When Bookies Lead the Tipping Competitions

So far this season favourites have won 41, drawn 2 and lost just 13 matches. This means that, counting draws as halves, favourites have a 75% winning record for the season, some 10% points higher than the long-term average.

Are the bookmakers happy about this? Or, put another way, do the bookies prefer it when favourites or underdogs win?

The answer: it depends.

Unless a bookmaker has a strong feeling about a particular game, he'll try to balance the head-to-head action on each team, where by 'balance' I mean matching the potential payout on both possible outcomes (ignoring the possibility of a draw). So, for example, on a game where the market is, say, $1.33 for the favourite and $3.00 for the underdog, if the bookie holds roughly 70% (3/4.33) of total wagers on the favourite and 30% (1.33/4.33) on the underdog, he'll be happy, because his book is balanced and he's guaranteed a 7.9% return on every dollar wagered regardless of which team wins.

If a bookie can consistently manage to create balanced books then he cares not whether he's first or last in tipping competitions – with one major caveat: there can be no exploitable pattern between the price on offer and the eventual winner.

Imagine, for example, that teams he priced at $3.00 won 35% of the time. Someone spotting this phenomenon and wagering a set amount on each $3.00 chance would grind out a profit equal to 5% (35% x 3 – 1) of every dollar wagered. This is clearly unsustainable for the bookie and you'd expect that, over time, the bookie would shorten the odds he offered on such teams.

What if, instead, these $3.00 chances won only 30% of the time? You might think that a profit could then be extracted by laying (ie betting against) these teams. This would certainly be true if the bookie ran a book with zero over-round and so offered $1.50 on the other side, in which case the profit would again be 5% (70% x 1.5 – 1) of every dollar wagered. In reality though, there would be an over-round, and a profit would only be available if the bookie were offering a price of at least $1.43. By way of context, if the bookie were TAB Sportsbet and one side was being offered at $3.00 we'd expect the other side to be at about $1.35.

The more general point is that, to avoid creating an exploitable opportunity, bookies want teams that they price at $P to win no more than 1/P of the time and no less than 1/P – Ov/(1-Ov) of the time, where Ov is the over-round that the bookie builds into each of his markets.

The table at right shows how narrow the range is between these two fractions for various prices, assuming an over-round of 7% (the usual TAB Sportsbet figure) and 4½% (a typical Centrebet figure) respectively.

	Over-round = 7%		Over-round = 4½%	
	Teams at the specified price can win		Teams at the specified price can win	
Price	No less than ...	No more than ...	No less than ...	No more than ...
$1.10	83%	91%	86%	91%
$1.25	72%	80%	75%	80%
$1.50	59%	67%	62%	67%
$1.75	50%	57%	52%	57%
$2.00	42%	50%	45%	50%
$2.25	37%	44%	40%	44%
$2.50	32%	40%	35%	40%
$2.75	29%	36%	32%	36%
$3.00	26%	33%	29%	33%
$3.50	21%	29%	24%	29%
$4.00	17%	25%	20%	25%
$4.50	15%	22%	18%	22%
$5.00	12%	20%	15%	20%
$5.50	11%	18%	13%	18%
$6.00	9%	17%	12%	17%

So, to be a successful bookmaker you need to be able to assess victory probabilities over the longer term to within about ±3-4%. That's a remarkable ability.

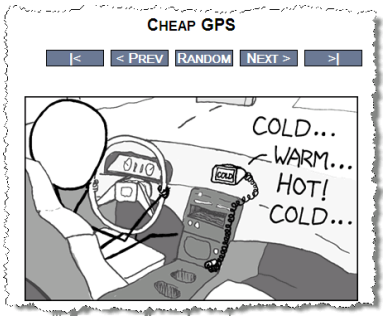
To gain an understanding of just how remarkable it is, I'd like you to undertake the following exercise.

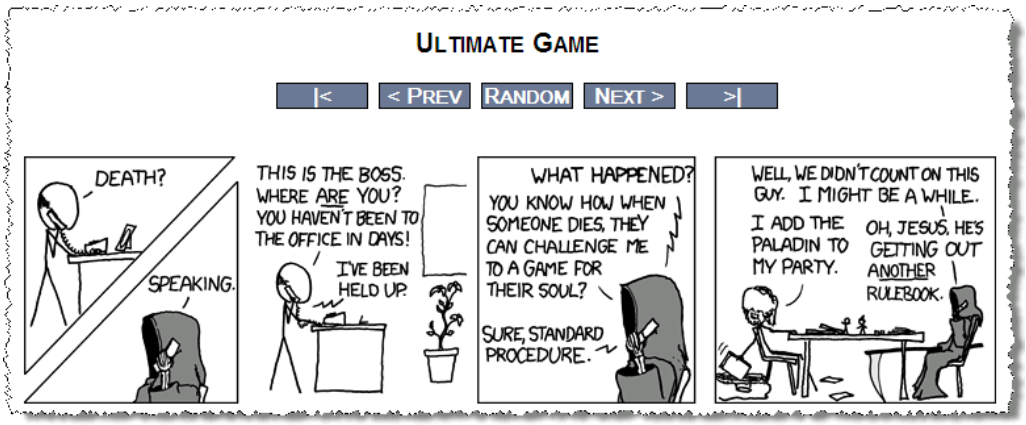
Please write down in the space provided a range within which you are 70% confident that the true figure lies.

