



AUSTRALIA

Top ranking horses ✓

Number	Horse Name	Odds @ 6pm Mon
1	Dunaden	\$7.50
24	Kelinni	\$21.00
15	Maluckyday	\$14.00
20	Lights of Heaven	\$18.00
2	Americain	\$6.00
12	Galileo's Choice	\$16.00

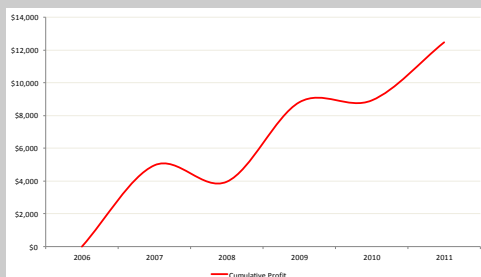
Source: Macquarie Research, Race TAB, November 2012

Bottom ranking donkeys ✗

Number	Horse Name	Odds @ 6pm Mon
22	Unusual Suspect	\$251.00
19	Tac de Boistron	\$51.00
5	Winchester	\$51.00
23	Zabeelionaire	\$51.00
21	Precedence	\$101.00
18	Niwot	\$51.00

Source: Macquarie Research, Race TAB, November 2012

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



Source: Macquarie Research, Race TAB, November 2011

Analyst(s)

John Conomos, CFA
+61 2 8232 5157 john.conomos@macquarie.com
Francis Lim
+612 8232 9313 f.lim@macquarie.com

5 November 2012
Macquarie Securities (Australia) Limited

Melbourne Cup Quant Style

The yearling that yielded

Event

- It's that time of year again where we move our attention from stock codes to saddlecloths and come up with our top picks for the race that stops the nation. We transform racing stats into traditional quant signals to form a model that ranks the Melbourne Cup field.
- Last year we made it three successful years in a row as Dunaden (our top-ranked horse) edged out Red Cadeaux by the closest of margins. Can we get four in a row? As always, we turn to the market for some guidance.

Impact

- Horses at the top of the model include Dunaden, Kelinni, Maluckyday, Lights of Heaven, Americain, and Galileo's Choice.
- Our model is tweaked each year based on market dynamics. Last year it was the high A\$ attracting a legion of foreign horses. The concentration of foreign horses remains high so we leave our Australian form factor in the model.
- This year the equity market has flocked to yield with investors seeking certainty of returns in an uncertain market. Looking at the yield calculated from the odds doesn't make sense as this would tilt towards the horses that the market perceives to have the least chance. Instead, as we suggest for equities, we look for a "quality yield" measure and calculate a yield for the horse's owner. Average prize money per race.
- Dunaden comes out on top with Kelinni, Maluckyday and Lights of Heaven close behind. Our favoured approach to betting is a two-pronged approach. Firstly a bet on the top horse and then going for the trifecta using the top quartile of horses. This best mirrors the way we (quants) approach equity investing. The payoff to our strategy since 2007 is shown on the left.
- Our favoured way to implement the trifecta 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 that this model is not intended to be taken seriously. Despite being branded as horse whisperers, the Quant team has very limited knowledge of horse racing and the purpose of this article is primarily fun.

Analysis

Quant factors used in the model

Quant Signal	Factor	Weight
Sentiment	Odds	20%
Momentum	Odds movement	17.5%
Value/Yield	Avg prize money per race	10%
Hit Rate	Win %	12.5%
	Form	17.5%
Other	Age	2.5%
	Barrier	5%
	Australian Form	10%
Quality	Odds dispersion	5%
		TOTAL 100%

Source: Macquarie Research, November 2012.

