FRONTIER ADVISORS

20 years

Market Correction Indicators

November 2014

Introduction

Frontier maintains a positive growth asset allocation view. However, equities have produced very strong returns in recent years and the potential for a negative event as central banks attempt an exit from the unprecedented monetary easing position is likely to be elevated.

Identifying a signal that will perfectly forecast the next market correction is not realistic.

However, we believe it is prudent to monitor a range of indicators that in aggregate may help to identify when risks of a future market correction are elevated. "This time it is different" is a dirty phrase in investments, but each major market correction is somewhat different. Therefore, the quote " history does not repeat, but it does rhyme" seems apt.

The metaphor of the frog in boiling water is in fact a myth. In reality if able to jump out a frog will exit as the water gets to a high temperature. http://www.abc.net.au/science/articles/2010/12/07/3085614.htm

Background

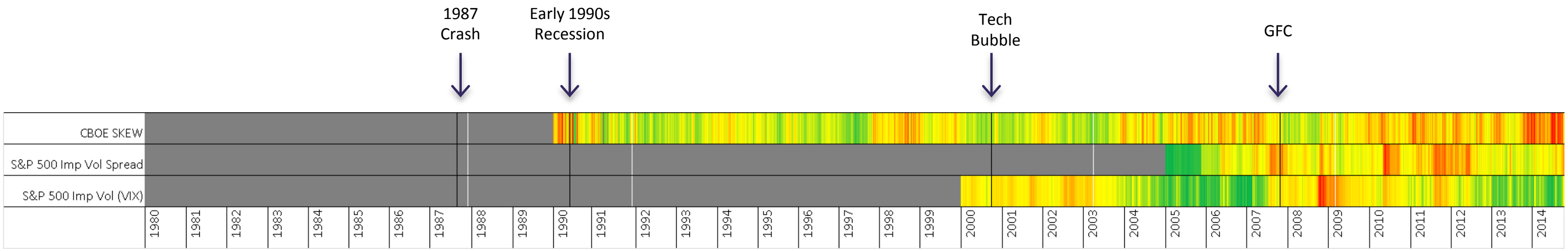
To identify indicators of impending market correction, we have researched a number of composite market stress indicators and their underlying components.

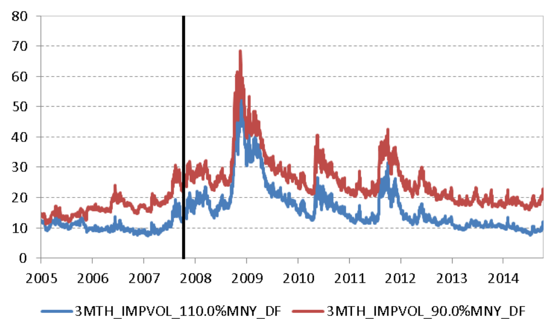
- European Central Bank Composite Indicator of Systemic Stress
- US Federal Reserve Bank of Financial Stress Index
- Bundesbank Financial Stress Indicator
- BoA Merrill Lynch Global Financial Stress Indicator

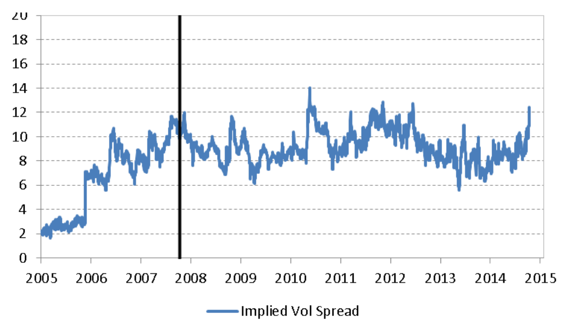
Our work found these were more coincident with changing market conditions rather than leading indicators.

Consequently, our focus has been to identify factors that appear to have some predictive power to signal a future market correction. The following pages provide our analysis of a range of metrics and their behaviour leading into significant past market events.

