



AUSTRALIA

Top Ranking Horses ✓



Number	Horse Name	Odds @ 5pm Mon
10	Trip To Paris	\$7.50
3	Fame Game	\$4.20
22	The United States	\$18.00
13	The Offer	\$35.00
2	Criterion	\$15.00
17	Almoonqith	\$15.00

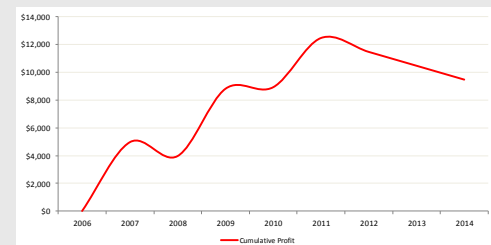
Bottom Ranking Donkeys ✗



Number	Horse Name	Odds @ 5pm Mon
7	Hokko Brave	\$35.00
18	Kingfisher	\$41.00
19	Prince Of Penzance	\$101.00
1	Snow Sky	\$41.00
5	Big Orange	\$61.00
21	Sertorius	\$101.00

Source: Macquarie Research, Race TAB, November 2015

Cumulative Profit on an annual \$1000 investment in Win/Box Trifecta Strategy



Source: Macquarie Research, November 2015

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2 November 2015

Macquarie Securities (Australia) Limited

Melbourne Cup Quant Style

Winning a Trip to Paris!

Event

- Hot off the successful warm up in the Rugby World Cup, the Macquarie Quant team turn our attention to Flemington, transforming racing stats into traditional Quant signals to make our picks in the race that stops the nation.

Impact

- Horses at the top of the model include Trip to Paris, Fame Game, The United States, The Offer, Criterion and Almoonqith.
- Trip to Paris comes out as the top horse following a strong showing in the Caulfield Cup. Taking the lead from his name, a celebratory Macaron or two under the Eiffel Tower seems an appropriate celebration should he win. We can all dream!
- The weak Australian dollar has not deterred offshore entrants in this year's race despite the overall prize purse getting a 20% haircut over the last 12 months (in USD terms). The 75% of the field from outside of AU/NZ will be hoping for support from the RBA when it meets on interest rates prior to race time. They will be out of luck if [our view](#) is correct.
- We add an extra Quality factor to this year's model tilting towards horses that have a proven track record over the longer distance of the Melbourne Cup. Macro volatility has picked up in the last 6 months as the Chinese market tipped over and investors contemplate the impact of a US interest rate cycle. Proven, Quality stocks typically win out in volatile environments leading us to increase our Quality tilt in 2015.

Strategy: Red Cadeaux - Learning from lessons past

- We adjust our strategy this year and include our bogey horse, Red Cadeaux in our trifecta bet. This will include 7 horses. Despite typically having poor form and being one of the races elder statesmen, Red Cadeaux always brings his A-Game on Cup day and cannot be ignored.
- Our traditional strategy is maintained, placing a bet on the top horse in our model and going for the trifecta using the top quartile of horses (plus Red Cadeaux). This best mirrors the way Quantitative strategies are applied to equity investing and can be implemented using a 'box trifecta' (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
			Won Over Distance

Source: Macquarie Research, November 2015

- We show the payoff to our historic strategy since 2007 inside. Overall profits remain healthy however results have gone against us in recent years providing a timely reminder that this is still 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](#)).
- For the Melbourne Cup we take a similar approach, using the 5 most important quant styles:
 - Value** – cheapness, what you get for the price
 - Momentum** – what is working, what is getting better?
 - Sentiment** – what everyone is looking for right now, what people like
 - Quality** – what is the best, the most reliable?
 - 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

