

# Pengana Global Volatility Fund

## April 2010 Update (Australian Feeder Fund)



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### Fund Description

The Pengana Global Volatility Fund seeks to provide investors with a non directional actively traded derivative strategy focused on volatility. The Fund trades in North American equity index futures, options and other volatility-based instruments and derives returns from mispricing of these instruments due to changes in volatility. The strategy began trading in November 2007<sup>2,3</sup> and is managed by a highly experienced team led by Alvin Wilkinson.

### Fund Features

<b>Style</b>	Non-directional global volatility	<b>Management Fees<sup>1</sup> (monthly)</b>	Class A: 2.0% p.a. Class B: 0.5% p.a.
<b>Investors</b>	Wholesale Investors only	<b>Performance Fees<sup>1</sup> (quarterly)</b>	Class A: 20% Class B: 30%
<b>Minimum Initial Investment Amount</b>	A\$100,000	<b>Trustee Fee<sup>1</sup></b>	0.2% per annum of the net asset value of the Fund
<b>Inception Date</b>	November 2007 <sup>2, 3</sup>	<b>FUM at Month End</b>	A\$75.9m

### Fund and Market Commentary

Fund Performance (Class A Units, in A\$, net of fees) <sup>2,3,4</sup>													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2010	2.3%	-0.4%	-1.6%	-16.6%									<b>-16.3%</b>
2009	0.7%	0.4%	1.1%	1.0%	1.2%	1.7%	1.3%	0.7%	0.3%	0.9%	1.9%	1.0%	<b>12.8%</b>
2008	3.5%	2.6%	1.1%	1.2%	2.1%	5.8%	1.8%	1.1%	-38.3%	-17.1%	68.2%	0.3%	<b>4.3%</b>
2007											1.6%	1.3%	<b>2.8%</b>

Fund Performance (Class B Units, in A\$, net of fees) <sup>2,3,4</sup>													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2010	2.2%	-0.3%	-1.4%	-16.5%									<b>-16.1%</b>
2009	0.7%	0.4%	1.1%	1.1%	1.0%	1.4%	1.3%	0.9%	0.3%	0.9%	1.7%	0.9%	<b>12.2%</b>
2008	3.5%	3.4%	0.7%	1.1%	1.9%	5.2%	1.7%	1.0%	-37.5%	-16.7%	66.7%	0.4%	<b>4.6%</b>

The Performance for the A\$ Class A shares in April 2010 was -16.6%.<sup>3,4</sup> The annualised return for the Class A shares since inception in November 2007 is 0.5%<sup>2,3,4</sup>.

**A brief summary of the month's events appears below but for a full explanation of the Fund's performance please refer to the attached Detailed Commentary.**

The S&P500 appreciated 1.5% over the month but the expectation of significant "event risk" increased dramatically. It was this development, along with dramatic rises in implied volatility in some options, that caused a number of our positions to fall in value at month end.

The major contributors to the Fund's underperformance in April 2010 were:

- Shorter dated positions in out-of-the-money S&P 500 put options
- Longer dated spreads between different options where the positions are "paired off" as closely as possible to being market neutral

Growing uncertainty led to the value of some of the Fund's short out-of-the-money put positions being elevated to extreme levels. This led to unrealized losses that were compounded by market mispricing of these positions. In the Detailed Commentary attached, we go into greater detail about the unusual behaviour of both the put and call wings to further explain the "mismarking" experienced by positions held by the Fund.

<sup>1</sup> All percentages are on a GST exclusive basis net of applicable reduced input tax credits. Please refer to the Information Memorandum for a more detailed explanation.

<sup>2</sup> The Fund began trading in May 2008. Performance for the period prior to May 2008 is the performance of all underlying assets managed in the Pengana Global Volatility Strategy. Performance from May 2008 is for the money managed in the Fund itself.

<sup>3</sup> Inception Dates: Class A Units - 07 November 2007, Class B Units - 31 December 2007

<sup>4</sup> Total return performance figures are derived from the Manager's records and are shown after management fees and performance fees, and assume reinvestment of distributions. Investments can go up and down. Past performance is not a reliable indicator of future performance.

