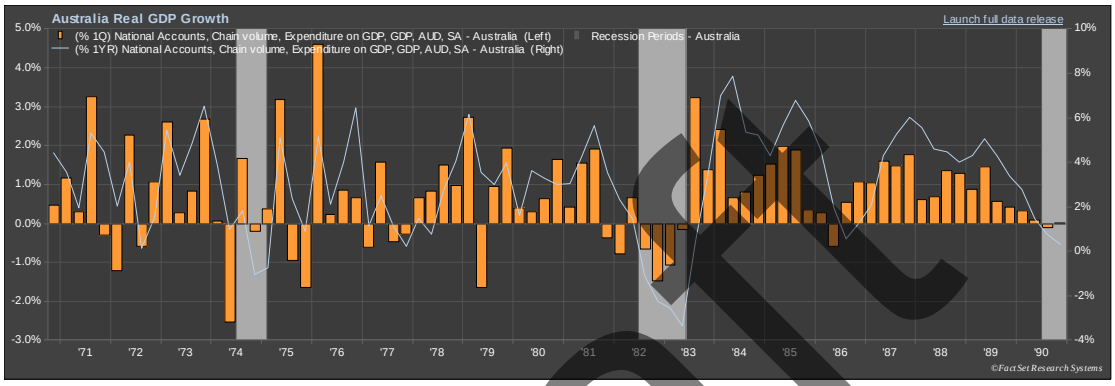
Finally, alternatives to market-weighted benchmarks are discussed. These may provide a suitable option for some investors, particularly if peer comparison risk is not a key source of aversion.

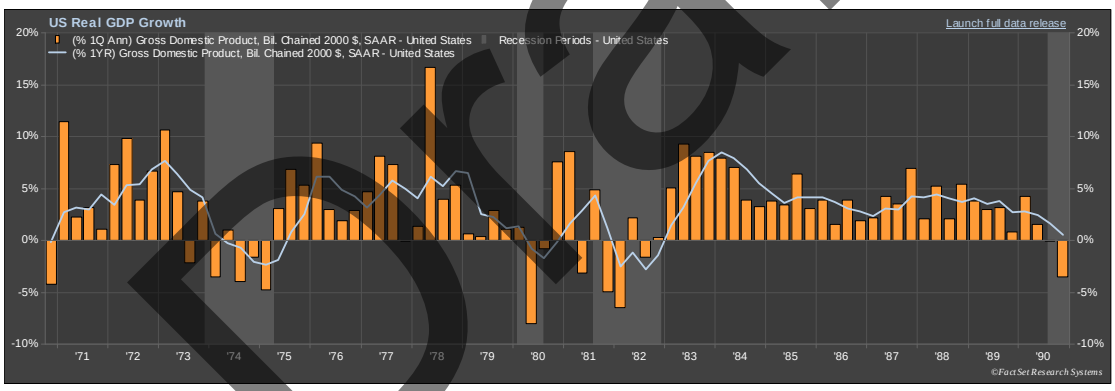
For the most part, the discussions and illustrations are focused on the Australian and US markets. The broad themes can be generalised to other developed markets.

The 1970s and 1980s – Oil, Inflation, Volcker and the fall of communism

In this section a brief outline is provided of the major events and economic conditions prevaling in Australia and the US during the 1970s and 1980s, decades characterised by stagflation and oil shocks in the first instance, then declining inflation and relative prosperity in the second.

The following charts illustrate changes in GDP, for Australia and the US, over the 1970s and 1980s:





The above charts show that the key periods of recessionary economic conditions were largely synchronised, however, the Australian economy was more volatile,. This was a natural outcome of its commodity and manufacturing orientated base, and open economy.

The proximate cause of the 1974 recessionary period was the OPEC oil embargo. The embargo commenced in 1973 in response to the US involvement with Israel during the Yom Kippur war. Oil prices rose substantially, and the economy and equity markets fell precipitously.

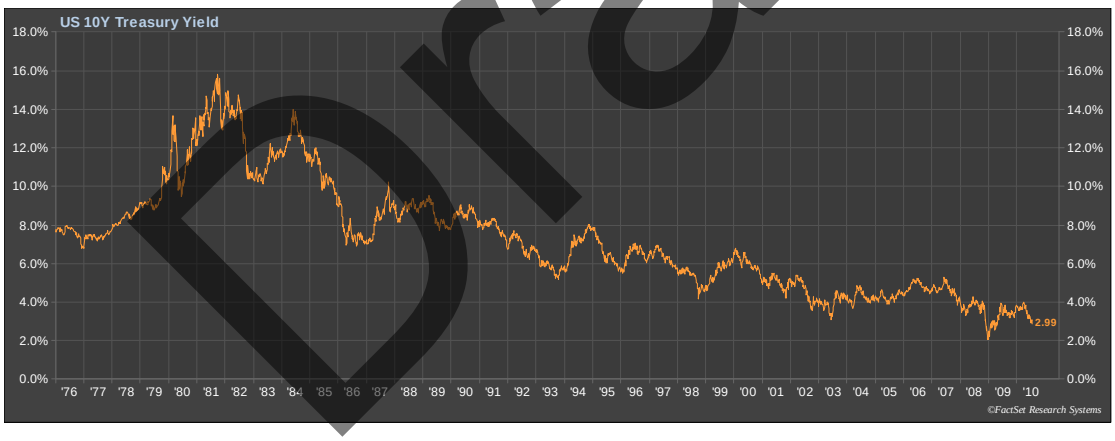
The US encountered a short and sharp recession in 1980. Again, oil was implicated, with this second oil crisis occurring after the fall of the Shah of Iran in January 1979. The Iranian Revolution, which followed, led to supply interruptions and higher prices. Oil supply remained tight in the ensuing years as Iraq and Iran descended into a war that consumed the nations from September 1980 to August 1988.

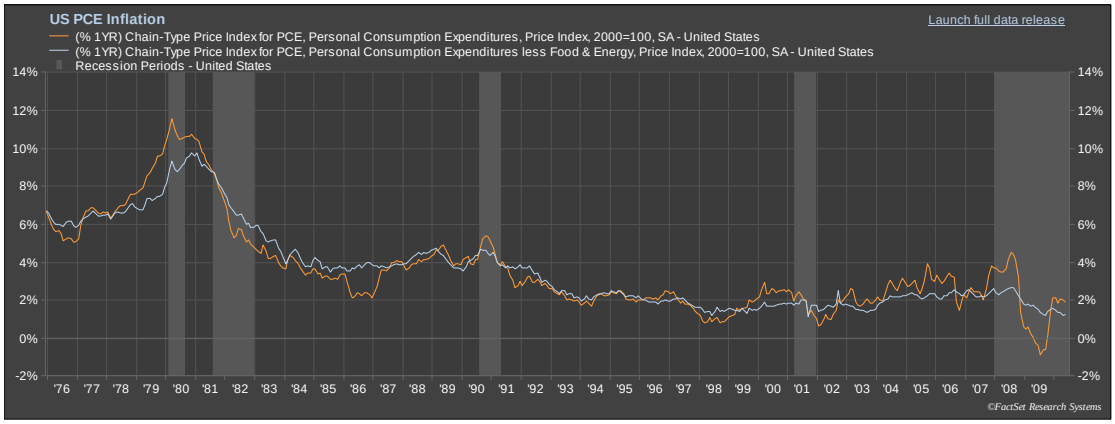
The 1970s were characterised by stagflation as a result of the inflationary impulse of energy costs and, potentially, by a discredited belief in the Phillips Curve (inverse relationship between unemployment and inflation) on the part of some monetary authorities, which kept interest rates too low despite accelerating inflation rates. It was also the decade in which the convertibility of the USD into gold was formally abandoned by the Nixon administration in 1971.

Paul Volcker was appointed as Chairman of the US Federal Reserve in August 1979. Under his stewardship, the Fed funds rate was aggressively raised until inflationary expectations were re-anchored. In the course of this harsh monetary medicine, the US and other parts of the world, including Australia, experienced a difficult recession in the early part of the 1980s.

One of the consequences of these actions included the Savings and Loans crisis in the US, which was precipitated by a mis-match in maturity between the funds which were sourced at shorter term maturities yet lent at longer maturities, amongst other things.

The historic actions of the Fed, however, ushered in a long period of declining inflation and bond yields and greater prosperity, as shown in the following charts.





In Australia, a bold financial market reform, led by Treasurer Paul Keating within the Hawke Government, resulted in the floating of the Australian dollar in December 1983 and increased the general sophistication of the financial system. Bank capital adequacy rules were revised.

Of note, in October 1987, equity markets around the world experienced a sharp and concentrated drop in values. To this day, no single proximate cause has been identified for the crash, although dynamic asset allocation methods of portfolio insurance are commonly raised. Despite the substantial correction, economic growth did not stall.

The decade closed with the fall of communism as a material geo-political backdrop. The Berlin Wall was breached on 9 November 1989, but it took until 26 December 1991 for the USSR to be formally dissolved. The Tiananmen Square protests also attracted considerable, and largely unwelcome, attention to China. The picture below of the "Tank Man" was taken on 5 June 1989 and remains indelibly associated with the event:

Source: AAP

The Plaza Accord was signed by the governments of France, West Germany, Japan, US and United Kingdom in 1985 to depreciate the US Dollar in an effort to stem the growth of the US current account deficit. The effort did not succeed in rectifying the deficit and was ultimately unwound at the Louvre Accord in 1987. However, the mechanism can be traced as a proximate cause of the Japanese asset bubble that led to its banking crisis and subsequent deflationary and low growth conditions that have since plagued its economy.

Overall, the 1970s were characterised by considerable economic uncertainty, sourced from the oil sector via Middle East politics in acute phases, and the Cold War more chronically. Inflation was a measurable source of uncertainty. The Volcker era in the Fed commenced with the successful anchoring of inflation expectations in the early 1980s. This set off economic and market circumstances which were largely favourable and well received in the subsequent decades, although asset bubbles persisted. This period was also recognisable as a formative stage of inflation targeting as an objective of central banks. It saw the demise of belief in the Phillips Curve in favour of the Taylor Rule (whereby interest rates are altered in response to divergences of inflation rates from target rates and of actual GDP from potential GDP) as an underlying guide to monetary settings.

