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Resolving the question of why the favourite-longshot bias exists in some betting markets but not in others

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Horserace betting markets

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- In the simplest kind of betting market for a horserace, the goal is to guess which horse will win the race.

- Each horse has a price for bets, called *odds*.
  The amount I bet on a horse is my *stake*.

- If my chosen horse wins, I get my stake back plus an amount equal to
  $odds \times stake$.

- Horses that are more likely to win have lower odds.
  Horses that are less likely to win have higher odds.
  This makes expected returns 'fair'.

Bookmaker vs. exchange

- Together account for 94% of UK betting turnover.
- *Bookmakers*
  - – odds set by the bookmaker
  - – must manage risk, so higher operating costs
- *Exchanges*
  - – odds set by the bettors
  - – no risk management, so lower operating costs

Competing markets

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Home » Horse Racing » 03 April 2011 » Doncaster » 16:25 »

Doncaster: 4:25 PM | 1m 4f Weights £14,500

williamhill.com Doncaster Shield (Conditions Stakes) (Class 2) Flat | **Win:** £9,390, **Going:** Good

Best Odds | **All Odds** | Exchanges | Historic Odds

ODDS FORMAT: 7/4 2.75 +175 | LAST ODDS CHANGE: LONGER SHORTER

Form	NO	A-Z	32RED	888sport	bet365	betCHRONICLE	BETFRED	betinternet	BLUESQ	Boylesports	CANBET	CORAL	corbettsports	Ladbrokes	Paddy Power	SKY BET	StanJames.com	totesport	Victor Chandler	William Hill	BETDAQ	betfair
144221-	4	**Times Up**	9/5	SP	7/4	17/10	7/4	SP	SP	7/4	SP	SP	7/4	**15/8**	**15/8**	SP	7/4	7/4	13/8	7/4	19/10	**2**
753276-	5	**Prompter**	7/3	SP	5/2	9/5	5/2	SP	SP	5/2	SP	SP	5/2	9/4	9/4	SP	**11/4**	5/2	5/2	5/2	13/5	11/4
503554-	3	**Nanton**	**11/2**	SP	5	4	5	SP	SP	5	SP	SP	5	5	5	SP	9/2	4	5	5	11/2	**6**
2861/12-	1	**Merchant of Dubai**	11/2	SP	5	5	5	SP	SP	5	SP	SP	**11/2**	5	**11/2**	SP	**11/2**	**11/2**	**11/2**	**11/2**	6	**6**
0/7302D-	2	**Moyenne Corniche**	9/2	SP	12	8	**14**	SP	SP	**14**	SP	SP	11	**14**	**14**	SP	**14**	**14**	**14**	12	13	13
697410-	6	**Cracking Lass**	11/2	SP	12	11/2	**14**	SP	SP	**14**	SP	SP	**14**	**14**	**14**	SP	**14**	**14**	**14**	**14**	17	**17**
Place terms (Highlight E/W)				2 1/4	2 1/4		2 1/4	2 1/4	2 1/4	2 1/4			2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4				

Best Price Percentage: **101.6%**, Bookies Only: **105.7%**

source: bookies.com (betgenius)

The favourite-longshot bias

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- The *favourite* is the horse considered most likely to win the race. They have a high probability of winning and low odds.

- *Longshots* are horses considered least likely to win. They have a low probability of winning and high odds.

- However, often we find that there is the **favourite-longshot bias (FLB)**.
  Odds for favourites are higher than what we would expect.
  Odds for longshots are lower than what we would expect.

The favourite-longshot bias

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- This makes betting on longshots relatively unfair.
- For example, on average for each £1 bet, you expect to receive £0.72 back.
- However, for favourites this number is £0.92 and for longshots this number is £0.38.

The favourite-longshot bias

- Why is the FLB important?
  - It violates *rational expectations*
  - It can violate the *efficient market hypothesis*
  - It tells us about the way people make decisions for real
  - In particular, it tells us about how people make **risky decisions**

FLB explanations – demand-side

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- (1) *Bettors love to take risks*
  - bettors prefer to bet on longshots because potential returns are higher

- (2) *Bettors are not good at estimating small probabilities*
  - bettors think low probability events are more likely to occur than they actually are

1. Weitzman, 1965; Ali, 1977, Thaler and Ziemba, 1988.
2. Kahneman and Tversky, 1979, Snowberg and Wolfers, 2010.

FLB explanations – supply-side

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- (1) *Transaction costs*
  - higher costs discourage informed betting (which eliminates the FLB)
- (2) *Bookmakers' defensive pricing policy*
  - insider trading more associated with longshot betting so bookmakers reduce odds on longshots

1. Hurley and McDonough, 1995.
2. Shin, 1991.

Research questions

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- Is there FLB in exchange markets?
- If not, is it because of low transaction costs?
- Is there FLB in bookmaker markets?
- If so, is it because of higher costs or pricing policy (or both)?