\*Please note the appendix is best viewed on your monitor.

# Pengana Global Volatility Fund

## April 2010 Update (Australian Feeder Fund)

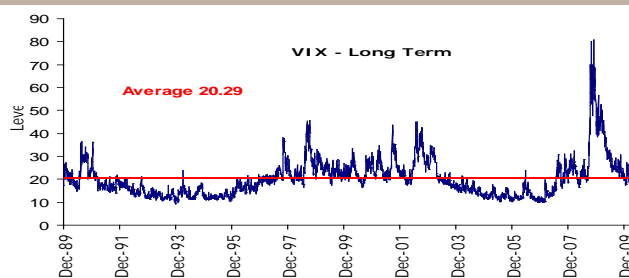


The longer dated spread positions have been held by the Fund since 2008. The Fund is long one series and short another on a ratio basis where the offsetting positions are "paired" to reduce risk. The price differential ("spread") between the two should remain reasonably stable but there was a surprising degree of variability in the long and short legs during the month.

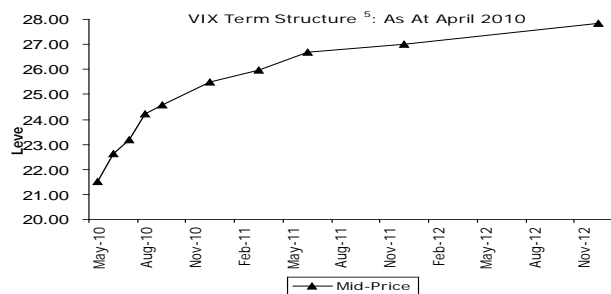
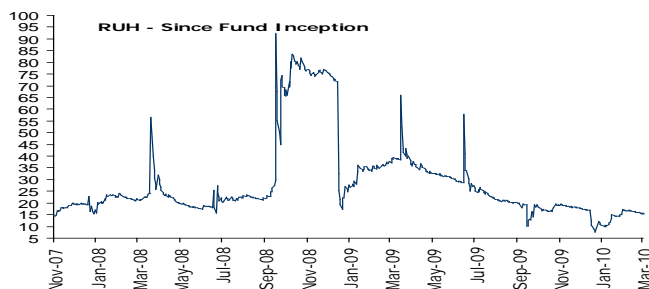
We remain confident that these positions will generate a profit upon expiry. As at the date of this report (May 24) a portion of the shorter dated positions had expired generating a profit, and we expect a similar outcome as the remainder of this shorter dated inventory expires. However we are mindful of the impact of the "mismarking" of these out-of-the-money options and will look to manage this to reduce the volatility of these longer dated positions.

Net Returns to 31 March 2010 <sup>2,3,4</sup>	Class A Units	Class B Units
3 months	-18.2%	-17.9%
6 months	-13.9%	-13.9%
1 year	-8.5%	-9.0%
<b>Annualised since inception</b>	<b>0.5% p.a.</b>	<b>-0.7% p.a.</b>

### CBOE Volatility Index (VIX)



### CBOE Realised Volatility (RUH) and Term Structure <sup>5</sup>



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<sup>5</sup> Term Structure describes the level of implied volatility for options in different expiry dates.

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# Pengana Global Volatility Master Fund

## April 2010 Detailed Commentary



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To say April was a tough month for the Fund would be an understatement. Whilst we have indicated to you during the life of the Fund that the Fund would find it difficult during "listless" or sideways markets, the market conditions during April (particularly late in the month) also proved to be a challenge for the Fund. Please find below a detailed commentary about the Fund's performance during the month.

### FUND COMMENTARY

The PGVF is not a directional long or short volatility strategy. It seeks to profit from ongoing relative value opportunities between different option series – however extreme levels of volatility do have implications for the PGVF:

1. The degree of mispricing of options increases: market participants driven by fear focus less on fair value, non-fundamental factors drive trading activity, and pricing inaccuracies and distortions increase.
2. Opportunities for the PGVF increase due to the degree of mispricing. The mispricing will persist for a period but given the finite life of options, the "speculative" value in the option (the element which we believe to be mispriced) will decline over time.

