Predictability and impact

The effect of OFT investigations on stock prices

David Stallibrass

Mario Mariniello

Aim

To determine what stock market data can tell us about the predictability and impact of OFT decisions under the Competition Act 1998.

Own opinions, do not represent OFT

Contents

- **Event studies**
- Methodology and hypothesis
- Results
- Discussion

Event studies

Stock market data

- Efficient market hypothesis:

  Value of stock = investors' expectation of net present value of future stream of dividends = current assets + future profits

- OFT impact on stock price
  - Fines, legal costs, lost profit from illegal activity
  - Drop in brand value / loyalty
  - Information on management team

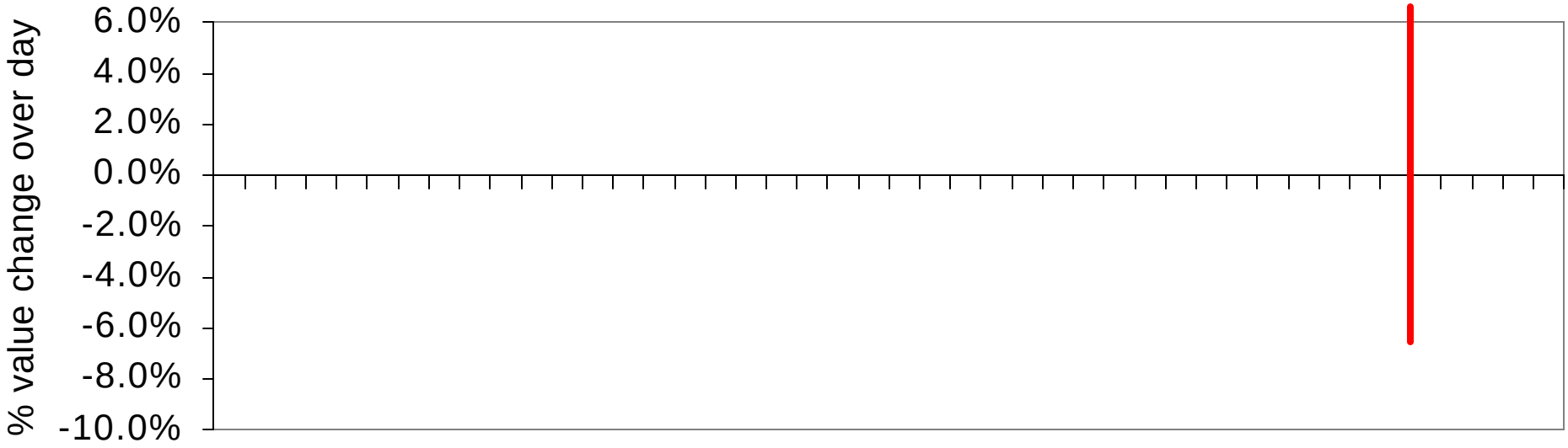
Event studies

Literature review

- Methodology: Campbell (1997)
- Bosch, Eckard (1991): US dataset. Share price drop 1% on indictment
- Langus, Motta (2006, draft): EU dataset. Share price drop 2.7% on announcement of investigation.
- Also used for analysis of mergers by Dusso, Roller, Neven (2003).

