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The Effect of Analyst Forecasts on Broker Market Share: New Evidence

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Outline

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2. Summary of Results
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Motivation and Contribution



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- Stockbroking industry has 2 models
 - Full service brokers – provide research but charge higher brokerage commissions
 - Discount brokers – no research and only transaction services but charge lower brokerage commissions
- Irvine (2004) provides evidence for one year from 1993 on the short-run relationship between broker market share and analyst reports for the largest 96 stocks in Canada
- Irvine's findings have informed subsequent research (Chen and Jiang 2006; Kadous et al 2006, Ljungqvist et al 2007)



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Motivation and Contribution

- The period of Irvine's analysis precedes the growth in internet based trading
- Australian study over the period 1998 to 2004 for ASX300 stocks
 - Examines this relationship through a bull and bear market
 - During the period when internet trading and the role of discount brokers became more important
 - Provides evidence from another market to that of Canada
 - Addresses some methodological issues in Irvine's paper.



Summary of Results

- Compared to Irvine (2004), we find *occasional* evidence of broker market share responding to release of analyst forecasts in the short term but it is *not consistent*.
- Evidence consistent with Irvine appears to be related to *periods of high market volatility* and the *finance industry*.
- The evidence appears to be dependent on using the '*raw*' measure of broker market share.

Literature Review



MARKET WIDE STUDIES

- Womack (1996)
 - recommendation changes lead to a doubling of trading volume for “added to buy” and a trebling of volume for “added to sell”.
- Green (2006)
 - Larger sample of 7000 recommendations from 1999 to 2002
 - On release date, volume is double the previous day
- Agrawal and Chen (2008)
 - Found that the more conflict of interest there is (investment banking versus broking), the smaller (larger) is the volume response to a recommendation upgrade (downgrade)



Literature Review

INDIVIDUAL BROKER STUDIES

- Market wide studies have limited ability to identify the **direct** benefit for brokers making a forecast or recommendation
- Require data at the level of the individual broker
- Owing to the difficulty of obtaining data, there are only 3 studies:
 - **Irvine (2000)** – Canadian data and examines long run relationship
 - **Jackson (2005)** – Australian data and examines long run relationship
 - **Irvine (2004)** – Canadian data and examines short run relationship



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Literature Review

Irvine (2000)

- Canadian data from September 1993 to August 1994
- Examines the 100 largest stocks for 22 stockbroking firms
- Focus is on annual rather than daily market share
- Found that broker market share is positively related to its coverage decision
- Robust to various proxies for trading volume

Literature Review



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Jackson (2005)

- Larger and longer dataset for Australia
- 350 firms over the period 1992 to 2002 for 23 broking firms
- Found 3 main results:
 - Higher is analyst reputation, greater is the broker's future annual market share
 - More optimistic analysts generate higher trading volume
 - More accurate an analyst forecast, the higher is the analyst reputation

Literature Review



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Irvine (2004)

- Short term study of broker market share to the release of a broker report at the individual broker level
- Same sample period and firms as in Irvine (2000)
- Final sample consists of 835 analyst forecasts and recommendations for 96 firms and 15 stockbroking firms

Literature Review



Irvine (2004 –cont'd)

- Main findings are:
 - Greater the gap between analyst forecast and consensus forecast, the greater is the broking firm's share of trading (**ABSDEV**)
 - Greater the uncertainty surrounding an analyst forecast, the lower is the impact on market share (**UNC**)
 - Level of investment recommendation has an impact on market share
 - Buy recommendations generate a higher market share on both the buy and sell side



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Literature Review

Irvine (2004 –cont'd)

Issues:

- Trading volume only represents 55% of the trading in those firms
- Only top 100 firms for one year of data
- Main measure used for trading is the share of the recommending broker in trading of the stock
 - Noisy
 - Analogous to using raw returns (*cf* abnormal returns) to measure price response



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Data

- Analyst and broker data from I/B/E/S for period January 1998 to December 2004
- Daily total volumes and values; buy, sell volumes and dollar value for each broker and each of the ASX300 firms were downloaded from the Broker Share History file on IRESS
- We use volumes and dollar value for all brokers not just the full service brokers
- Sample consists of 5028 forecasts and 375 firms over a seven year period

Research Design - I



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Variable Definition:

