



The Information Content of Trading Volume and Short Sales

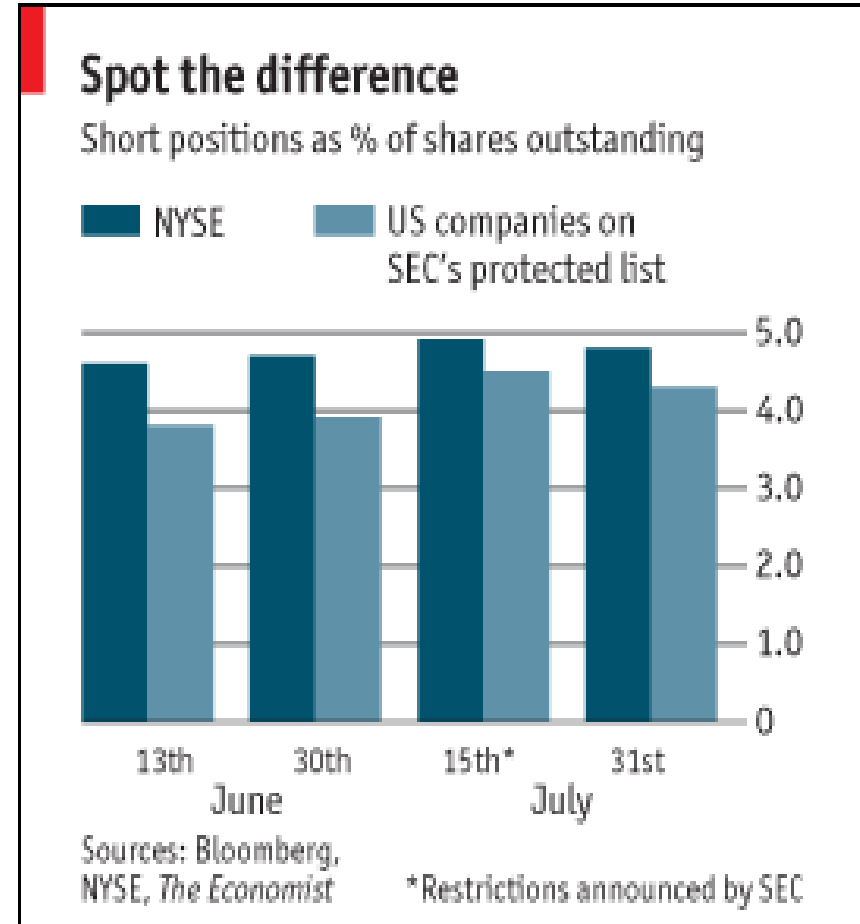
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Short Selling: The Phantom Menace

- 15th July – 12th August SEC ban on naked short selling in 19 Financial Firms
- Strong rhetoric from SEC against “Manipulation”
- For the 9 US firms on the SEC list, aggregate short positions fell slightly
- If the 19 stocks had higher risk profiles (hence the SEC action) they should have REALLY outperformed the markets
- Prices may also react more slowly to the ban on short sales, meaning that the market is less efficient with respect to inflation.



Source: The Economist, August 14th 2008.