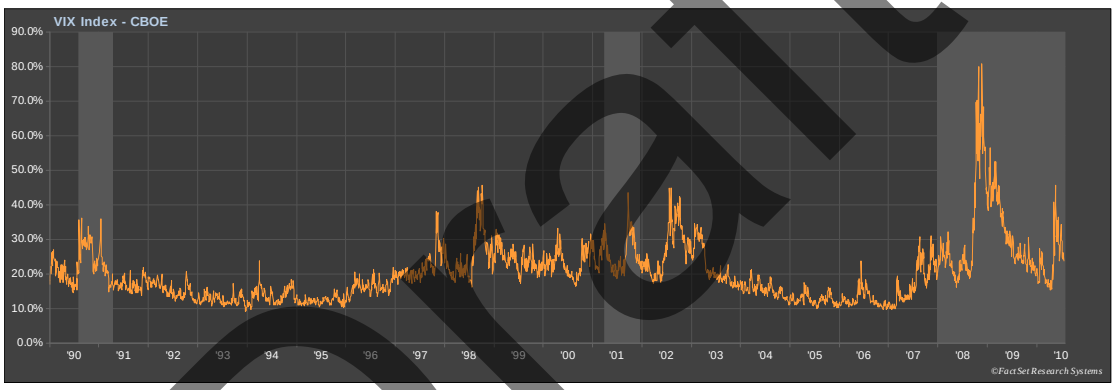
Equity Market Volatility and Behaviour - 1990 to Present Day

We are interested in exploring the broad patterns of equity market volatility, in particular,:

- individual market volatility;
- increasing correlations across market returns; and
- unusual correlations.

Individual Market Volatility

The following chart illustrates the Chicago Board Options Exchange Volatility Index (VIX) progression over the period. It illustrates that markets can be considered to have experienced two full cycles in volatility expectations in the last 20 years. The proximate causes should provide useful background information in forecasting the likely volatility environment in coming years.

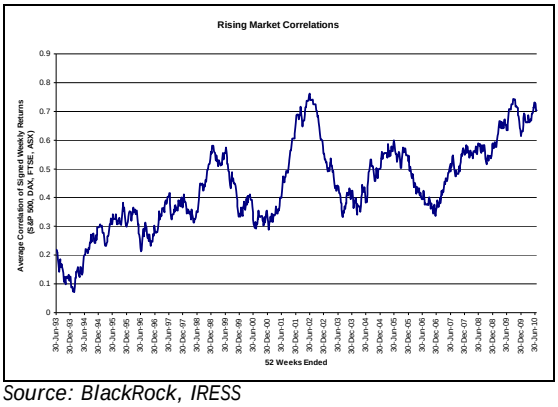


The VIX index captures the inherent uncertainty which faced investors at different times in history.

Increasing Equity Market Correlation

Over the period, the developed equity markets have also shown increasing correlation in their performance. To limit the impact of extreme returns in our analysis, we have observed the rolling 52 week correlations of the sign of market returns. Simply put, if the US market recorded a positive return last week, the sign of the return is taken as +1. If the return was negative, the sign of the return would be -1.

These figures were calculated across the US, German, UK and Australian equity markets. The pair-wise rolling 52 week correlations were averaged and displayed in the following chart:

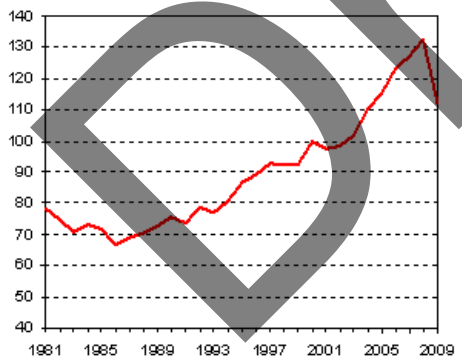


Source: BlackRock, IRESS

The chart illustrates a secular trend of rising correlations and points to an increasingly integrated equity market.

Part of the reason behind the rising correlations is the increasing importance of trade. This would naturally tie economies closer together. Trade has been increasing materially since 1990, notwithstanding the effects of the recent crisis:

Ratio of world exports of goods and commercial services to GDP (index 2000 = 100)



Source: IMF, WTO

Long term studies of trade integration and capital mobility suggest that this is unlikely to change in the absence of a very dramatic development in the geo-political structure (see Reinhart and Rogoff 2008, Obstfeld and Taylor 2004).

Larger listed companies also compete increasingly across geographies, which increases their correlation despite differences in natural listed domicile.

Unusual Correlations

Another reason for increasing correlation across equity markets is the globalisation of money flows. The impact of monetary flows has given rise to increasing correlations between financial time series that seem to have limited economic relationships. One striking example relates the currency carry trade between the Japanese Yen and New Zealand Dollar with the S&P 500 Index:

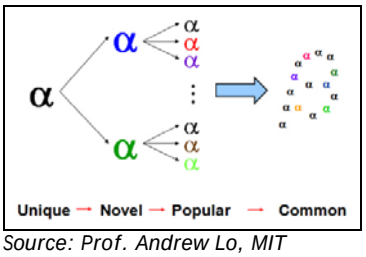
NZD / YEN Exchange rate (LHS) and S&P 500 Index Level (RHS)

Source: IRESS

The presence of multi-strategy hedge funds have highlighted that financial market linkages arise due to common ownership, rather than necessarily through common underlying economic influence as had been generally assumed in prior history.

Further, importantly for structured processes, the volume of assets and spread of ideas beyond their source of discovery and refinement has led to a degree of commoditisation of concepts that were once considered unique or novel sources of alpha. The impact of this stealthy diminution of strategy diversification was amply displayed in August 2007 and in the period since. Professor Andrew Lo from MIT illustrated how, as ideas spread through word of mouth, personnel movements or other means, they transform into exotic betas:

Alpha becomes Beta as knowledge spreads



Source: Prof. Andrew Lo, MIT

Review of Proximate Causes of Market Volatility – 1990 to Present

A review of major developments in the last two decades can be divided into five sub-periods:

- 1990 – 1992: Declining volatility expectations
- 1993 – 1996: Stable volatility expectations
- 1997 – 2002: High volatility expectations
- 2003 – 2006: Declining volatility expectations
- 2007 – Present: High volatility expectations

By dividing the last two decades into sub-periods as above, it is possible to characterise the sorts of factors that lead to changes in volatility expectations. When combined with the issues seen as being pertinent in framing expectations for the next several years, this should help guide efforts to better understand the nature of the market that can be anticipated.

1990-1992: Declining Volatility Expectations

The period was characterised by declining inflationary expectations and bond yields in Australia and the US. Short term interest rates in both Australia and the US also fell steadily over the period.

This occurred despite Saddam Hussein's invasion of Kuwait on 2 August 1990 which led to the first Gulf War under the Bush Presidency. Whilst oil prices spiked over the period, in a significant break from the 1970s, these did not lead to a sustained break in inflationary outcomes. This was the proximate cause for the relatively brief spike in the VIX in this period.

Over this period, central banks began to explicitly adopt inflation targeting as a policy. New Zealand commenced this trend in 1989. Australia adopted inflation targeting in mid-1993 when RBA Governor Bernie Fraser expressed his view that "if inflation could be held to an average of 2-3% over a period of years, that would be a good outcome." Over the years, many other monetary authorities adopted this policy.

Further, efforts to increase labour force flexibility, which commenced in earnest during the 1980s (eg Thatcher Government in the UK, the Prices and Incomes Accords commenced under the Hawke government in Australia), began to pay significant dividends. Industrial action declined materially in Australia.

The Maastricht Treaty, a pre-cursor to the formation of the Euro, was signed on 7 February 1992 and included explicit convergence criteria. These criteria included references to price stability and sustainability of the government fiscal position. In an early indication of the potential power of hedge funds, Soros Funds Management also forced the UK Pound from the Exchange Rate Mechanism on 16 September 1992.

Alan Greenspan was appointed to the Chair of the Fed in August 1987. Although the Fed did cut rates into the 1987 Crash, this was only a slight adjustment. In contrast, the Fed cut rates many times and sustained these cuts as the Gulf War developed and oil prices spiked. This gave rise to speculation of the presence of a "Greenspan Put" under the market. However, lead indicators and business surveys were materially more bearish in the Gulf War than in the October 1987 period when they remained optimistic. Interest rate cuts coincided with a peak in the unemployment rate.

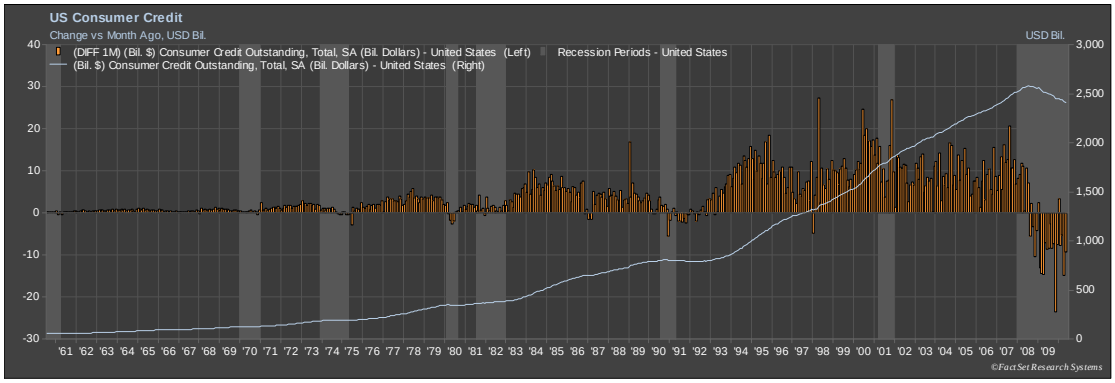
1993-1996: Stable Volatility Expectations

During this period, US 10 Year Treasury bond yields range traded, and inflation outcomes were stable. Corporate profits in the US also experienced a sustained period of growth that had not been experienced since the early 1960s.

The Mexican Peso Crisis emerged in December 1994 and triggered a financial crisis. Through investment linkages, US banks had material exposures to these developments and the US Treasury, under Robert Rubin within the Clinton Administration, orchestrated a series of loans and guarantees. It is interesting to note that volatility expectations did not reflect these events with a spike. Although the Fed tightened rates through 1994, which contributed indirectly to the Mexican problems, rates were reduced only slightly as the crisis unfolded and equity markets extended their rally. The ISM report and US Index of Leading Indicators fell over this period, indicating concern registered in the business community.

The Microsoft Corporation launched Windows 95, and the internet started to permeate society in a material manner. This period essentially marked the birth of the Tech Boom. Greenspan uttered the words "irrational exuberance" on 5 December 1996.

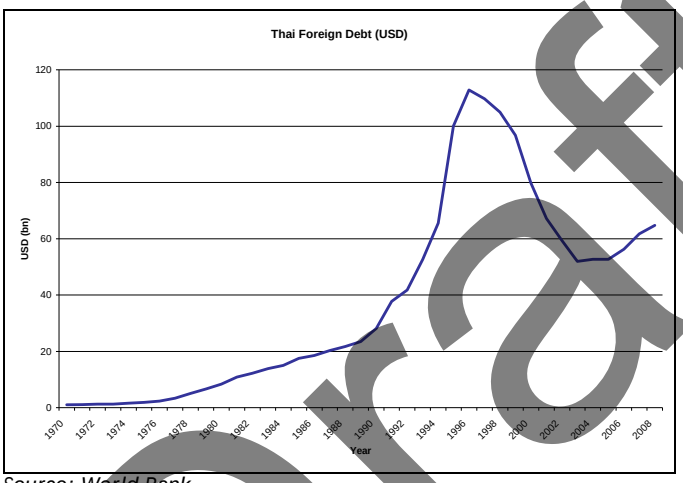
This period also saw the commencement of a period of significant and sustained debt accumulation which precipitated the credit crisis of 2007-2009:



1997-2002: High Volatility Expectations

This period was characterised by a series of financial excesses that reached a critical point and became unstable. It also saw the impact of Islamic terrorism on US soil and US allies being placed on a war footing for operations in Afghanistan and Iraq.