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

	DETAILS						YIELD	HIT RATE		SENTIMENT	MOMENTUM	RISK	OTHER			Aus	
Rank	#	Horse Name	OS	Age	Barrier	Odds	Prize Money	Form	Win %	Odds	Odds Movement	Odds Dispersion	Age	Barrier	Form	Total Score	
		MAX SCORE						10	17.5	12.5	20	17.5	5	2.5	5	10	100
1	1	Dunaden	FR	7	16	\$ 7.5	10.0	17.5	9.4	20	17.5	5.0	0.0	0	10	89.4	
2	24	Kelinni	IRE	5	10	\$ 21.00	5.0	17.5	12.5	15	17.5	2.5	2.5	5	10	87.5	
3	15	Maluckyday	NZ	6	9	\$ 14.00	10.0	4.4	9.4	20	17.5	3.8	1.3	5	5	76.3	
4	20	Lights of Heaven	NZ	5	17	\$ 18.00	10.0	13.1	9.4	15	17.5	3.8	2.5	0	5	76.3	
5	2	Americain	USA	8	12	\$ 6.00	10.0	8.8	9.4	20	17.5	2.5	0.0	5	3	75.6	
6	12	Galileo's Choice	IRE	7	11	\$ 16.00	2.5	17.5	12.5	20	13.1	5.0	0.0	5	0	75.6	
7	14	Green Moon	IRE	6	5	\$ 17.00	7.5	17.5	9.4	15	4.4	5.0	1.3	5	10	75.0	
8	8	Mount Athos	IRE	6	8	\$ 8.00	2.5	17.5	9.4	20	13.1	5.0	1.3	5	0	73.8	
9	4	Red Cadeaux	GB	7	18	\$ 8.50	7.5	17.5	6.3	20	17.5	3.8	0.0	0	0	72.5	
10	13	Glencadam Gold	IRE	5	7	\$ 41.00	5.0	17.5	12.5	10	4.4	5.0	2.5	5	10	71.9	
11	17	My Quest for Peace	IRE	5	1	\$ 19.00	5.0	13.1	12.5	15	13.1	2.5	2.5	5	3	71.3	
12	16	Mourayan	IRE	7	3	\$ 23.00	7.5	13.1	3.1	15	13.1	3.8	0.0	5	10	70.6	
13	7	Cavalryman	GB	7	6	\$ 31.00	10.0	17.5	6.3	10	13.1	3.8	0.0	5	0	65.6	
14	10	Ethiopia		4	14	\$ 23.00	10.0	8.8	3.1	15	8.8	3.8	2.5	5	3	59.4	
15	9	Sanagas	GER	7	4	\$ 31.00	2.5	4.4	12.5	10	13.1	2.5	0.0	5	3	52.5	
16	6	Voila Ici	IRE	8	13	\$151.00	7.5	8.8	12.5	5	4.4	1.3	0.0	5	5	49.4	
17	11	Fiorente	IRE	5	2	\$ 35.00	2.5	8.8	6.3	10	8.8	2.5	2.5	5	0	46.3	
18	3	Jakkalberry	IRE	7	19	\$ 61.00	7.5	13.1	9.4	5	4.4	2.5	0.0	0	3	44.4	
19	18	Niwot		8	15	\$ 51.00	5.0	8.8	6.3	10	8.8	1.3	0.0	0	3	42.5	
20	21	Precedence	NZ	7	20	\$101.00	5.0	8.8	3.1	5	8.8	1.3	0.0	0	10	41.9	
21	23	Zabeellonaire	NZ	4	24	\$ 51.00	5.0	4.4	3.1	10	8.8	5.0	2.5	0	3	41.3	
22	5	Winchester	USA	8	22	\$ 51.00	7.5	4.4	6.3	10	8.8	1.3	0.0	0	3	40.6	
23	19	Tac de Boistron	FR	6	21	\$ 51.00	2.5	13.1	3.1	10	4.4	1.3	1.3	0	3	38.1	
24	22	Unusual Suspect	USA	9	23	\$251.00	2.5	4.4	3.1	5	4.4	1.3	0.0	0	3	23.1	