Short Selling: The Phantom Menace

- National Australia Bank
 - Share Price fell (Nov 07 \$44.84 - Feb 08 \$28.59)
 - ABC Learning
 - Feb. 26, 2008 share price fell 70% on opening
 - “rallied” to close 43% down.
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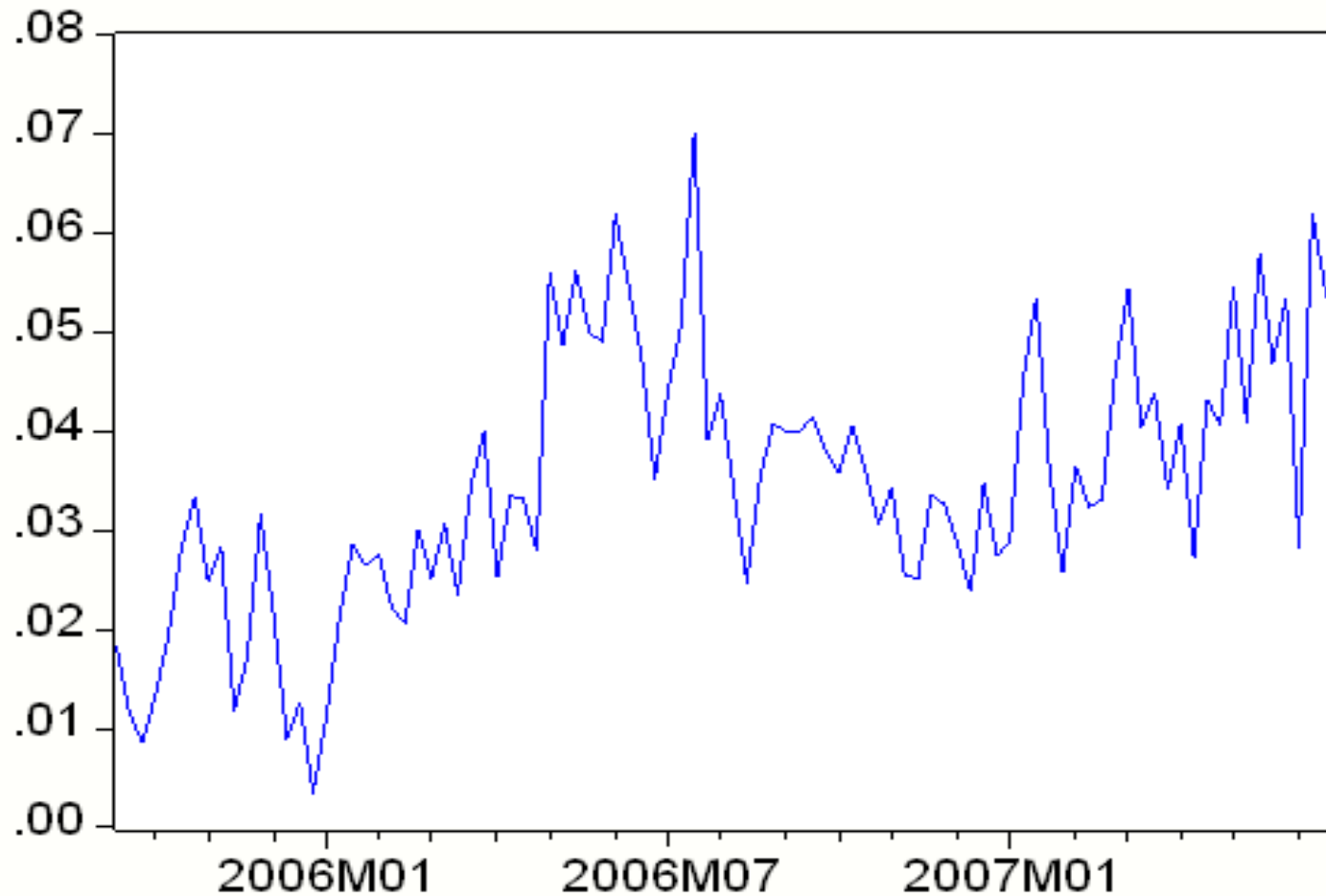
Introduction

- Traditionally, prices assumed to be the channel via which information was transmitted to the market.
 - Recent research has identified other agents in the price discovery process.
 - Trading Activity
 - Trading Volume
 - Volume has been found to convey information:
 - Price signals conditioned on volume are more informative.
 - price movements persist
 - changes are driven by information.
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Why Hong Kong?

Median Relative Short Sales



Why Hong Kong?