In 1997, the Asian region was struck by a financial crisis. Commencing with the collapse of the Thai Baht in July 1997, economic, financial and sentiment linkages saw the spread of financial contagion across the region. The promise of strong growth from the "Asian Tigers" and surrounding regions attracted foreign capital flow in the 1990s, but ultimately produced an economic crisis. The following chart displays the foreign debt in Thailand, illustrating the bubble clearly:



Source: World Bank

In May 1998, Pakistan conducted a set of nuclear weapons tests, increasing tensions with India.

The Russian Ruble crisis struck on 17 August 1998 as the ripples of the Asian financial crisis fanned outwards. A common perception at the time was that nuclear powers would not be permitted to default on their debt. This perception was misplaced and the Russian debt default that shortly followed led to a flight to safety that caused US Treasury yields to fall sharply.

The hedge fund, Long Term Capital Management (LTCM), had highly leveraged trades purportedly involving the spread between on-the-run and off-the-run Treasuries, amongst many other strategies. The sharp movements in the market precipitated material losses in the fund, which ultimately collapsed, and was bailed out by a consortium of Wall Street Banks (excluding Bear Stearns). There were considerable concerns that the collapse of LTCM would threaten the banking system. The process of unwinding these positions led to many traditional price relationships becoming unhinged, in the first truly widespread example of disparate security prices becoming related due to a common ownership, rather than for underlying economic reasons.

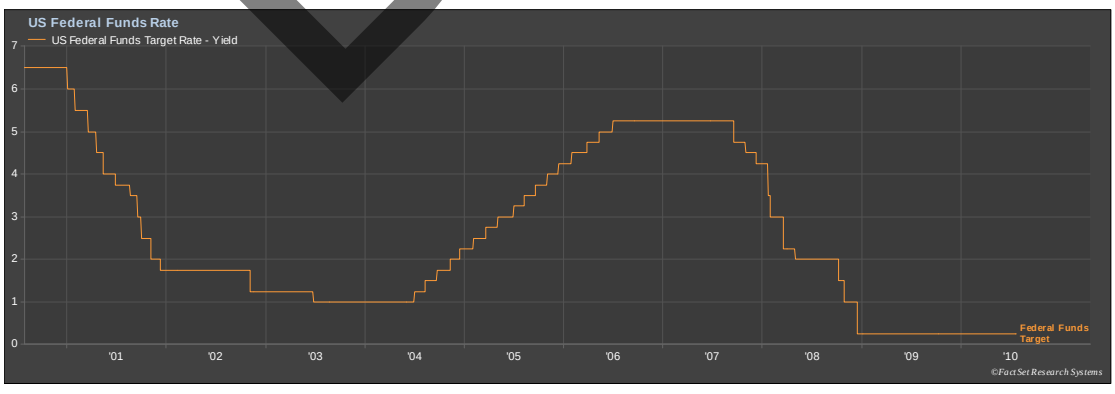
The Technology Boom was in full flight in 1999. Equity markets continued to rally despite slow growth in corporate profits. Confidence across consumers and business was highly elevated. The NASDAQ peaked on intra-day trade on 10 March 2000 before falling precipitously for many years. The Fed commenced tightening rates in mid-1999. These peaked in mid 2000 at 6.5% before being drawn down again from January 2001, as confidence measures fell, to a low of 1% in 2003.

On 11 September 2001, two aircraft were crashed into the World Trade Centre in New York. Operation Enduring Freedom commenced in Afghanistan on 7 October 2001. President George W Bush names Iran, Iraq and North Korea as the "axis of evil" in a State of the Union address in January 2002. The search for weapons of mass destruction in Iraq commenced in earnest and preparations for an invasion of Iraq were well in train prior to the commencement of major combat operations on 20 March 2003. Oil prices experienced a spike, but reverted to prior levels quickly after the military force in Iraq was asserted.

2003 – 2006: Declining volatility expectations

Volatility expectations declined as the combat operations in the Middle East did not lead to acute global shortages of oil. The period was remarkable for a lack of external geo-political or economic dislocation. This quiet period gave rise to excessive risk-taking, clearly visible in retrospect.

Ben Bernanke, when a Governor of the Fed Board, spoke of a Great Moderation on 20 February 2004, noticing that macro-economic variables had become far less volatile. He posited that these were the result of: structural change, improved macro-economic policies and good luck. Later that year, the Fed commenced tightening rates once again:

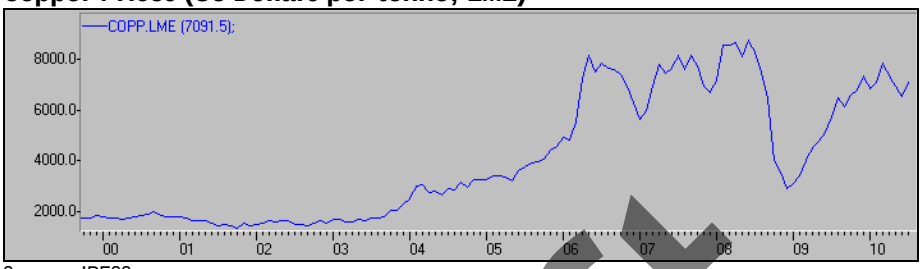


Governance, particularly relating to oversight of remuneration practices in public companies, also increased in prominence. New York Attorney General, Eliot Spitzer, demanded repayment of the majority of Dick Grasso's (Chairman and Chief Executive of the NYSE) $140 million pay package in 2004.

Despite rates being tightened, Alan Greenspan spoke of a "bond conundrum" in February 2005 as 10 year Treasury yields remained stable despite tighter monetary policy moves. By then, China was amassing significant holdings in its foreign reserves.

China's industrialisation began having a material impact on global commodity prices, as evidenced by the copper price:

Copper Prices (US Dollars per tonne, LME)

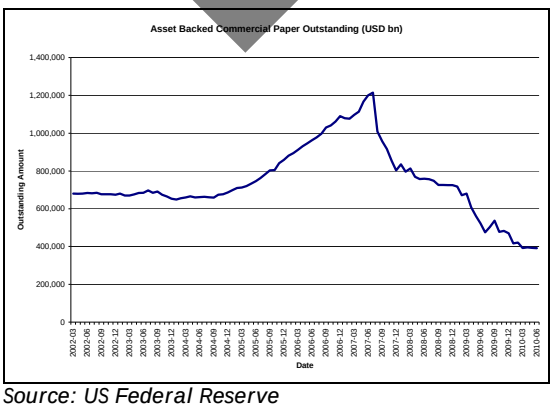


Source: IRESS

Anthropogenic Global Warming rose in prominence to increasingly occupy policy circles. Al Gore's "An Inconvenient Truth" was released in 2006. He was awarded the Nobel Prize in 2007 together with the UN Intergovernmental Panel on Climate Change. Carbon pricing risk was broadly discussed as an investment issue.

The Chinese Government reformed the RMB peg against the US Dollar in 2005, allowing it to appreciate gradually. This process was temporarily halted in 2008 and re-initiated in 2010.

Innovations in securitising asset-backed debt, catering to a renewed search for yield amongst investors, led to a material expansion of the funds available to mortgages and other rationale for personal debt accumulation. Lending standards deteriorated. Securitisation volumes increased dramatically, illustrated in the following US-related chart, spreading risk widely across the financial system.



Source: US Federal Reserve

These innovations fuelled a property bubble in the US and elsewhere.

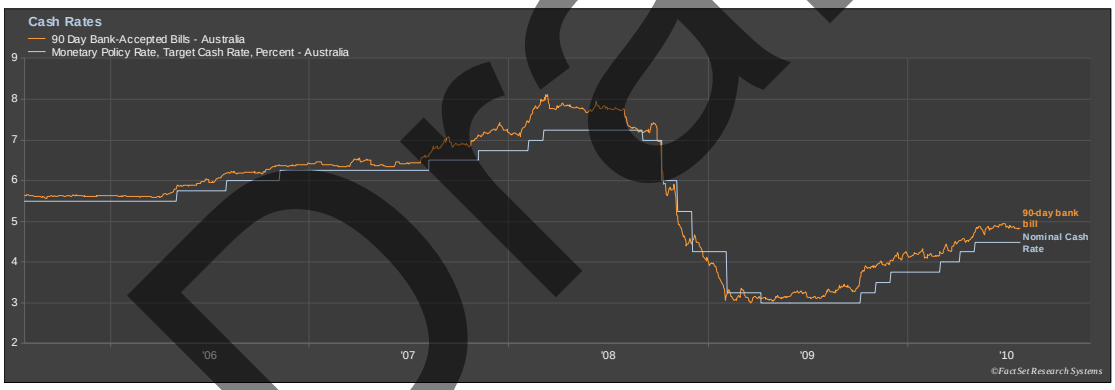
2007 – Present: High volatility expectations

The trigger for the 2007-2009 financial crisis was the deterioration in the sub-prime mortgage market. On 27 Feb 2007, Freddie Mac announced that it would no longer buy sub-prime mortgages. On 2 April 2007, New Century Financial Corporation, a leading sub-prime mortgage lender, filed for bankruptcy protection. On 7 June 2007, Bear Stearns informed investors that it was suspending redemptions from its High-Grade Structured Credit Strategies Enhanced Leverage Fund.

In August 2007, many quant funds around the world experienced exceptionally poor returns.

On 17 February 2008, Northern Rock bank was nationalised by the UK Treasury. Central banks extended liquidity support for their domestic financial institutions in more creative ways, swelling their balance sheets.

Bear Stearns was acquired by JP Morgan with the aid of creative financing from the Federal Reserve on 24 March 2008. Interest rates around the developed world were drastically reduced and confidence plummeted. The following chart of Australian short term interest rates illustrates the severity:



During September 2008:

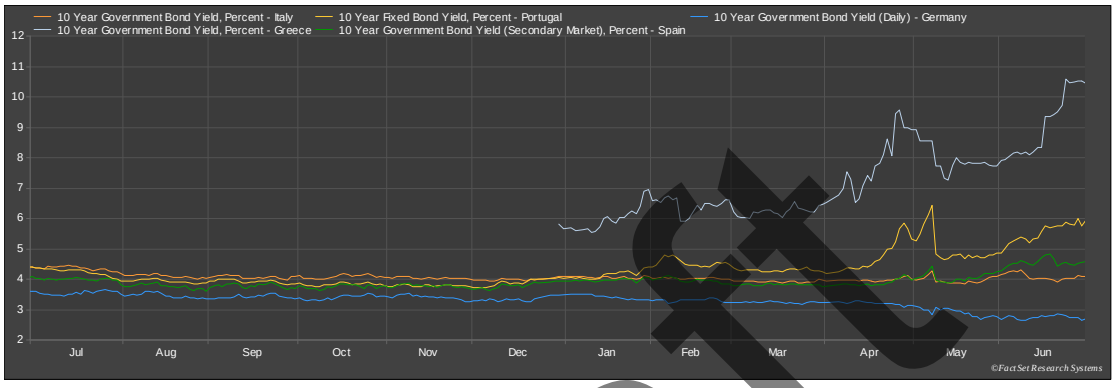
- Fannie Mae and Freddie Mac were placed into conservatorship;
- Merrill Lynch was acquired by Bank of America;
- Lehman Brothers filed for bankruptcy;
- AIG was offered financial support;
- the Reserve Primary Money Market Fund "breaks the buck"; and
- short selling of equities was banned on financial sector companies in the US and all securities in Australia (with some exceptions).