(If you plan on doing this exercise, please do so before moving to the next page).

Question	Your Answer
1. The weight of an unladen 737-700 jet	Between _____ and _____ kilograms
2. The number of member countries in the UN	Between _____ and _____ countries
3. The number of stars in the Milky Way	Between _____ and _____ stars
4. The population of Belgium	Between _____ and _____ people
5. The length of the world's longest river	Between _____ and _____ kilometres
6. The height of Mount Everest	Between _____ and _____ metres
7. The number of cars, trucks and busses sold in Australia last year	Between _____ and _____ vehicles
8. The number of vineyards in Australia	Between _____ and _____ vineyards
9. The typical weight of a fully grown male sperm whale	Between _____ and _____ kilograms
10. The number of golf courses in the US	Between _____ and _____ courses
11. The average number of behinds scored per regular season game in 2007	Between _____ and _____ behinds
12. The volume of water in a typical Olympic pool (filled to a depth of 2m)	Between _____ and _____ litres
13. The weight of the largest gold nugget ever discovered	Between _____ and _____ kilograms
14. The men's world record for the marathon in 1958	Between _____ and _____ hrs: min: sec
15. The distance from London to New York by air	Between _____ and _____ kilometres
16. The number of tiles in the 'sails' of the Sydney Opera House	Between _____ and _____ tiles
17. Proportion of the Australian population aged under 15 as at June 2006	Between _____ and _____ percent
18. The height of the world's tallest living tree	Between _____ and _____ metres
19. The distance to the Sun	Between _____ and _____ kilometres
20. The world's population	Between _____ and _____ people

Once you've provided the 20 ranges please refer to the Appendix for the answers and count the number of times the range you provided included the correct answer.





(Some more strips from www.xkcd.com)

Okay. To have done well in this exercise – to be 'well calibrated' – exactly 14 of the ranges you provided should have contained the correct answer. Remember, I asked to give me ranges which you felt were 70% likely to contain the correct answer.

Here's a rough guide to interpreting your score:

Score	Interpretation
Exactly 14 correct	You've aced the test. A career in bookmaking awaits.
13 or 15 correct	You have legitimate grounds for claiming 'sampling variation' and crediting yourself with a High Distinction. You make bookies nervous.
11, 12, 16 or 17 correct	A statistician would hedge and say that he or she is 'unable to reject the null hypothesis that your estimates are well-calibrated'. Still, most bookies would be keen to have your business.
18 or more, or 10 or fewer correct	It's statistically improbable that you're well-calibrated, but you can console yourself by realising that you're in the majority. Bookies would be delighted to have you as a customer.

Most people find at least two things difficult about this task:

- the notion of providing answers about which they're only 70% certain
- the concept that success means being 'wrong' 30% of the time

Further, the vast majority of people find that they have been over-confident about their estimates and so have provided ranges that are generally too narrow resulting in scores well below 14.

To do well in this exercise required that you make accurate assessments about how confident you should be about your answers. Successful bookmakers face a similar challenge in that they need to make accurate assessments about how confident they should be about a particular team's chances. (And, for a MAFL Fund to be profitable in the medium to long term it must be able to identify those games where the bookmaker has got this assessment wrong.)

This season the bookmakers' assessments have been uncharacteristically poor (not that you'd know this from perusing the MAFL Fund share prices).

The table at right shows how the favourites, grouped by TAB Sportsbet price, have performed across all games in season 2008 and the return that would have been enjoyed by someone betting $1 on every favourite.

Price of Fav	Total Return	Win	Games
⊞$1.20 or less	$0.49	10	11
⊞$1.21 to $1.40	$0.03	13.5	18
⊞$1.41 to $1.60	$3.78	9	10
⊞$1.61 to $1.85	$1.04	10.5	17
Grand Total	$5.33	43	56

As you can see, such a wagering strategy would have been extremely lucrative, the overall $5.33 return representing a 9.5% ROI on a $56 outlay.

What's more, the pricing inaccuracy extends across all price ranges with ROIs ranging from 0.1% for favourites priced between $1.21 and $1.40 all the way up to 37.8% for favourites priced between $1.41 and $1.60.

One potential outcome of this, which would be positive for Investors in the Heritage and Line Funds, is that the TAB Sportsbet bookmaker looks at the numbers as we have done here, overcorrects for what he sees and so tends to erroneously shorten the prices of favourites for the remainder of the season. In doing this – unless he increases his over-round – he will simultaneously lengthen the prices for underdogs and offer larger handicaps, thereby creating a positive expectation for underdog betting on head-to-head and line markets.