With that in mind, the major contributors to the Fund's underperformance in April 2010 were:

- Shorter dated put skew (short 1-3 month expiry out-of-the-money S&P 500 put options)
- Longer dated calendar ratio spread (long one series and short another series of options on a ratio basis where the positions are "paired off" as closely as possible to being delta neutral).

All of these positions were engineered with the appropriate offsetting futures position to create a delta neutral position (i.e. S&P 500 futures are bought or sold depending on the respective option positions held).

### Shorter dated put skew

The majority of the shorted dated (1-3 month) put skew positions held by the Fund were accumulated during the first quarter of 2010. These positions were "packaged" with offsetting futures position to create a delta neutral position.

Our general intention is to hold such positions to expiry where the positions would be cash settled at a profit. However due to growing investor uncertainty in the broader equity market and a reluctance to sell downside risk we witnessed a demand supply dynamic resulting in volatilities on the put side of the market being elevated to extreme levels. These unrealized losses were compounded by market mismarking of these positions. At the position level these losses were partially offset by the short futures position that was held.

In the market commentary below we go into greater detail about the unusual behaviour of both the put and call wings to further explain the "mismarking" experience of positions held by the Fund. For a technical explanation we would also like to draw your attention to the Appendix – "SPX Kurtosis Apr 2010", which shows that the variability of out-of-the-money options in April and early May even exceeded the variability experienced in October 2008.

We remain confident that these positions will generate a profit upon expiry. As at the date of this report (May 24) a portion of this put skew has expired generating a significant profit, and we expect a similar outcome after the expiry of the remainder of this shorter dated inventory.

### Longer dated calendar-ratio spread

This position has been held by the Fund since 2008. The Fund is long one series and short another on a ratio basis where the offsetting positions are paired off depending on the respective deltas. Where necessary the Fund will maintain a delta neutral position by buying or selling futures as appropriate.

We remain confident that this position will ultimately be profitable but are mindful of the impact of the "mismarking" of these out-of-the-money options and will look to manage this to reduce the volatility of these longer dated positions.

This report is not an offer of securities and it must not be construed as an offer to sell or an invitation to subscribe for any securities or other financial products in any jurisdiction or country. Investment in the Pengana Global Volatility Master Fund (the "Fund") can only be made by completing a subscription form attached to the Private Placement Memorandum. The information in this report is not intended to be securities or financial product advice and should not be relied upon as such. The repayment of an investment in, and the performance of, the Fund is not guaranteed by the Fund, the Pengana Global Volatility (Offshore) Fund, the Pengana Global Volatility Fund, Pengana Capital Global Volatility Limited, Pengana Capital Limited nor any of their related bodies corporate or any other person or organization. Investment in the Fund is subject to risk, including possible delays in repayment and loss of income and principle invested. Past performance is not indicative of or a guarantee of future results. The information in the report is intended to provide a general outline only and is not intended to be a definitive statement on the subject matter.

# Pengana Global Volatility Master Fund

## April 2010 Detailed Commentary



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### MARKET COMMENTARY

April experienced a gain in the S&P 500 as it started the month at a level of 1178; the market rose to 1210 on 15 April, and then fell to 1192 on 16 April. The S&P 500 saw its high of the month occur on 23 April when it closed at 1217. This level has not been seen since September 2008. The index ended the month at the 1186 level, with the return for the month being 1.48%. Volume in the S&P 500 was slightly higher than the two year average.

The VIX started the month at 17.47, then moved down to the month's low of 15.59 on 14 April. This was the lowest level of the Volatility Index since July of 2007. 14 days later, the VIX achieved the high of the month at 22.81 before ending the month at 22.05. Month on month the VIX rose 26.2%.