The USD 700bn Troubled Asset Relief Program (TARP) was passed into law on 3 October 2008. In the same month, the Australian government guaranteed bank debt issuance to ensure continued availability of foreign funding for the domestic banking system. Bank deposits were also guaranteed. This had the unintended consequence of creating a flight to safety from mortgage funds and income securities more generally.

The US Federal Reserve and Bank of England introduced forms of quantitative easing to increase money supply and stimulate their economies, raising fears of "printing money".

Equity market levels troughed in March 2009.

Late in 2009, concerns over the size of Greek debt mounted. In April 2010, peripheral European government debt yields diverged substantially, as markets called into question their credit quality and fiscal sustainability:



The European Financial Stability Fund was established on 8 June 2010 in an attempt to stabilise the situation. The ECB also commenced programs to ease credit constraints and market illiquidity.

At the G-20 meeting in Toronto, held on 26-27 June 2010, calls were made for fiscal austerity. In the lead-up to this meeting, Greece, Spain, Germany and Portugal announced material austerity measures to address market concerns. The stability of the Euro was regarded to be under threat.

Oil prices also jumped substantially over the period. As supply and demand conditions were not acutely disrupted, this was assumed to be the result of speculative activity. Inflation expectations remained anchored despite these developments.

Geopolitical risks remained omnipresent in this period. Iran continued a program to enrich uranium to high grades, purportedly for peaceful purposes. North Korea tested a nuclear weapon on 9 October 2006. A second test was conducted on 25 May 2009.

Hopes for freer world trade were dealt a blow with the apparent failure of the Doha Trade Round negotiations in July 2008. Nonetheless, free trade agreements continued to be made successfully on a bilateral basis.

Observations

The last forty years is notable for the reduction in the degree of uncertainty in the economy stemming from inflationary expectations. However, the cost of this achievement included the creation and disorderly unwinding of several asset bubbles as investors reacted by lowering risk premia and increasing leverage to breaking point. Periods of relative calm served only to create the seeds of excess that were revealed at a later stage. The pattern is consistent also with the formation of expectations via relatively recent experience. In other words, forecasts and subsequent economic behaviour appear heavily influenced by the recent experience and display momentum effects.

Examples of excessive risk taking and leverage span a wide range of economic circumstances: Japanese asset bubble, Asia crisis, Tech bubble, various property bubbles, LTCM and the problems in peripheral Europe. These merely append a longer history of similar patterns throughout financial history and demonstrate that such phenomena are perhaps inherent in the basic structure of our economy.

The process of recovering from unwinding periods of excess can take a very long time, as the Japanese example demonstrates. Additionally, transmissions of stress can be highly unpredictable and non-linear, as the relationship between the Asian crisis and the fall of LTCM illustrated. In accordance with extended historical analysis (see Reinhart and Rogoff 2008), recessions related to banking crises have proven to be more severe and are associated with subsequent fiscal difficulties at the national level.

Oil supply dynamics have been central to several spikes in volatility expectations over the period we have examined. Energy dependence remains a key source of geo-political risk. However, the Gulf Wars and the rise in the price of oil in the lead up to the financial crisis of 2007-2009 have demonstrated that inflationary expectations have become resilient to spikes in energy costs to a material degree.

The contrast between the impact of sustained military operations on volatility expectations that are far from national borders (eg. Iraq/Iran War) and events that occur on home soil (eg. 11 September 2001) demonstrate that such actions affect domestic psyches if they occur within close proximity, and have lasting implications for equity markets only if they impact on company earning capacity.

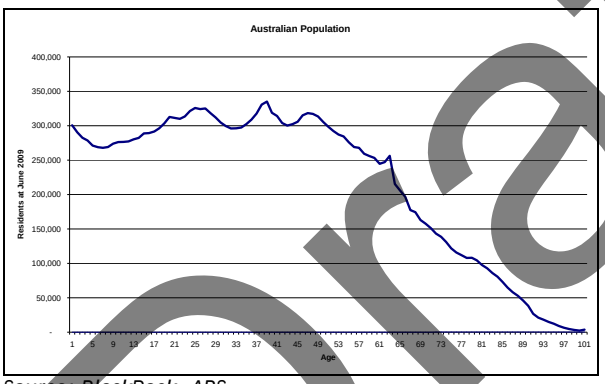
Relevant Longer Term Trends

In this section, some longer term trends not previously raised are discussed. These have relevance as we frame our expectations for volatility in the medium term. These longer term trends are: demographics, labour share of GDP and services share of GDP.

Demographics

The underlying demographics of a nation have a material impact on the policies and economic structures that are required to sustain an economy.

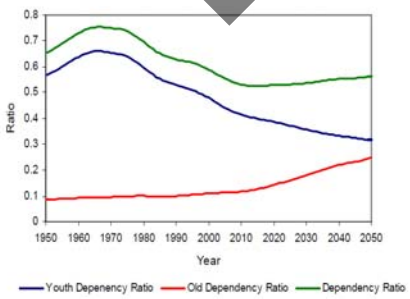
In general, we can expect a cohort of the baby boomer generation to retire in coming years. This is anticipated to reduce the productive capacity of economies that are not sustained by high birth rates and immigration. Further, these will change the dependency ratios and relative scarcity of labour to capital. Australia's demographic profile is shown in the following chart:



Source: BlackRock, ABS

Importantly, as aging demographics in the European region and Japan continue to develop, world dependency ratios are now at an inflection point:

World Dependency Ratios



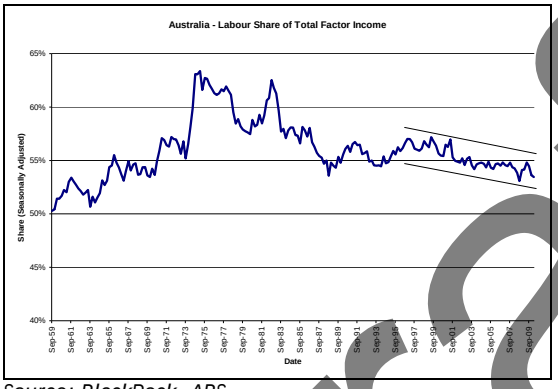
Source: Harvard PGDA

Interestingly, the US faces a different demographic challenge to many western nations. Due partly to high birth rates amongst the Hispanic and Latino population, there is a cohort of young workers entering the workforce (source: US Census Bureau, CRS). This could have the effect of elevating unemployment rates relative to the population profiles in Europe.

Despite extremely accommodative monetary policy, the US policy makers must select a path between containing unemployment and managing an unsustainable deficit.

Labour share of GDP

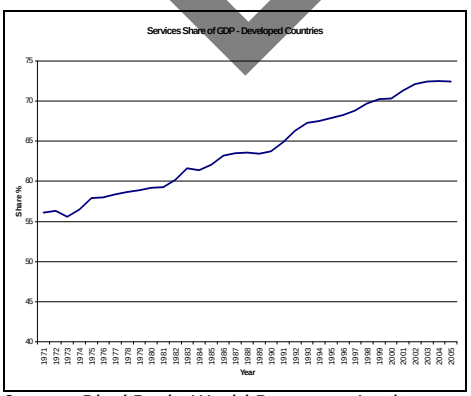
In recent experience, the share of production to wages has declined. This trend has helped to boost corporate profitability but may not be sustainable within a demographic backdrop of declining population participation in the workforce. Nonetheless, the market may have become acclimated to profitability growth, from this source. The following chart illustrates the labour share of total factor income in Australia. The pattern is qualitatively similar for other western nations:



Source: BlackRock, ABS

Services share of GDP

As time has progressed, the nature of developed market economies has evolved from agricultural to manufacturing and now to an increased exposure to services-based sectors. This trend is illustrated in the following chart:



Source: BlackRock, World Resources Institute

The services sector is less prone to economic cycles and the change in the underlying structure of the developed market economies contributed to the greater economic stability experienced in recent decades.

Current Issues and Developments

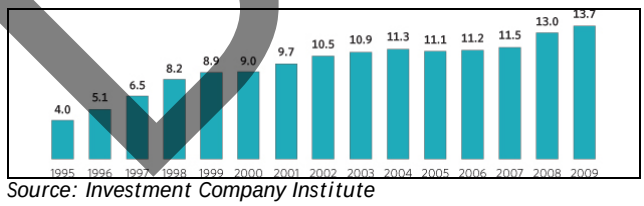
In this section, a wide variety of current issues which may have a bearing on economic and market volatility expectations in the medium term are considered.

Nature of market participants

The nature of market participants has evolved materially. Some notable features include:

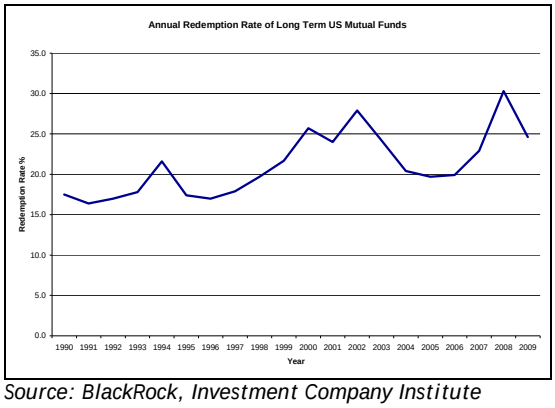
- The rise of Sovereign Wealth funds. These funds have long term investment horizons, are generally opaque, may acquire assets for national strategic interests rather than for investment returns, and are increasing materially in size and influence. At June 2010, the assets under management are estimated at USD 3.9 trillion (source: Sovereign Wealth Fund Institute);
- The increased size of private equity funds and participation in the listed equity market. Amongst the more influential include, in terms of assets under management (AUM): BlackStone (USD 98bn.), TPG (USD 45 bn.) and Carlyle (USD 90.5 bn) [Company sources]. Deals may involve considerable leverage and their influence can change the valuation metrics and investment considerations applicable to classes of investments in which they are interested;
- The rapid growth of Exchange Traded Funds (ETFs). Assets under management in ETFs globally passed USD 1 trillion in 2009 and was rapidly increasing. The iShares organisation, now part of BlackRock, passed USD 1 trillion in AUM in 2010. Also, the share of assets invested in index funds continues to rise:

Percentage of Equity Mutual Fund Total Net Assets Invested in Index Funds



Source: Investment Company Institute

- Hedge funds remain a material influence on markets. The hedge fund industry AUM was estimated at USD 1.5 trillion as at 30 June 2010 (source: Dow Jones).
- Investors are shortening their time frames. Impatience implies that investors react more strongly to shorter term performance considerations. This impacts the behaviour of markets. Holding periods are declining and turnover is rising, as evidenced by the chart on the following page:



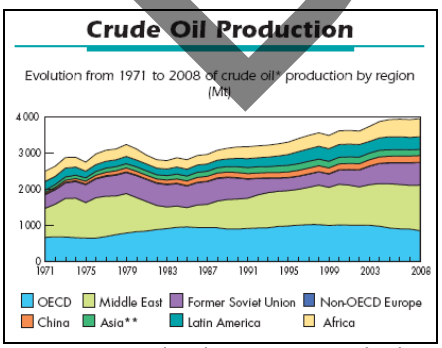
Source: BlackRock, Investment Company Institute

Shorter investment horizons for the most part, mixed with more rapid dissemination of opinion via advancements in telecommunications, and more tightly networked investors and citizens (see Friedman 2006, World Bank) implies greater extremes of investor behaviour (see Gladwell 2000, Farrell 2000, Beinhocker 2007).

