

### AUSTRALIA

#### Top ranking horses ✓

Number	Horse Name	Odds @ 6pm Mon
3	So You Think	\$3.40
24	Maluckyday	\$11.20
8	Americain	\$12.60
11	Descarado	\$8.90
19	Holberg	\$36.70
13	Manighar	\$22.00

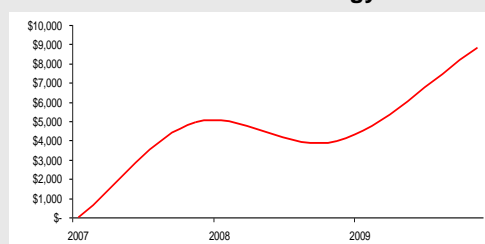
Source: Macquarie Research, Race TAB, November 2010

#### Bottom ranking donkeys ✗

Number	Horse Name	Odds @ 6pm Mon
14	Master O'Reilly	\$74.10
10	Buccellati	\$130.10
21	Red Ruler	\$107.80
17	Zavite	\$75.90
9	Tokai Trick	\$77.60
5	Illustrious Blue	\$39.30

Source: Macquarie Research, Race TAB, November 2010

#### Cumulative Profit on \$1000 investment in Win/Box Trifecta Quant Strategy



Source: Macquarie Research, Race TAB, November 2010

## Melbourne Cup Quant Style

### So you think you can win?

#### Event

- The Emirates Melbourne Cup is being held on Tuesday (2 Nov.) at Flemington Racecourse. The Macquarie Quant team transform racing stats into traditional quant signals to come up with our top picks for the race that stops the nation.

#### Impact

- Horses at the top of the model include So You Think, Maluckyday, Americain, Descarado, Holberg and Manighar.
- Last year our model came up trumps with cup winner Shocking appearing as the top-ranked horse. A strategy of betting on both a box-trifecta on the top 6 horses and a win on the top horse from our model has yielded almost 300% since we first ran the model in 2007.
- We took our lead from the market last year and upweighted Value factors as these were being rewarded. This year it is Momentum and Sentiment that are performing so we place more emphasis on the odds from the TAB (Sentiment) and the movement in the odds (Momentum).
- So You Think comes out on top with Maluckyday close behind. Whilst we do like to bet on the top pick in the model, our favoured approach is betting on the top quartile of horses. This is consistent with the quant approach to investing and is likely to yield higher returns given the price of the favourite.
- The best way to implement this is via a 'box trifecta' on the top 6 horses in the model (see your local bookie for a description of this bet). The top six horses in the model are shown on the left.
- The obvious exogenous factor this year is the weather with the chance rain playing havoc with the track. The horses that have had a win on a heavy track (in order of rank in our model) are Descarado, Harris Tweed, Shocking and Monaco Consul.
- We must stress 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.

#### Analysis

- The table below shows the weights of the factors in our model.

#### Quant model factors

Quant Signal	Factor	Weight
Sentiment	Odds	20%
Momentum	Odds movement	25%
Value/Yield	Avg prize money per race	5%
Hit Rate	Win %	15%
	Form	20%
Other	Age	5%
	Barrier	5%
Quality	Odds dispersion	5%
<b>TOTAL</b>		<b>100%</b>

Source: Macquarie Research, November 2010

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## Analysis

- The table below shows the breakdown for each horse on each of the different factors we use in the model.

