

DERIVATIVES

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COORDINATOR'S MESSAGE

By Scott McKenzie

This is quite a different bulletin this time: not directly derivatives topics, but important considerations for any investor, whether or not derivatives are part of your portfolio.

The first article by Ashley Ormond is an excellent historical analysis of the ASX over more than a century, showing clear long-term trends in ASX prices but also the deviation from the trend. This shows us that at present the ASX is about 10% below the trend line, and that therefore, the market is undervalued. It's worth keeping an eye on Ashley Ormond's analysis of market prices on his website: www.investing101.com.au.

Readers with a keen interest in this topic will note some differences between Ashley Ormond's model and that of Robert Vagg, whose analysis is regularly featured in the *Investors Voice*. Where Ormond has a 'wobbly line' to describe the historical trend, Vagg has a slightly rising regular curve. While the current prices are shown to be undervalued in both cases, but by different amounts, undervalued they are. And we can expect (sometime) good returns as the market returns to trend.

The second article by Troy Rieck is a Q&A session about foreign currencies and the impact on our investments when currency conversion rates change. With 92 US cents buying an AUD at present (compared with 65 US cents not so long ago), our US-denominated investments are now almost 40% more valuable. So now might be a good time to invest overseas. But might not the USD fall even further? What then? It's quite tricky investing internationally!

Thanks to Ian Flack for organizing this edition of the bulletin. I am pleased to write this introduction in his absence.

Scott McKenzie is the Vice President of the AIA.

A MEASURE FOR FEAR AND GREED IN THE STOCK MARKET

By Ashley Ormond

One of the golden rules that applies to both investing and trading is that we need to make rational, objective decisions and not get caught up in emotion. The problem – and the opportunity for profit – lies in the fact that financial markets are neither rational nor efficient, and are largely driven largely by emotion in the short and medium terms. What is needed is a way to track and measure this emotion.

The entire world of finance is based on grand sounding theories like the “Efficient Markets Hypothesis” and the “Rational Expectations Theory” - which assume that every investor in the world has instant and free access to every single piece of relevant information affecting the price of every asset, and that every investor reacts in a calm, considered, rational and logical manner and instantly takes exactly the correct action in response to every new piece of relevant information as soon as it becomes available. Because the theories assume that all asset prices instantly and accurately reflect all available relevant information, they also assume that all asset price moves are completely random and independent, are not clustered, and do not follow trends. These theories have dominated the financial world for the past 50 years, and all of the main tools of the industry are based on the assumption that they are correct – including the Capital Asset Pricing Model, the Modern Portfolio Theory, Value-at-Risk models, Black-Scholes pricing models, Mean-Variance Optimization models, etc.

Of course, all of us in the real world know that these theories, assumptions and models on which they are based are complete nonsense. Financial markets are far from efficient and rational – they lurch from fear to greed and back again regularly, and have done so for centuries. The near complete failure of the global banking system in 2008, the massive collapse in share prices, commodities and currencies around the world, and their subsequent surge in 2009 are just further proof of how wrong these theories are, and how much markets are driven by emotions and susceptible to panic and massive over-reaction.

In practice, it is reasonably easy for the ordinary investor or trader to tell whether we are in a bull or bear market by gauging the general sentiment in the market, together with technical analysis tools like price charts and patterns, and also by using fundamental tools like P/E ratios, dividend yields, Tobin’s Q, etc. What is much harder to determine is how far the emotional cycle will take the current up or down trend before it is likely to snap back. Momentum trading is fine until you get wiped out by the snap back, and the contrarian approach is extremely tricky, trying to predict the tops and bottoms.

The “Fear & Greed Index” is a tool I developed over many years as a specific quantitative measure of where the market is in the fear & greed cycle, and how far the current trend is likely to continue in the same direction before reversing. Cycles and patterns are easy to see only in hindsight, but in the middle of the storm it is hard to see the overall pattern. That’s where the Fear & Greed Index is a useful tool to help measure the extent of over-pricing or under-pricing while still in the middle of a cycle. It also provides statistical probabilities of the index continuing in the current trend.