Energy Security

Our historical review revealed that energy security remained an important strategic interest and influence on global growth and volatility expectations. Although inflationary expectations appear to have become more resilient to spikes in oil prices, interruptions in oil supply, and energy supply more generally, still have material ramifications.

To this end, the continued reliance on imported oil within OECD countries, together with the increased demand for imported oil from China, will be important to monitor. This dynamic is made more complex by the fact that OECD oil fields are in decline and oil demands must increasingly be met from Africa, the former Soviet Union and the Middle East:



Source: International Energy Agency (IEA)

Political Leadership

The key multi-lateral governing body has evolved from the G-8 to the G-20 in recognition of an increasingly multi-polar world. In many respects, this increases the complexity and challenges involved in coordinating responses to new challenges. Further, an increasingly integrated world economy increases the risk and consequence of unintended policy errors.

The recent financial crises saw relatively quick policy responses emanating from the US, Europe, China and other parts of the world. This offers some hope that political will can be mustered to coordinate actions when there is a material threat.

Japan continues to suffer from a dysfunctional political system. The world's third largest economy is challenged by continuing weakness in its economy, a rapidly aging demographic profile, extreme levels of government debt supported mostly by a pliant domestic population, and an emerging China in its proximity.

The European Union has been severely tested in recent times and remains a viable socio-economic entity. The credit crisis has highlighted the need for closer integration on fiscal lines and policies, which remains the most challenging component for the Union.

China's political system continues to rely on satisfying the demands of the domestic populace for ongoing legitimacy. However, the Communist party increasing demonstrates a pragmatic and, thus far, reasonably well calibrated leadership of this complex nation. For example, its response to Obama's imposition of a 35% duty on imported Chinese tires in 2009 was to make targeted threats to investigate tariff increases on politically sensitive chicken parts and cars imported into China. They have overseen the largest mass migration in mankind, as the population in cities relative to agricultural lands developed. And, they engineered a strong response to the impact of the global financial crisis. However, China's policy instruments are still developing and it seems almost inevitable that a policy error or other unintended consequence of large transformations of its society will foment a material disruption.

China acknowledges that economic rebalancing will be necessary for sustained growth and political stability. Its efforts in that regard are hampered by the lack of social safety nets and high precautionary saving (source: Roach 2009). Growth expectations in this market vastly exceed those of the majority of western nations.

Of some concern for political leadership and stability is the loss of some credibility in the US as a military power. Active operations in Iraq and Afghanistan have not progressed as well as hoped. The US military capability for sustained combat operations has once again shown to be wanting. This adds to a record of outcomes in Vietnam and Korea that were not particularly successful.

Nonetheless, the US has managed to regain much of its international standing which had suffered under the foreign policy objectives espoused by the Bush (43) Administration. This is shown in the following table:

U.S. Favorability Rating

	1999/ 2000 %	2002 %	2003 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %
U.S.	--	--	--	83	76	80	84	88	85
Britain	83	75	70	55	56	51	53	69	65
France	62	62	42	43	39	39	42	75	73
Germany	78	60	45	42	37	30	31	64	63
Spain	50	--	38	41	23	34	33	58	61
Poland	86	79	--	62	--	61	68	67	74
Russia	37	61	37	52	43	41	46	44	57
Turkey	52	30	15	23	12	9	12	14	17
Egypt	--	--	--	--	30	21	22	27	17
Jordan	--	25	1	21	15	20	19	25	21
Lebanon	--	36	27	42	--	47	51	55	52
China	--	--	--	42	47	34	41	47	58
India	--	66	--	71	56	59	66	76	66
Indonesia	75	61	15	38	30	29	37	63	59
Japan	77	72	--	--	63	61	50	59	66
Pakistan	23	10	13	23	27	15	19	16	17
S. Korea	58	52	46	--	--	58	70	78	79
Argentina	50	34	--	--	--	16	22	38	42
Brazil	--	--	--	--	--	--	--	--	62
Mexico	68	64	--	--	--	56	47	69	56
Kenya	94	80	--	--	--	87	--	90	94
Nigeria	46	76	61	--	62	70	64	79	81

1999/2000 survey trends provided by the Office of Research, U.S. Department of State.

Pew Research Center Q7a.

Source: Pew Research Centre

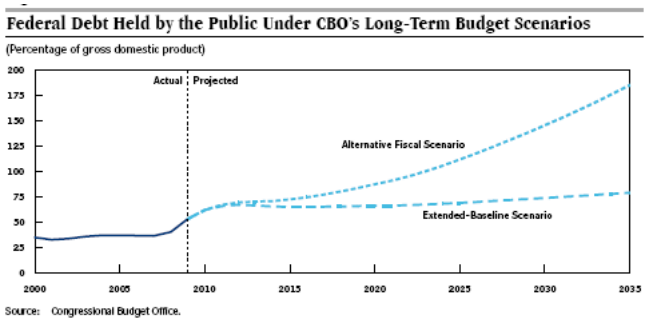
Of note is the upcoming mid-term elections in the US, scheduled for November 2010, in which the Democrats are expected to lose control of the House of Representatives (source: Intrade). This will increase the impact of partisan politics on fiscal flexibility and reduce the ability of the US Federal government to respond to future developments.

Australia's political system remains stable, with a federal election to be held on 21 August 2010. Australia remains one of the least corrupt nations in the world (source: Transparency International).

Fiscal trajectories and the need for austerity

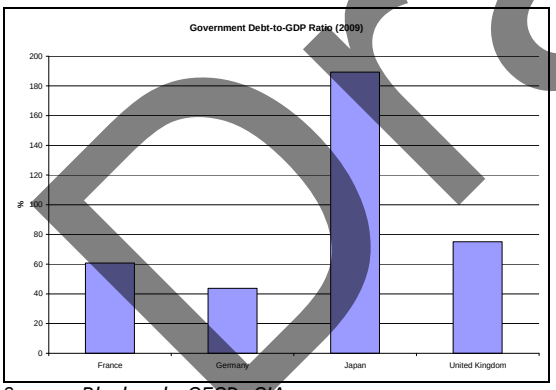
Many of the world's major economies are burdened with large fiscal deficits. However, in many cases, these are projected to worsen as demographic developments escalate the payments for healthcare and pensions.

In the US, the Congressional Budget Office's Long-Term Budget Outlook released in June 2010 outlines an "Alternative Fiscal Scenario" which represents the organisation's best estimate of the actual path, inclusive of several changes to the law that are widely expected to occur. It highlights that the US Federal deficit is essentially expected to proceed along an unsustainable path:



Several other countries, and particularly Japan, are also under significant debt burdens. Japan's newest Prime Minister has targeted the fiscal situation his gravest concern. Austerity measures were the first priority of the UK's new Chancellor of the Exchequer George Osborne. Following from the debt scare in Europe, several countries have enacted austerity measures. The fate of the fiscal and banking crisis in Europe rests with the successful implementation of credible policies to return fiscal balances to a sustainable footing and recapitalize the banks (see IMF). Long term studies on currency unions suggest that political will is the key determinant to the survival of such arrangements (source: Bordo and Jonung 1999).

The following chart outlines the current debt burdens of other major economies:



Source: Blackrock, OECD, CIA

Deleverage cycles tend to be protracted (source: McKinsey Global Institute). They are also associated with lower growth (source: BIS).

In contrast, Australia's fiscal position is exceptionally strong. Latest budget projections estimate a return to surplus in 2012-13 and for net debt to peak at 6% of GDP in 2011-12 (source: Australian Commonwealth Treasury).

Banking and Financial reform

The wave of rancour over the cost of bank bailouts and impact on employment in the recent financial crisis motivated material reforms to the banking system and remuneration arrangements. It is likely that reforms will be ongoing for several years. However, the following are relevant for our purposes:

- In the US, the Dodd-Frank Act was recently signed into law. Key provisions included: the "Volcker Rule", which significantly limits deposit taking institutions from engaging in proprietary trading or investing in hedge funds or private equity; the establishment of a consumer financial protection body; the appointment of the US Federal Reserve (Fed) as the main body responsible for monitoring of systemic risk; and reforms to bankruptcy processes involving financial institutions.

- In the UK, the Financial Services Authority has announced plans to reform compensation arrangements across the financial services industry. This includes banks, hedge funds and investment managers. The reforms call for an increasing proportion of compensation for key employees to be paid in the form of equity or similar instruments, and for payment to also be deferred. Similar reforms to compensation arrangements are anticipated to apply across the European Union.

- The Bank for International Settlements has reviewed the capital requirements recommended for bank capital adequacy. The proposed reforms announced on 26 July 2010 included consideration of liquidity and maturity of capital, together with measures to address the pro-cyclicality of existing reserving practices.

Quantitative Easing and Central Banking

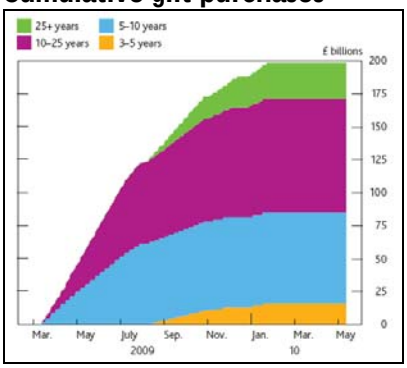
The depth of economic distress and disruption to the financial system in the recent crisis necessitated the implementation of programs which can be broadly classified as quantitative easing by key central banks.