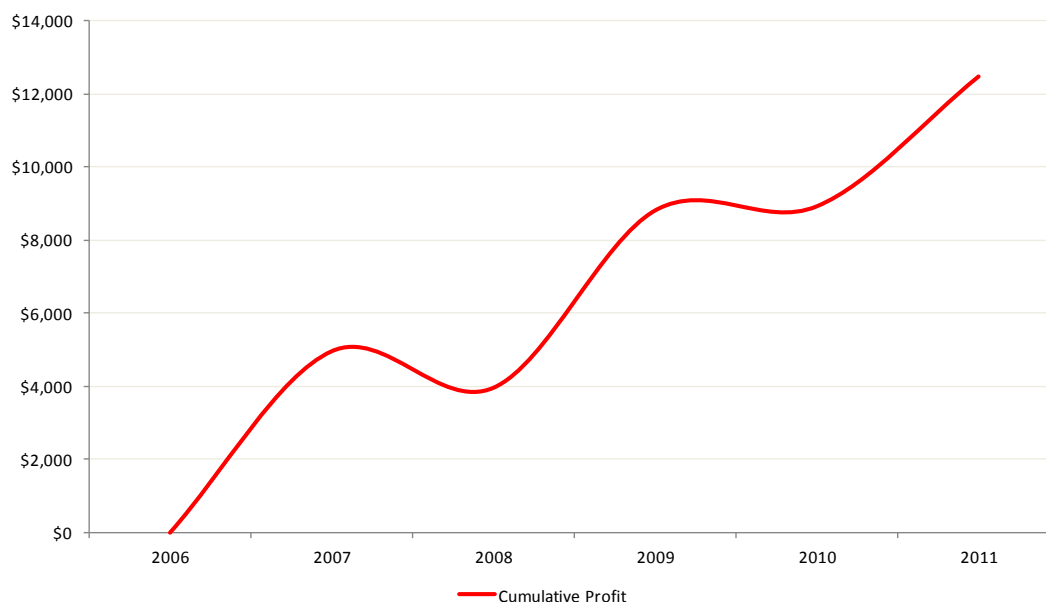
Source: Macquarie Research, Race TAB, November 2012

- 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 Americain, Dunaden, and Mount Athos.
- Momentum** was measured by movement in the odds from opening prices until the latest available odds. Horses with strong momentum include Americain, Kelinni, Dunaden, Red Cadeaux, Lights of Heaven and Maluckyday.
- Yield** was measured by average prize money per race as this represents the return of each horse. Leaders in this category were Dunaden, Americain, Ethiopia, Cavalryman, Maluckyday and Lights of Heaven.
- 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 Americain, Dunaden, Jakkalberry, Lights of Heaven, and Voila Ici.
- 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 Galileo's Choice, Dunaden, Mount Athos, Ethiopia, Sanagas and Americain.
- Australian form** takes 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. This year the field is made up of much older horses.
- 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.
- 2010 saw Americain 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.
- This year the model has thrown out some interesting names. Our favoured strategy still 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.
- The best way to implement the trifecta bet 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 are shown on the previous page.
- 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 2012

- 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 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 / efpowa^*

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 Sept 2012

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	50.00%	56.85%	61.54%	41.38%	63.19%	44.15%	(for US coverage by MCUSA, 7.35% of stocks covered are investment banking clients)
Neutral	36.62%	25.14%	27.69%	52.13%	30.77%	30.57%	(for US coverage by MCUSA, 9.31% of stocks covered are investment banking clients)
Underperform	13.38%	18.02%	10.77%	6.49%	6.04%	25.28%	(for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients)

Company Specific Disclosures:

Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/disclosures.

Analyst Certification:

The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research receives compensation based on overall revenues of Macquarie Group Ltd ABN 94 122 169 279 (AFSL No. 318062) (MGL) and its related entities (the Macquarie Group) and has taken reasonable care to achieve and maintain independence and objectivity in making any recommendations.

General Disclaimers:

Macquarie Securities (Australia) Ltd; Macquarie Capital (Europe) Ltd; Macquarie Capital Markets Canada Ltd; Macquarie Capital Markets North America Ltd; Macquarie Capital (USA) Inc; Macquarie Capital Securities Ltd and its Taiwan branch; Macquarie Capital Securities (Singapore) Pte Ltd; Macquarie Securities (NZ) Ltd; Macquarie First South Securities (Pty) Limited; Macquarie Capital Securities (India) Pvt Ltd; Macquarie Capital Securities (Malaysia) Sdn Bhd; Macquarie Securities Korea Limited and Macquarie Securities (Thailand) Ltd are not authorized deposit-taking institutions for the purposes of the Banking Act 1959 (Commonwealth of Australia), and their obligations do not represent deposits or other liabilities of Macquarie Bank Limited ABN 46 008 583 542 (MBL) or MGL. MBL does not guarantee or otherwise provide assurance in respect of the obligations of any of the above mentioned entities. MGL provides a guarantee to the Monetary Authority of Singapore in respect of the obligations and liabilities of Macquarie Capital Securities (Singapore) Pte Ltd for up to SGD 35 million. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this research in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements (including the FSA Rules) which sets out how we must seek to identify and manage all material conflicts of interest. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account your investment objectives, financial situation or particular needs. Macquarie salespeople, traders and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions which are contrary to the opinions expressed in this research. Macquarie Research produces a variety of research products including, but not limited to, fundamental analysis, macro-economic analysis, quantitative analysis, and trade ideas. Recommendations contained in one type of research product may differ from recommendations contained in other types of research, whether as a result of differing time horizons, methodologies, or otherwise. Before making an investment decision on the basis of this research, you need to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of your particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise. The date and timestamp for above share price and market cap is the closed price of the price date. #CLOSE is the final price at which the security is traded in the relevant exchange on the date indicated.