Data and method

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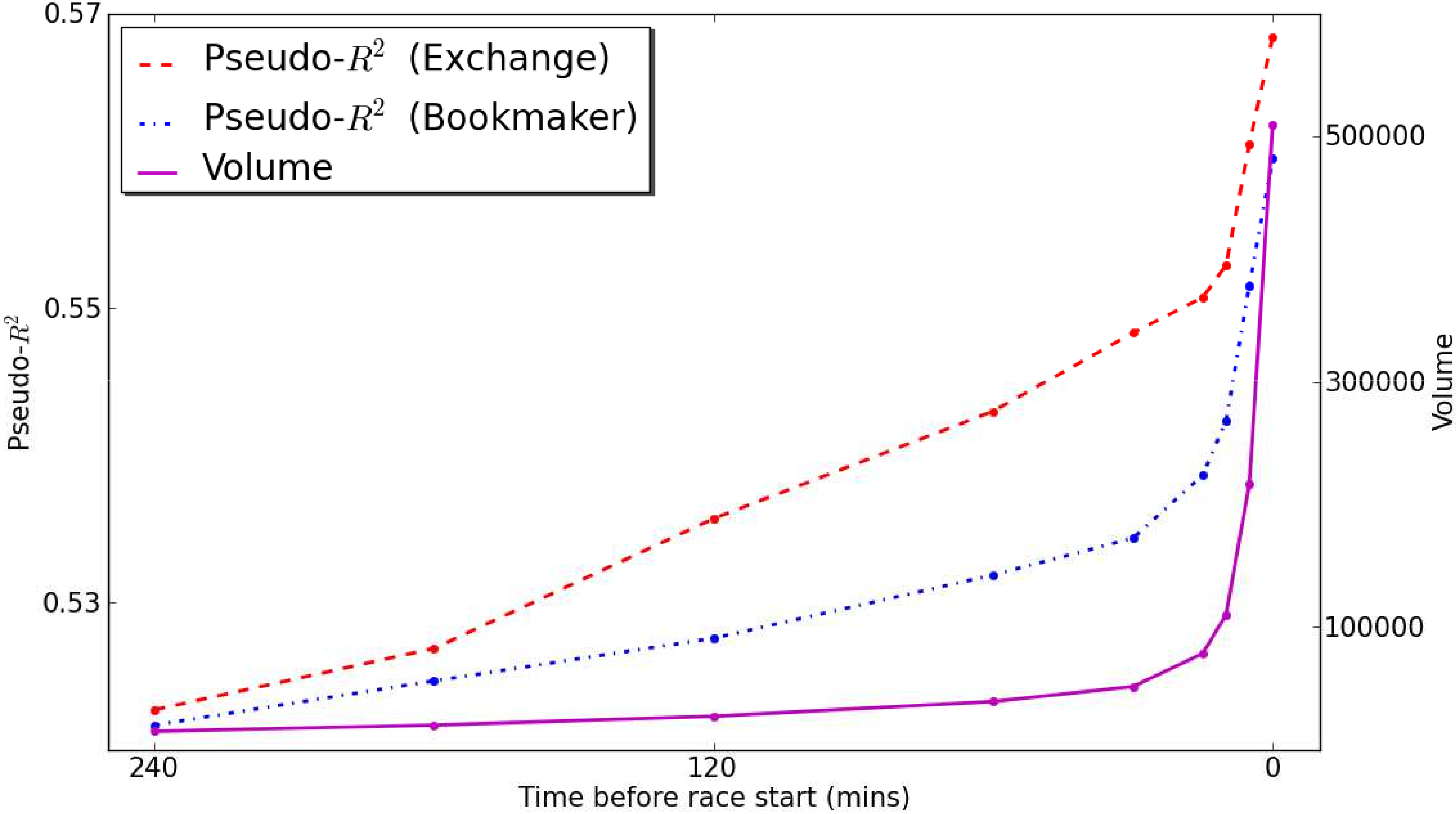
- 6,058 horseraces in the UK and Ireland, August 2009 – August 2010.
- Bookmaker (mean of 9 bookmakers) and exchange (Betfair) odds at different times in the market.
- Measure quantitatively the level of FLB.