Realized volatility did indeed pick up, with 10-day rising from 7.5 to 19.5 (>150%) over the course of the month. An investor purchasing a 30-day at-the-money option on 1 April would have paid a 15 *implied* volatility, and over the next 30 days, the S&P 500 index *realized* a 13.4 volatility; a material increase over the 30-day time frame ending 11 March, during which the index *realized* a 7.3 volatility. The words *implied* and *realized* are italicized for effect, to highlight a concept important to holders of long option positions. Typically, realized volatility is lower than implied volatilities and whilst correlated there is a margin between the two – investor expectations of volatility in the future are expressed as implied volatility; realized volatility is the actual volatility based on market movements.

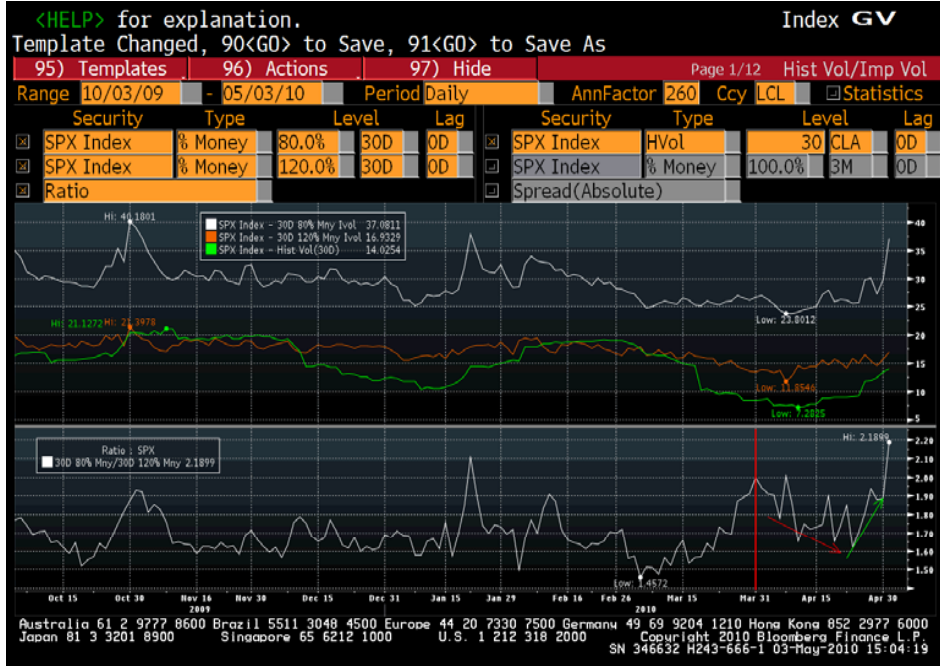
At a very basic level, when one buys an option, the option could appreciate in value for a number of different reasons. A manager trading volatility as an asset class isolates that element of the option price that is an expectation of the variance of the underlying shares for the time frame covered by the option contract. The stock variability expectation is the volatility *implied* by the option price in the market place. If an option trader expects that the *realized* volatility of the shares going forward will be greater than that currently *implied* by the option price in the market, the trader might purchase those options and trade a stock hedge appropriately to harvest gains should they arise. Over the course of April 2010, the *realized* volatility of the underlying index came close to matching the *implied* volatility paid on 1 April, but not quite.

Also worthy of note was the increased pivot higher of short term downside put volatilities. Significant macro events that might have otherwise been catalysts for weakness in underlying equity markets were offset by buoyant investor interpretation of US economic data and corporate earnings announcements. But as experienced in the past, the ongoing rally in the indices actually witnessed a counter-intuitive increase in the expense of puts relative to calls, or "skew" as the relationship is characterized. In particular, the considerably out of the money put tail (30-day 80% strike) appreciated significantly to new highs relative to the 120% call. Given the nature of the ratio at 31 March, it would have been statistically somewhat difficult to have suggested that the put tail would appreciate relative to the call tail a month later, but indeed this is what occurred, with particular activity in the last week of April. For choice, on 1 April one might have likely elected the call for long tail exposure, but the continued rally in the index in the face of considerable headwinds appears to have resulted in static expectations of upside risk within the context of an overall general implied volatility expansion.