**Fig 1 Detailed rankings**

Rank	DETAILS						VALUE Prize Money	HIT RATE		SENTIMENT Odds	MOMENTUM Odds Movement	RISK Odds Dispersion	OTHER		Total Score
	#	Horse Name	OS	Age	Barrier	Odds		Form	Win %				Age	Barrier	
		MAX SCORE						5	20	15	20	25	5	5	100
1	3	So You Think	NZ	4	3	\$ 3.40	5	20	15	20	25	5	5	5	100
2	24	Maluckyday	NZ	4	6	\$ 11.20	2.5	20	15	20	25	5	5	5	97.5
3	8	Americain	FRA	6	12	\$ 12.60	2.5	20	11.25	20	25	5	2.5	5	91.25
4	11	Descarado	NZ	4	1	\$ 8.90	5	15	7.5	20	25	3.75	5	5	86.25
5	19	Holberg	UAE	5	10	\$ 36.70	1.25	20	15	10	18.75	2.5	5	5	77.5
6	13	Manighar	ENG	5	20	\$ 22.00	2.5	10	15	15	25	3.75	5	0	76.25
7	12	Harris Tweed	NZ	5	13	\$ 17.90	2.5	15	3.75	15	25	3.75	5	5	75
8	20	Precedence	NZ	5	15	\$ 22.80	1.25	20	7.5	15	18.75	5	5	0	72.5
9	1	Shocking		5	24	\$ 12.20	5	10	7.5	20	18.75	5	5	0	71.25
10	23	Once Were Wild		4	11	\$ 26.70	1.25	10	15	15	12.5	5	5	5	68.75
11	4	Ziping		9	16	\$ 23.50	3.75	15	11.25	15	18.75	3.75	0	0	67.5
12	7	Shoot Out		4	17	\$ 17.10	5	10	11.25	20	12.5	2.5	5	0	66.25
13	2	Campanologist	UAE	6	19	\$ 67.00	3.75	20	11.25	5	18.75	3.75	2.5	0	65
14	15	Monaco Consul	NZ	4	14	\$ 36.00	5	10	7.5	15	12.5	2.5	5	5	62.5
15	16	Profound Beauty	IRE	7	22	\$ 38.10	2.5	20	15	10	6.25	3.75	0	0	57.5
16	22	Linton		4	23	\$ 65.20	3.75	20	11.25	10	6.25	1.25	5	0	57.5
17	6	Mr Medici	HKG	6	5	\$ 46.00	3.75	10	3.75	10	18.75	2.5	2.5	5	56.25
18	18	Bauer	ENG	8	2	\$ 51.40	3.75	10	11.25	10	12.5	2.5	0	5	55
19	5	Illustrious Blue	ENG	8	9	\$ 39.30	1.25	15	3.75	10	6.25	2.5	0	5	43.75
20	9	Tokai Trick	JPN	9	4	\$ 77.60	5	15	3.75	5	6.25	1.25	0	5	41.25
21	17	Zavite	NZ	8	7	\$ 75.90	2.5	5	3.75	5	12.5	1.25	0	5	35
22	21	Red Ruler	NZ	6	8	\$ 107.80	1.25	5	7.5	5	6.25	1.25	2.5	5	33.75
23	10	Buccellati		7	21	\$ 130.10	1.25	5	7.5	5	12.5	1.25	0	0	32.5
24	14	Master Oreilly	NZ	8	18	\$ 74.10	3.75	5	3.75	5	6.25	1.25	0	0	25

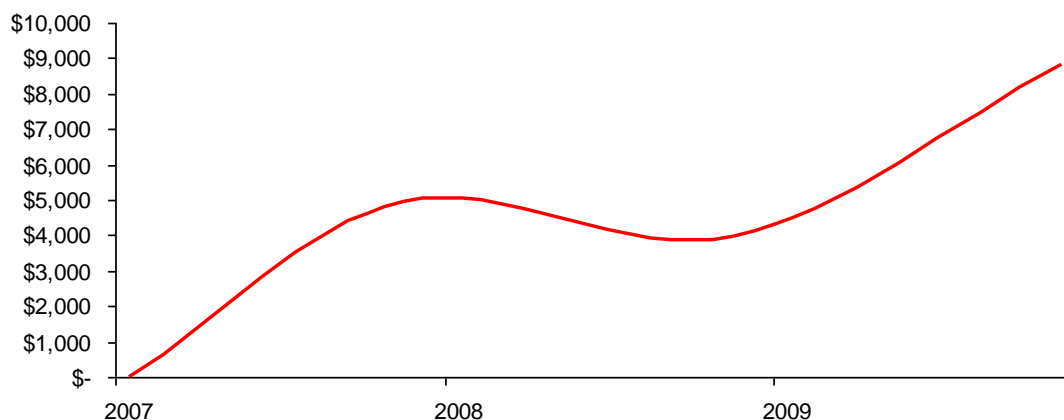
Source: Macquarie Research, Race TAB, November 2010

- Sentiment** was measured by the last available odds before publication as this is representative of the mood of the market. Horses with strong sentiment include So You Think, Shocking, Maluckyday and Americain.
- Momentum** was measured by movement in the odds from opening prices until the latest available odds. Horses with strong momentum include So You Think, Maluckyday, Americain and Profound Beauty.
- Value** was measured by average prize money per race as this represents the return of each horse. Leaders in this category were So You Think, Shocking, Descarado and Tokai Trick.
- Hit rate** was measured by the horses winning percentage and by the form over the last five races for the horse. Horses with a good hit rate include So You Think, Maluckyday, Linton and Profound Beauty.
- Quality/Risk** was measured by odds dispersion amongst bookmakers to indicate the variance of the perceived value of the horses. Horses with low odds dispersion are So you think, Mr Medici, Americain and Manighar.
- 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.
- A horse's weight handicap showed no correlation and was therefore left out of the model.