Option pricing

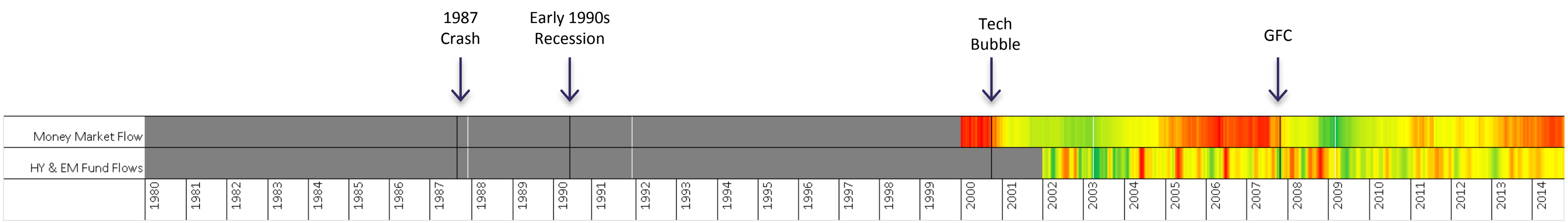


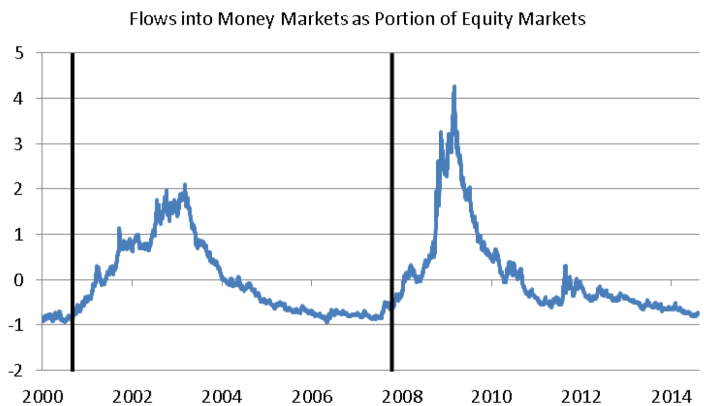




- Implied volatility is currently relatively low
- Spread between implied volatility put/call spiked up in early October
- No clear predictive power or signals from option pricing have been identified

Market flows





- High Yield and Emerging Markets Fund Flows very volatile
- Money Market Flows (flows out of cash funds) were high prior to Tech crash and GFC but with long lead time
  - Potentially a better signal for when to enter (when flows into cash high) rather than exit equities
  - Current level of outflows at same level as prior to previous crashes but historically shown it can remain at that level for a number of years

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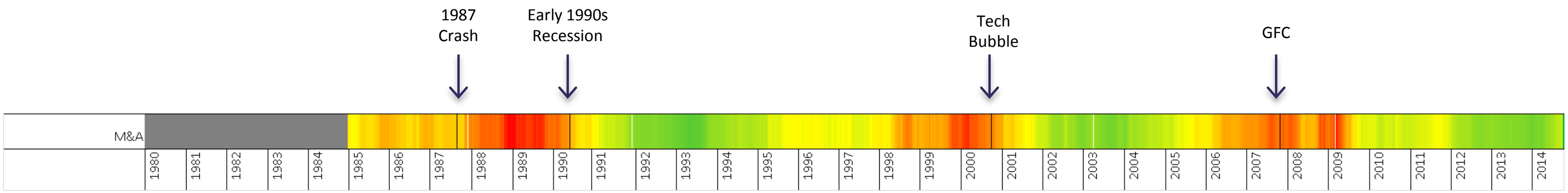
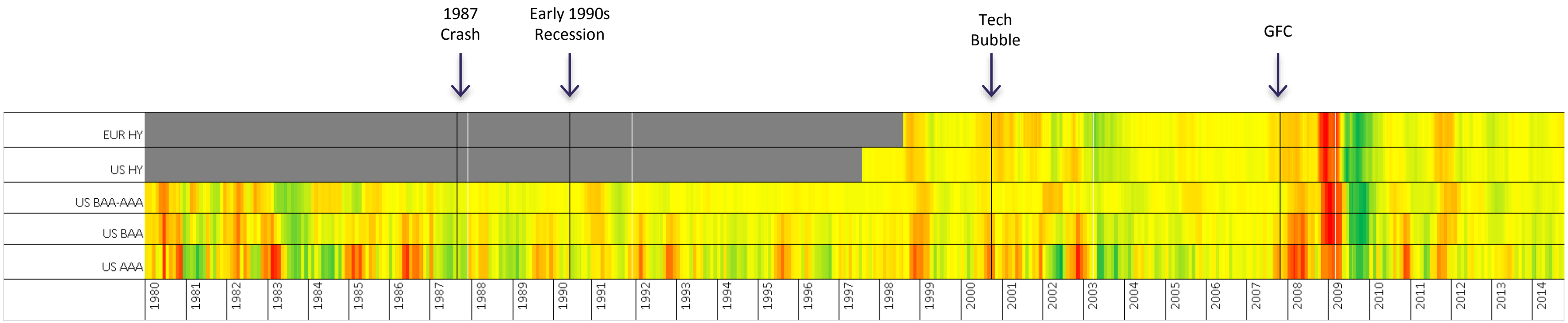
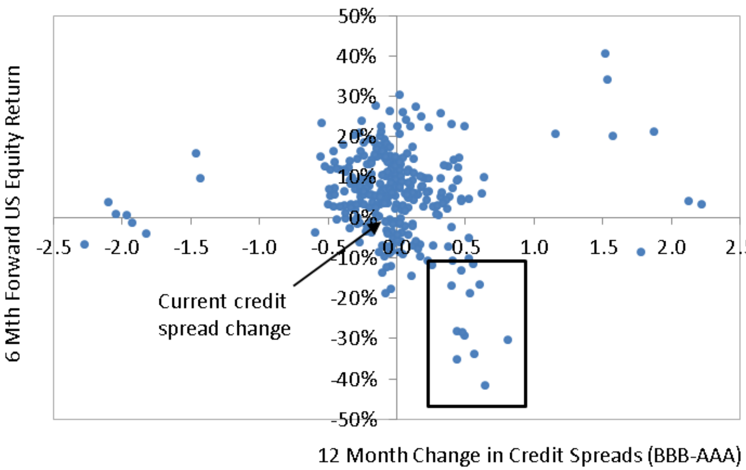
Mergers and acquisitions



