



## AUSTRALIA

## Top Ranking Horses ✓



Number	Horse Name	Odds @ 6pm Mon
22	Lucia Valentina	\$7.10
24	Signoff	\$11.30
3	Fawkner	\$7.90
11	Mutual Regard	\$9.90
1	Admire Rakti	\$6.70
5	Protectionist	\$9.80

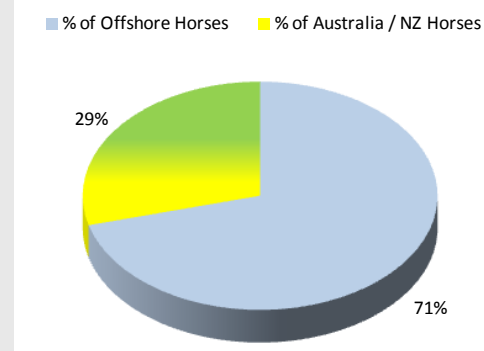
## Bottom Ranking Donkeys ✕



Number	Horse Name	Odds @ 6pm Mon
17	Mr O'Ceirin	\$118.70
20	Opinion	\$97.20
6	<del>Sea Moon</del>	<del>\$0.00</del>
13	Willing Foe	\$47.80
7	Seismos	\$47.20
23	Unchain My Heart	\$63.00

Source: Macquarie Research, Race TAB, November 2014

## Foreign entrants continue to dominate the field



Source: Macquarie Research, Race TAB, November 2014

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3 November 2014

Macquarie Securities (Australia) Limited

# Melbourne Cup Quant Style

## Quality Offshore exposure

### Event

- The first Tuesday in November has arrived and the Macquarie Quant team have focussed their factor model on Flemington, transforming racing stats into traditional Quant signals to rank the runners in the race.

### Impact

- Horses at the top of the model include Lucia Valentina, Signoff, Fawkner, Mutual Regard, Admire Rakti and Protectionist.
- Each year we look to the market to guide us and make slight tweaks to our model. The Australian economy continues to face the prospect of low growth as we transition from mining led growth to broader based, consumer and non-mining led growth. The market is clearly being divided into winners and losers and investors have been seeking growth exposure via offshore earners.
- International horses continue to dominate the Cup field with over 70% of runners coming from outside AU/NZ. (see chart on left) **We place a tilt to proven international horses but still favour those who have Australian form (Quality, reliable horses).**
- The Halloween announcement by the Bank of Japan to bolster quantitative easing also raised eyebrows here. **A sharp drop in the yen gives a nice boost to AUD denominated prize money should Japanese owned, Admire Rakti repeat his performance in the Caulfield Cup.** Do the Japanese owners have some influence here?

### Strategy

- We adjust our strategy slightly this year to allow for the Japanese funny business. We firstly put an each way bet on Admire Rakti.**
- We then revert to our traditional strategy. Placing a bet on the top horse in our model and going for the trifecta using the top quartile of horses.** This best mirrors the way we (quants) approach equity investing. The best way to implement the trifecta strategy is via a 'box trifecta' on the top 6 horses in the model (see your local bookie for a description of this bet).

### Factors used in the model

Quant Signal	Factor	Quant Signal	Quant Signal
Sentiment	Odds	Quality	Odds Dispersion
Momentum	Odds movement		Win %
	Form	Innovative Data / Other	Age, Barrier
Value	Avg prize money per race		Australian Form
			International Horse

Source: Macquarie Research, November 2014

- We show the payoff to our historic strategy since 2007 inside. After a couple of years with no lollies we gained some redemption this year [successfully picking the winner of the World Cup](#). However the poor results in recent Melbourne Cups are a timely reminder that this is still simply gambling!
- This model is not intended to be taken seriously. The Quant team has limited knowledge of horse racing and the purpose of this article is primarily fun.