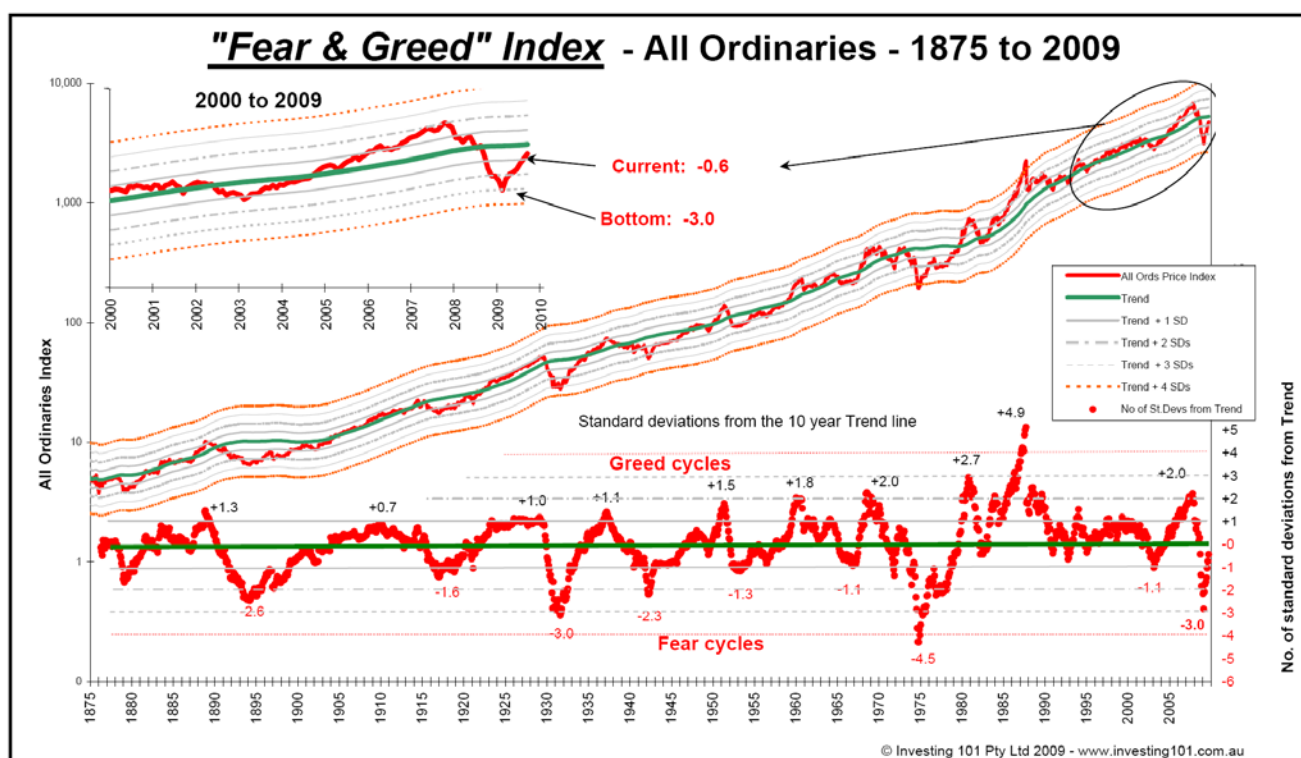
How it works:

If markets were rational and efficient, and if investors valued stocks based on logical assessment of long term fundamentals, then the returns on the broad stock market index would follow a long term trend line driven by long term economic fundamentals. Over the long term, economic growth (and overall company earnings growth) is driven by growth in population, workforce participation rates, capital investment, labour productivity and inflation. Each of these underlying economic factors is remarkably stable, consistent and relatively predictable over very long periods, and their long term paths are not affected by the regular cyclical economic booms and bust cycles that occur frequently along the way. The stock market has kept close to its long term path despite massive

upheavals - including catastrophic world wars, severe prolonged global depressions, oil crises, devastating natural disasters, etc.

The Fear & Greed Index is a measure of how far the Australian All Ordinaries Index has departed from its underlying trend driven by long term underlying economic growth. The Fear & Greed index is a score ranging between +5 (extreme optimism) to -5 (extreme pessimism). These extreme scores of +5 and -5 have never been reached. A score of 0 indicates that the overall stock market is running along its long term underlying fundamental economic trend and is fairly priced. The market rarely stays at its equilibrium level (score of 0) as it should if the market were rational and priced stocks on the basis of long term fundamentals. Instead the market repeatedly swings from Fear to Greed cycles and back again.

