→ The Income & Fixed Interest Boutique
2015 Melbourne Cup Model

"You've got to know when to hold 'em, know when to fold 'em"

Within the Income & Fixed Interest boutique we have a team of quants whose job is to parse economic and market data to identify relevant factors which we then overlay with our qualitative views and technical analysis to generate a portfolio of trades. Given the interest in the iconic Melbourne Cup we thought it might be an interesting exercise to run an analysis on the race on an annual basis. This is our first effort. The majority of this analysis was conducted/overseen by Steve Campbell, our Cash Portfolio Manager and resident horse expert.

The lyrics from Kenny Roger's 1978 classic "The Gambler" also apply to the approach that we have undertaken when looking for the winner for this year's Melbourne Cup. Based off the work undertaken we predict the winner will be **Preferment**, with **Trip To Paris** his main danger. Other live chances include Criterion, Fame Game, Who Shot Thebarman and Hartnell. The race has been assessed off a good 4 track rating.

Introduction

After exploring a host of significant factors including handicap, form and barrier position, we predict the winner of the 2015 Melbourne Cup to be *Preferment.* The horse excels on all our key metrics and benefits from a favourable weight (handicap) relief relative to its last race. *Preferment's* pedigree is strong, being by leading staying sire Zabeel, and is trained by Australia's leading Group 1 trainer, Chris Waller. We expect *Trip to Paris* to be the main danger.

In conducting our research we drew from our investments blueprint to understand how each variable influenced the outcome. Identifying the right determinants is part of how we generate performance. With it, we can anticipate how assets, in this case, horses, may behave given a preset environment. We've carried out a thorough look at the field and provided a summary of each major contestant.

For those interested in potentially a higher return we have also included exotic bet combinations for trifectas (the first three horses home in the race in the correct order) and an astrology tilt using the work of Pythagoras.

Quantitative assessment - "The secret to survivin' is knowin' what to throw away and knowin' what to keep"

As with any trade identification, the first step is always to discard ideas that have no money-making potential. In assessing the field we begin with three factors designed to eliminate those horses that we believe cannot win. These criteria are as follows:

1. **Prior starts in Australia.** While we're not discounting the Northern Hemisphere horses – particularly given the last five winners all started their racing careers in Europe – we have eliminated those horses that have not had a start in Australia in the three months leading up to the Cup. Historically their record has been poor and though they have gone very close in recent years, *Vintage Crop* in 1993 remains the only horse to have won the Cup without having a start in Australia in the three months prior. In this year's field we can eliminate six out of the 24 horses under this criterion.

2. **Market price indicator**. Believing odds reflect probability of winning is an intuitive reflex but most fail to realise that the relationship falls apart beyond a certain point. Looking at historical winners we've identified that horses priced above $21 have a disproportionally lower chance of winning than their odds would suggest and have filtered those horses out. We have tested this for other thresholds, though the $21 mark consistently provides the highest risk/reward ratio.

3. **Performance**. The horse must have finished 4th or better at its most recent start unless its most recent start was in the Cox Plate. The Cox Plate has provided four of the last ten Melbourne Cup winners, attracts the best Weight For Age (WFA) performers and is run over 2040m, well short of the 3200m of the Cup.
   Concessions were not set for other notable races, such as the Caulfield Cup and Geelong Cup. The Caulfield Cup field has not provided the winner since 2006, although prior to that it was a reasonable guide to the Melbourne Cup winner. The Geelong Cup is growing in prominence as a guide to Melbourne Cup winners, with previous winners *Media Puzzle*, *Americain* and *Dunaden* all winning the Geelong Cup at their first start in Australia before going on to win the Cup. Bauer also won the Geelong Cup at his first Australian start before being beaten in a photo finish in 2008. It is not as good a guide if a horse has had at least one start in Australia prior to the Geelong Cup.