- Open, transparent and liquid order book market.
 - Large number of stocks are eligible for short selling.
 - Short Sales are identified by the broker at the time they are entered into the order book.
 - Reports are made available the following day.
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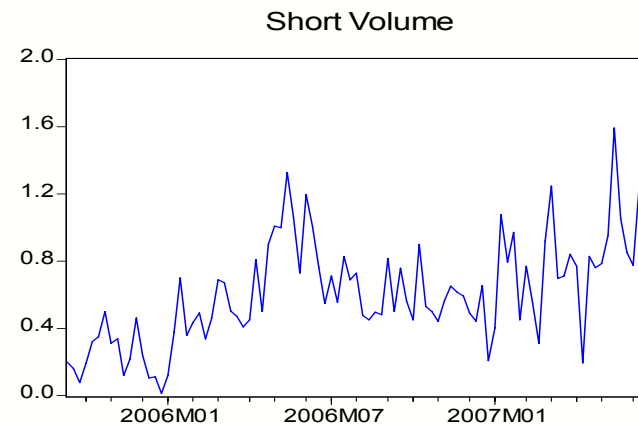
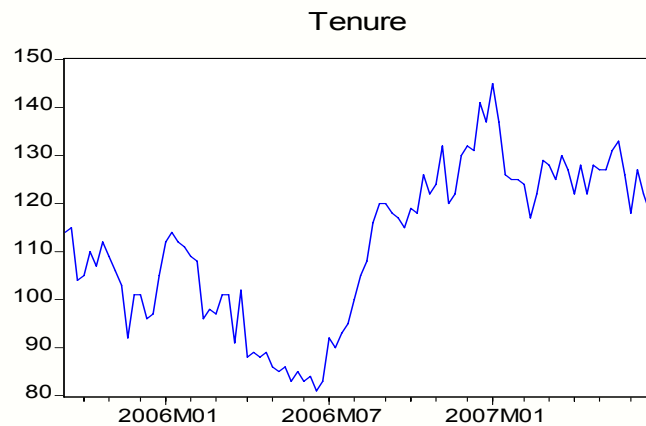
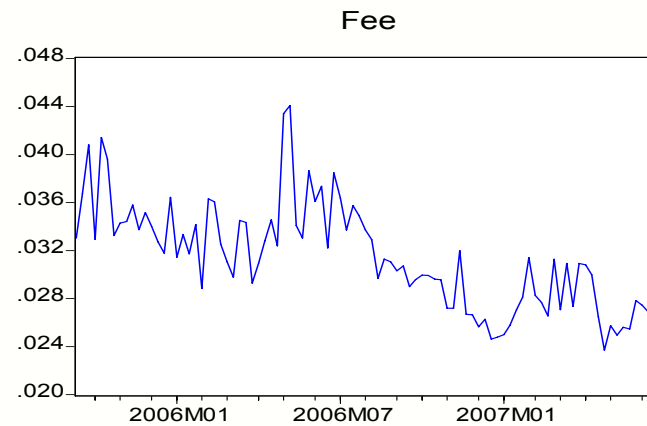
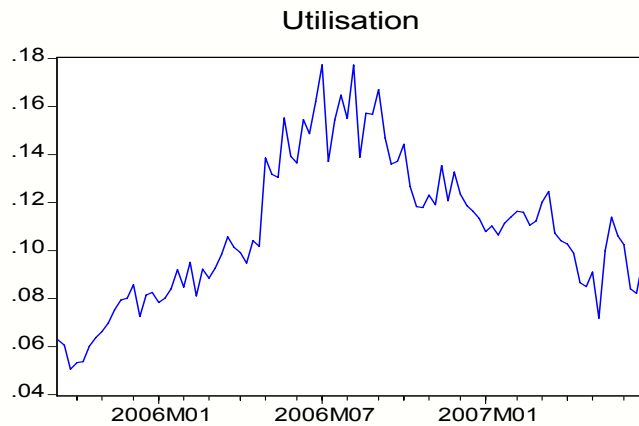
Why Hong Kong? Market Data

SHORT SELLING TURNOVER - DAILY REPORT

CODE	NAME OF STOCK	Total Short Selling Turnover		Total Turnover	
		(SH)	(\$)	(SH)	(\$)
1	CHEUNG KONG	754,000	87,287,500	7,497,518	869,964,237
2	CLP HOLDINGS	1,075,000	66,000,250	5,516,053	338,747,633
3	HK & CHINA GAS	444,000	9,624,750	9,521,267	206,520,429
4	WHARF HOLDINGS	1,129,000	47,106,000	7,155,028	299,524,995
5	HSEC HOLDINGS	1,997,600	224,412,880	29,653,630	3,326,378,814
6	HK ELECTRIC	568,000	24,830,900	3,614,960	158,381,500
8	PCCW	682,000	3,007,050	5,549,002	24,514,977
10	HANG LUNG GROUP	46,000	1,654,850	847,426	30,390,755
11	HANG SENG BANK	253,900	34,506,390	3,776,838	514,675,807
12	HENDERSON LAND	748,000	46,407,400	6,675,345	414,600,742
13	HUTCHISON	1,503,000	109,056,600	7,706,017	561,367,777
14	HYSAN DEV	125,000	2,618,000	2,300,561	48,157,829
16	SHK PPT	1,991,000	274,858,600	9,713,765	1,344,229,149
17	NEW WORLD DEV	1,329,000	27,938,700	22,166,073	465,644,843
19	SWIRE PACIFIC A	1,189,000	114,336,800	6,703,830	645,855,786
20	WHELLOCK	69,000	1,557,500	1,448,581	32,680,628
23	BANK OF E ASIA	870,800	35,872,480	8,394,618	344,865,491

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Why Hong Kong? Dataexplorers data



Some initial results

$$er_{it} = \alpha_0 + \sum_{j=1}^n \alpha_j X_j + \sum_{k=1}^{11} \beta_k D_k + \varepsilon_t$$