The following chart shows the Australian All Ordinaries Price Index since 1875 to the end of September, along with the path of the Fear & Greed score:



This chart shows clearly that deviations from the trend line are certainly not random - they are clustered in groups and follow clearly defined paths through each cycle, consisting of:

- regular periods of Greed (excessive optimism), when the All Ords rises to around +2 or more standard deviations above the long term trend line. When this collapses, it is followed by:
- regular periods of Fear (excessive pessimism), when the All Ords falls to -2 or more standard deviations below the long term trend line, before bouncing back into the next Greed cycle

In each fear cycle the market collapsed rapidly, and in each greed cycle it snapped back quickly and strongly. At the very extremes (more than 2 or 3 standard deviations above or below trend), the stock market departs from "normal" distribution patterns - ie it experiences "fat tails" (or excess leptokurtosis). Examples are the peak before the 1987 crash, and the depths of the market crashes in 1930, 1974 and 2008.

The following table describes the score bands and gives examples of points in history where these scores have been reached:

"Fear & Greed" Index range	Amount of time spent in range	Comments	Examples
More than +2 above Trend	approx 2% of the time	Market is extremely OVER-VALUED - extreme Greed/optimism. Leads to serious collapses when asset/credit bubble bursts	<ul style="list-style-type: none"> o Late 1987 before the 1987 crash (reached +4.9 at the peak) o Early 1981 (Index reached +2.7) before 1981-2 collapse & global recession. o Early 1970 (reached +2.0) before the 1970s collapse & deep global recession o Late 2007 (reached +2.0) before the 2008 collapse & global recession
+1 to +2 above Trend	10% to 14% of the time	Market is significantly OVER-VALUED. Vulnerable swing back to Fear cycle on negative news	<ul style="list-style-type: none"> o Late 1888 (peaked at +1.3) before 1889-93 fall + global depression. o Mid 1950 (peaked at +1.5) before 1951 fall & recession o Early 1929 (+1.0) before 1929 crash o 1960 (+1.8) before recession
0 to +1 above Trend	30% to 35% of the time	Market is moderately OVER-VALUED	o Market frequently spends long periods here - during periods of moderate optimism and positive fundamentals, and when falling after peaks
0 (On Trend)	rarely stays on Trend line for long	Market is fairly priced - ie on it's long term trend based on fundamentals	o Market briefly crosses 0 level frequently while swinging from Fear cycle to Greed cycle and back. Never stays at equilibrium level for long
0 to -1 below Trend	30% to 35% of the time	Market is moderately UNDER-VALUED	o Market frequently spends long periods here - during periods of moderate pessimism and deteriorating fundamentals, and while recovering from collapses & recessions
-1 to -2 below Trend	10% to 14% of the time	Market is significantly UNDER-VALUED. If recession is only mild and conditions are benign, market will swing back to boom/Greed cycle	<ul style="list-style-type: none"> o 1917 (bottomed at -1.5) before the end of War optimism and 1920's boom. o Early 1952 (bottomed at -1.3) before mid-late 1950s boom. o Late 1966 (bottomed at -1.1) before late 1960s boom. o Early 2003 (bottomed at -1.1) before 2003-7 boom.
More than -2 below Trend	approx 2% of the time	Market is extremely UNDER-VALUED - extreme Fear/pessimism. Major structural problems preventing confidence & investment, but rebounds strongly when rectified	<ul style="list-style-type: none"> o 1890s banking crisis/depression (Index bottomed at -2.7 in Mar 1894). o 2008-9 credit crisis/recession (reached -3.0 in March 2009) o 1930s banking crisis/depression (reached -3.3 in Aug 1931). o 1970s credit crisis/recession (reached -4.5 in Sep 1974)

How to use the index:

I have found this a very useful tool in understanding the cycles in the Australian stock market. It can be (and has) used to determine when to take positions on the whole market (via SPI futures, SPI options, ETFs and ETF warrants). It can also be used to provide a market backdrop when trading individual stocks. However, in the big market moves up and down, the market tends to carry virtually every individual stock with it – ie virtually every stock falls heavily in the major collapses, and virtually every stock jumps strongly in the major market recoveries.