## Analysis

- Quant factors are the building blocks of quant ‘styles’, and styles are combined into models.
- For example, our Macquarie Alpha Model has over 120 factors that are grouped into 10 styles which are then weighted to form a single model rank ([see report here](#)).
- Here we take a similar approach, using the 5 most important quant styles:
  1. **Value** – cheapness, what you get for the price
  2. **Momentum** – what is working, what is getting better?
  3. **Sentiment** – what everyone is looking for right now, what people like
  4. **Quality** – what is the best, the most reliable?
  5. **Innovative Data** – what other data sources gives us an information edge
- The table below shows the breakdown for each horse on each of the different factors we use in the model.

**Fig 1 Detailed rankings of horses in the race**

Rank	DETAILS					VALUE	SENTIMENT	MOMENTUM		QUALITY		OTHER				Final Score	
	#	Horse Name	OS	Age	Barrier	Odds	Prize Money	Odds	Odds Movement	Form	Odds Dispersion	Win %	Age	Barrier	Foreign		Aus Form
MAX SCORE						5	20	17.5	15	10	10	5	5	2.5	10	100	
1	22	Lucia Valentina	NZ	4	2	\$ 7.10	5.0	20	13.1	15.0	10.0	10.0	5.0	5.0	0.0	10.0	93.1
2	24	Signoff	IRE	5	16	\$ 11.30	3.8	20	17.5	15.0	7.5	10.0	5.0	0.0	2.5	10.0	91.3
3	3	Fawkner		7	9	\$ 7.90	5.0	20	17.5	11.3	10.0	10.0	0.0	5.0	0.0	10.0	88.8
4	11	Mutual Regard	IRE	6	12	\$ 9.90	2.5	20	17.5	15.0	10.0	10.0	2.5	5.0	2.5	0.0	85.0
5	1	Admire Rakti	JPN	7	8	\$ 6.70	5.0	20	13.1	7.5	10.0	5.0	0.0	5.0	2.5	10.0	78.1
5	5	Protectionist	GER	5	11	\$ 9.80	3.8	20	4.4	15.0	10.0	10.0	5.0	5.0	2.5	2.5	78.1
7	12	Who Shot Thebarman	NZ	6	13	\$ 15.20	3.8	15	8.8	11.3	7.5	10.0	2.5	5.0	0.0	10.0	73.8
8	8	Junoob	GB	7	7	\$ 30.60	2.5	15	4.4	11.3	10.0	7.5	0.0	5.0	2.5	10.0	68.1
9	2	Cavalryman	GB	9	3	\$ 20.10	5.0	15	8.8	15.0	7.5	5.0	0.0	5.0	2.5	0.0	63.8
9	14	My Ambivalent	IRE	6	4	\$ 53.50	5.0	10	8.8	15.0	7.5	7.5	2.5	5.0	2.5	0.0	63.8
11	21	Araldo	GB	7	24	\$ 27.1	1.3	15	17.5	7.5	7.5	5.0	0.0	0.0	2.5	5.0	61.3
12	16	Brambles	NZ	6	21	\$ 56.80	3.8	10	4.4	11.3	5.0	7.5	2.5	0.0	0.0	10.0	54.4
13	10	Gatewood	GB	7	22	\$ 53.10	2.5	10	8.8	15.0	5.0	7.5	0.0	0.0	2.5	0.0	51.3
14	9	Royal Diamond	IRE	9	6	\$ 42.20	1.3	10	13.1	11.3	5.0	2.5	0.0	5.0	2.5	0.0	50.6
15	15	Precedence	NZ	9	20	\$ 35.80	3.8	15	17.5	3.8	2.5	2.5	0.0	0.0	0.0	2.5	47.5
15	19	Lidan	FR	6	10	\$ 59.80	2.5	5	8.8	3.8	7.5	5.0	2.5	5.0	2.5	5.0	47.5
17	4	Red Cadeaux	GB	9	15	\$ 15.00	5.0	15	13.1	3.8	5.0	2.5	0.0	0.0	2.5	0.0	46.9
17	18	Au Revoir	IRE	5	23	\$ 65.20	1.3	5	13.1	7.5	5.0	2.5	5.0	0.0	2.5	5.0	46.9
19	23	Unchain My Heart		8	5	\$ 63.00	1.3	5	17.5	7.5	2.5	2.5	0.0	5.0	0.0	5.0	46.3
20	7	Seismos	IRE	7	1	\$ 47.20	1.3	10	4.4	7.5	2.5	5.0	0.0	5.0	2.5	2.5	40.6
20	13	Willing Foe	USA	8	17	\$ 47.80	2.5	10	4.4	11.3	2.5	7.5	0.0	0.0	2.5	0.0	40.6
22	6	Sea Moon	GB	7	48	\$	3.8	5	8.8	7.5	2.5	7.5	0.0	0.0	2.5	2.5	40.0
23	20	Opinion	IRE	6	14	\$ 97.20	2.5	5	4.4	3.8	5.0	2.5	2.5	5.0	2.5	5.0	38.1
24	17	Mr O'Ceirín	NZ	7	19	\$ 118.70	1.3	5	13.1	3.8	2.5	5.0	0.0	0.0	0.0	2.5	33.1