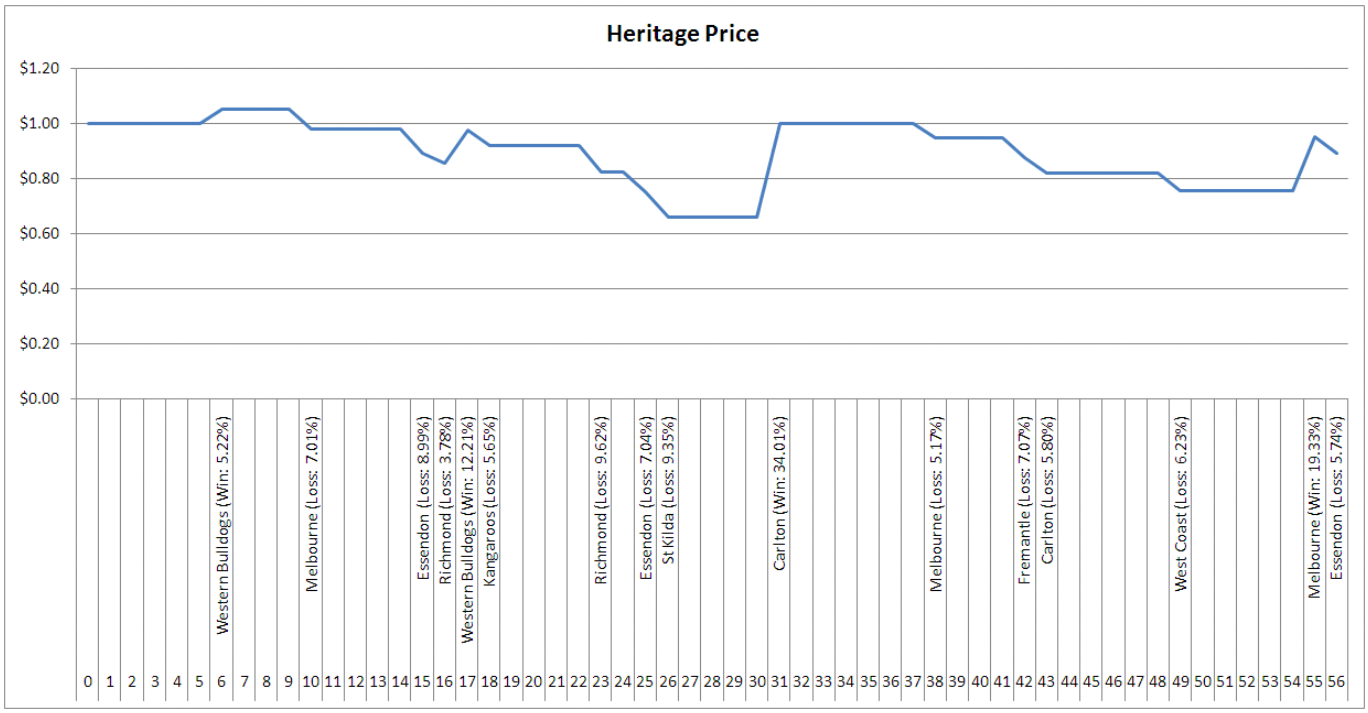
How confident do you reckon I should be about that outcome?

Review of Fund Performance

I've has some requests to reproduce the charts from last year that tracked the performance of each of the Funds on a week-to-week basis. With the hiatus created by the Hall of Fame match, this week seemed like a good opportunity to revise and publish these charts and publish in an updated version.

The Heritage Fund

This Fund has spent precious little time trading in positive territory, though the Dees' victory last weekend has put it within striking distance of the magic $1 figure yet again.



HERITAGE FUND

Team Wagered On	Bets	Win	Lose	% Outlayed	% ROI	% RONF
Adelaide	-	-	-	-	-	-
Brisbane Lions	-	-	-	-	-	-
Carlton	2	1	1	17.1%	164.7%	28.2%
Collingwood	-	-	-	-	-	-
Essendon	3	-	3	21.8%	(100.0%)	(21.8%)
Fremantle	1	-	1	7.1%	(100.0%)	(7.1%)
Geelong	-	-	-	-	-	-
Hawthorn	-	-	-	-	-	-
Kangaroos	1	-	1	5.6%	(100.0%)	(5.6%)
Melbourne	3	1	2	19.3%	37.0%	7.2%
Port Adelaide	-	-	-	-	-	-
Richmond	2	-	2	13.4%	(100.0%)	(13.4%)
St Kilda	1	-	1	9.3%	(100.0%)	(9.3%)
Sydney	-	-	-	-	-	-
West Coast	1	-	1	6.2%	(100.0%)	(6.2%)
Western Bulldogs	2	2	-	11.8%	148.3%	17.4%
Total	16	4	12	111.7%	(9.5%)	(10.6%)

The Heritage Fund has profited from just three teams so far this season – Carlton, Melbourne and the Western Bulldogs – and has lost money on six teams, most painfully on Essendon and Richmond.