For example, in late 2007 the Fear & Greed score reached +2.0 which indicated extreme excess optimism, and was the trigger for me to sell my more speculative stocks – including highly leveraged financials and speculative miners. Then, during 2008 when the market was suffering major falls, my Fear & Greed Reports nominated a score of -3.0 as most likely target to be reached at the bottom of the cycle. By pure coincidence, the score of -3.0 was the exact bottom of the market, when the All Ords closed at 3,111 on 6th March this year, and the bounce back started the very next trading day. (In the US, the bottom was reached the following Monday - 9th March).

The Fear & Greed reports in the early months of 2009 year spotted this and pointed out that it was time for aggressive investors not just to buy, but to even borrow to buy the overall market. I didn't waste time picking stocks at the bottom – everything takes off in the bounces following major collapses - so I just bought the broad market, while everybody else was panicking and running for the exits in sheer terror. I also made sure I was heavily weighted toward high beta stocks – cyclicals like banking, retailing and resources, which do traditionally do best coming of recessionary cycles. Since the bottom in March 2009, the whole market index quickly bounced back more than 50% in 7 months. The All Ords stayed within the expected range during the cycle and has now bounced back. As predicted by the Fear & Greed index, this so-called "crisis" was just another cycle in a long history of cycles in the market. As usual, human fear drove investors to

exaggerate the bad "news" and sell off shares much too far. When they realized the massive error, the market quickly recovered, just as it has done in past cycles.

Of course the Fear & Greed index was just one measure telling us that the market was extremely cheap and severely over-sold in Jan/Feb 2009. There were other strong signals at the same time that told the same story - like trailing dividend yields above 7%, and trailing price/earnings ratios of only 8 times earnings for the whole market. The Fear & Greed Index has now bounced back to be well within -1.0, which is the "normal" range where it spends around 60% to 70% of its time.

How it is calculated:

The "Fear & Greed" Index is the natural log of the percentage difference between the current All Ordinaries Index and its long term trend line, measured by the number of standard deviations. The trend line is based on a constant level above its 10 year moving average, so that the trend is the both the mean and median for the monthly All Ords index over the whole period.

For example, the calculation of the Fear & Greed index for the end of September 2009 was:

A	Current All Ords Index level	4,739	End September 2009
B	10 year moving average All Ords Price Index:	4,060	(= 120 month equally-weighted moving average of month-end All Ords price index)
C	Long term trend level of All Ords Index:	5,274	(median and mean long term Trend level = 29.9% above the 10y Moving Average)
D	Current All Ords relative to long term Trend:	-10.1%	(= A / C - 1)
E	Natural log of the distance between the Current All Ords and it's long term Trend	-10.7%	(as distributions of asset returns & prices have a finite limited downside (minus 100%) but unlimited up-side, returns are converted to their Natural Logarithms to enable comparison to symmetrical normal statistical distribution)
F	Standard Deviation of All Ords returns	17.0%	(= the annualized standard deviation of the continuously compounded monthly All Ords returns over the historical series, weighted for relevance)
G	Current "Fear & Greed" Index score:	-0.6	(= E / F)

This type of tool tracks and measures "big picture" cycles and trends. It is best used to take advantage of the big swings in the cycles – for both investors and traders. It can be used for both a momentum approach (riding the current cycle while it lasts) and also a contrarian approach (taking a view on the likelihood of the current trend reversing and snapping back at the top or bottom). These big picture signals only occur every few years. On the other hand this is not a useful tool to trade in very short term periods like daily or even weekly.

Of course, the "Fear & Greed" index is just one measure of the market. Investors and traders should also use other methods - including P/E ratios, dividend yields, discounted cash-flow valuation, etc before taking action.

Readers may download the full paper on the Fear & Greed Index from www.investing101.com.au. This includes details of each boom and bust cycle in Australia over the past 150 years; outlines the underlying factors driving the long term economy and stock market, and how the Fear & Greed score is constructed.

Ashley Ormond is the principal of Investing 101 Pty Ltd which holds AFSL 301808. He has been both investing and trading in financial markets since the mid 1980s. He has held senior executive roles at major global banking and finance groups and has been a director of a number of companies in the listed, private, and charitable sectors. He currently manages and advises a number of major funds in Australia. His qualifications include a BA in Economic History (Deakin), Bachelor and Master of Laws (Sydney), Grad Dip in Applied Finance (FINSIA), holds a Chartered Financial Analyst® designation (CFA®), and has lectured in capital markets for the Securities Institute of Australia.