- M&A activity shows clear cyclicality with high levels proceeding market corrections (although not as clear for 1987 crash)
- Current levels of M&A announcements are relatively low but have ticked up in recent months and historically have increased rapidly

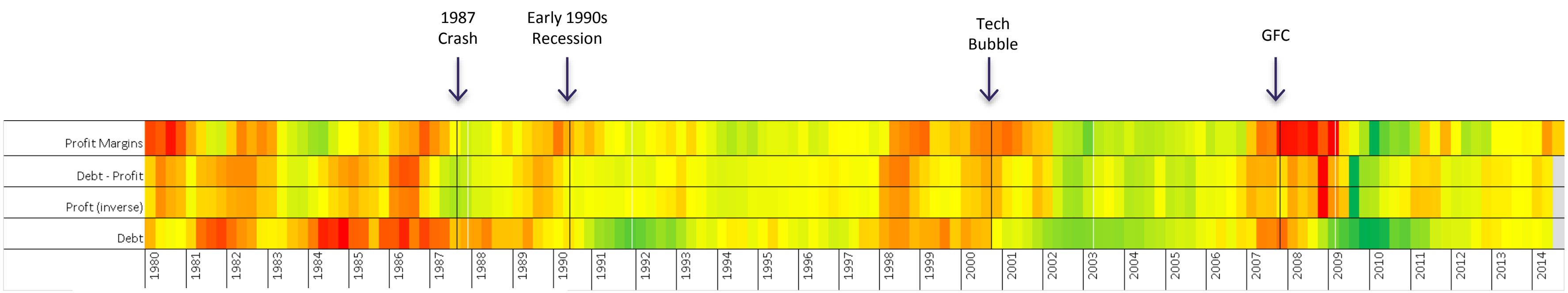
Credit spreads

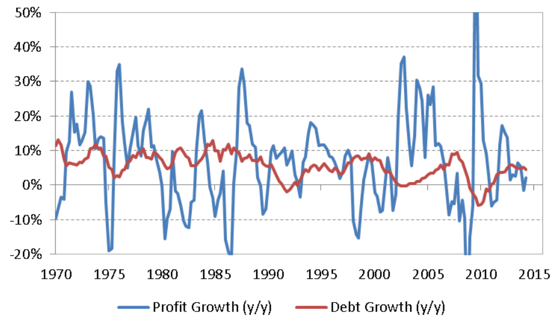


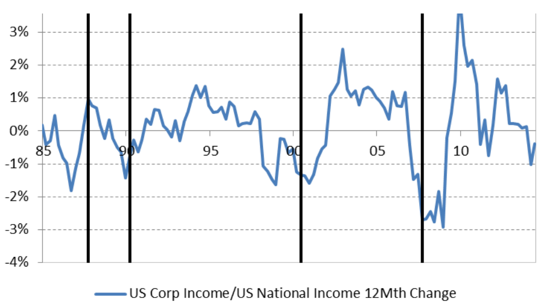


- Credit markets have been observed to deteriorate first in the investment cycle
  - Can provide a number of "false" signals
    - i.e. expansion of credit spreads does not necessarily mean equity correction is imminent
  - However, if credit spreads are not expanding historically an equity correction is not imminent
    - Suggests current conditions remain benign to a severe equity market correction