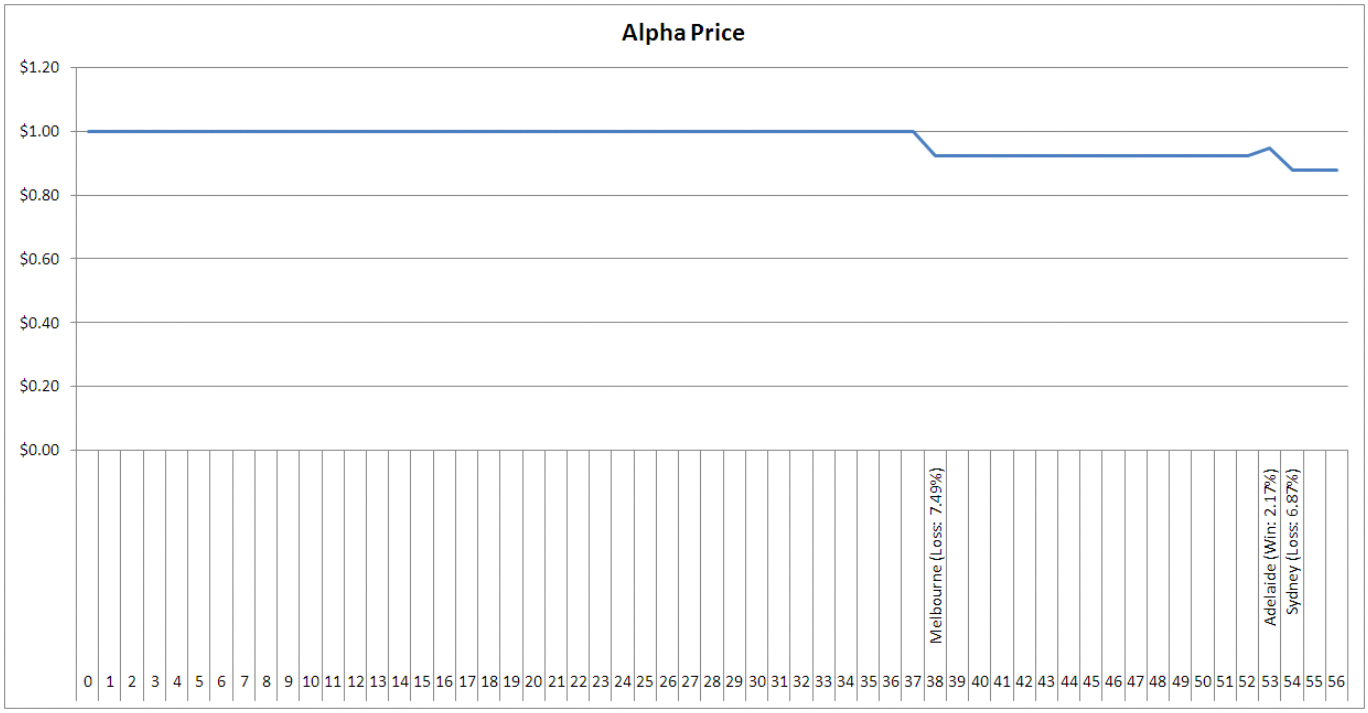
There are still seven teams on which it is yet to wager. Five of these teams are currently in the top 8 ladder positions.

It's won just 25% of its bets – considerably below the expected 40% mark.

At this stage last year the Heritage Fund was trading at $1.12 having won 8 of 18 bets.

The Alpha Fund

It's been a very quiet start to the season for the Alpha Fund, partly because of the curfew imposed on it until Game No. 33. To date it has not traded above $1.



ALPHA FUND

Team Wagered On	Bets	Win	Lose	% Outlayed	% ROI	% RONF
Adelaide	1	1	-	5.1%	43.0%	2.2%
Brisbane Lions	-	-	-	-	-	-
Carlton	-	-	-	-	-	-
Collingwood	-	-	-	-	-	-
Essendon	-	-	-	-	-	-
Fremantle	-	-	-	-	-	-
Geelong	-	-	-	-	-	-
Hawthorn	-	-	-	-	-	-
Kangaroos	-	-	-	-	-	-
Melbourne	1	-	1	7.5%	(100.0%)	(7.5%)
Port Adelaide	-	-	-	-	-	-
Richmond	-	-	-	-	-	-
St Kilda	-	-	-	-	-	-
Sydney	1	-	1	6.9%	(100.0%)	(6.9%)
West Coast	-	-	-	-	-	-
Western Bulldogs	-	-	-	-	-	-
Total	3	1	2	19.4%	(62.8%)	(12.2%)

The Alpha Fund has placed just three wagers, winning one (on Adelaide) and losing two (on Melbourne and Sydney).