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FINDING OUT ABOUT FOREIGN CURRENCY

By Troy Rieck

In this month's Bulletin, Scott McKenzie sat down with Troy Rieck, Managing Director of Capital Markets at QIC, to discuss the role that foreign currency plays within investment portfolios.

Scott McKenzie (SMK): How does foreign currency exposure get into a portfolio?

Troy Rieck (TR): The most common way is when an investor buys an asset from offshore – perhaps a global equities portfolio, or an infrastructure asset.

Another way would be for the investor to put some cash into a foreign currency bank account, like those offered by some banks.

The final way would be for the investor to purchase a foreign currency forward contract (a derivative) that trades away Australian Dollars for some other currency, such as US Dollars or British Pounds, at a fixed exchange rate.

SMK: What is the role of the exchange rate?

TR: The exchange rate is nothing more than the price at which one currency can be exchanged for another.

SMK: So what impacts does foreign currency have on the portfolio?

TR: Purely in return terms – when the exchange rate goes up, foreign currency values go down, and act as a drag on fund returns. We've seen this over the last six months, with the Australian Dollar trading up to US 88 cents, having traded down to US 63 cents early this year.

Of course, the reverse is also true: when the exchange rate falls, the value of foreign assets goes up. So when the exchange rate plunged at the end of last year, the value of any foreign assets in the portfolio went up accordingly.

SMK: Can an investor control the amount of foreign currency exposures in their portfolio, without having to trade foreign assets?

TR: For an institutional investor, the answer is yes – the easiest way to do this is through foreign currency forward contracts, as these derivatives can be traded separately to any assets in the portfolio. Investors can decide how much (and what type of) foreign currency exposure they want to have in their portfolios completely separately to how much (and what type of) foreign assets they have.

It can be much harder for retail investors – most of the products that they are able to invest in that contain foreign assets will be unhedged portfolios (so no currency hedging). Sometimes a fund manager will offer a hedged and unhedged version of its international equities fund, and international bond funds tend to be hedged.

SMK: Does it matter then that retail investors can't really control how much foreign currency exposure they have?

TR: It can make a huge difference. Exchange rates tend to be volatile and quite unpredictable, so their short term influence on fund returns can also be huge. Even in the long term, changes in the exchange rate don't "wash out".

For example, in the five years to 31 March 2008, a hedged IE fund would have more than doubled in value, but an unhedged fund increased by barely 40%. Movements like these can turn a great investment idea into an all-so-ran outcome.

SMK: Does that mean there is some “optimal” level of foreign currency exposure?

TR: Unfortunately not. During one period of time, being unhedged might bring you great return benefits, but the same exposure during another time period might cost you a lot of money.

Exchange rates are notoriously difficult to forecast in the short-term and long-term; how many people last year would have believed that the Australian Dollar could have traded down from USD 98 cents to USD 60 cents in the space of a few months?

SMK: So why have any foreign currency exposure at all?

TR: Sometimes the exposure is hard to remove (for retail investors, it would often involve selling your holding and moving the money to a hedged product). Other times it can be costly to remove (e.g. trying to hedge emerging markets exposures involves trading in small and illiquid currency markets).

And the foreign currency hedges mean that you might need cash to settle those contracts at a time when cash is hard to find (such as when the exchange rate is falling quickly, as it did last year). You may be forced to sell assets and raise cash just at that point where you don't want to.

Some investment advisors also believe that having some foreign currency exposure in the fund helps to cushion the blow when equity markets fall heavily – in other words, a form of “crisis hedge”. The problem with that view of the world is that the crisis hedge may not work – what if the Australian Dollar rises in value, as it did in the 2001/02 financial year?

SMK: Are there any other roles for foreign exchange?

TR: Some investors try to make money out of actively trading foreign currency contracts. There are a variety of ways that people try to do this, such as trying to forecast the exchange rate 12 months out (fundamental analysis).

Two of the more popular ways are the carry trade (buying currencies with high interest rates) and the momentum trade (buying currencies that have appreciated in value recently). The evidence of success is in favour of active management, and this success has some theoretical support.

SMK: What's your forecast for the Australian Dollar in 12 months time?

TR: Let me be honest and say I have absolutely no idea – but suspect it could be very different to where it is today. Could we toss a coin on direction, but say the change might be 15 cents from where it is today?

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