Horse	Price	Starts in OZ	Last Start
Preferment	X	X	X
Trip To Paris	X	X	X
Criterion	X	X	X
Almoonqith	X	X	X
The United States	X	X	X
Fame Game	X	X	
Who Shot Thebarman	X	X	

Max Dynamite	X		X
Hartnell		X	X
The Offer		X	X
Excess Knowledge		X	X
Our Ivanhowe		X	X
Prince of Penzance		X	X
Gust of Wind		X	X
Hokko Brave		X	
Grand Marshal		X	
Snow Sky		X	
Quest For More		X	
Sertorius		X	
Bondi Beach			X
Sky Hunter			X
Red Cadeaux			X
Big Orange			
Kingfisher			

Only horses that met these criteria were considered for further analysis. From the results above we were able to narrow the field down to the following group; *Preferment, Trip To Paris, Criterion, Almoonqith and The United States.*

"*You've got to know when to hold 'em*"

From an investment viewpoint, this is the step in which we determine our quantitative call(s) before overlaying with our qualitative view. Here we rank the five remaining horses based on an aggregate score along the following set of criteria:

→ **Barrier position**. The starting gate has been shown to materially impact the odds of winning a race. Looking at our data we see that there's a curvilinear bias, favouring horses drawn between 5 and 14. Horses drawn wider obviously face the risk of having a harder run during the race and horses drawn inside barriers face the risk that they get caught on the rail and are unable to obtain clear running in the home straight.
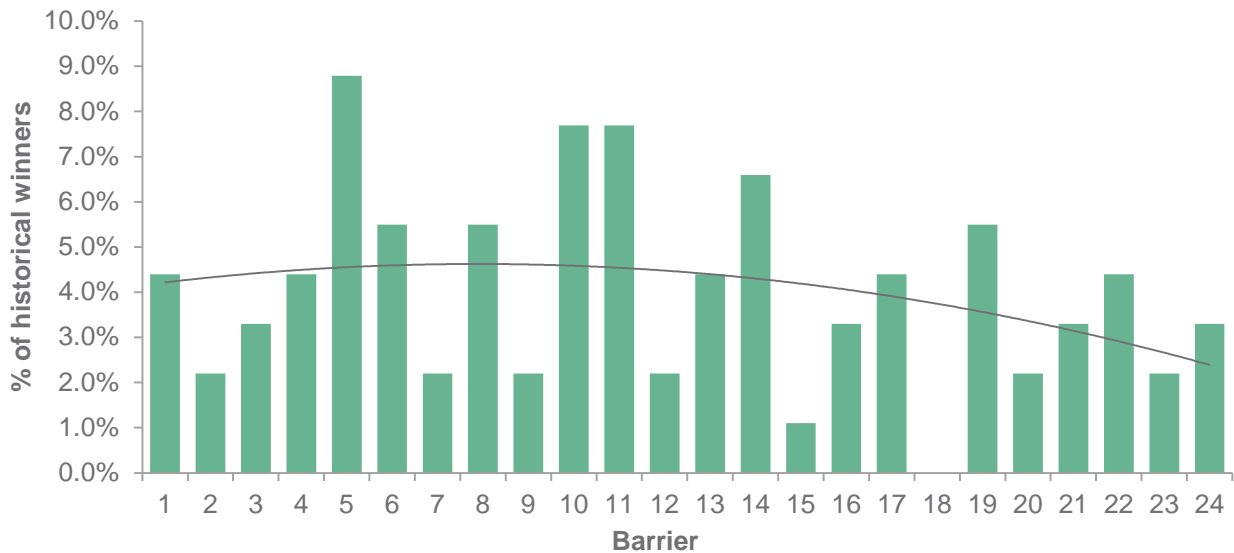
advantage/disadvantage is one of most important aspects of predicting a winner. The system of handicapping is designed to equalise the field but based on past records we can see a clear skew to better performing horses that have been assigned a higher handicap (horse number 1 has the highest handicap, horse 24 the lowest). This is the product of a more compressed weight scale that benefits better performed horses. Historically the spread between the highest and lowest handicapped horse was much wider. The distribution over the past 45 years is as follows:
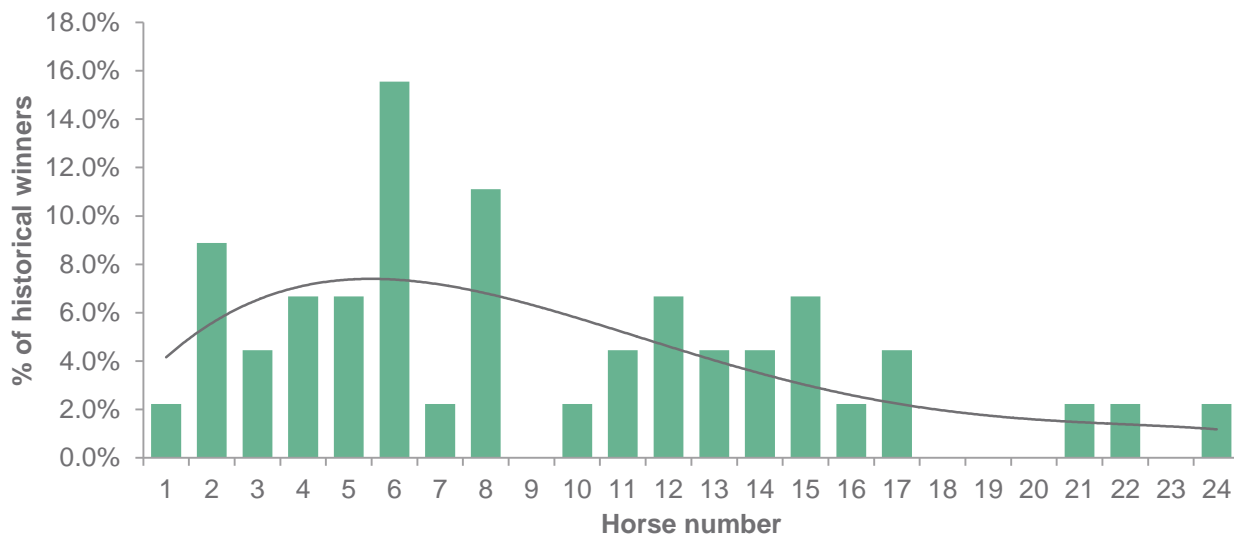
→ **Form**. This one's fairly self-explanatory. We use a formulated score based on the combination of the places attained and distances covered in the last three races. The score is designed to identify horses that are higher placed and/or have covered longer distances similar to the Melbourne Cup (3200m). Horses such as *Max Dynamite* are favoured on this metric given its consistent form (1st, 2nd and 2nd) and distance covered.