Country-Specific Disclaimers:

Australia: In Australia, research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947), a participating organisation of the Australian Securities Exchange. **New Zealand:** In New Zealand, research is issued and distributed by Macquarie Securities (NZ) Ltd, a NZX Firm.

Canada: In Canada, research is prepared, approved and distributed by Macquarie Capital Markets Canada Ltd, a participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Macquarie Capital Markets North America Ltd., which is a registered broker-dealer and member of FINRA, accepts responsibility for the contents of reports issued by Macquarie Capital Markets Canada Ltd in the United States and sent to US persons. Any person wishing to effect transactions in the securities described in the reports issued by Macquarie Capital Markets Canada Ltd should do so with Macquarie Capital Markets North America Ltd. The Research Distribution Policy of Macquarie Capital Markets Canada Ltd is to allow all clients that are entitled to have equal access to our research. **United Kingdom:** In the United Kingdom, research is issued and

distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated by the Financial Services Authority (No. 193905). **Germany:** In Germany, this research is issued and/or distributed by Macquarie Capital (Europe) Limited, Niederlassung Deutschland, which is authorised and regulated by the UK Financial Services Authority (No. 193905). and in Germany by BaFin. **France:** In France, research is issued and distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated in the United Kingdom by the Financial Services Authority (No. 193905). **Hong Kong & Mainland China:** In Hong Kong, research is issued and distributed by Macquarie Capital Securities Ltd, which is licensed and regulated by the Securities and Futures Commission. In Mainland China, Macquarie Securities (Australia) Limited Shanghai Representative Office only engages in non-business operational activities excluding issuing and distributing research. Only non-A share research is distributed into Mainland China by Macquarie Capital Securities Ltd. **Japan:** In Japan, research is issued and distributed by Macquarie Capital Securities (Japan) Limited, a member of the Tokyo Stock Exchange, Inc. and Osaka Securities Exchange Co. Ltd (Financial Instruments Firm, Kanto Financial Bureau (kin-sho) No. 231, a member of Japan Securities Dealers Association and The Financial Futures Association of Japan and Japan Investment Advisers Association). **India:** In India, research is issued and distributed by Macquarie Capital Securities (India) Pvt Ltd., 92, Level 9, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai – 400 051, India, which is a SEBI registered Stock Broker having membership with National Stock Exchange of India Limited (INB231246738) and Bombay Stock Exchange Limited (INB011246734). **Malaysia:** In Malaysia, research is issued and distributed by Macquarie Capital Securities (Malaysia) Sdn. Bhd. (Company registration number: 463469-W) which is a Participating Organisation of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission. **Taiwan:** Information on securities/instruments that are traded in Taiwan is distributed by Macquarie Capital Securities Ltd, Taiwan Branch, which is licensed and regulated by the Financial Supervisory Commission. No portion of the report may be reproduced or quoted by the press or any other person without authorisation from Macquarie. Nothing in this research shall be construed as a solicitation to buy or sell any security or product. Research Associate(s) in this report who are registered as Clerks only assist in the preparation of research and are not engaged in writing the research. **Thailand:** In Thailand, research is produced with the contribution of Kasikorn Securities Public Company Limited, issued and distributed by Macquarie Securities (Thailand) Ltd. Macquarie Securities (Thailand) Ltd. is a licensed securities company that is authorized by the Ministry of Finance, regulated by the Securities and Exchange Commission of Thailand and is an exchange member of the Stock Exchange of Thailand. Macquarie Securities (Thailand) Limited and Kasikorn Securities Public Company Limited have entered into an exclusive strategic alliance agreement to broaden and deepen the scope of services provided to each parties respective clients. The strategic alliance does not constitute a joint venture. The Thai Institute of Directors Association has disclosed the Corporate Governance Report of Thai Listed Companies made pursuant to the policy of the Securities and Exchange Commission of Thailand. Macquarie Securities (Thailand) Ltd does not endorse the result of the Corporate Governance Report of Thai Listed Companies but this Report can be accessed at: <http://www.thai-iod.com/en/publications.asp?type=4>. **South Korea:** In South Korea, unless otherwise stated, research is prepared, issued and distributed by Macquarie Securities Korea Limited, which is regulated by the Financial Supervisory Services. Information on analysts in MSKL is disclosed at <http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03053&pageDiv=02>. **South Africa:** In South Africa, research is issued and distributed by Macquarie First South Securities (Pty) Limited, a member of the JSE Limited. **Singapore:** In Singapore, research is issued and distributed by Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services license holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 25, 27 and 36 of the Financial Advisers Act. All Singapore-based recipients of research produced by Macquarie Capital (Europe) Limited, Macquarie Capital Markets Canada Ltd, Macquarie First South Securities (Pty) Limited and Macquarie Capital (USA) Inc. represent and warrant that they are institutional investors as defined in the Securities and Futures Act. **United States:** In the United States, research is issued and distributed by Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA. Macquarie Capital (USA) Inc. accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc.'s affiliate's analysts are not registered as research analysts with FINRA, may not be associated persons of Macquarie Capital (USA) Inc., and therefore may not be subject to FINRA rule restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures, or contact your registered representative at 1-888-MAC-STOCK, or write to the Supervisory Analysts, Research Department, Macquarie Securities, 125 W.55th Street, New York, NY 10019.