Corporates

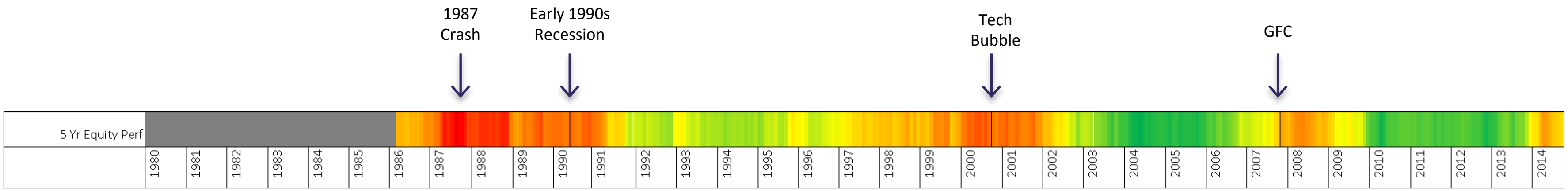


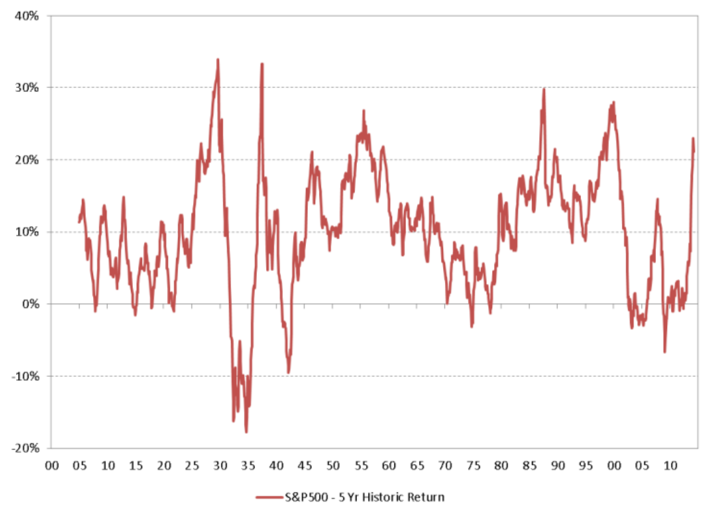




- Increasing corporate debt an indicator of late stage of investment cycle
  - Default risk increases when debt is growing stronger than profits
  - Profit growth is more volatile than debt growth
  - Currently profit growth is relatively low, while debt is increasing – potential early warning signal although not excessive
- Contraction in profit margins negative for equity markets – small negative currently

