

Market Efficiency in Person to Person Betting

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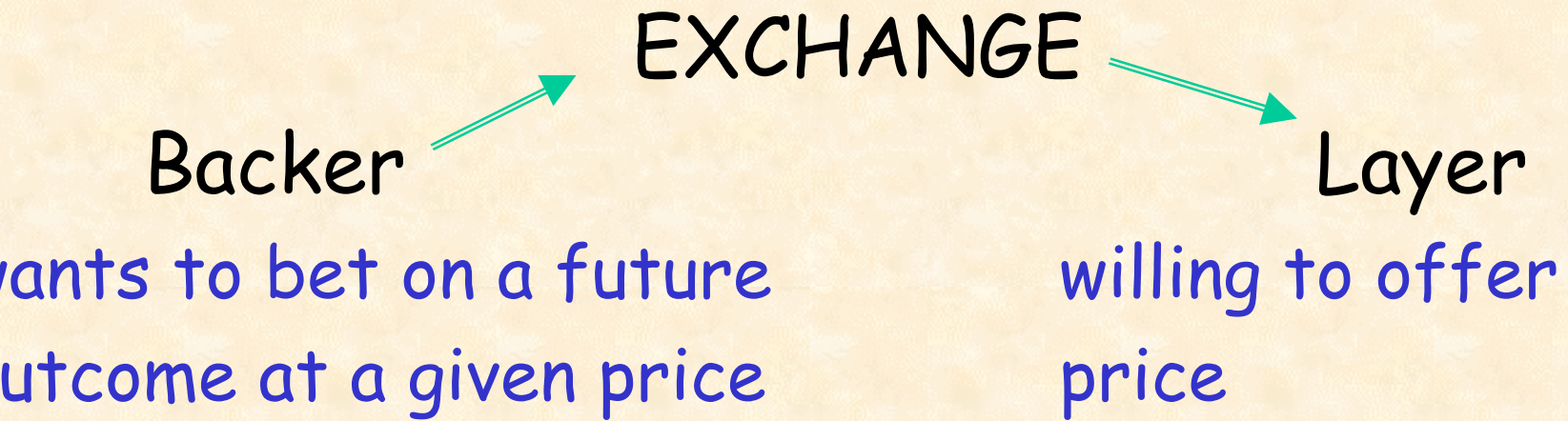
WHAT'S COMING UP?

1. Background
2. Internet betting exchanges
3. Betting market inefficiency
4. Data & methods
5. Results
6. Conclusions

1. BACKGROUND

- Big growth in **person-to-person** wagers.
- Incumbent bookmakers claim **unfair competition** from exchanges. Have called for changes to taxation of betting exchanges.
- Alternative view is **innovation**, leading to lower barriers to entry and transactions costs.
- We compare **market efficiency** in exchange and traditional (fixed odds) betting.

2. Internet Betting Exchanges



Clients are presented with three best odds and takes that are available.

Example from Betfair:

BACK				LAY		
Air Wave	3.4	3.45	3.55	3.6	3.65	3.7
	£368	£87	£714	£84	£338	£930
Ratio	6.6	6.8	7	7.2	7.4	7.6
	£854	£623	£373	£312	£350	£5
Crystal Castle	6	6.2	6.4	6.8	7	
	£303	£300	£409	£195	£275	
Fayr Jag	9.2	9.4	9.6	10	10.5	11
	£295	£444	£693	£586	£284	£193
Acclamation	12	12.5	13	13.5	14	14.5
	£34	£115	£531	£811	£315	£196
Rudis Pet	16	17.5	18	19	19.5	20.5
	£200	£140	£156	£249	£188	£150

Important features of Exchanges:

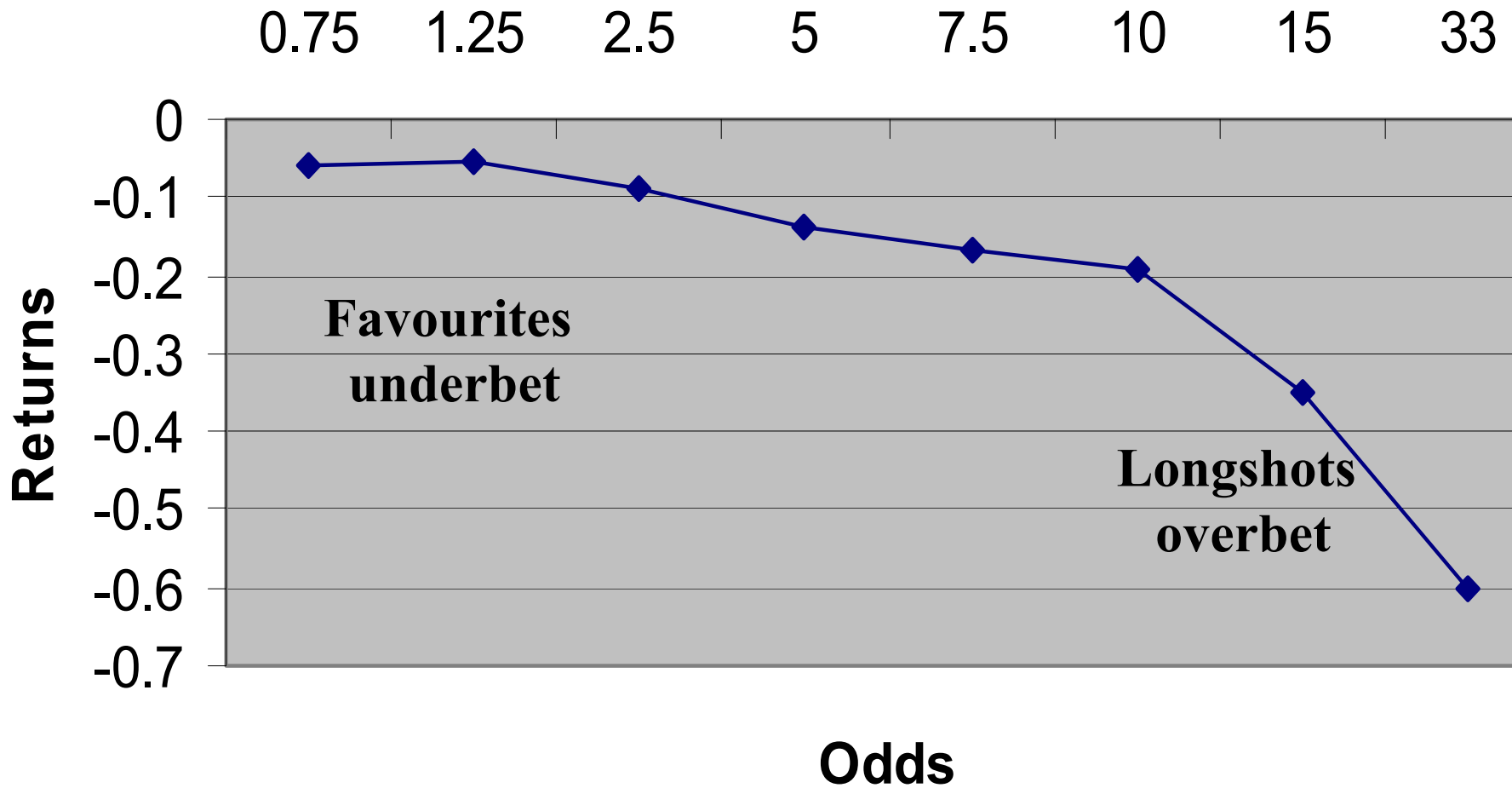
- **Prices can and do change** during course of market.
- Anyone can offer odds. **Competition reduces margins** in the odds.
- Exchange **commission is low** relative to bookmakers 'overround'

3. BETTING MARKET EFFICIENCY

- Long history of exploring betting market inefficiencies, focusing on **FAVOURITE-LONGSHOT bias**:

Bets placed at shorter odds yield higher expected return than bets at longer odds.

Favourite-longshot bias



Derived from bookmaker prices for 12 000 races 2002 (U)

- Traditionally this has been explained as consequence of **risk loving** behaviour of bettors
- Hurley & McDonough: **cost-based explanation** for the bias. Higher are transactions costs, higher is F-L bias.
- Transactions costs are **lower** in **exchange** markets than traditional betting.
- Implication:
F-L bias should be **lower** in exchanges than in traditional markets

Information costs are integral to this explanation of the bias

High transaction costs imply better information required to achieve positive returns

For lower levels of information one would expect a **higher** proportion of "casual bettors" & a greater degree of F-L bias

4. METHODS & DATA

- Use Shin's (1991) empirical model to estimate degree of bias in exchange & traditional markets - same set of horse races.
- Compare degree of bias with:
 - (a) different levels of transaction cost (bookmakers "over-round", exchanges commission);
 - (b) different levels of public information

DATA

- Internet **bookmaker** prices for 799 UK horse races in 2002.
- **Mean** and **outlier** bookmaker price selected.
- Equivalent **exchange prices** from Betfair.
- Both sets taken **simultaneously**, early in market
- Restricted to markets with **high liquidity**.
- Races divided into **4 classes**: 1 - low grade to 4 - highest grade.