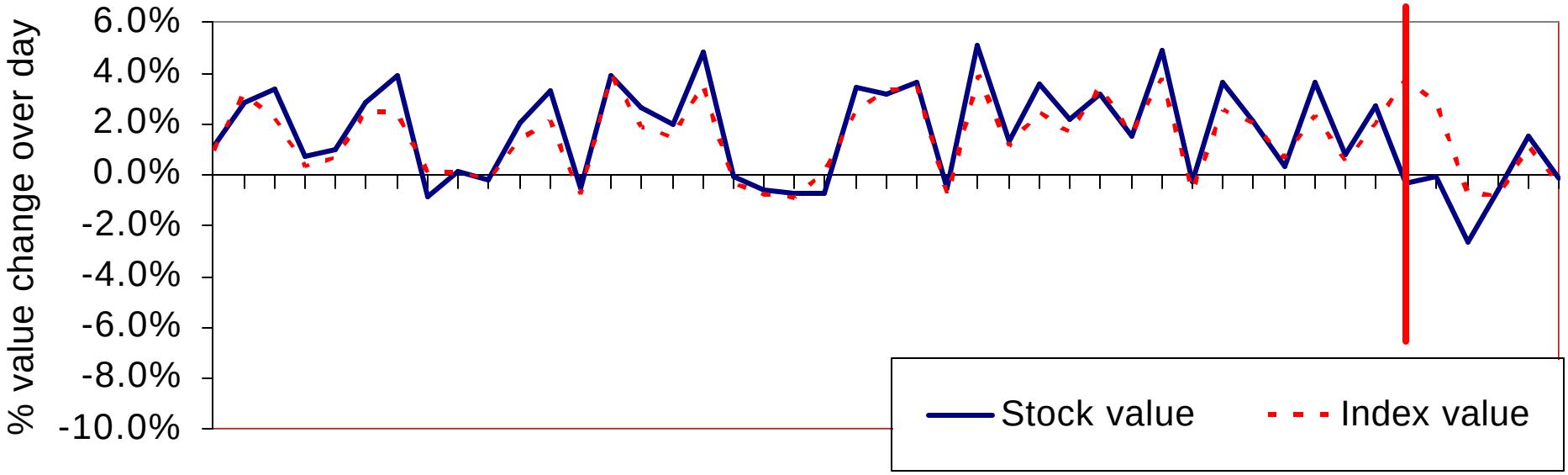
Event studies

Standard methodology



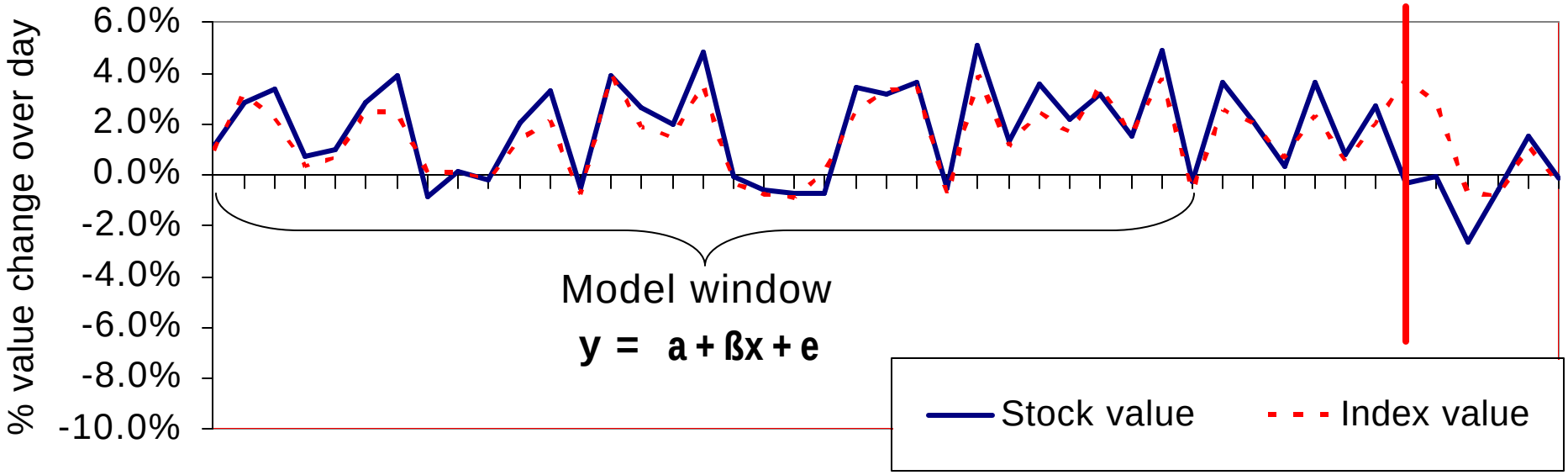
Event studies

Standard methodology



Event studies