Horse	Form - last 3			Distance		
Fame Game	6	2	7	2400	3200	3400
Trip To Paris	2	5	3	2400	3300	3200
Preferment	9	1	1	2040	2000	2000
Who Shot Thebarman	7	8	5	2400	2000	2000
Criterion	2	1	6	2040	2000	2100
Almoonqith	1	7	6	2400	2400	2000
Bondi Beach	2	2	1	2900	2400	2800
Max Dynamite	1	2	2	3300	3200	3200
Hartnell	5	6	4	2040	2000	1600
Hokko Brave	10	6	3	2400	3200	2500
Our Ivanhowe	3	2	9	2400	2400	2000
Sky Hunter	2	1	1	2200	2400	2400
Gust of Wind	4	11	8	2400	2000	1600
Red Cadeaux	3	7	11	2600	2400	2000
Excess Knowledge	1	2	2	2500	2400	2400
Kingfisher	8	3	2	2800	2800	4000
Big Orange	7	1	1	3300	3200	2400
Snow Sky	5	6	1	2400	2400	2400
Grand Marshal	11	5	7	2400	2000	2000
The United States	1	6	9	2500	2000	2000
Prince of Penzance	2	8	5	2500	2400	2000
The Offer	1	4	5	2400	2400	2300
Quest For More	16	2	1	2400	3200	3200
Sertorius	9	6	10	2400	2400	1800

→ **Handicap advantage.** This provides for an adjustment to a horses form to account for the quality of opposition that it has been racing against: a horse performing well against low grade opposition rates well on our form indicator, and our 'Advantage' indicator has been constructed to take the quality of opposition into account. This is a calculation based on the combination of the handicap and benchmark rating change, both relative to the last race run and relative to other horses within the field for this race. The purpose of this is to measure the level of advantage or disadvantage that a horse will experience due to the change in weight and quality of the field from prior races to this race. The result of this analysis is an effective weight adjustment score, where a positive score is an advantage and a negative score is a disadvantage.

→ **Trainer and jockey**. Another metric based on our assessment of each trainer and jockey. We have looked at longer and more recent records for jockeys riding in this year's race and assigned a score against them. Similarly the record of trainers in group 1 races has been assessed: the best trainers and jockeys are more likely to win than a trainer who has never trained a group 1 winner or a jockey that has never ridden a group 1 winner.

Other factors that we considered included the age and sex of the winner. With two-thirds of this year's field being aged between 4 and 6 years, it is highly likely that the winner comes from this age bracket. Whilst fillies and mares have only won 10% of all Melbourne Cup's run we find this information useless given we do not know what proportion fillies and mares have made up of all Melbourne Cup fields: that is, if fillies and mares only made up 5% of the field then the statistic shows that fillies and mares have a better winning record than their participation rate in the race. It is therefore not a factor that we assigned a weight against.