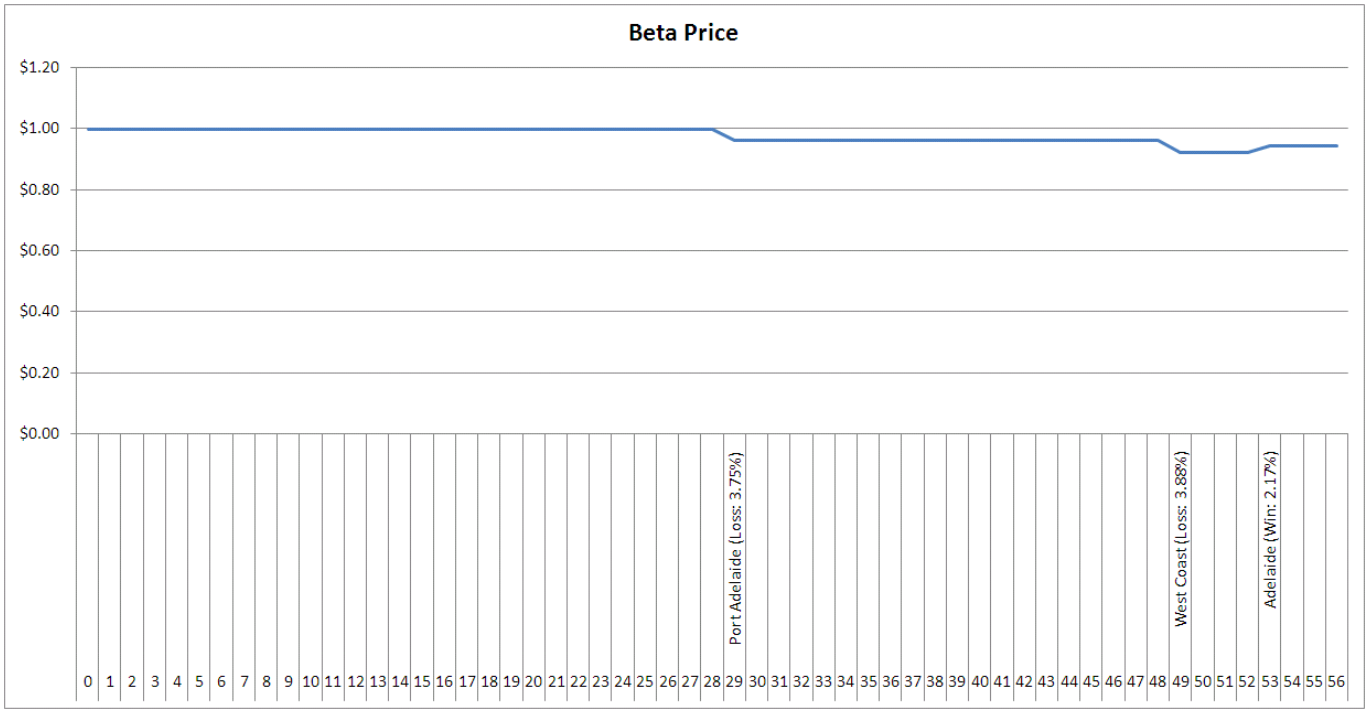
Last year the Alpha Fund was generally very conservative, so it surprises me still that the Dees are amongst the teams which it has fancied so far this season.

At this stage last season the Alpha Fund had made two bets for two winners and was trading at $1.03.

The average bet size is significantly higher so far this year than it was last year, partly attributable to the 50% increase in the Kelly fraction we're using this year for this and the Beta Fund.

The Beta Fund

It's also been a very quiet start to the season for the Beta Fund, again partly due to the early season curfew. To date, like the Alpha Fund, the Beta Fund has not traded above $1.



BETA FUND

Team Wagered On	Bets	Win	Lose	% Outlayed	% ROI	% RONF
Adelaide	1	1	-	5.1%	43.0%	2.2%
Brisbane Lions	-	-	-	-	-	-
Carlton	-	-	-	-	-	-
Collingwood	-	-	-	-	-	-
Essendon	-	-	-	-	-	-
Fremantle	-	-	-	-	-	-
Geelong	-	-	-	-	-	-
Hawthorn	-	-	-	-	-	-
Kangaroos	-	-	-	-	-	-
Melbourne	-	-	-	-	-	-
Port Adelaide	1	-	1	3.7%	(100.0%)	(3.7%)
Richmond	-	-	-	-	-	-
St Kilda	-	-	-	-	-	-
Sydney	-	-	-	-	-	-
West Coast	1	-	1	3.9%	(100.0%)	(3.9%)
Western Bulldogs	-	-	-	-	-	-
Total	3	1	2	12.7%	(43.0%)	(5.5%)

The Beta Fund has also placed just three wagers so far this season.

Its sole success came from a Round 7 wager on the Crows, the only occasion of which the Alpha and Beta funds have chosen to wager on the same team for the same game.