- Mainly follow Irvine (2004)
- Daily Broker market share (dependent variables)

$$MKTSHARE_{j,t}^k = \frac{Volume_{j,t}^k}{\sum_{j=1}^J Volume_{j,t}^k}$$

$$SUMSHARE = \sum_{t=0}^5 MKTSHARE_{j,t}^k$$



Research Design I

- Abnormal market share (dependent variables)

$$ABMKTSHARE_{j,t}^k = MKTSHARE_{j,t}^k - \left[\sum_{\tau=-40}^{-21} MKTSHARE_{j,\tau}^k / 20 \right]$$

$$ABSUMSHARE = \sum_{t=0}^5 ABMKTSHARE_{j,t}^k$$



Research Design I

- Main Independent variables

$$ABSDEV_{j,t}^k = \frac{|F_{j,t}^k - \bar{F}_t^k|}{P_t^k}$$

$$UNCERTAINTY = \left(1 - \frac{1}{N}\right) D + SE$$

- D is sample variance of analysts forecasts
- SE is the sample squared error in consensus forecasts



Research Design - II

Regression model and testing

- Our regression estimation techniques and research design mainly follow Irvine (2004) at the initial stages
- Main regressions are below and these were the primary tests of Irvine (2004):

$$SUMSHARE = a + b_1ABSDEV + b_2UNCERTAINTY + b_3DFIN \\ + b_4DIND + e$$

$$SUMSHARE = a + b_1ABSDEV + b_2UNCERTAINTY + b_3DFIN \\ + b_4DIND + b_5BUY + b_6SELL + e$$



Table 1 –Summary Statistics

	Mean	Median	Standard Deviation
<i>ABSDEV</i>	0.0693	0.0039	1.7627
<i>UNCERTAINTY</i>	0.1043	0.0008	1.9882
<i>MCAP (A\$mil)</i>	4,001	1,109	7,806
<i>SUM(0,+5)</i>	0.3361	0.1961	0.4143
<i>SUM(-5, -1)</i>	0.2808	0.1503	0.3622
<i>ABSUM(0,+5)</i>	0.0067	-0.0087	0.3429
<i>ABSUM(-5, -1)</i>	0.0072	-0.0126	0.2699

Main results



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- Table 2 (both post- and pre-event period)
 - Overall sample period AND for all firms (ASX300) and large (ASX100) firms
 - When the dependent variable is *SUMSHARE* and *ABSUMSHARE*, both *ABSDEV* and *UNC* are insignificant

MAIN INDEPENDENT VARIABLE ARE INSIGNIFICANT

Summary of main results



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- **Table 3 (post event period)**
 - Partitioned by calendar years and for all firms
 - Both *ABSDEV* and *UNC* are significant when the dependent variable is *SUMSHARE* and *ABSUMSHARE* but only for the years 2001 and 2002. This is consistent with Irvine's results.
- **Table 4 (post event period)**
 - Partitioned by calendar years and large firms
 - *ABSDEV* is generally insignificant except for 2002 and using *ABSUMSHARE*
 - *UNC* is generally insignificant except for 1999 and 2004 for *SUMSHARE* and 1998 for *ABSUMSHARE*

MIXED RESULTS

Summary of main results



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- **Table 5 (pre-event period)**
 - Partitioned by calendar years and all firms
 - Only year consistent with Irvine(2004) is 2001, when both *ABSDEV* and *UNC* for the *ABSUMSHARE* dependent variable is significant
 - When we used *SUMSHARE* for 2001, neither *ABSDEV* nor *UNC* is significant.
- **Table 6 (pre-event period)**
 - Partitioned by calendar years and large firms and for the pre-event period
 - *ABSDEV* is never significantly positive as found in Irvine (2004)
 - *UNC* is negatively significant for different years and different measure of broker market share.

Mixed and inconsistent results



Summary of main results

- **Table 7**
 - **Post-event period:** *ABSDEV* and *UNC* are significant but driven by high volatility markets when the raw measure is used.
 - **Pre-event period:** it appears that again driven by high volatility markets when the raw measure is used though for *ABSDEV* it is significant when the ‘abnormal’ measure is used.

Summary of main results



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•Table 8

- Industry analysis that shows that it is the finance industry when the raw measure (*SUMSHARE*) is used to produce the predicted sign and statistical significance for *ABSDEV* and *UNC*.
- All the analysis was re-done with the following equation and produced results that were qualitatively similar

$$\begin{aligned} \text{SUMSHARE} = & a + b_1\text{ABSDEV} + b_2\text{UNCERTAINTY} + b_3\text{DFIN} \\ & + b_4\text{DIND} + b_5\text{BUY} + b_6\text{SELL} + e \end{aligned}$$

Summary of main results



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- **TABLE 9**
 - Tobit analysis is used for the raw measure of market share
 - Similar results as found using OLS technique used by Irvine (2004)