	DETAILS						VALUE	SENTIMENT	MOMENTUM		QUALITY		OTHER		Aus	
Rank	#	Horse Name	OS	Age	Barrier	Odds	Prize Money	Odds	Odds Movement	Form	Odds Dispersion	Win %	Barrier	Foreign	Form	Final Score
MAX SCORE																
1	10	Trip To Paris	IRE	5	14	\$ 7.50	3.8	20	17.5	17.5	5.0	11.3	5	7.5	7.5	92.5
2	3	Fame Game	JPN	6	12	\$ 4.20	5.0	20	13.1	17.5	5.0	7.5	5	7.5	2.5	83.1
3	22	The United States	IRE	6	3	\$ 18.00	1.3	15	17.5	17.5	3.8	15.0	5	0.0	7.5	82.5
4	13	The Offer	IRE	7	13	\$ 35.00	2.5	10	17.5	13.1	2.5	11.3	5	7.5	7.5	76.9
5	2	Criterion	NZ	5	4	\$ 15.00	5.0	20	13.1	13.1	5.0	3.8	5	0.0	7.5	72.5
5	17	Almoonqith	USA	6	10	\$ 15.00	1.3	20	17.5	8.8	5.0	7.5	5	0.0	7.5	72.5
7	6	Hartnell	GB	5	17	\$ 31.00	3.8	15	8.8	8.8	3.8	15.0	0	7.5	7.5	70.0
8	12	Sky Hunter	GB	6	7	\$ 35.00	2.5	10	13.1	17.5	3.8	15.0	5	0.0	0.0	66.9
8	15	Preferment	NZ	4	11	\$ 9.50	5.0	20	8.8	13.1	3.8	3.8	5	0.0	7.5	66.9
10	8	Max Dynamite	FR	6	2	\$ 13.00	1.3	20	8.8	13.1	5.0	3.8	5	7.5	0.0	64.4
11	20	Bondi Beach	IRE	4	18	\$ 23.00	5.0	15	8.8	17.5	2.5	15.0	0	0.0	0.0	63.8
12	23	Excess Knowledge	GB	6	24	\$ 35.00	1.3	10	17.5	13.1	3.8	7.5	0	0.0	7.5	60.6
13	4	Our Ivanhowe	GER	6	22	\$ 19.00	2.5	15	8.8	8.8	5.0	15.0	0	0.0	5.0	60.0
14	11	Who Shot Thebarman	NZ	7	6	\$ 19.00	3.8	15	4.4	4.4	2.5	11.3	5	7.5	2.5	56.3
15	24	Gust Of Wind	NZ	4	19	\$ 31.00	5.0	15	8.8	8.8	3.8	11.3	0	0.0	2.5	55.0
16	14	Grand Marshal	GB	6	15	\$ 41.00	3.8	10	13.1	8.8	1.3	7.5	0	7.5	2.5	54.4
17	9	Red Cadeaux	GB	10	8	\$ 31.00	5.0	15	13.1	8.8	2.5	3.8	5	0.0	0.0	53.1
18	16	Quest For More	IRE	6	21	\$ 101.0	1.3	5	8.8	17.5	1.3	11.3	0	7.5	0.0	52.5
19	5	Big Orange	GB	5	23	\$ 61.00	2.5	5	4.4	13.1	2.5	15.0	0	7.5	0.0	50.0
19	21	Sertorius		8	5	\$ 101.00	2.5	5	17.5	8.8	1.3	7.5	5	0.0	2.5	50.0
21	1	Snow Sky	GB	5	16	\$ 41.00	3.8	10	4.4	13.1	1.3	11.3	0	0.0	2.5	46.3
22	19	Prince Of Penzance	NZ	6	1	\$ 101.00	1.3	5	13.1	4.4	1.3	7.5	5	0.0	5.0	42.5
23	18	Kingfisher	IRE	5	9	\$ 41.00	2.5	10	4.4	13.1	1.3	3.8	5	0.0	0.0	40.0
24	7	Hokko Brave	JPN	8	20	\$ 35.00	3.8	10	4.4	4.4	2.5	3.8	0	0.0	2.5	31.3