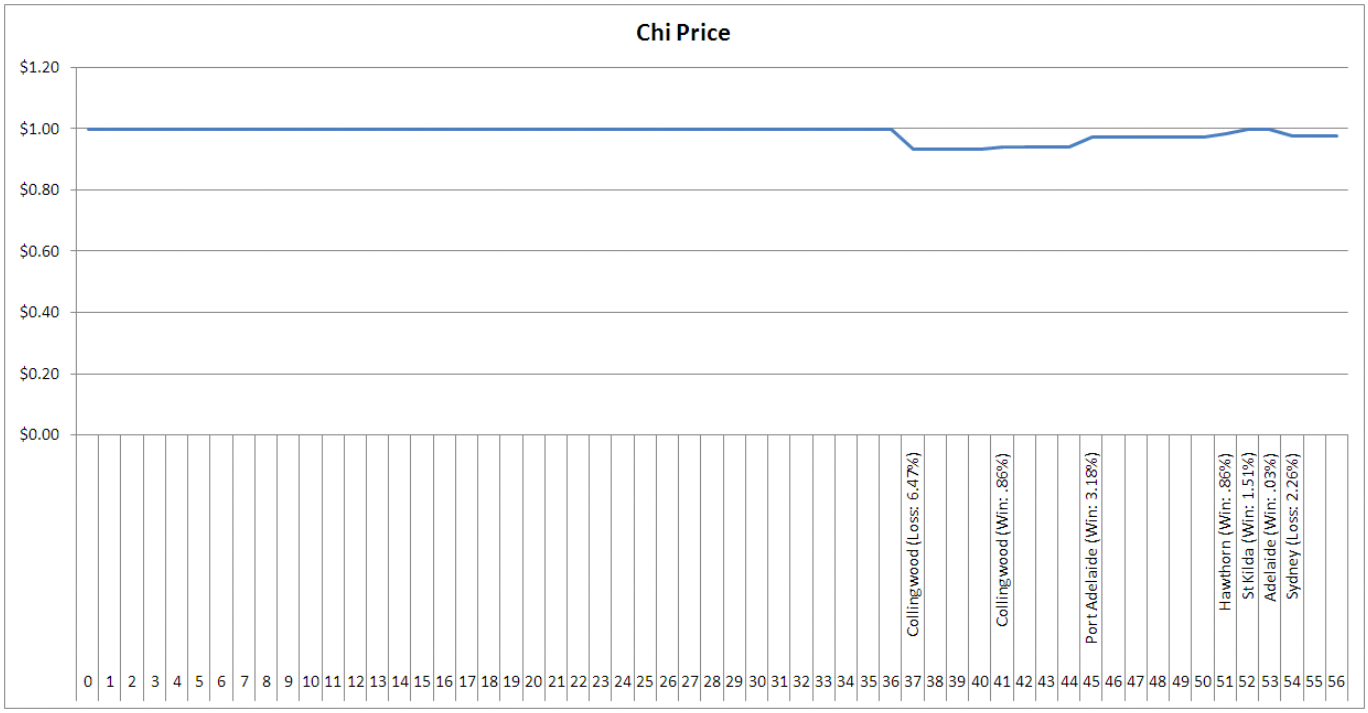
To be fair, the Beta Fund has genuine reasons to feel aggrieved about the losses it suffered in the other two games, with Port and the Eagles both finding themselves in winning positions in their respective games but eventually being unable to close their games out.

At this time last season the Beta Fund was trading at 95.6c having gone 2 and 2 on its 4 wagers (losing the first 2 and winning the next 2).

The average Beta Fund bet size has been considerably smaller so far this season than it was in 2007 though the last two bets of the 2007 season did serve to drive up the average considerably.

The Chi Fund

In its first year of trading the Chi Fund is showing some promise, though it too has yet to trade at a premium to its IPO price.



CHI FUND

Team Wagered On	Bets	Win	Lose	% Outlayed	% ROI	% RONF
Adelaide	1	1	-	0.1%	43.0%	0.0%
Brisbane Lions	-	-	-	-	-	-
Carlton	-	-	-	-	-	-
Collingwood	2	1	1	8.3%	(67.5%)	(5.6%)
Essendon	-	-	-	-	-	-
Fremantle	-	-	-	-	-	-
Geelong	-	-	-	-	-	-
Hawthorn	1	1	-	1.8%	47.0%	0.9%
Kangaroos	-	-	-	-	-	-
Melbourne	-	-	-	-	-	-
Port Adelaide	1	1	-	5.5%	58.0%	3.2%
Richmond	-	-	-	-	-	-
St Kilda	1	1	-	3.0%	50.0%	1.5%
Sydney	1	-	1	2.3%	(100.0%)	(2.3%)
West Coast	-	-	-	-	-	-
Western Bulldogs	-	-	-	-	-	-
Total	7	5	2	21.0%	(11.0%)	(2.3%)

So far this season the Chi Fund has wagered on six teams.