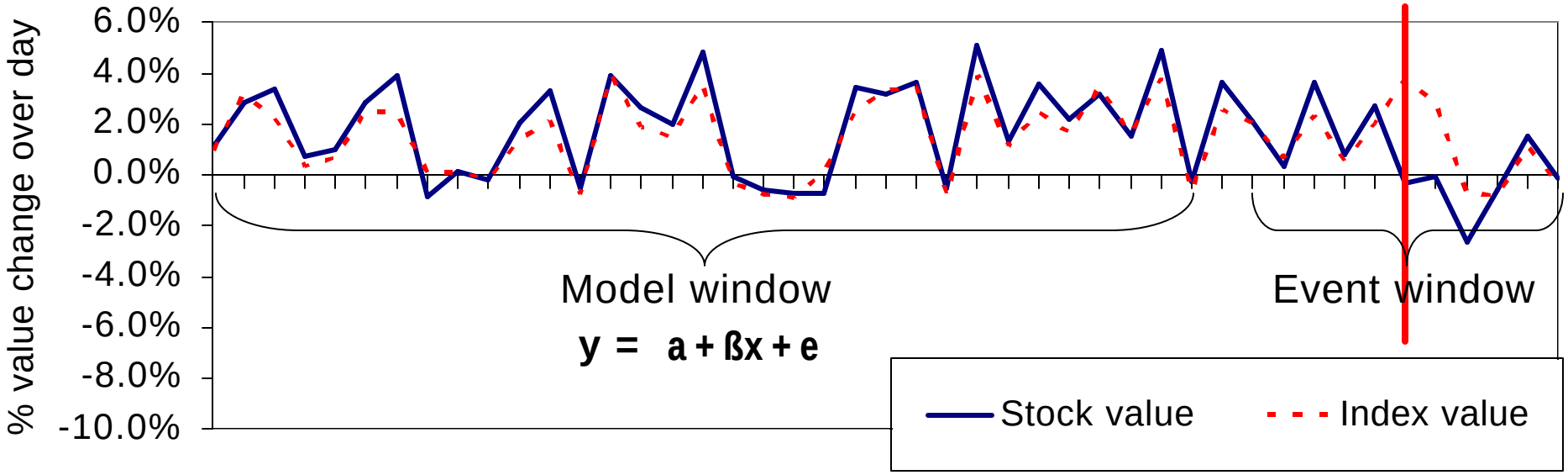
Standard methodology



- Long enough for high efficiency
- Near and short enough to be relevant
- Follow Motta & Langus (t-30 to t-130)