### Historic Profitability of the model

- 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.
- We like a bet on the top pick in the model; however, our favoured approach is betting on the top quartile of horses. This is consistent with the quant approach to investing.
- The best way to implement this is via a 'box trifecta' on the top 6 horses in the model (see your local bookie for a description of this bet) and this has yielded success in the past. The top six horses in the model are shown on the left.
- 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 anual \$1000 investment in Win/Box Trifecta Quant Strategy**



Source: Macquarie Research, Race TAB, November 2010

- This strategy has yielded almost 300% since we first ran the model in 2007.
- 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:

<p><b>Recommendation definitions</b></p> <p><b>Macquarie - Australia/New Zealand</b> Outperform – return &gt;3% in excess of benchmark return Neutral – return within 3% of benchmark return Underperform – return &gt;3% below benchmark return</p> <p>Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield</p> <p><b>Macquarie – Asia/Europe</b> Outperform – expected return &gt;+10% Neutral – expected return from -10% to +10% Underperform – expected return &lt;-10%</p> <p><b>Macquarie First South - South Africa</b> Outperform – expected return &gt;+10% Neutral – expected return from -10% to +10% Underperform – expected return &lt;-10%</p> <p><b>Macquarie - Canada</b> Outperform – return &gt;5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return &gt;5% below benchmark return</p> <p><b>Macquarie - USA</b> Outperform (Buy) – return &gt;5% in excess of Russell 3000 index return Neutral (Hold) – return within 5% of Russell 3000 index return Underperform (Sell)– return &gt;5% below Russell 3000 index return</p>	<p><b>Volatility index definition*</b></p> <p>This is calculated from the volatility of historical price movements.</p> <p><b>Very high–highest risk</b> – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.</p> <p><b>High</b> – 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.</p> <p><b>Medium</b> – stock should be expected to move up or down at least 30–40% in a year.</p> <p><b>Low–medium</b> – stock should be expected to move up or down at least 25–30% in a year.</p> <p><b>Low</b> – stock should be expected to move up or down at least 15–25% in a year. * Applicable to Australian/NZ/Canada stocks only</p> <p><b>Recommendations</b> – 12 months <b>Note:</b> Quant recommendations may differ from Fundamental Analyst recommendations</p>	<p><b>Financial definitions</b></p> <p>All "Adjusted" data items have had the following adjustments made: Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives &amp; hedging, IFRS impairments &amp; IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends &amp; minority interests</p> <p><b>EPS</b> = adjusted net profit / efpowa* <b>ROA</b> = adjusted ebit / average total assets <b>ROA Banks/Insurance</b> = adjusted net profit /average total assets <b>ROE</b> = adjusted net profit / average shareholders funds <b>Gross cashflow</b> = adjusted net profit + depreciation *equivalent fully paid ordinary weighted average number of shares</p> <p>All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).</p>																																
<p><b>Recommendation proportions – For quarter ending 30 September 2010</b></p> <table><tr><th></th><th>AU/NZ</th><th>Asia</th><th>RSA</th><th>USA</th><th>CA</th><th>EUR</th><th></th></tr><tr><td>Outperform</td><td>51.06%</td><td>64.41%</td><td>55.07%</td><td>46.58%</td><td>66.99%</td><td>50.00%</td><td>(for US coverage by MCUSA, 13.73% of stocks covered are investment banking clients)</td></tr><tr><td>Neutral</td><td>34.15%</td><td>17.31%</td><td>36.23%</td><td>48.40%</td><td>28.71%</td><td>36.81%</td><td>(for US coverage by MCUSA, 11.76% of stocks covered are investment banking clients)</td></tr><tr><td>Underperform</td><td>14.79%</td><td>18.28%</td><td>8.70%</td><td>5.02%</td><td>4.31%</td><td>13.19%</td><td>(for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients)</td></tr></table>				AU/NZ	Asia	RSA	USA	CA	EUR		Outperform	51.06%	64.41%	55.07%	46.58%	66.99%	50.00%	(for US coverage by MCUSA, 13.73% of stocks covered are investment banking clients)	Neutral	34.15%	17.31%	36.23%	48.40%	28.71%	36.81%	(for US coverage by MCUSA, 11.76% of stocks covered are investment banking clients)	Underperform	14.79%	18.28%	8.70%	5.02%	4.31%	13.19%	(for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients)
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