The output from our quantitative model assessment for those horses that meet our criteria shows that Preferment will be the hardest horse to beat, with the results in the table below:

| Horse | Odds | Weight | Age | Barrier | | Handicap | | Form | Advantage | Trainer | Jockey | Agg. Score |
	$	kg	yo	#	prob	#	prob	score	score	score	score	
Preferment	10.0	53.5	4.0	11	6.5%	15	3.5%	17.3	5.9	10.0	10.0	99.0
Trip To Paris	8.5	55.0	5.0	14	5.8%	10	4.0%	10.5	0.0	9.0	8.5	82.0
Criterion	13.0	57.5	5.0	4	4.5%	2	4.0%	13.9	3.4	9.0	5.0	80.0
Almoonqith	14.0	53.0	6.0	10	6.5%	17	2.3%	20.3	-1.4	9.0	9.0	70.0
The United States	20.0	50.0	6.0	3	3.5%	22	2.0%	25.3	2.0	8.0	9.0	60.0

Qualitative assessment - *"If you're gonna play the game, boy, you gotta learn to play it right"*

While we're steered by quantitative outputs, our decisions are invariably determined by experience and judgment. Models help narrow down ideas but offer limited depth and unique insight. Our resident I&FI horse-expert provides coverage on the key runners below.

Key horses meeting our benchmark

→ **Preferment**: this horse is by *Zabeel*, who has been one of the strongest influences in staying bred horses in Australia and New Zealand. *Zabeel* has sired previous Melbourne Cup winners *Efficient*, *Jezabeel* and *Might And Power* and, based on breeding, *Preferment* should relish the 3200m at Flemington. He has had two starts at Flemington for two wins in Group One races: the VRC Derby over 2500m last year and in the Turnbull Stakes over 2000m in early October. Some may question his performance in the Cox Plate, however these concerns were allayed for us when Gailo Chop won the Group 1 Weight For Age McKinnon Stakes (2000m) on the weekend. Preferment finished next to Gailo Chop in the Cox Plate.

→ **Trip To Paris**: finished 2nd in the Caulfield Cup at his first start in Australia and will have no problems handling the distance of 3200m as he is a winner of the Ascot Gold Cup in the UK, a group 1 race run over 4000m. His trainer, Ed Dunlop, has brought *Red Cadeaux* out to Australia previously for the Melbourne Cup and has run 2nd three times. This is a trainer that knows what he is doing. The risk with some UK stayers is that they are too dour however those concerns were allayed with this horse when he showed a sharp sprint in the Caulfield Cup.

→ **Criterion:** if the race was run over 2000m we would be confident that Criterion would be far too good for this field. Of his 31 career starts, 20 have been in Group 1 races. As a younger horse he

won the ATC Derby over 2400m and finished 4th in the VRC Derby over 2500m. The query will be the 3200m for him, his breeding suggests he is more adept at shorter distances than longer ones.

→ **Almoongith**: passed all criteria on the strength of his Geelong Cup win, which was impressive. We have doubts over the strength of that field however and note that at his start before that he was unplaced in the Metropolitan Handicap in Sydney in early October. This race has not been a great form reference for the Melbourne Cup, particularly if the horse was not good enough to run a place.

→ **The United States:** won the Moonee Valley Cup at his last start, which has not historically been a great indicator for the Melbourne Cup and we have doubts over the depth of the field that he beat. Only lightly raced and is bred to handle 3200m although we believe others have better credentials for this year's race.

Key horses NOT meeting our benchmark

→ **Fame Game:** the Japanese are regarded as having the best stayers in the world. Fame Game finished second in Japan's version of the Melbourne Cup, the Tenno Sho. Has only had one start in Australia, in the Caulfield Cup when he came from last (18th) on the turn and hit the line strongly to finish 6th. The stewards (racing's version of the police) were less than impressed with the jockey and implied that the horse had been given an easy run with a view of having him primed for Melbourne Cup day. Excluded due to not finishing top 4 at his last run.

→ **Who Shot Thebarman**: ran 3rd in this race last year, 2nd in the Sydney Cup earlier this year and has been performing well without running a place in the lead up to this year's Melbourne Cup. Finished 7th in the Caulfield Cup at his last start after starting from a wide barrier, drifting back in the field and hitting the line well. Bred to stay all day being by *Yamanin Vital.* Excluded due to not finishing top 4 at his last run.