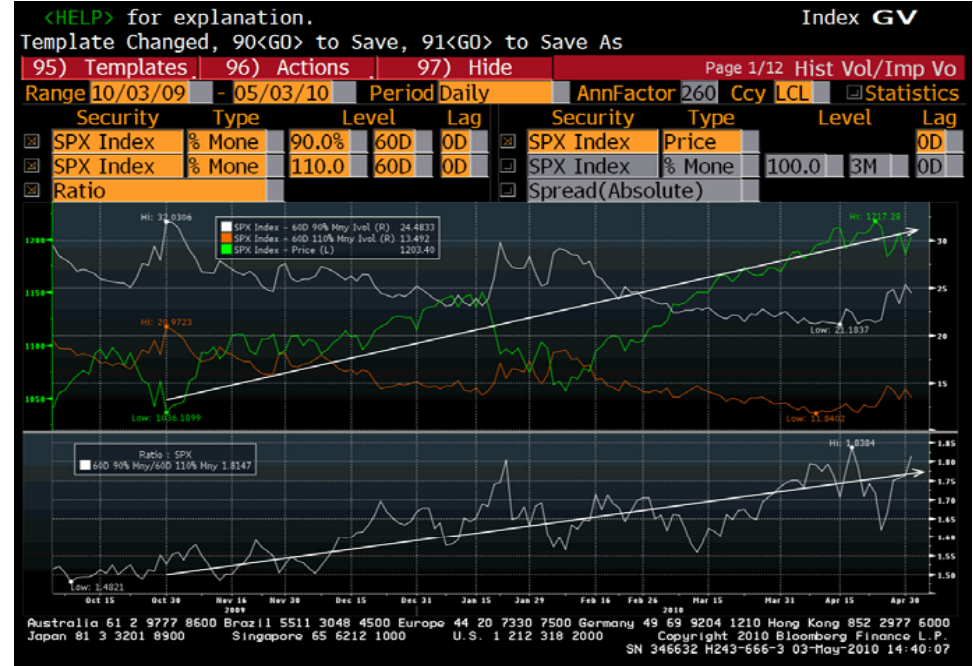
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# Skew Relationships

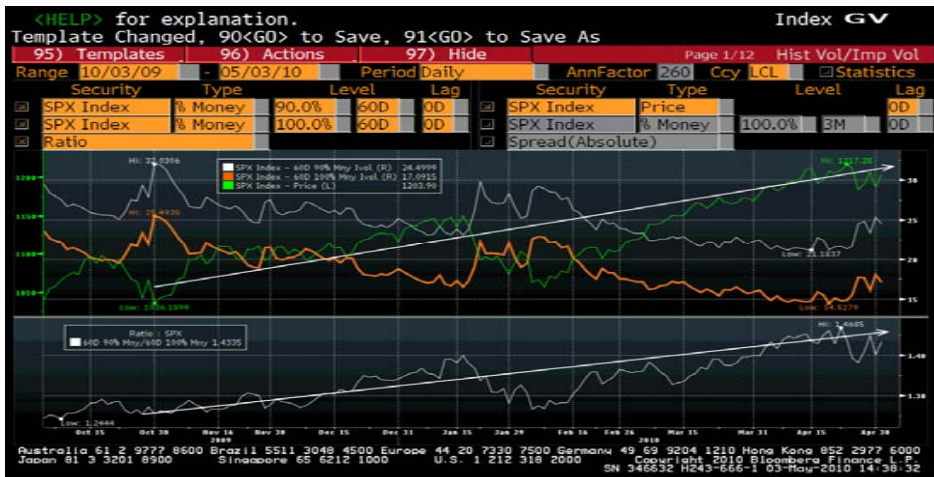
SPX 30-day 80% Strike Implied Vol vs 120% Implied Vol (Oct 09 to Present)



SPX 60-day 90% Strike Implied Vol vs 110% Implied Vol (Oct 09 to Present)