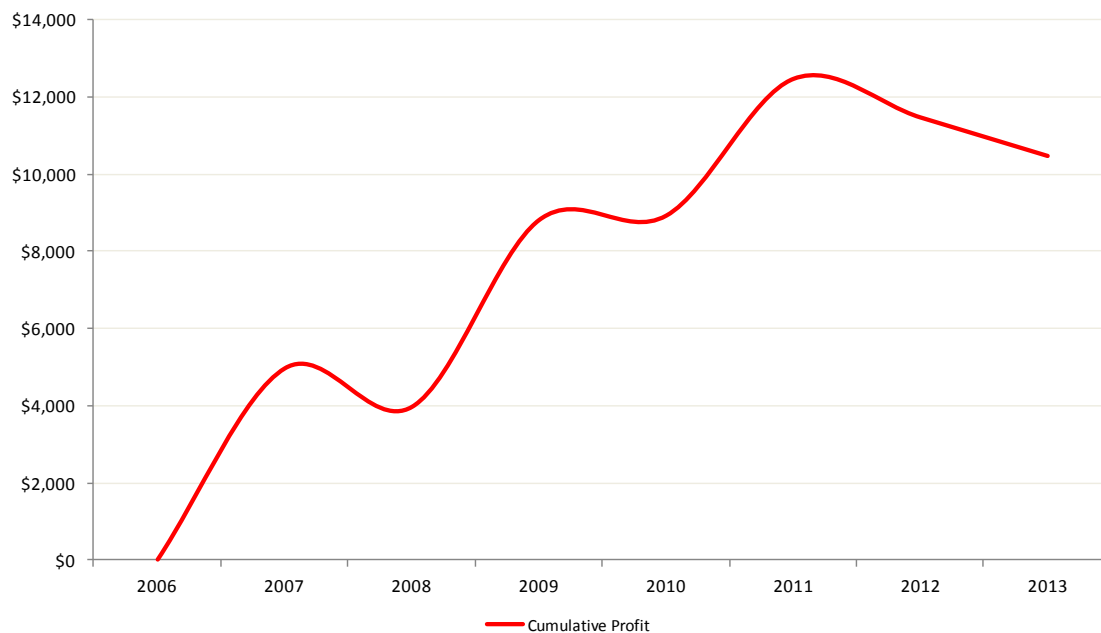
Source: Macquarie Research, Race TAB, November 2014

- **Value / Yield** is measured by average prize money per race as this represents the return of each horse.
- **Momentum** is measured by movement in the odds from opening prices until the latest available odds. The horses form in its last 5 starts is also a good indicator of the momentum in the horse.
- **Sentiment** is measured by the last available odds before publication as this is representative of the mood of the market.
- **Quality** is measured by odds dispersion amongst bookmakers to indicate the variance of the perceived value of the horses. We also measure the horses winning percentage to get a hit rate of the horse.
- **Innovative / Other Data**
  - ⇒ We use the Australian form to account for the large number of foreign horses in the field. If the horse has successfully raced, won or placed in Australia it receives a higher weighting (depending on result).
  - ⇒ We also took into account factors that made up previous winners of the Melbourne Cup. Starting barrier can give the horse an obvious advantage.
- According to historical analysis, winning horses are almost twice as likely to have started in one of the first 14 barriers. The age of the horse can also make a difference. Almost half of winners since 1861 have been aged four or five.