→ **Our Ivanhowe:** excluded due to not passing the market price filter, although passes all other criteria. Our market price filter was run as at 8am Monday morning and it is possible that his price may shorten prior to the Melbourne Cup start time of 3pm Tuesday afternoon. Ran well last start when finishing 3rd in the Caulfield Cup. A German import that has raced against some of the best horses in the world in the L'Arc Triomphe in France and the Japan Cup in 2014 and is obviously a high class racehorse. Has never raced over further than 2500m, may be some question marks over him at 3200m and probably explains why he is currently at greater than $21 and has been filtered out.

→ **Hartnell:** won the Group 1 BMW over 2400m at Rosehill (Sydney) in the autumn, beating one of Japan's better stayers in *To The World*, and is a high class horse when at his best. He did fail in the Sydney Cup as a short priced favourite after that performance despite dropping 5.5kgs in weight and racing against a weaker field than what he faces on Tuesday which raises some question marks about him at the distance. He has won at 3200m in the UK as a young horse. His most recent performances have been solid without being spectacular, running home well in the Turnbull Stakes and running 5th in the Cox Plate. Concerns at the distance may explain why he fails our market price filter factor.

→ **Gust Of Wind:** Won the ATC Oaks in the Autumn on a soft track, beating Winx by 2.5 lengths (Winx won the Cox Plate in late October, thrashing the field and breaking the track record in the process. Winx has improved significantly in our opinion since they raced in the ATC Oaks).

Finished 4th in the Caulfield Cup at her most recent start. She raced close to the pace in that event, rounding the home turn in 5th place so she held her ground rather than coming from back in the field and hitting the line strongly. We think the increase in distance to 3200m may favour some of the other runs more than Gust Of Wind. Excluded from our shortlist due to failing the market price filter.

→ **Bondi Beach:** has only had 5 career starts and fails our criteria due to his most recent start being in the United Kingdom. Has performed well to date with 2 wins and 3 seconds from his 5 starts. Looks to have plenty of potential however given the poor record of imports in the race that have not had a start in Australia prior to the Melbourne Cup we are prepared to risk him and leave him out.

→ **Hokko Brave:** Another Japanese stayer that has performed well at home, running 2nd in the Tenno Sho in 2014 and running 6th in 2015 (Fame Game ran 2nd). Has had one start in Australia when finishing 10th in the Caulfield Cup. Would need to improve off that: he was 10th at the home turn and only held his position down the home straight. No issues with the distance but certainly favour others out of the Caulfield Cup to him.

→ **Red Cadeaux:** an old marvel, having run 2nd in this race in 2011, 2013 and 2014. Was classy enough to run 2nd over 2000m at Randwick in the Group 1 WFA Queen Elizabeth Stakes in the autumn. At 10 years of age his best years are probably behind him but the same statements were also made in 2013 and 2014.

→ **Snow Sky:** Has history against him. Was the topweight when weights were released in September and no original topweight has won or run a place in the Melbourne Cup since 1950 when Comic Court was successful (Makybe Diva carried the topweight in 2005 when successful: she was not however the topweight when weights were initially released). Snow Sky is obviously a high class stayer, you don't get handicapped with the highest weight in the race if you are not. Given the poor record however we are prepared to risk him and leave him out.

Summary of our quantitative and qualitative review - "Every hand's a winner, and every hands a loser"

The horses that meet our criteria

Horse	Price	Starts in OZ	Last Start
Preferment	X	X	X
Trip To Paris	X	X	X
Criterion	X	X	X
Almoonqith	X	X	X
The United States	X	X	X

Our performance assessment using quantitative analysis:

	Odds	Weight	Age	Barrier		Handicap		Form	Advantage	Trainer	Jockey	
Horse	$	kg	yo	#	prob	#	prob	score	score	score	score	Agg. Score
Preferment	10.0	53.5	4.0	11	6.5%	15	3.5%	17.3	5.9	10.0	10.0	99.0
Trip To Paris	8.5	55.0	5.0	14	5.8%	10	4.0%	10.5	0.0	9.0	8.5	82.0
Criterion	13.0	57.5	5.0	4	4.5%	2	4.0%	13.9	3.4	9.0	5.0	80.0
Almoonqith	14.0	53.0	6.0	10	6.5%	17	2.3%	20.3	-1.4	9.0	9.0	70.0
The United States	20.0	50.0	6.0	3	3.5%	22	2.0%	25.3	2.0	8.0	9.0	60.0

Horses we favour based of our qualitative assessment:

Preferment, Trip To Paris, Criterion, Fame Game and Who Shot Thebarman

Our selections:

Best Bet: Preferment

Best each way bet: Trip To Paris

Best trifecta: Preferment, Trip To Paris for 1st, include Fame Game, Who Shot Thebarman, Criterion and Hartnell for 2nd and 3rd.