The US Federal Reserve balance sheet has expanded to USD 2.4 trillion as at 21 July 2010. This included USD 777 billion in US Treasury securities and USD 1.1 trillion in mortgage backed securities. In contrast, the balance sheet was worth USD 903 billion as at 27 June 2007. The program to acquire mortgage backed securities has now ceased, without material disruption to the market (source: US Federal Reserve).

The Fed undertook these activities to influence the cost of debt for housing loans and to contain the yields on longer-term US Treasury securities, which serve as a key reference point from which discount rates are calculated in investment decision making.

The Bank of England also instituted an Asset Purchase Facility which acquired GBP 200 billion in assets, mostly UK gilts:

Cumulative gilt purchases



Source: BoE

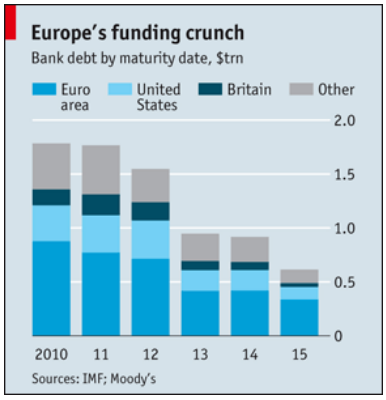
The lever of quantitative easing could be pulled further in the event of an economic deterioration. However, in the words of Dallas Fed Reserve President Fisher, further monetary policy accommodation "would have as little effect boosting the economy as pushing on a string". Such sentiments reflect a belief in the limits of monetary accommodation as a means to boost economic prospects, as has also been demonstrated by the Japanese example.

Furthermore, at some stage, these monetary accommodations will need to be reversed and returned to a more sustainable level.

On a positive note, coordination between the key central banks around the world has demonstrably improved. The USD swap lines were quickly established between the Fed and other central banks in the recent European debt crisis, and the program of coordinated cuts to cash rates during the acute phase of the financial crisis was also a notable highlight.

Bank Debt Refinancing Requirements

The Euro Area banks have very large refinancing requirements in the next five years (see chart below). Although most cleared the recent stress tests overseen by the Committee of European Banking Supervisors, it will require a highly confident investor base to provide the capital required to replace maturing obligations.



The Euro area banks finance much of their balance sheet from the wholesale market due to a relatively small depositor base.

Geopolitical Risks

Risks from geo-political sources remain apparent in many theatres. Apart from Iraq, issues which could have an impact on equity volatility expectations include:

- Iranian moves towards developing a nuclear weapons capability. CIA Director Leon Panetta has said, in June 2010, that Iran has enough fissile material for two atomic bombs and could develop nuclear weapons in two years. Such a development would be regarded as unacceptable by Israel and many world powers. It is instructive to note that Russia and China recently voted in favour of UN sanctions against Iran;

- Deterioration in the lawless regions on the border of Afghanistan and Pakistan that leads to an outbreak of Islamic extremist terrorism;

- Escalation of tensions on the Korean Peninsula. North Korea has recently been identified as the culprit in the recent destruction of a South Korean warship;

- The possible Russian annexation of Ukraine. This political hotspot has been identified by many strategy analysts as a near term potential flashpoint (see GlobalResearch, StratFor); and

- The continued rise of China, if historical emergence of great powers is a guide, may also present acute risks.

This list could not be considered to be exhaustive. Further, history has plainly shown that many geopolitical risks are almost completely unforeseen until they occur.

Economic Expectations

The IMF released an update of its World Economic Outlook on 7 July 2010. The key forecasts for real GDP growth (year over year) were:

Real GDP Projection		
Country / Region	**2010**	**2011**
United States	3.3	2.9
Euro Area	1.0	1.3
Japan	2.4	1.8
China	10.5	9.6
Australia	3.0	3.5

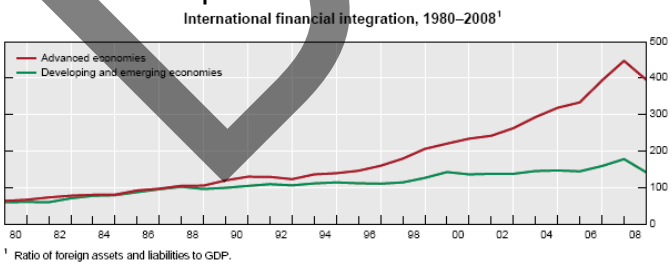
Source: IMF

The IMF highlighted that risks to the downside have risen sharply. Risks from fiscal developments in the Euro region are particularly concerning. However, financial sector reform and rebalancing of external demand were also mentioned in that context. Veiled reference was also made to China's foreign exchange policy. In the event, China subsequently resumed its currency reform (see People's Bank of China (PBoC)).

Increasing Financial Integration

The increasing correlations between economies via financial transmission mechanisms have been highlighted in the recent financial crisis. The importance of financial integration on financial market returns has also been noted earlier in this report.

The following chart shows the extent to which international financial integration has taken place:



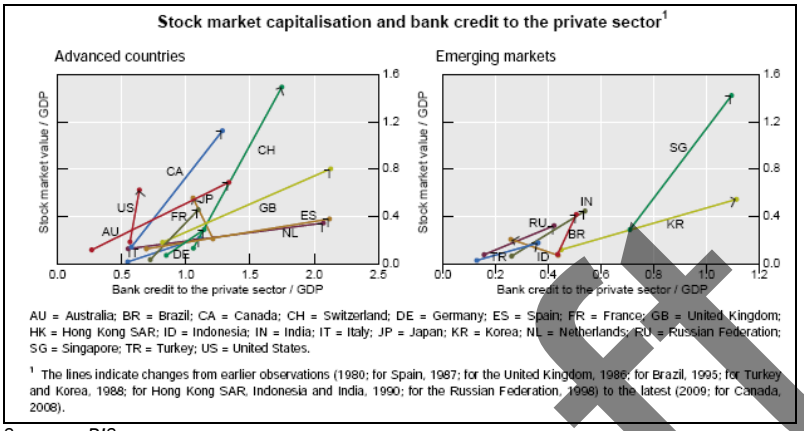
Source: BIS

Increased financial integration is associated with financial crises (see Reinhart and Rogoff 2008).

Increasing global integration increases the pace at which developments in one part of the world affect another. Once thought to reduce systemic risk through the sharing of risk burdens, this theory has been potentially tested to destruction in the recent crisis.

Increased interdependence between financial markets and the real economy

The financing needs of companies have become more reliant on the market for tradeable securities. This deepens an inherent dependency between the real economy and swings in financial markets. The following chart, published by Bank for International Settlements (BIS) in July 2010, illustrates that this phenomenon is widespread:



Source : BIS

Anthropogenic CO2 and Global Warming

Concerns over the impact of anthropogenic carbon dioxide and other greenhouse gases on the earth's atmosphere and climate continue to occupy climatologists and policy makers.

The end of the first commitment period of the Kyoto Protocol is scheduled for 2012 and a new international framework needs to be negotiated and ratified. The Copenhagen Summit held in December 2009 was supposed to achieve these aims, however, a definitive agreement was not forthcoming. Further discussions were planned.

On 28 July 2010, the US National Oceanic and Atmospheric Administration released the 2009 State of the Climate report which drew on data from 10 key climate indicators. Scientists from 48 countries contributed to the report, which confirmed that the past decade was the warmest on record and that the Earth has been growing warmer over the past 50 years. All indicators were consistent with that conclusion.

This issue is relevant for equity markets and volatility expectations for two primary reasons. Firstly, abatement initiatives including moves towards carbon pricing have the means to alter investment decisions and profitability depending on the specifications of the agreements achieved. Secondly, we are in uncharted terrain in terms of the potential impacts of global warming on society and the economy generally. Discontinuities are possible in weather related perils, agriculture, disease prevalence and availability of basic resources like water to population centres.

Risk seeking behaviour

Our examination of the market history suggests that periods of low profit growth or return expectations are associated with an increase in speculative activity elsewhere as investors seek satisfactory returns.

The following are examples from recent US history:

- The profit recession in the mid 1980s is associated with the subsequent Japanese asset bubble;
- The profit recession in the late 1990s occurred during the Tech boom; and
- Low interest rates in the early 2000s lead to a search for yield that is associated with the debt crisis of 2007-2009.

The above observations are consistent with Prospect Theory (see Kahneman and Tversky 1979). Under Prospect Theory, investors:

- relate more to gains or losses relative to a reference point rather than absolute levels of wealth;
- feel greater discomfort in losses than happiness in gains of similar magnitude; and
- react very differently between circumstances that are regarded as very unlikely and those which are assured never to happen.

Between gains and losses on the one hand, and likely and unlikely events on the other, there are four domains of behaviour. These can be summarised in a simple four cell diagram. Note that investors are expected to equate low growth as a loss in this context, as it is below their level of habituation:

	Likely Events	**Unlikely Events**
Gains	**Risk Averse Behaviour** • "A bird in the hand"; • Investing in bonds rather than stocks; • Accepting an okay offer rather than holding out for a better one	**Risk Seeking Behaviour** • "No guts, no glory; • Buying lottery tickets; • Trying to make the big leagues
Losses	**Risk Seeking Behaviour** • "Go for broke"; • Playing double-or-nothing to make up for gambling losses; • Con games where the victim has too much invested to quit	**Risk Averse Behaviour** • "Better safe than sorry"; • Buying insurance; • Wearing seat belts; • Not eating sushi because of parasite risk

Source: Poundstone (2010)

Safe Haven Assets

One issue to highlight is that the assumption that US Treasury securities represent a safe asset for wealth preservation may come under scrutiny given the increasingly precarious fiscal position, structure of its economy and extent of foreign sourced borrowings (sources: CBO, BEA, FOMC). If a re-assessment were to occur, a search for a suitable alternative safe financial harbour may be chaotic. No clear alternative has emerged as a consensus view, although gold, the Euro, oil and SDRs have been variously mentioned (see IMF, Authers 2010, PBoC). None of these appears an obvious choice.

Outlook for Equity Market Volatility and Earnings Growth

In this section, the historical recap and review of current issues are combined into a qualitative forecast for equity market volatility in the medium term.

The major world economies are presently at the inflection point of several important developments. These have been outlined in the previous sections. Inflection points, particularly those which have become background assumptions, can be sources of volatility as adjustments in expectations can be abrupt.

Inflation expectations appear well anchored (source: BIS) and yields on long term government bonds for the large western nations are very low. Whilst this reflects the actions of central banks with quantitative easing programs and a flight to quality from bond investors, it is clear that the market has become more discerning about risk bearing. It seems reasonable to expect risk premia to be strenuously examined. The long term trend of declining bond risk premia relative to inflation experience, which is visible in US data, has many tangible reasons to rise in the medium term with flow-on effects for the discount rate demanded from other assets.

Quantitative easing programs and stretched fiscal budgets present a cap to the upside potential for economic and company profit growth. Monetary conditions in the major western economies remain at highly accommodative settings and fiscal adjustment is a key priority in many quarters. The potential for above-trend economic growth in many locations will present an opportunity to rectify these issues. A key caveat against this development would be sustained high levels of unemployment that could result from sustained productivity growth, a so-called jobless recovery.