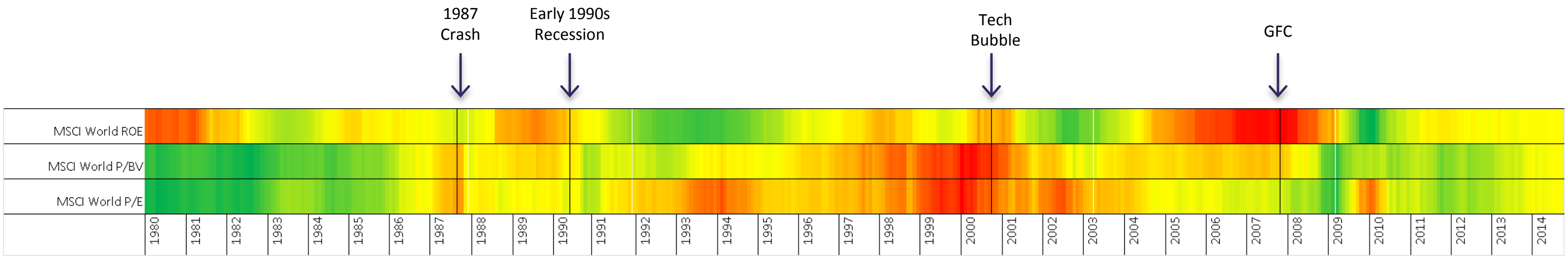
Market reversal

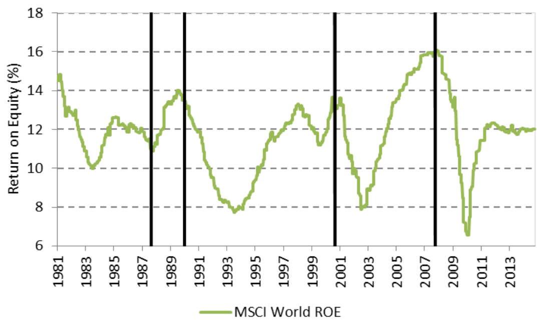


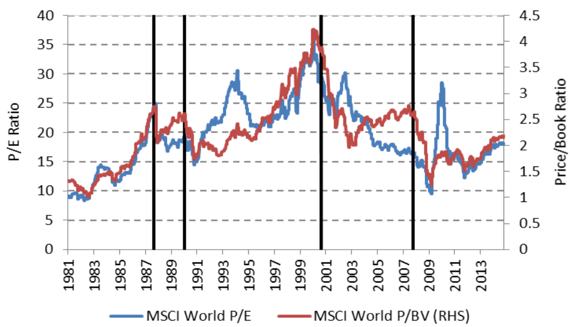


- Historically, equity market returns reverse to "normal" after five years
- Last five years have been particularly strong (>20% p.a. in US), although rebounding from GFC-lows
- Over the last 100 years, 5 year returns in the US have only been higher on 5 other occasions (1928-9, 1937, mid-1950s, 1987 and 1999-2000)
  - All of those occasions, except the mid-1950s, preceded a major market crash

Equity market fundamentals

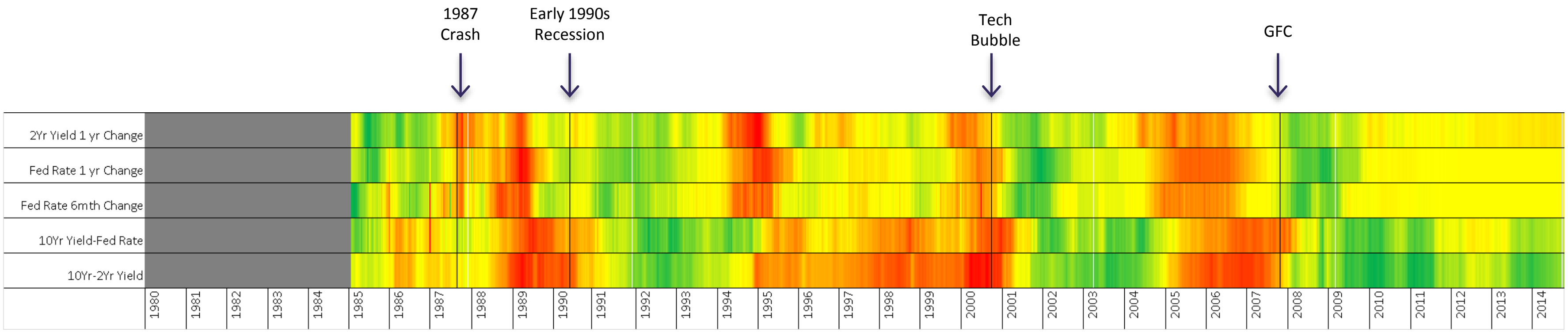






- High value metrics (P/E and P/BV) are indicators of potential future equity underperformance
- Excessive valuation was clear lead to tech bubble
- Excessive earnings was clear lead to GFC
- Equity market metrics are currently relatively neutral