© Macquarie Group

Auckland Tel: (649) 377 6433	Bangkok Tel: (662) 694 7999	Calgary Tel: (1 403) 218 6650	Denver Tel: (303) 952 2800	Frankfurt Tel: (069) 509 578 000	Geneva Tel: (41) 22 818 7777	Hong Kong Tel: (852) 2823 3588
Jakarta Tel: (62 21) 515 1818	Johannesburg Tel: (2711) 583 2000	Kuala Lumpur Tel: (60 3) 2059 8833	London Tel: (44 20) 3037 2000	Manila Tel: (63 2) 857 0888	Melbourne Tel: (613) 9635 8139	Montreal Tel: (1 514) 925 2850
Mumbai Tel: (91 22) 6653 3000	Munich Tel: (089) 2444 31800	New York Tel: (1 212) 231 2500	Paris Tel: (33 1) 7842 3823	Perth Tel: (618) 9224 0888	Seoul Tel: (82 2) 3705 8500	Shanghai Tel: (86 21) 6841 3355
Singapore Tel: (65) 6601 1111	Sydney Tel: (612) 8232 9555	Taipei Tel: (886 2) 2734 7500	Tokyo Tel: (81 3) 3512 7900	Toronto Tel: (1 416) 848 3500		

Available to clients on the world wide web at www.macquarieresearch.com and through Thomson Financial, FactSet, Reuters, Bloomberg, CapitalIQ and TheMarkets.com.



Research

Head of Equity Research

John O'Connell (Global)	(612) 8232 7544
Matt Nacard (Australia)	(612) 8232 4017

Consumer Staples

Greg Dring	(612) 8232 3104
------------	-----------------

Food & Beverages

Greg Dring	(612) 8232 3104
------------	-----------------

Retail

Greg Dring	(612) 8232 3104
------------	-----------------

Energy

Adrian Wood	(612) 8232 8531
-------------	-----------------

ESG

Deana Mitchell (maternity leave)	(612) 8232 4576
----------------------------------	-----------------

Financials

Banks	
Michael Wiblin	(612) 8232 6089
Insurance & Diversified Financials	
Tim Lawson	(612) 8237 7332
Bryan Raymond	(612) 8232 2740

Healthcare

Dr Craig Collie	(612) 8232 4130
-----------------	-----------------

Industrials

Capital Goods	
Greg Dring	(612) 8232 3104
John Purtell	(612) 8232 8633

Industrials

Transportation / Commercial Services

Ian Myles	(612) 8232 4157
Russell Shaw	(612) 8232 7124

Infrastructure

Ian Myles	(612) 8232 4157
-----------	-----------------

Materials

Chemicals / Containers, Packaging / Paper & Forest Products, Construction Materials, Steel