### Historic Profitability of the model

- Our historic strategy involves a bet on the top pick in the model and also betting on the top quartile of horses for the trifecta. This mirrors the way we (quants) approach equity investing.
- Below we shows the profitability of betting a combined \$1000 on 2 bets in each of the years we've run the model:
  - ⇒ The top-ranked horse for a win
  - ⇒ A box-trifecta on the top six horses in the model.

**Fig 2 Cumulative Profit on an annual \$1000 investment in Win/Box Trifecta Quant Strategy**



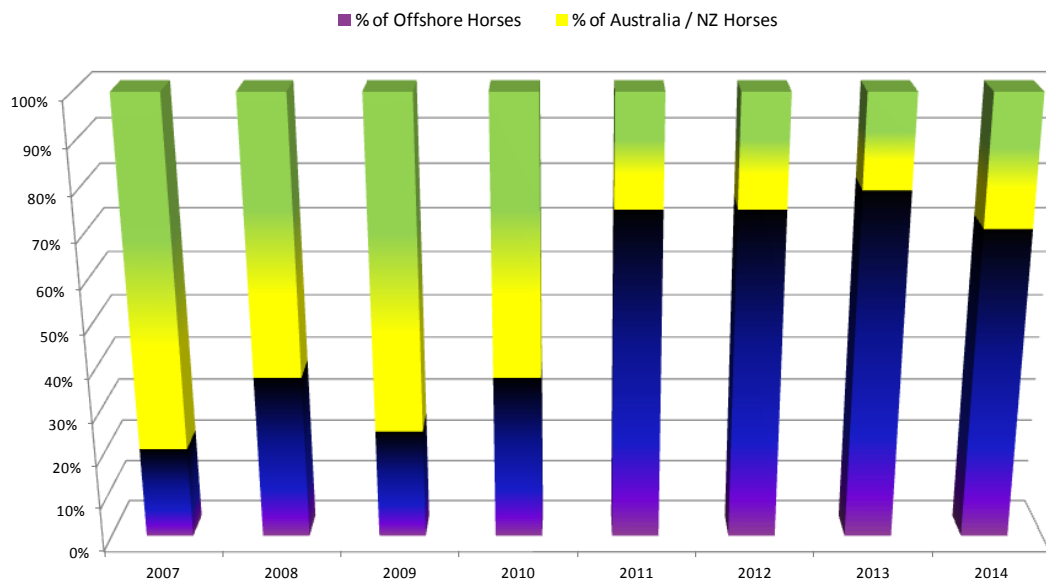
Source: Macquarie Research, Race TAB, November 2011

- The Macquarie Quant team first ran the Melbourne cup model in 2007. Taking a box trifecta on the Top 6 horses in the model in 2007 paid handsomely.
- In 2008, we warned to be wary of the 'Black Swan' and unfortunately our model yielded little success. At \$41, Viewed came from nowhere to win the cup. Most of the race favourites were left behind.
- In 2009, Shocking was at the top of our model and took out the race.
- 2010 saw American bring home the bacon. Whilst the horse was not our top pick the box trifecta paid off again with odds of roughly \$250-\$300 depending on your location.
- 2011 left us on the edge of our seats with Dunaden winning only by the slightest of margins paying \$9.10. Red Cadeaux came from nowhere and was actually ranked near the bottom of our model.
- We were taken by surprise in 2012 with Green Moon taking out the race and Jakkalberry coming from nowhere to make up the top 3. Thankfully our model remains profitable over the long term.
- 2013 also proved a tough year for punters. For the first time in 8 years the favourite came through (which was not our top pick) and Red Cadeaux also proved a thorn in our side preventing the trifecta.