Trading volume



Results - FLB over time

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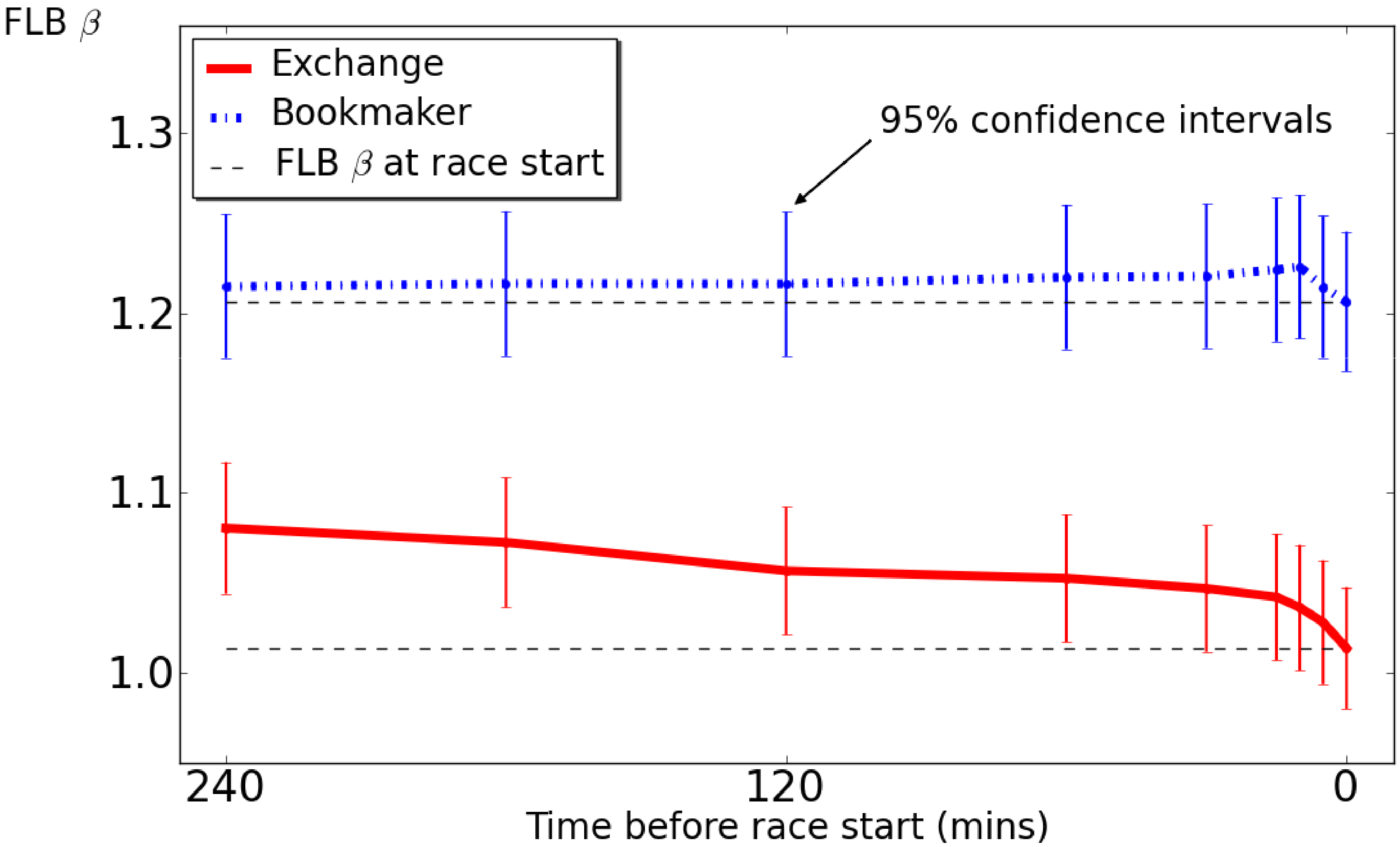

Transaction costs

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Time until race start	Exchange		Bookmakers	
	FLB β	Costs B_e	FLB β	Costs B_b
240	1.080	0.113	1.215	0.198
180	1.072	0.101	1.216	0.207
120	1.056	0.079	1.216	0.214
60	1.052	0.070	1.216	0.217
30	1.047	0.064	1.220	0.217
15	1.042	0.064	1.224	0.200
10	1.036	0.063	1.226	0.190
5	1.028	0.058	1.214	0.180
START	1.014	0.057	1.206	0.181
Corr(β,B)	0.9181*		0.3935	

*: significant at the 1% level (2-tailed test).

Discussion - exchanges

- Significant FLB in early stages – however, costs are higher also.
- FLB is eliminated over time - suggests that exchanges are dominated by informed bettors who bet in a manner which eliminates any FLB which does exist.
- This is possible because costs are low in the later stages of the market.

Discussion - bookmakers

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- Higher costs result in less competitive prices, restricting informed betting.
- FLB present *at all times* throughout the market.
- However, level of FLB not correlated with transaction costs – suggests that transaction costs alone are not enough to explain bookmaker FLB.
- Bookmaker pricing policy is also an important factor (model is in the paper).

Conclusion

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- FLB is now mainly a market (supply-side) phenomenon in the UK.
- Transaction costs are important, but only in the sense that prohibitive costs restrict informed traders.
- Bookmakers' pricing policy is also important, but not necessarily because of insider traders.

Thank you

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- Any questions?
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