John Purtell	(612) 8232 8633
Liam Farlow	(612) 8237 2313

Global Metals & Mining

Lee Bowers	(618) 9224 0838
Adrian Wood	(612) 8232 8531
Andrew Sullivan	(612) 8237 6271

Real Estate

Property Trusts & Developers

Paul Checchin	(612) 8232 4197
---------------	-----------------

Telcos / Media / Tourism & Leisure

Andrew Levy	(612) 8232 5165
-------------	-----------------

Utilities

Ian Myles	(612) 8232 4157
-----------	-----------------

Commodities & Precious Metals

Colin Hamilton (Global)	(44 20) 3037 4061
Jim Lennon (London)	(44 20) 3037 4271
Kona Haque (London)	(44 20) 3037 4334

New Zealand

Stephen Hudson	(649) 363 1414
Warren Doak	(649) 363 1416
Nick Mar	(649) 363 1476
Andrew Levy (Telecommunications)	(612) 8232 5165

Emerging Leaders

Adam Simpson	(612) 8232 4439
Andrew Wackett	(618) 9224 0867
Jodie Bannan	(612) 8232 2999

Quantitative

Gurvinder Brar (Global)	(44 20) 3037 4036
John Conomos (Australia)	(612) 8232 5157
Burke Lau (Hong Kong)	(852) 3922 5494

Data Services

Sheridan Duffy	(612) 8232 9786
----------------	-----------------

Economics and Strategy

Tanya Branwhite (Strategy)	(612) 8232 7628
Richard Gibbs (Head of Economics)	(612) 8232 3935
Brian Redican (Aus Economics)	(612) 8232 7016
Matthew Brooks (Global)	(612) 8237 0645

Find our research at

Macquarie:	www.macquarie.com.au/research
Thomson:	www.thomson.com/financial
Reuters:	www.knowledge.reuters.com
Bloomberg:	MAC GO
Factset:	http://www.factset.com/home.aspx
CapitalIQ	www.capitaliq.com
TheMarkets.com	www.themarkets.com
Contact Gareth Warfield for access	(612) 8232 3207

See and hear our analysts at

www.macquarie.com.au/macquariedigital

Toll free from overseas

Canada	1800 989 8159
Hong Kong	800 96 2049
Japan	0053 161 6437
New York	1888 622 7862
Singapore	800 616 1037

Email addresses

FirstName.Surname@macquarie.com
eg. john.oconnell@macquarie.com

Sales

Equities

Martin Dacron (Australia)	(612) 8232 7421
Dave Robertson (New Zealand)	(649) 363 1498

Sales

Dan Ritchie (Global)	(612) 8232 3124
Scott Dolling (Hong Kong)	(852) 2823 3705
Brett Dimon (London)	(44 20) 3037 4831
Rob Fabbro (London)	(44 20) 3037 4865
Brendan Waller (Melbourne)	(613) 9635 8177
Daniel Pittorino (New York)	(1 212) 231 2552
Adam Millhouse (Singapore)	(65) 6231 2888
Mike Johnson (Sydney)	(612) 8232 8518

Sales Trading

Tim Shaw (Sydney)	(612) 8232 4386
Jon Holland (Auckland)	(649) 363 1471
Mike Keen (London)	(44 20) 3037 4905
Andrew Donald (Melbourne)	(613) 9635 8270
Chris Reale (New York)	(1 212) 231 2555

Specialist Sales

Julia Thomas (Property)	(613) 9635 9323
Phil Zammit (Emerging Leaders)	(612) 8232 3122

Syndication

Paul Staines	(612) 8232 7781
Angus Firth	(612) 8232 4039

Alternative Strategies

Kristen Edmond (Sales)	(612) 8232 3111
Cameron Duncan (Converts)	(612) 8232 7405
Kurt Dalton (Derivatives)	(612) 8232 5943
Greg Mann (Equity finance)	(612) 8232 1820
Shannon Donohoe (Stock borrow & loan)	(612) 8232 6997

Fixed Income, Currencies & Commodities

Gavin Bradley (Metals & Energy)	(612) 8232 3089
Will Richardson (Currencies)	(612) 8232 3666
Sarah Milne (Fixed Income)	(44 20) 3037 4625
David Castle (Fixed Income)	(612) 8232 8300
Ian Miller (Futures)	(612) 8232 3555
Robert Gallivan (US Credit)	(1 212) 231 2356