Outlook

On the basis of this review of historical events, long-term trends and current issues, the balance of influences on volatility expectations is upward. In other words, elevated volatility expectations appear likely to persist on the basis of underlying socio-economic, political and financial market factors.

The period of deleverage, stretched fiscal resources and extremely accommodative monetary policy settings is expected to place a constraint on the upside of growth potential for most western nations and also Japan. Both the historical record and behavioural finance theory suggest that these conditions create additional volatility due to an increase in speculative activity.

Furthermore, the geo-political backdrop does not provide any comfort that an external event will not impact the financial market in the medium term.

Australia, with its proximity and trade relationships to the economies of China, and Asia more generally, has a more robust set of economic and monetary conditions. This will serve to support growth expectations for domestically oriented industries to some degree. However, the integration of world markets implies that the market volatility themes which are relevant for the main western economies will also have an impact.

Although a longer term trend, China's future growth will become less resource dependent (source: BHP, Garnaut Golley and Song 2009, McKay 2009) and thus lead to some decoupling between China's economy and Australia's resource production base. High resource prices will also be met by a supply response over time (source: Treasury).

Australia's banking sector has strong offshore funding requirements (source: RBA) and this provides a very tight link to the monetary conditions facing overseas banks.

Implications for Equity Investment Management

The future market environment has material implications for the structure of equity fund managers in order to maximise the probability of success. This section covers sources of alpha, risk management and a perspective on the equity manager of tomorrow.

Sources of Alpha

The following provides a framework outlining various ways in which alpha can be obtained:

- Information edge: better or faster knowledge about developments convey an advantage;
- Positioning for behavioural biases: flaws in decision processes under uncertainty and agency conflicts lead to opportunities; and
- Liquidity flows: awareness of money flows and the associated impact on security prices.

Information Edge

Obtaining and digesting information relevant to forecasts of earnings and other important valuation metrics has been a bedrock principle of security analysis for decades (see Graham and Dodd 1934). However, there have been two distinct developments in recent times which are particularly worthy of note:

- Increased cross border trade and economic specialisation have made many value-chains more complex (see Amiti 1997). Indeed this is one of the aims of the WTO and the reason behind ongoing negotiations of trade agreements ; and
- The volume of information produced and potentially useful for analysis continues to increase dramatically.

This implies that the underlying economics of securities listed on an equity market are increasingly influenced by upstream and downstream processes with their own competitive dynamics (see Boston Consulting Group). Furthermore, these components can increasingly be found in other jurisdictions. It is not just foreign sales that are increasing to approximately half of US equity earnings (source: Standard and Poors), but supply chains are also following suit. Similar trends are apparent in Europe (and were a driving rationale for the formation of the EU) and Australia.

There is also a proliferation of information that becomes relevant to the earnings of any single company resulting from increasingly dynamic value chains.

Information management is a key area of competition. The ability to access, classify, decipher and apply information appropriately is itself a material source of advantage. This is particularly relevant for industries with low geographic concentration like resources, international airlines, heavy engineering, pharmaceuticals, mining services and insurance. But it is also relevant elsewhere.

Domestic listings of niche companies, within a global context, will exist to service predominantly domestic clientele. Such companies will have relatively simple and localised value-chains. These companies will continue to provide a source of potential alpha for investors which focus on highly stock specific issues. However, the future increasingly belongs to investment companies with the scale and ability to harness advantage from rising successfully to the challenge of the increasing complexity.

Positioning for the Behavioural Biases

The use of heuristics to make complex decisions is commonplace (see Kahneman and Tversky 1979, Gladwell 2005, Ericsson et al 2006). A large body of research also highlights that these methods produce outcomes that are not necessarily in the interests of the decision maker and produce endogenous dynamics (see Thaler & Sunstein 2008, Akerlof & Shiller 2009, Lehrer 2009, Mackay 1841, Shefrin 2000, Kindleberger & Aliber 2005, Ball 2004). Even awareness of these biases does not prevent a decision maker from falling into the same traps (source: Poundstone 2010).

Decision making is subject to errors with known, scientifically verified and reliable biases as uncertainty increases. Our review suggests that uncertainty at several levels is expected to be elevated in the medium term as the developed economies transition through several inflection points amidst a general climate of fiscal constraint.

Further, risk seeking behaviour and higher levels of experimentation with new and untested business models (eg. Tech boom, CDO-squared debt structures, Asian "Tiger" economic miracle) can be anticipated from companies in an environment of constrained growth. This contributes to increased uncertainty on the part of investors who are reviewing these alternatives.

Market dynamics adds another layer to this such that stocks with favourable growth prospects will attract a disproportionate flow of capital whilst disappointment will be more severely punished. When growth prospects for earnings are limited, and investment time horizons are short, reactions are often more extreme (source: Goldston-Morris). Market volatility expectations are also elevated during profit recessions.

Research in behavioural finance, psychology and marketing emphatically suggest that cognitive errors and sub-optimal decisions are more prevalent in circumstances where uncertainty is high. For example, Zhang (2006) identifies that high "information uncertainty" stocks are slower to impound the implications of news. In a subsequent paper, also in 2006, he also found that sell-side analysts made greater forecasting errors resulting in earnings drift in such situations. Sapra & Zak (2008) outline neurological reasons why risk and ambiguity are not consistently addressed when making decisions. Loewenstein, Weber, Hsee and Welch (2001) outline that anticipatory emotions have a strong impact on decisions, frequently overriding cognitive evaluations. Lindstrom (2008) provides many examples of how 90% of consumer buying behaviour is largely unconscious, often driven by fear.

In brief, there are many reasons to expect a higher relative level of uncertainty in the medium term than generally experienced in the historical period under review.

These are expected to give rise to an increased level of behavioural biases that have been a source of profit in markets. When coupled with lower growth expectations, the rewards to accurate assessment of earnings prospects and an ability to systematically identify behavioural biases can be expected to deliver abnormal profits.

Liquidity Flows

The extent of global financial integration was demonstrated vividly during the financial crisis. The experience highlights once again that liquidity flows are an important element of financial market assessment.

International trade, integration of value-chains, overlap of customers and influence of monetary flows have each served to increase the correlation between security market returns in different locations. A natural outcome of this development is that comparisons will increasingly be made between companies listed on exchanges across domiciles.

Managers of domestic equity portfolios will need to be increasingly aware of the decision frameworks and probable conclusions of investors with a global mindset. The absence or relative lack of this context will become increasingly costly in "global industries".

The importance of the bond market on equity market sentiment has also been demonstrated since 2007. Their relevance is expected to remain elevated as developments in government fiscal positions unfold. The government debt positions influence the pricing and availability of credit to domestic firms, and clearly influence sentiment. Government policy also has a material influence on monetary policy and, therefore, currency movements. In Europe, the UK and Japan, monetary policy is providing much of the support for economic recovery. It may also need to do so in the US.

Currency volatility, which has become more relevant to investment, is expected to remain elevated whilst monetary and debt settings are at extremes.

Perhaps more than ever, tomorrow's successful equity analyst needs to be a macro-economic, monetary and political strategist. They also need a way to successfully integrate these sources of information into a consistent and coherent decision making framework. Old fashioned stock picking has an increasingly limited applicable universe.

Risk Management

The picture of the financial markets which arises from our review is one which is highly integrated through several mechanisms: business model and value-chain, customer, macro-economic, financial flow, political policy and others besides.

With instability being clearly evident at several points, awareness and management of aggregate exposures to a host of new, but largely commercially unavailable, factors has become necessary for investors. For example, it is no longer sufficient to know the country of domicile and GICS industry classification of a company. It is important to know the location of their client bases and major components of the value chain. These will help provide a sense of exposure to dislocation in different geographies and currencies. Importantly, this needs to be captured in a coherent framework to be effective. To be sure, this is an exceptionally data intensive and challenging undertaking to establish and maintain. However, it is necessary.

The task of risk management is made ever more challenging by the increasing influence of financial flows. As was demonstrated in the acute phases of the financial crisis, the liquidation of multi-strategy hedge funds and demise of investment banks caused very unusual correlations to arise. These correlations have very limited underlying economic rationale and largely arise due to common ownership.

Such factors do not generally impact security prices until a crisis develops. Naturally, a crisis is not a particularly opportune time to commence the process of identifying these relationships. The process of identifying potential build-ups will require a combination of statistical techniques and monitoring of various statutory disclosures, amongst other things.

The equity manager of tomorrow

It is interesting to note that central banks and regulatory authorities around the world who have an interest in financial stability are evolving their practices to think along network lines (see US Fed, BIS). In other words, they have come to realise that monitoring the financial stability of individual organisations is now insufficient. They need to monitor the network.

In the same way, the increasing integration of value-chains and trade together with the impact of money flows makes isolated analysis insufficient in the financial markets we envisage. Network-style thinking and understanding network dynamics (see Watts and Strogatz 1998, Barabasi 2003) has become an imperative.

The equity managers of tomorrow will increasingly divide themselves between:

- Managers whose key focus remains traditional analysis of a smaller number of firms whose dynamics, by virtue of their simple value-chains and customer base, are driven by highly idiosyncratic issues; and
- Managers who see the world as an integrated economy and are internally organised to identify and act on ideas in that context.

Those whose business models place them within the poles outlined above will be increasingly marginalised (see Porter 1980).

Managers who perceive the world as an integrated economy will compete on the basis of:

- Understanding the internal linkages within the economy and, on this basis, identifying areas of uncertainty where research can make a meaningful difference to finessing research conclusions;
- Developing superior processes to gather, align and apply data to resolve these uncertainties more accurately and/or more quickly than the market;
- Their deep appreciation of behavioural biases and at least take steps to prevent falling prey to these or, better still, having the means to identify and profit from them;
- Their ability to monitor, comprehend and forecast the impact of global flows and monetary transmission mechanisms in a context of an economy currently at the crux of several inflection points or otherwise taking extreme measures in key areas; and
- Analysis of risk on the basis of potential disruptions to the network, as opposed to via the simpler statistically orientated or limited classification scheme methods of today.

The environment we perceive in the medium term will present great opportunities for organisations which are able to adapt best. As a result, the quality of professional business management in these organisations will also become even more important relative to the quality of the investment professionals. Meeting these challenges is as much about coordinating infrastructure and processes as it is about raw investment talent.

Consultants and research organisations would do well to ensure their focus on business management factors adequately reflects their increased importance.

Robust Equity Benchmarks

In this section we examine potential, relatively new, directions which may warrant consideration as alternative equity benchmarks. The dominance of market capitalisation-weighted benchmarks has clearly been established and is supported by a long theoretical chain of thought (see Sharpe 1964). However, they may not be the ideal point of departure or index basis for all investors, particularly if more volatile conditions are anticipated.

Why use a market capitalisation-weighted benchmark?