US interest rates

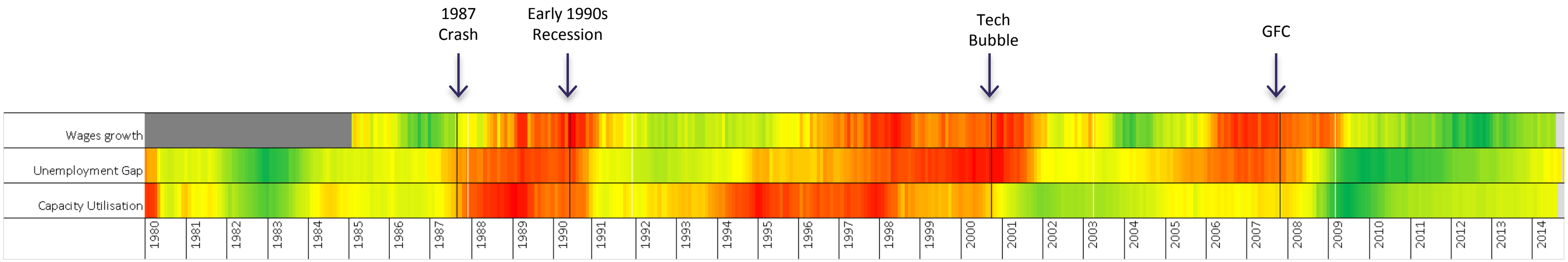


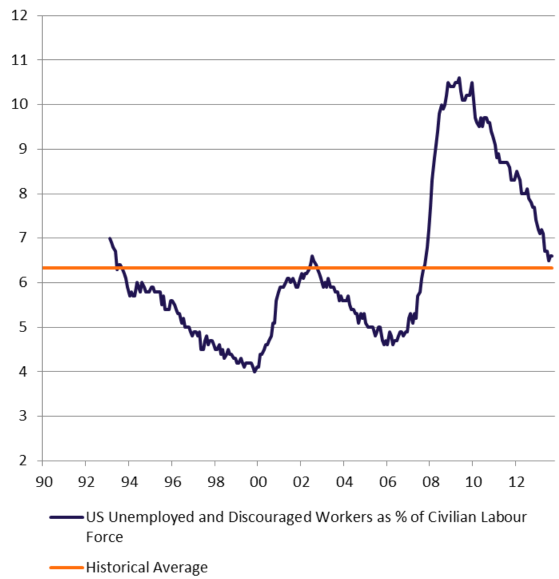
Equity Market Performance in US Yield Curve Regimes

Average 12 month forward return (%)	Yield curve	
	Steepening	Flattening
Interest Rates Rising	17.4	11.2
Interest Rates Falling	2.7	14.5

- Rising interest rates is not necessarily negative for equity performance
- Rising interest rates in flattening yield curve regime typically provides positive but not outsized prospective equity returns
- Falling interest rates in steepening yield curve regime (i.e. short duration yields are falling) is a regime that historically produces poor equity performance

US economy





- US unemployment gap indicative of pressure building in economy and consistent with economic cycle peaking
- US unemployment gap currently at around historic average level

Summary

Level of market stress	
⬆	Very low
↗	Low
●	Neutral
↘	High
⬇	Very High
—	N.A

	1987 Crash	1990s Recession	Tech Crash	GFC	Now
Option Pricing	—	⬇	↘	↘	●
Market Flows	—	—	⬇	⬇	⬇
M&A	↘	⬇	⬇	⬇	↗
Credit Spreads	↗	●	↘	↘	●
Corporates	●	↘	⬇	⬇	●
Market Reversal	⬇	⬇	⬇	↘	↘
Equity Fundamentals	↘	↘	⬇	⬇	●
US Interest Rates	↘	●	⬇	↘	↗
US Economy	↘	⬇	⬇	⬇	↗

Conclusions

We have identified a number of prospective indicators that may be useful signals for a future market correction.

Economic and equity market fundamentals and the yield curve are obvious factors to monitor.

M&A activity, credit markets, corporate debt levels and money market flows have historically provided some indication of a future market correction.

The factors we have reviewed have a focus on the US, somewhat because this remains such a large part of investment markets, somewhat because the actions of the Federal Reserve and market response appears so critical in the near-term, and somewhat because the US provides the most complete and long-dated data series easily available.

Additionally, we monitor signals in multiple regions (e.g. credit spreads, interest rates).

The growth in China means it is likely to be far more important to future economic/investment shocks and we are monitoring it closely, but the transparency of data from China is particularly poor and therefore difficult to interpret.

Conclusions

The high returns from equity markets over the last five years and the potential for a reversal is the key concern, although these returns are a rebound from the lows of the Global Financial Crisis.

There are some early signs of growing debt levels in corporates, M&A activity is picking up from lows and money market flows are negative (although historically this can continue for a number of years before a market correction). However, most indicators are around neutral currently, including credit spreads, yield curve, economic cycle and equity market fundamentals.

Except, for the fact equity markets have produced strong returns in the last five years, we have not identified any strong signal to suggest an imminent market correction.

We continue to recommend an overweight to growth assets.

Important information

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