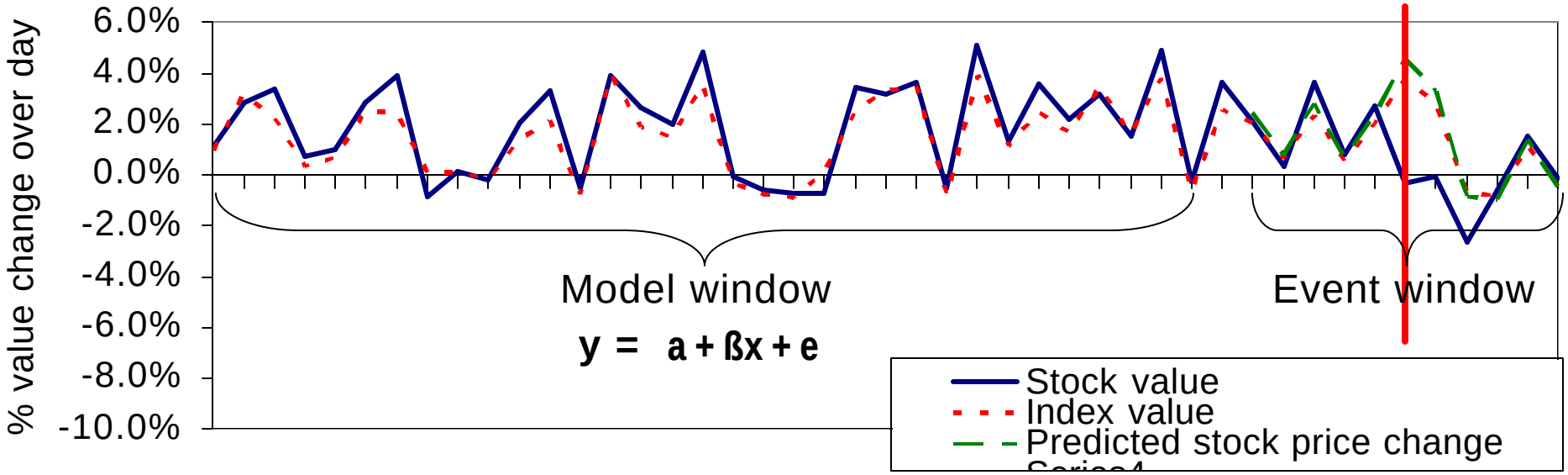
Event studies

Standard methodology



Event studies

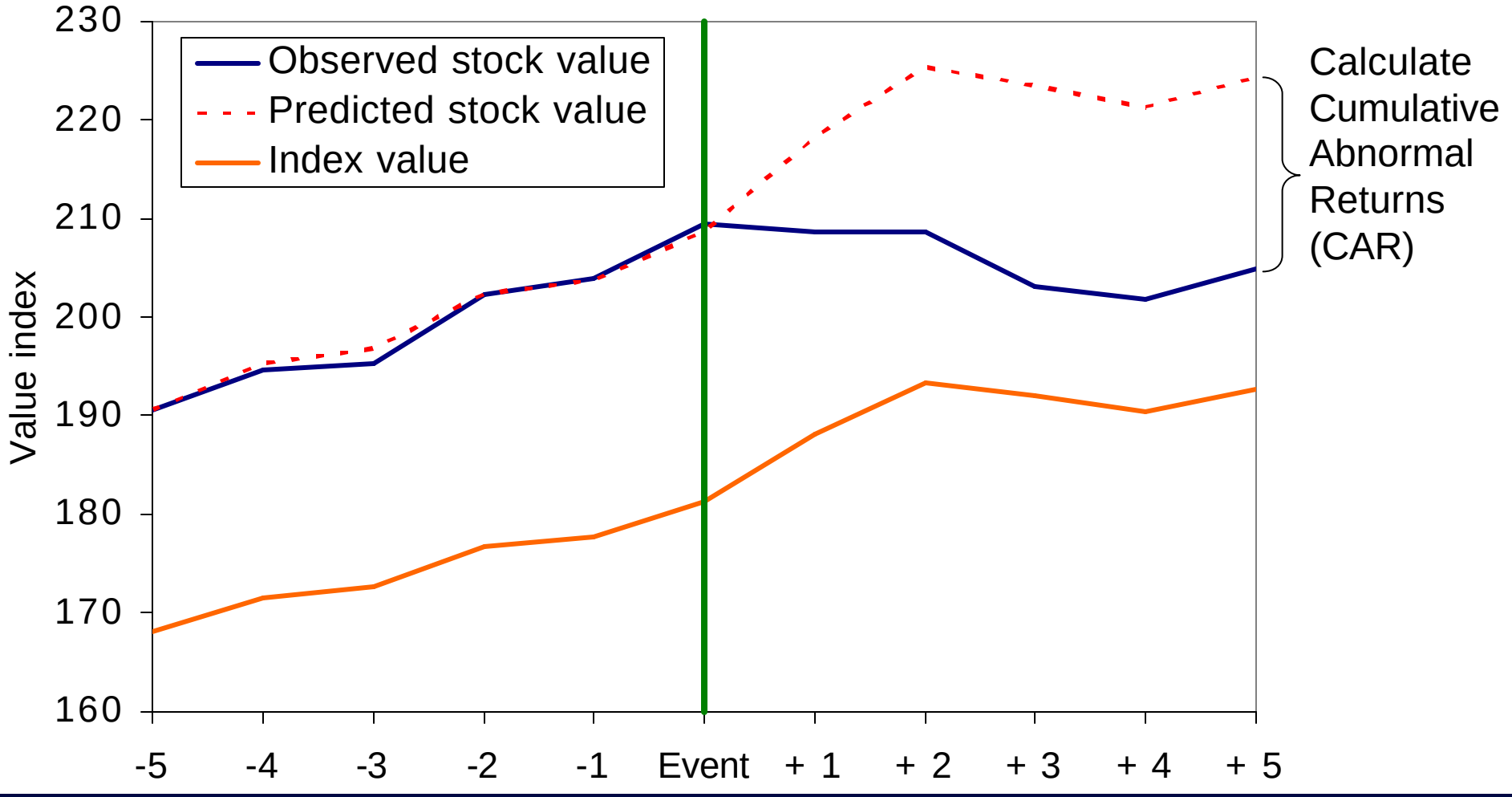
Standard methodology



- Capture short term runs and rebounds
- Event at centre of the window
- Follow Motta & Langus (t-5 to t+5)

Event studies

Standard methodology



Event studies

Summary

1. Estimate relationship between changes in stock value and changes in index value over **model window**.
2. Use estimated relationship to predict stock value over **event window.**
3. Compare divergence of predicted and actual stock movements to determine if event has effected stock.