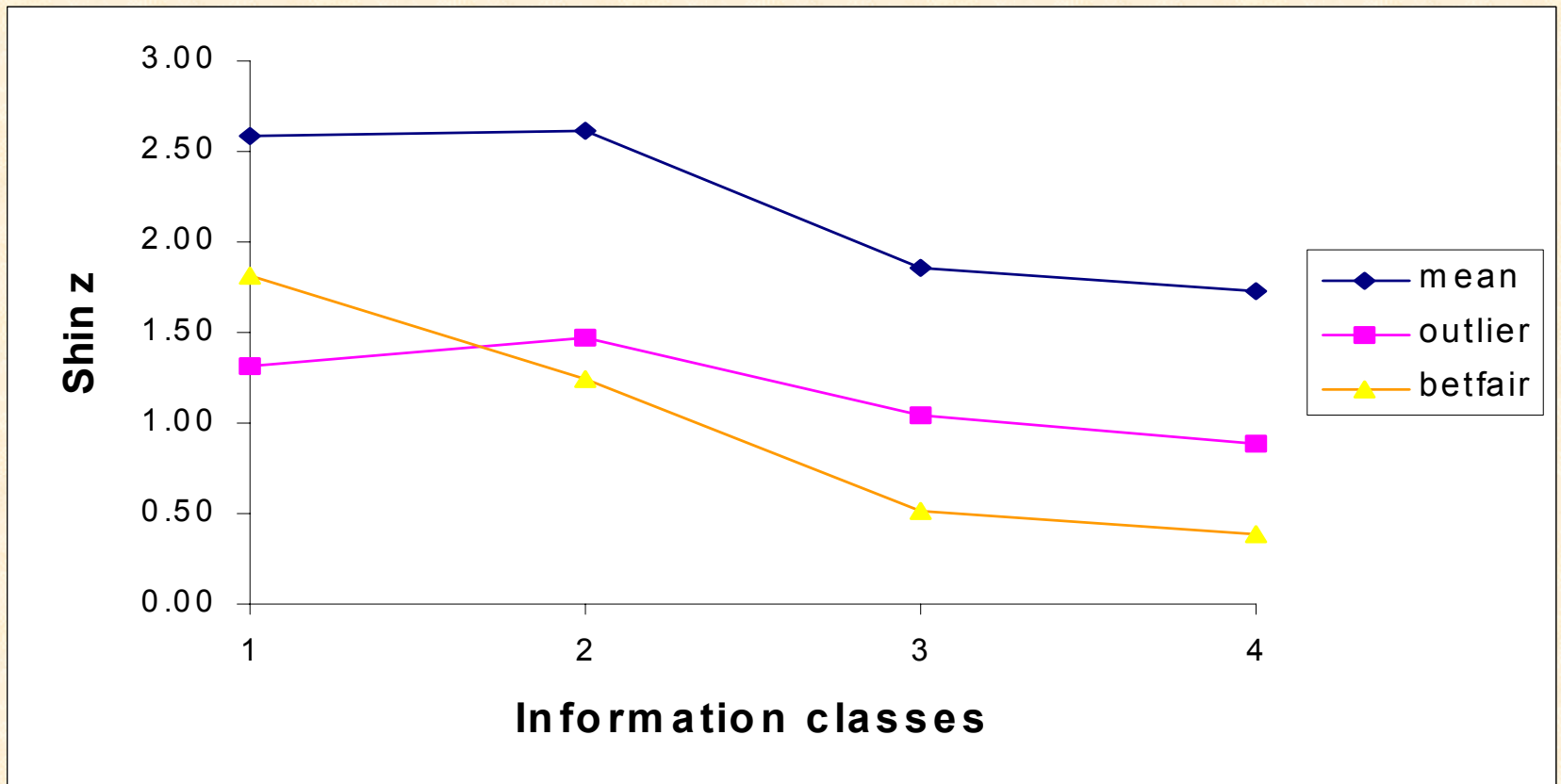
- Estimate "Shin's z " - the degree of bias

Shin modelled bookmaker behaviour as a function of the number of runners & their probabilities of winning: z is a coefficient from this model measuring the percentage of turnover associated with "insider information" - proxy for bias

- Estimate for **three prices**: mean, outlier and Betfair and for each information class

5. RESULTS

Figure 1: Degree of bias for mean, outlier, and Betfair prices



Results (previous slide) support an **information based** explanation of the F-L bias:

The market with **high transaction costs** (bookmaker mean prices) exhibits the **greatest degree of bias**

The exchange exhibits **little evidence** of bias - therefore **efficiency gains**

Increased levels of information associated with **lower bias** in mean, outlier and betting exchange

6. CONCLUSIONS

- Betting exchange markets display **high degree of efficiency** relative to traditional bookmakers.
- Results consistent with **transaction cost explanation of the F-L bias**. More generally the importance of **publicly available information** for efficiency.
- Evidence that this **innovation in betting**, facilitated by new technology, is associated with **efficiency gains**. Implications for taxation of betting exchanges and bookmakers.
- **Little evidence to support sympathetic policy response** to claims of unfair treatment from incumbent bookmakers.