SPX 90% Put / 100% Put 2-month Implied Vol Ratio - Oct 09 to Present



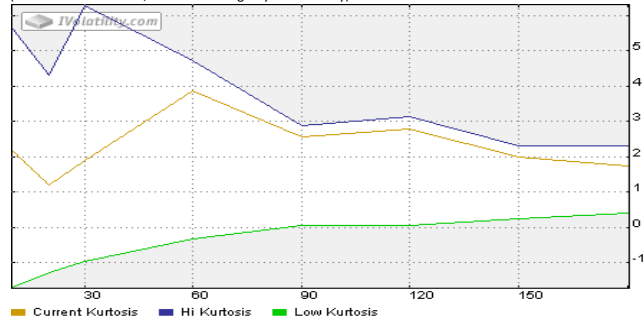
# Kurtosis

Kurtosis is the relative peakedness or flatness of a returns distribution compared to the normal distribution (a normal distribution has a zero kurtosis). A distribution is said to be leptokurtic if its tails are fatter than those of a corresponding normal distribution. It is said to be platykurtic if its tails are thinner than those of the normal distribution. Market returns for stocks tend to be slightly leptokurtic. This means that dramatic market moves occur with greater frequency than is predicted by the normal distribution. (60-day SPX Kurtosis below) Source: Ivolatility.com

30-day Kurtosis (tail "fatness") increased considerably post the so surprising announcement of US government review of the synthetic CDO activities of a large investment bank. The widening was driven largely by put tail expansion rather than call tail widening.

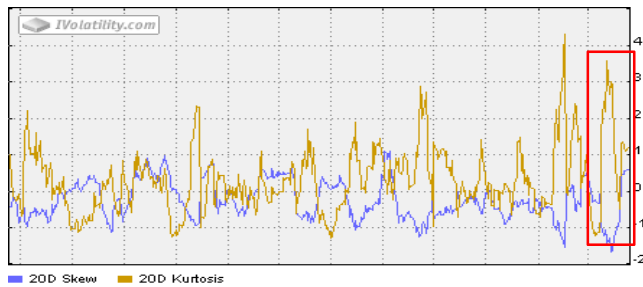
**SPX Kurtosis Cone (May 18)**

(Y-axis is Kurtosis Level, X-axis is Trading Days to Maturity)

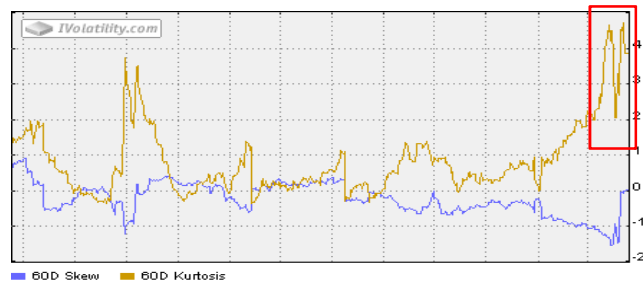


The huge variability in 20-day, 60-day and 90-day out-of-the-money options over the course of April and early May 2010 was very much out of the ordinary, exceeding even the variability experienced in October and November of 2008. Anyone managing the relative relationship between out of the money options would have experienced extremely unusual variability in those relationships.

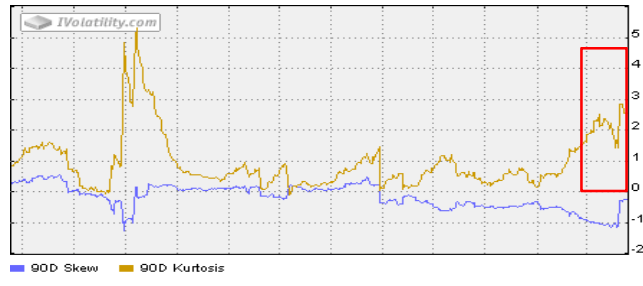
**SPX 20-day Kurtosis, May 2008 to Present**



**SPX 60-day Kurtosis, May 2008 to Present**



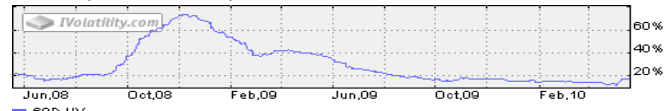
**SPX 90-day Kurtosis, May 2008 to Present**



**SPX 60-day At-the-Money Implied Volatility**



**SPX 60-day Realized Volatility**



**SPX Price**