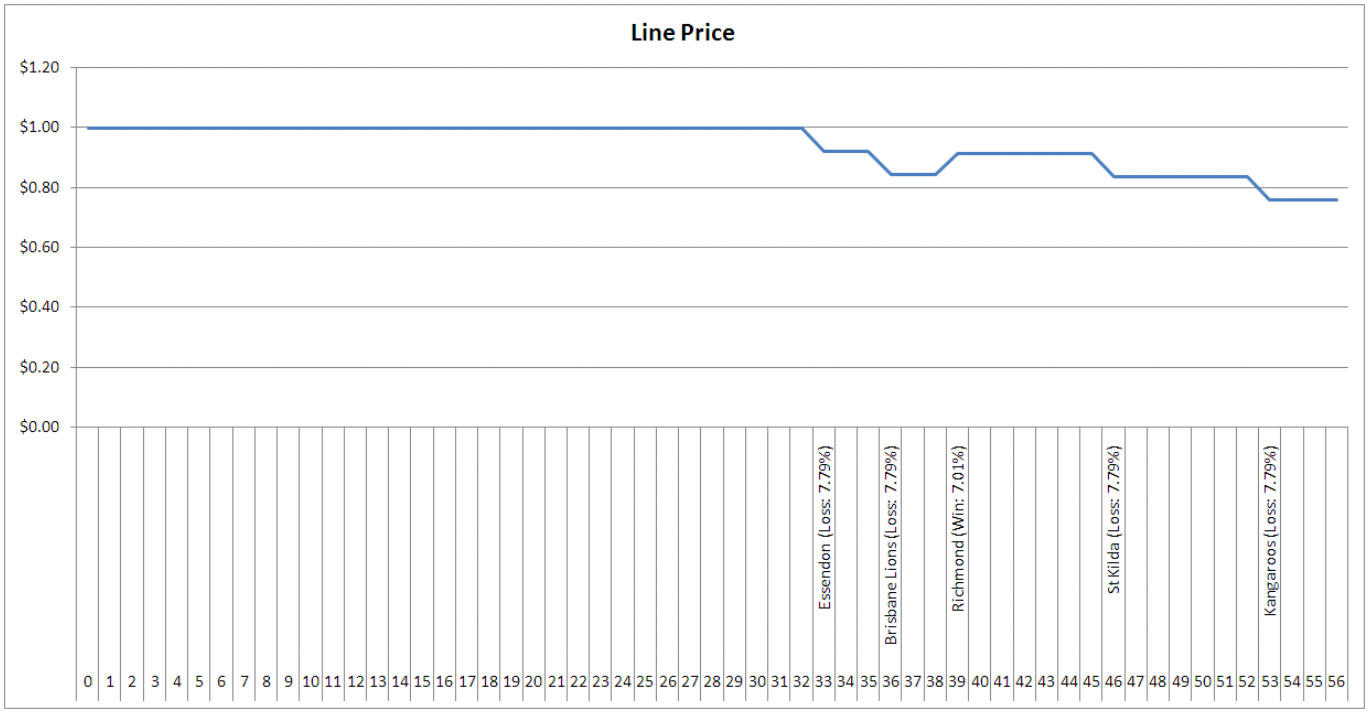
It's made money on four of those teams (Adelaide, Hawthorn, Port Adelaide and St Kilda) and lost money on two (Collingwood and Sydney).

All up it's won over 70% of its wagers, which is at the high end of expectations for this Fund and which can be partly attributed to the preponderance of favourites amongst victorious teams so far this season.

The Fund's average bet size, at around 3½% is considerably smaller than expected.

The Line Fund

With 32 of 56 favourites so far winning and covering the spread, the Line Fund has found it a difficult season so far.



LINE FUND

Team Wagered On	Bets	Win	Lose	% Outlayed	% ROI	% RONF
Adelaide	-	-	-	-	-	-
Brisbane Lions	1	-	1	7.8%	(100.0%)	(7.8%)
Carlton	-	-	-	-	-	-
Collingwood	-	-	-	-	-	-
Essendon	1	-	1	7.8%	(100.0%)	(7.8%)
Fremantle	-	-	-	-	-	-
Geelong	-	-	-	-	-	-
Hawthorn	-	-	-	-	-	-
Kangaroos	1	-	1	7.8%	(100.0%)	(7.8%)
Melbourne	-	-	-	-	-	-
Port Adelaide	-	-	-	-	-	-
Richmond	1	1	-	7.8%	90.0%	7.0%
St Kilda	1	-	1	7.8%	(100.0%)	(7.8%)
Sydney	-	-	-	-	-	-
West Coast	-	-	-	-	-	-
Western Bulldogs	-	-	-	-	-	-
Total	5	1	4	39.0%	(62.0%)	(24.2%)

Only one of the Line Fund's five bets has been successful – a wager on the Tigers in Round 5 where they drew with (and should have beaten) the Bulldogs when receiving 19½ points start.

The other 4 bets, though losing bets, have not been without merit. None of them, adjusted for handicap, has lost by more than 3 goals, and two of them have lost by just 9½ and 4½ points respectively.

At the same point last season the Line Fund was trading at 81.1c having won 3 and lost 6 wagers.

The average bet size this year is a little higher this year compared to last, mainly because this Fund no longer wagers on teams receiving 6½ start, which are teams that are often only available at prices other than $1.90 (and, in the case of teams supported by the Line Fund last year, at prices generally under $1.90)

Bookmakers' Prices

Finally the bookies are recognising that the Cats are vincible. For the first time in as long as I can remember, the Cats have lengthened in the Flag market, though they're still at an unbackable $2.20 - $2.25.