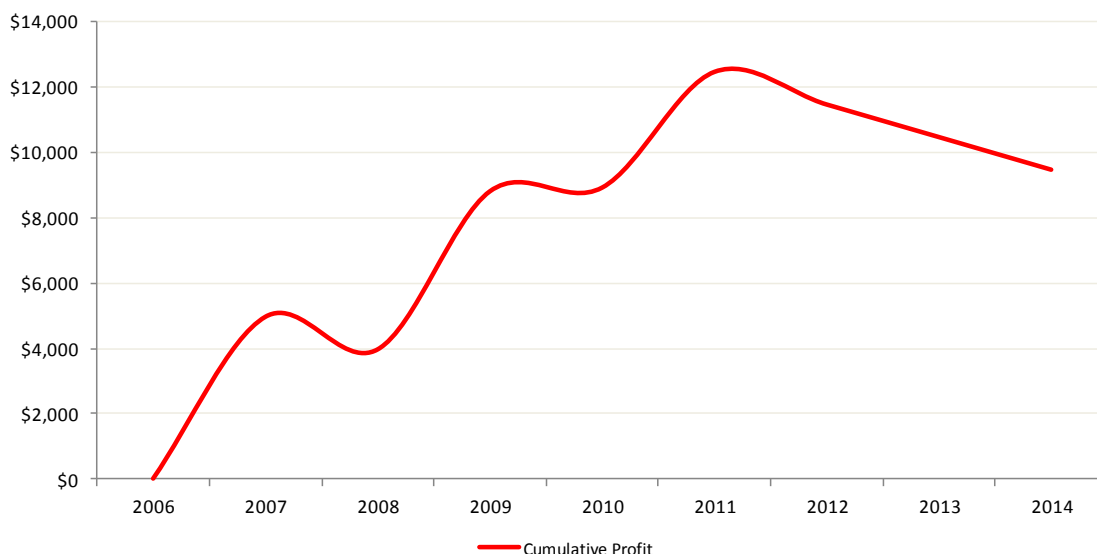
Source: Macquarie Research, Race TAB, November 2015

- 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 horse's form in its last 5 starts is also a good indicator of the momentum for 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.
 - ⇒ We also look to see if the horse has won over the longer distance of the Cup.
- 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 show 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 2015

- 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.
- One of our top picks in 2014 was Admire Rakti who unfortunately had a heart failure following the race. This caused chaos for our model and our bogey horse, Red Cadueax, again came from nowhere to upset the trifecta.
- We are hoping to redeem ourselves in 2015!

A strategy for 2015: How we will be betting

- We **add an extra Quality factor to this year's model** tilting towards horses that have a proven track record over the longer distance of the Melbourne Cup. Macro volatility has picked up in the last 6 months as the Chinese market tipped over and investors contemplate the impact of a US interest rate cycle. Proven quality stocks typically win out in volatile environments leading us to increase a tilt to Quality in 2015.
- The weak Australian dollar has not deterred offshore entrants in this year's race despite the overall prize purse getting a 20% haircut over the last 12 months (in USD terms). The 75% of the field who are from outside of AU/NZ will be hoping for support from the RBA when it meets prior to race time. They will be out of luck if [our view](#) is correct.
- This year we adjust our strategy for our bogey horse (and now fan favourite) Red Cadeaux. Red Cadeaux typically has had poor form leading into the race and, at 10 years old, would appear past his prime. This horse however has disrupted our trifecta bets on multiple occasions and cannot be written off. We include him in this year's trifecta bet (we'll have 7 horses). Our strategy remains:
 - ⇒ We firstly put an each way bet on Trip to Paris as the top horse in the model.
 - ⇒ And also go for the trifecta using the top 6 horses (plus Red Cadeaux). This best mirrors the way we quants approach equity investing.
- The best way to implement the trifecta strategy is via a 'box trifecta' (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 revaluations, 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 2015

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	48.87%	59.96%	35.63%	42.13%	59.44%	42.11%	(for US coverage by MCUSA, 3.54% of stocks followed are investment banking clients)
Neutral	33.44%	25.00%	39.08%	52.55%	37.06%	38.42%	(for US coverage by MCUSA, 5.05% of stocks followed are investment banking clients)
Underperform	17.68%	15.04%	25.29%	5.32%	3.50%	19.47%	(for US coverage by MCUSA, 0.51% of stocks followed are investment banking clients)

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