The popularity of capitalisation-weighted benchmarks can be readily understood as a natural outcome of:

- A benchmark representing the average return of all participants in the market;
- Fund flows and corporate success, from the perspective of institutional investors and fund managers, being significantly driven by competitive rankings. This naturally centres around an average and this average will approximate a market capitalisation-weighted benchmark;
- The investability of the benchmark. Such indices can absorb large volumes of assets and popular indices, approximating a pure capitalisation weighted measure, typically exhibit low turnover; and
- The classical training of many professional investment market participants.

Relevance of capitalisation-weighted benchmarks for end investors

Ultimately, in the parlance, an investor cannot "eat relative risk". It is also worth examining why a relatively arbitrary index construction should be relevant to the great bulk of investors when their underlying circumstances differ materially.

Why should, say, a 20% exposure to the financial sector be appropriate to both Mr. Jones and Mrs. Smith? What if additional banks or insurers were listed and the market capitalisation of the financial sector rose to 40%? How relevant would the index and associated investment be to these two investors then?

Actual market practice suggests that investors do not react materially to changes in index composition. For example, the global media company, News Corp, was domiciled in Australia and was the largest component the S&P ASX 200 index when both listed share classes were aggregated. It was removed from this index, via a series of discrete steps, in 2004 due to a shift in domicile of registration to the US. A revision to the index constituents of this magnitude ought to result in revisions to strategic asset allocation settings for Australian investors. However, we are not aware of any revisions along those lines.

This highlights a degree of inertia within the investment community that may have roots in the influence of peer comparison on profitability and availability of alternatives. Nonetheless, investors are increasingly questioning the relevance of a market capitalisation-weighted index.

Back to basics

It is worthwhile reminding ourselves of why investors generally elect to acquire equity securities. These reasons usually include:

- To obtain an exposure to economic growth via the profits accruing to listed companies;
- To hedge against long term erosion of real wealth via inflation; and
- To obtain a good risk-adjusted return.

Although capitalisation-weighted benchmarks can be expected to meet the above points, alternative approaches may offer superior risk adjusted returns.

We consider alternatives which have been the subject of industry discussion: fundamental indexation, minimum variance portfolios and maximum diversification portfolios. We leave aside the trivial case of equally weighted portfolios.

Fundamental Indexation

Fundamental indexation (See Arnott Hsu & Moore 2005) refers to an alternative weighting scheme in which measurable fundamentals are used as the means of determining index weights. These fundamentals can include measures like: reported earnings, operating cashflow, book value, dividends paid and sales.

A key underlying belief is that market price movements over react and cause larger capitalisation stocks to be more expensive than they should be, on average. Outperformance can be derived from electing to use a weighting scheme that pays no regard to prices, but is nonetheless anchored via consideration of underlying fundamentals, and rebalancing to this on a regular basis.

Critics of this approach argue that:

- Material contributions to the expected outperformance come from exposures to "value" and smaller capitalisation stocks which demand a risk premium;
- Turnover exceeds the capitalisation-weighted alternative;
- Due to liquidity constraints, large volumes of assets cannot be managed against this type of index;
- It is readily replicated and hence any premium will be arbitraged away;
- The construction methodology takes no account of differences in expected growth rates; and
- If new stocks were added to the investment universe, it would change the underlying characteristics of the index.

The historical performance of the concept against leading market indices is provided below:

Performance Update

TOTAL RETURN AS OF 6/30/10	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
FTSE RAFI® 1000 Index[A]	FR10XTR	-3.52%	24.17%	-7.82%	1.26%	4.54%	17.85%
S&P 500[B]	SPTR	-6.65%	14.43%	-9.81%	-0.79%	-1.59%	16.16%
Russell 1000[C]	RU10INTR	-6.40%	15.24%	-9.54%	-0.56%	-1.22%	16.47%
FTSE RAFI® US 1500 Index[D]	FR15USTR	-0.65%	34.27%	-4.37%	4.09%	10.11%	22.81%
Russell 2000[E]	RU20INTR	-1.95%	21.48%	-8.60%	0.37%	3.00%	21.05%
FTSE RAFI® Developed ex US 1000 Index[F]	FRX1XTR	-14.19%	6.94%	-11.08%	3.38%	4.26%	19.38%
MSCI EAFE[G]	GDDUEAFE	-12.93%	6.38%	-12.94%	1.35%	0.56%	18.10%
FTSE All World Series Developed ex US[H]	FTS5DXUS	-12.07%	7.79%	-11.76%	2.38%	1.51%	18.33%
FTSE RAFI® Developed ex US Mid Small[I]	FRSDXUS	-7.73%	14.00%	-8.43%	3.58%	7.81%	18.25%
MSCI EAFE Small[J]	MCUDEAFE	-8.30%	9.99%	-15.10%	-0.99%	2.85%	19.93%
FTSE RAFI® Emerging Markets[K]	TFREMU	-5.35%	25.30%	1.77%	18.21%	19.63%	25.32%
MSCI Emerging Markets[L]	GDUEEGF	-6.04%	23.48%	-2.22%	13.07%	10.33%	24.99%
FTSE RAFI® Canada[M]	FRCANTR	-1.62%	14.55%	-1.40%	7.13%	8.90%	14.31%
S&P/TSX 60[N]	TX60AR	-3.28%	7.90%	-3.54%	6.06%	2.85%	16.48%
FTSE RAFI® Australia[O]	FRAUSTR	-11.80%	14.91%	-6.16%	5.19%	8.65%	12.97%
S&P/ASX 200 Index[P]	ASA51	-9.93%	13.15%	-7.85%	4.52%	6.95%	13.47%
FTSE RAFI® Japan[Q]	FRJPNTR	-6.26%	-7.41%	-18.69%	-2.84%	-1.17%	18.51%
MSCI Japan[R]	GDDLJN	-7.46%	-7.47%	-21.16%	-4.44%	-4.99%	18.39%
FTSE RAFI® UK[S]	FRGBRTR	-8.47%	15.52%	-7.55%	2.14%	3.09%	17.12%
MSCI UK[T]	GDDUUK	-7.55%	19.55%	-5.94%	2.76%	1.19%	14.99%
RAFI Investment Grade[U]		6.22%	15.54%	8.74%	6.08%	7.23%	6.03%
Merrill Lynch US Corporate Master[V]	C0A0	6.09%	16.32%	7.12%	5.16%	6.96%	6.20%
RAFI High Yield[W]	RAFIHY	4.76%	26.97%	10.15%	8.70%	10.00%	11.22%
Merrill Lynch US High Yield BB-B Rated[X]	H0A4	4.60%	21.76%	5.34%	6.14%	6.44%	10.19%

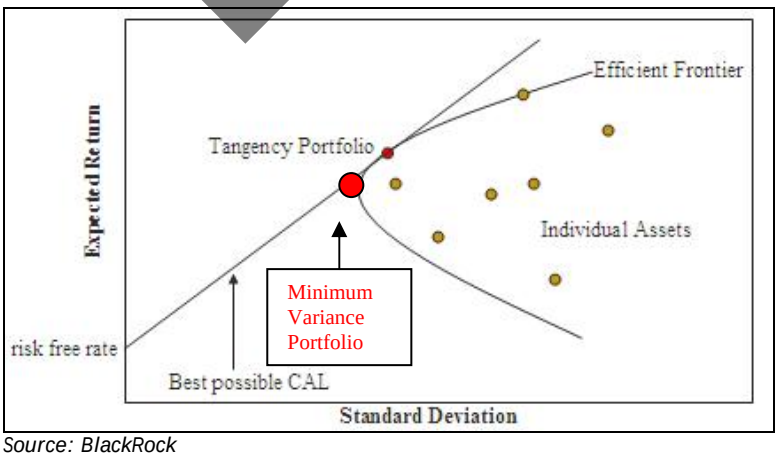
Source: All index returns are calculated using Total Return data from Bloomberg except for the FTSE RAFI Developed ex US Mid Small (FRSDXUS) and the MSCI EAFE Small (MCUDEAFE) which uses price return data.

Source: FTSE RAFI, Bloomberg

Minimum Variance Portfolios

Minimum variance portfolios (see Haugen & Baker 1991, Clarke, de Silva & Thorley 2006) are developed by creating a fully invested portfolio which is expected to have the least risk, as measured by variance. No consideration is given to expected returns or price. In order to develop the portfolio settings, estimates for risk and correlation need to be obtained. There is no particular consensus about how best to make these estimates.

Under the CAPM framework, the minimum variance portfolio is illustrated in the following diagram:



Source: BlackRock

If expected returns from stocks can be ignored (see Jagannathan & Ma 2003) outcomes can be superior to those of capitalisation-weighted benchmarks because a minimum variance portfolio will deliver the same return with less risk.

Others argue that stocks with high degrees of predictive uncertainty, and hence volatility, tend to be over-bought due to investor optimism and limitations on short selling (see Ang, Hodrick, Xing and Zhang 2006b). Minimum variance portfolios attempt to avoid these stocks by construction.

Criticisms include:

- The resulting portfolio can appear highly undiversified;
- Outperformance is sourced from the value premium as low volatility companies typically have limited growth prospects and trade on low price multiples as a result; and
- Turnover is higher than for the capitalisation-weighted alternative.

Maximum Diversification Portfolios

A maximum diversified portfolio (see Choueifaty & Coignard 2008) is one where particular concern is given to develop portfolios where the correlations between constituents are low.

Technically, portfolios are developed which maximise a so-called "diversification ratio". This is the ratio of:

- Weighted expected standard deviations; to
- Estimated portfolio risk.

In some ways, the concept of maximum diversification portfolios is a close relation to minimum variance portfolio. If all the stocks in the universe have the same volatility than the maximum diversified portfolio is the same portfolio as the minimum variance portfolio. Hence, many of the points raised for minimum variance portfolios apply to maximum diversified portfolios too.

Maximum diversified portfolios have an additional benefit relative to minimum variance portfolios in that the resulting portfolios are usually more "diverse" in appearance. The constituents of a maximum diversified portfolio would be from disparate industries and exposed to different risk factors as these are important means of reducing correlations between pairs of stocks.

As before, there is no consensus about how best to estimate correlations and risks which are the key inputs to portfolio formation.

No Panacea

For investors seeking to find the optimal approach to gaining equity market exposure in an environment of higher volatility, there is no panacea. The circumstances of the individual investor will dictate which of the alternatives would be perceived to deliver superior risk adjusted returns.

Conclusions

Having analysed 40 years of major events, broad themes and longer term trends in Australia and the world, it appears that the outlook for equity market volatility over the medium term is towards the higher end of that experienced over the past two decades.

In such an environment, successful equity fund managers will be characterised as either those who continue with traditional stock picking methods on companies with simple value chains that are driven by highly idiosyncratic issues; or those who recognise the integrated nature of economic entities and structure themselves in that context to capture and profit from information insights.

In the pursuit of superior risk adjusted returns, investors now have some alternative equity portfolio construction approaches to consider. These may be of particular interest to investors who question the relevance of market capitalisation-weighted benchmarks, and who are less concerned about relative peer rankings.

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