Best roughie: Hartnell

If the stars align…

In ancient time, the Pythagoreans believed that "number is the ruler of forms and ideas, and is the cause of gods and demons". In the recommended reading list by W. D. Gann, the legendary chartist of his time, we found applications of numerology to horse racing. One of the theories states that the winning horse is the one with a compatible name value to the number of the ruling planet as at the finishing time of the race. The name value of a horse is determined by the sound of its name.

We went through the process to pick the winning horse. And here it goes: Tuesday is ruled by Mars. Sunrise at Flemington is 6:12am on the race day (from Bureau of Meteorology), thus the race is in the 9th hour after sunrise and the hour is ruled by Saturn. The time of the race 3pm is 8 hours 48 minutes after sunrise. The ruling planet changes to the next every 4 minutes, which is the time the sun goes by 1 degree of longitude. Thus the 4 minutes between 3:00pm and 3:04pm is ruled by Jupiter. The winner is the horse whose name value is equal to the number of the ruling planet. Similarly, the 2nd and 3rd horses can also be picked to match the ruling planets adjacent to the finishing time.

Here are the results:

Time	3:00 PM	3:04 PM	3:08 PM	3:12 PM	3:16 PM	3:20 PM	3:24 PM
Ruler	Saturn	Jupiter	Mars	Sun	Venus	Mercury	Moon
Winner		Our Ivanhowe	Grand Marshal	Kingfisher	Our Ivanhowe	Grand Marshal	Max Dynamite
2nd & 3rd		Criterion	Sky Hunter	Snow Sky	Criterion	Sky Hunter	Grand Marshal
2nd & 3rd		Snow Sky	Max Dynamite	Sky Hunter	Snow Sky	Max Dynamite	Criterion

Tribute: The 'Cups King" - Bart Cummings

Last we'd like to pay a small tribute to racehorse trainer, Bart Cummings. Bart Cummings passed away earlier this year. His record in the Melbourne Cup is unlikely to be surpassed. In all Cummings trained twelve Melbourne Cup winners, with the next closest trainer having trained five. Cummings was also known for his sharp wit and one-liners. Some of these include:

→ After *Viewed* won the 2008 Melbourne Cup, Cummings' long-time stable foreman, Reg Fleming, said: "There's Bradman and there's Bart." Bart loathed the comparison. "Well, I hope he [Fleming] is a good judge," Bart says. "I don't like commenting on that. He's not the only one who has said it, but I don't like talking about that one."

"I wasn't bad at cricket – but I wasn't as good as Bradman."

→ "You had a tear in your eye," remarked a racing scribe to Bart Cummings, after the Cummings trained *Saintly* had just won the Melbourne Cup.

"Yeah, I didn't have enough on it," replied Bart.

→ "You won eleven Melbourne Cups. (This before Bart had gone on to win his twelfth) I won two for you by that much," said former stable jockey, Roy Higgins, to trainer Bart Cummings, while holding two fingers just a couple of inches apart.

"If it wasn't for me, you would only have won nine."
"If it wasn't for me, you wouldn't have won any," replied Bart, as the pair exchanged friendly fire.

→ "I keep my horses in the weakest of company and myself in the best of company. It's the best recipe for success I know."

 — Bart responding to suggestions about his training practices after he was suspended earlier in his career for a horse he trained showing huge improvement

→ "I think you should get a second opinion."

    — Bart to Darren Beadman after Beadman told Bart that God had spoken to him and had told him to quit race riding and study to become a religious minister

→ "Horses"

    — Bart's answer to the question "What do you attribute your success to?"

→ "Gee this carnival is going quickly," said trainer, Lee Freedman to fellow trainer, Bart Cummings.

"It is if you're winning," replied Bart, who by his standards was having a lean season.

→ "Patience is the cheapest thing in racing, but most people don't use it"

    — Bart often used this when describing the "win now" mentality of some of the owners he'd had over the years.

Vimal Gor
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About BTIM's Income & Fixed Interest Boutique

BT Investment Management's Income & Fixed Interest team of nine dedicated professionals, led by Vimal Gor, manage the #1 performing Australian composite bond fund of 2014 and 2011.

To find out more about the team, their philosophy and their flagship funds visit btim.com.au.

For more information
Please call 1800 813 886, contact your business development representative or visit www.btim.com.au

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