	Bookmakers' Prices (7th May v 30th April)							
	Premiership Winner			Final 8		Wooden Spoon		Miss 8
Team	TAB	Centrebet	Domebet	TAB	Centrebet	TAB	Centrebet	TAB
Geelong	2.20 L	2.20 L	2.25 L	No Price S	No Price S	No Price -	No Price L	No Price L
Hawthorn	3.80 S	3.80 S	3.85 S	No Price S	No Price S	No Price -	No Price L	No Price L
Western Bulldogs	12.00 S	12.00 S	13.00 S	1.05 S	1.04 S	No Price L	No Price L	7.00 L
Adelaide	13.00 S	13.00 S	13.00 S	1.07 S	1.08 S	1001.00 L	1001.00 L	6.50 L
Port Adelaide	15.00 S	15.00 S	15.00 S	1.65 S	1.60 S	201.00 L	251.00 L	2.00 L
St Kilda	17.00 -	17.00 -	21.00 L	1.40 L	1.33 -	501.00 L	501.00 L	2.40 S
Collingwood	21.00 L	21.00 L	21.00 L	1.50 -	1.60 L	201.00 S	201.00 -	2.20 L
Sydney	21.00 L	21.00 L	23.00 L	1.28 L	1.28 L	501.00 S	501.00 L	3.20 S
Brisbane Lions	35.00 L	34.00 L	36.00 L	1.70 L	1.80 L	201.00 S	201.00 L	1.95 S
Carlton	51.00 S	51.00 S	67.00 S	3.00 S	2.75 S	41.00 L	67.00 L	1.33 L
Kangaroos	51.00 L	67.00 L	67.00 L	1.80 L	1.90 L	201.00 -	251.00 -	1.85 S
Richmond	101.00 -	101.00 -	121.00 L	4.50 L	4.25 L	35.00 S	41.00 -	1.12 S
Fremantle	201.00 L	201.00 L	251.00 L	6.00 L	5.00 L	9.00 S	11.00 S	1.06 S
Melbourne	301.00 S	501.00 S	1001.00 S	31.00 S	21.00 S	2.20 L	2.00 L	1.01 S
West Coast	301.00 L	301.00 L	331.00 L	31.00 L	21.00 L	2.30 S	2.60 S	1.01 S
Essendon	501.00 L	501.00 L	501.00 L	21.00 L	13.00 L	4.50 S	6.00 S	1.01 S
Over-round	*19.0%*	*18.5%*	*13.9%*	*7.9%*	*9.0%*	*30.1%*	*20.4%*	*7.5%*

Just one win is all it's taken to move the Dees off the bottom line of Flag betting with the TAB though not, oddly, off the top line of Spoon betting. The Eagles have firmed dramatically on Spoon betting, however, and are now all-but equal favourites in this market. The existence of two strong contenders for the Spoon explains, in part, the disgracefully high over-round in this market, especially at TAB Sportsbet.

In Final 8 betting we still have 10 teams at odds shorter than evens and another one or two not all that far away.

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This week, a few quotable quotes from around the world.

David Coleman: "Moses Kiptanui - the 19 year old Kenyan, who turned 20 a few weeks ago"

Murray Walker: "We now have exactly the same situation as we had at the start of the race, only exactly the opposite"

Peter Lorenzo: "Hodge scored for Forest after 22 seconds - totally against the run of play"

Ian McNail: "We actually got the winner three minutes from the end but then they equalized"

Chris Eubank, replying to "Have you ever thought of writing your autobiography?": "On what ?"

Dean Smith: "If you make every game a life-and-death thing, you're going to have problems. You'll be dead a lot."

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Back to routine this week with Richmond (v Geelong) and Freo (v the Bulldogs) both at home and promising attractive odds for the Heritage Fund.

'til Thursday,

Tony

11 May 2008

Appendix: Exercise Answers

Question	Answer	Source
1. The weight of an unladen 737-700 jet	38,147 kg	http://americanscot.blogspot.com/2008/01/flying-its-not-like-trip-to-grocery.html
2. The number of member countries in the UN	192	http://geography.about.com/cs/countries/a/numbercountries.htm
3. The number of stars in the Milky Way	100 billion	http://hypertextbook.com/facts/2000/MarissaWager.shtml
4. The population of Belgium	10.4million (July 2007 est.)	https://www.cia.gov/library/publications/the-world-factbook/print/be.html
5. The length of the world's longest river	6,650 km	http://en.wikipedia.org/wiki/List_of_rivers_by_length
6. The height of Mount Everest	8,848m	http://geology.com/records/highest-mountain-in-the-world.shtml
7. The number of cars, trucks and busses sold in Australia last year	1,049,982	http://www.themotorreport.com.au/3323/record-year-sees-more-than-a-million-cars-sold-in-australia/
8. The number of vineyards in Australia	8,041	http://www.winebiz.com.au/statistics/viticulture.asp
9. The typical weight of a fully grown male sperm whale	50,000 kg	http://en.wikipedia.org/wiki/Sperm_Whale
10. The number of golf courses in the US	15,990	http://www.census.gov/compendia/statab/tables/08s1216.pdf
11. The average number of behinds scored per regular season game in 2007	25.1	(Own records)
12. The volume of water in a typical Olympic pool (filled to a depth of 2m)	2.5 million litres	http://en.wikipedia.org/wiki/Olympic-size_swimming_pool
13. The weight of the largest gold nugget ever discovered	65.2 kg	http://en.wikipedia.org/wiki/Gold_nugget
14. The men's world record for the marathon in 1958	2h:15m:17s	http://www.nationmaster.com/encyclopedia/Sergey-Popov
15. The distance from London to New York by air	5,580 km	http://www.travelnotes.org/Air.htm
16. The number of tiles in the 'sails' of the Sydney Opera House	1,056,000	http://en.wikipedia.org/wiki/Sydney_Opera_House
17. Proportion of the Australian population aged under 15 as at June 2006	19.6%	http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3235.0Main%20Features32006?opendocument&tabname=Summary&prodno=3235.0&issue=2006&num=&view=
18. The height of the world's tallest living tree	112 m	http://hypertextbook.com/facts/2001/OlgaVapnyar.shtml
19. The distance to the Sun	149.6 million km	http://en.wikipedia.org/wiki/Astronomical_unit
20. The world's population	6.6 billion (July 2007 est)	http://kids.yahoo.com/reference/world-factbook/country/xx--World