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Methodology

Sample selection

- Publicly traded or is a subsidiary of at least 10% of turnover;
- Traded at the time of the event and trading not suspended during windows;
- Evidence from Westlaw to check information release.
- The decision or intervention was made by the OFT.
- **10 firms from 7 cases and a total of 31 discrete events.**

Methodology

Predictability hypothesis

- Share price reaction to event → not priced in by investors → not fully predicted
- No share price reaction → **either** predicted by investors **or** event of insignificant impact

Event	Announcement	Final decision
Prediction	Surprise	Expected
Observation	Share price drop	No share price drop

Methodology

Impact hypothesis

- Compare share price impact with fine, estimates of lost profits.
  - If fine << share price impact then question importance of fine as deterrent
  - If fine + lost profits << share price impact then loss of value via other mechanisms

Prediction	Fines small part of impact	Lost profit small part of impact
Observation	Fines << share price impact	Lost profit << share price impact

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Results

	Initial announcement [1]		Leniency [2]		SOO		Final Decision		
	CAR	t stat	CAR	t stat	CAR	t stat		CAR	t stat
JJB	**-19.6'''**	**-2.4**	**-11.1'**	**-1.4**	**-10.6'**	**-1.2**	Infringe	9.3	0.9
JD	**-13.1''**	**-1.6**	-5.3	-1.1	4.4	1.0	Infringe	**-20.2'**	**-1.4**
Blacks	-7.3	-0.7	10.8	1.3	6.7	1.0	Infringe	-2.6	-0.5
First Group	-1.8	-0.1					Leniency	4.7	0.4
Arriva	**-21'**	**-1.4**	-0.8	-0.1			Infringe	-2.9	-0.4
Wiseman	-4.5	-0.6			**-10'**	**-1.4**			
Keller (Makers)	-3.9	-0.4			0.7	0.1	Infringe	0.1	0.0
DSGI							Clear	-2.1	-0.2
Arena [3]					-12.9	-1.1	Blocked	-7.4	-0.8
BSkyB 1					**-14.1''**	**-1.7**	Clear	3.1	0.3
BSkyB 2 [3]	**-18'''**	**-2.3**					Blocked	-3.6	-0.9
British Airways 1							Clear	-6.4	-0.7
British Airways 2	-5.3	-0.9							

Notes:
Significance: 1 tailed tests. ‘ = significant at 90% confidence, ‘’ = significant at 95% confidence, ‘’’ = significant at 99% confidence
[1]: Model window runs from -20 to -106 days for all firms.
[2]: Model window runs from -30 to -124 days for all firms
[3]: Arena/BskyB was a mandatory notification under the regime prior to the Enterprise Act 2002. The proposed agreement was blocked. Initial Announcement refers to first announcement by OFT of intention to block agreement.

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British Airways 1							Clear	-6.4	-0.7
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Notes:

Significance: 2 tailed tests. ‘ = significant at 90% confidence, ‘’ = significant at 95% confidence, ‘’’ = significant at 99% confidence

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[2]: Model window runs from -30 to -124 days for all firms

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Results

Look for a sign



Results

Look for a sign

Event	Announcement	SOO	Final decision
Negative observations	9	4	7
Total observations	9	7	11
Probability if random	0.002	0.273	0.161

UNPREDICTED **PREDICTED**

Results

One firm case study

Case details

Firm name	JJB Sports
Case name	Replica Football Kit

Timeline of share price reactions

Dawn Raid	Leniency	SOO	Final decision
↓	→	→	→ (infringement)

Cumulative impact of investigation

Share price	Loss of value	Loss of profits	Fine
-20%	~ £180m	£20m - £50m	£8.37m

Results

Fines and noise

Firm name	St. Dev. of daily returns	Current market cap. (£m)	St. Dev. of daily valuation changes (£m)	Fine (£m)
JJB	3.1%	600	18	8.4
JD	4.2%	200	8	0.1
Blacks	1.5%	130	2	0.2
Arriva	2.0%	1,500	30	0.2
Keller (Makers)	2.0%	650	13	0.5
Microsoft	2.2%	268,000	5,896	330

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Discussion

Predictability

- Share price reaction at announcement
- No reaction at final decisions
- Final decisions predicted

Impact

- Share prices very noisy - case by case estimates tricky
- Fines very small

Discussion

Event studies

- Very noisy data
- Only picks up big events
- Question over rational stock market hypothesis

OFT and legislation

- Good on predictability
- Fines far too small
- Not many cases

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www.oft.gov.uk

david.stallibrass@oft.gsi.gov.uk