### 2014 Strategy – More of the same with a slight change

- Each year we adjust our model slightly looking to the market for inspiration. The strength of the Australian dollar continues to make the prize money attractive to foreign horses and we continue to see international horses dominating the field of the Melbourne cup. (chart below).

**Fig 3 Increased dominance of foreign entrants in the Melbourne cup field**



Source: Macquarie Research, November 2014

- The Australian economy continues to face the prospect of low growth as we transition from mining led growth to broader based, consumer and non-mining led growth. [Our equity strategy team recently reiterated this in and their stock preferences](#). The market is clearly being divided into winners and losers and investors have been seeking growth exposure via offshore earners. **We place a tilt to proven international horses but still favour those who have Australian form (Quality, reliable horses).**
- The Halloween announcement by the Bank of Japan also raised eyebrows here. **A sharp drop in the yen gives a nice boost to AUD denominated prize money should Japanese owned, Admire Rakti repeat his performance in the Caulfield Cup.** Do the Japanese owners have some influence here? We adjust our strategy slightly this year to allow for the Japanese funny business.
- How we will be betting:
  - ⇒ We firstly put an each way bet on Admire Rakti despite carrying a very heavy weight.
  - ⇒ We then place a bet on the top horse in our model
  - ⇒ And also go for the trifecta using the top quartile of horses. This best mirrors the way we (quants) approach equity investing.
- The best way to implement the trifecta strategy is via a 'box trifecta' on the top 6 horses in the model (see your local bookie for a description of this bet).
- We must stress again however that this model is not intended to be taken seriously. The Quant team has very limited knowledge of horse racing and the purpose of this article is primarily fun.
- And... Past performance is no indication of future returns. Happy punting!

## Important disclosures:

## Recommendation definitions

**Macquarie - Australia/New Zealand**

Outperform – return >3% in excess of benchmark return  
 Neutral – return within 3% of benchmark return  
 Underperform – return >3% below benchmark return

Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield

**Macquarie – Asia/Europe**

Outperform – expected return >+10%  
 Neutral – expected return from -10% to +10%  
 Underperform – expected return <-10%

**Macquarie First South - South Africa**

Outperform – expected return >+10%  
 Neutral – expected return from -10% to +10%  
 Underperform – expected return <-10%

**Macquarie - Canada**

Outperform – return >5% in excess of benchmark return  
 Neutral – return within 5% of benchmark return  
 Underperform – return >5% below benchmark return

**Macquarie - USA**

Outperform (Buy) – return >5% in excess of Russell 3000 index return  
 Neutral (Hold) – return within 5% of Russell 3000 index return  
 Underperform (Sell) – return >5% below Russell 3000 index return

## Volatility index definition\*

This is calculated from the volatility of historical price movements.

**Very high-highest risk** – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

**High** – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

**Medium** – stock should be expected to move up or down at least 30–40% in a year.

**Low-medium** – stock should be expected to move up or down at least 25–30% in a year.

**Low** – stock should be expected to move up or down at least 15–25% in a year.

\* Applicable to Asia/Australian/NZ/Canada stocks only

**Recommendations** – 12 months

**Note:** Quant recommendations may differ from Fundamental Analyst recommendations

## Financial definitions

All "Adjusted" data items have had the following adjustments made:

Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense  
 Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

**EPS** = adjusted net profit / epowa\*

**ROA** = adjusted ebit / average total assets

**ROA Banks/Insurance** = adjusted net profit / average total assets

**ROE** = adjusted net profit / average shareholders funds

**Gross cashflow** = adjusted net profit + depreciation

\*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

## Recommendation proportions – For quarter ending 30 September 2014

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	48.73%	59.90%	35.63%	42.00%	60.28%	42.11%	(for US coverage by MCUSA, 6.09% of stocks followed are investment banking clients)
Neutral	33.76%	24.97%	39.08%	52.67%	36.17%	38.42%	(for US coverage by MCUSA, 8.12% of stocks followed are investment banking clients)
Underperform	17.52%	15.13%	25.29%	5.33%	3.55%	19.47%	(for US coverage by MCUSA, 0.51% of stocks followed are investment banking clients)

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