- For Hong Kong, the information content of total volume is quite limited.
 - Distinguishing between short and all other trading volume:
 - Short sales volume has significant explanatory power
 - All other volume does not.
 - Higher short sales means lower returns in the next period.
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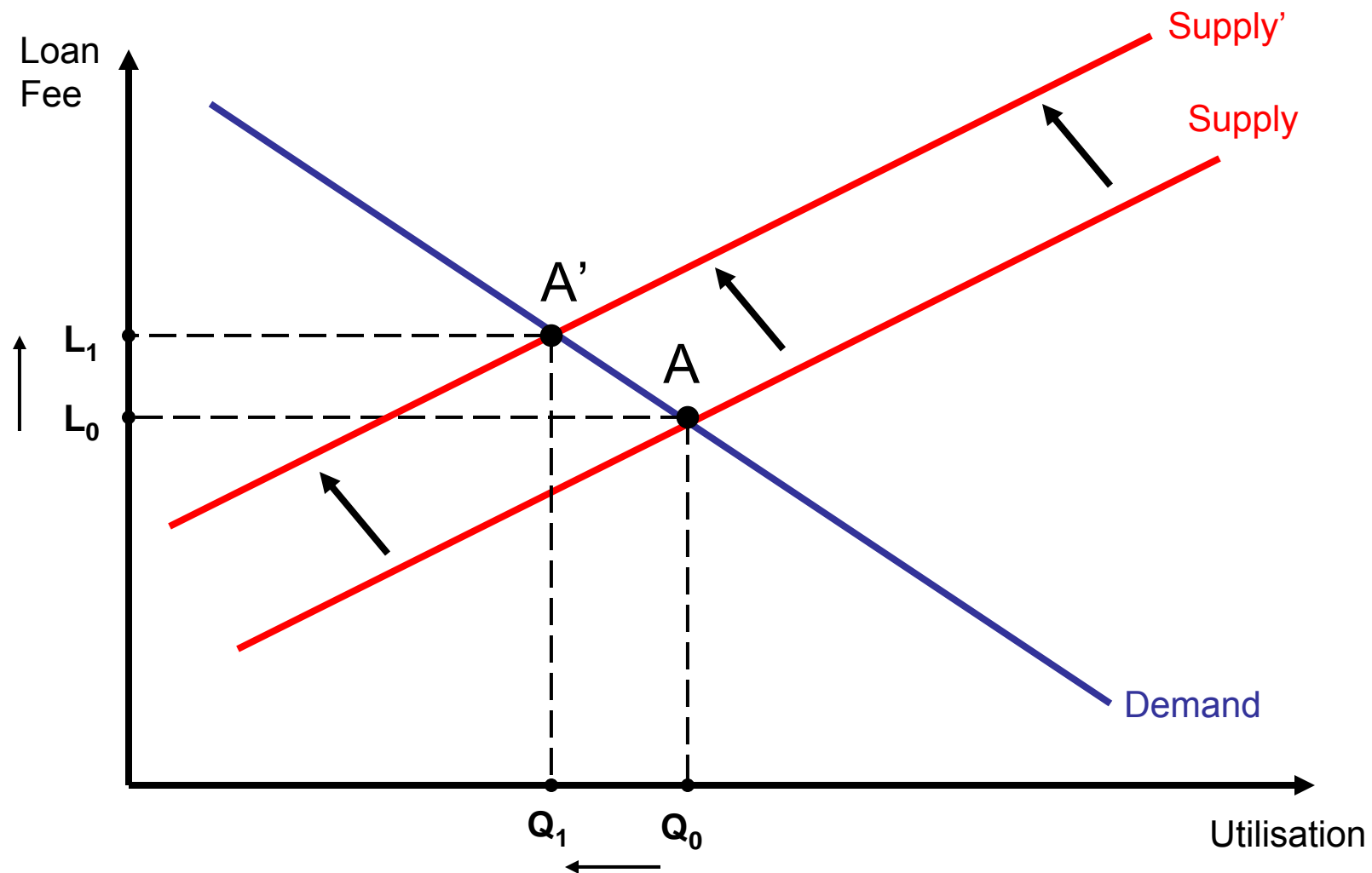
Table 2
Baseline Regressions

This table presents the estimation results for the equation $er_{it} = \alpha_0 + \sum_{j=1}^n \alpha_j X_j + \sum_{k=1}^{11} \beta_k D_k + \varepsilon_t$, where er_{it} is the excess return of stock i on week t , X is a vector of j independent variables that may influence the change in the price of a stock, D are monthly dummy variables, α and β are parameters to be estimated and ε_t are the errors, which are assumed $\sim N(0, \sigma^2)$. The vector of independent variables includes lagged volume (vo(-1)), lagged weekly, monthly and yearly returns (r(-1, -4, -52)), a dummy variable indicating a high and mid-level of institutional ownership (IO1, IO2), contemporaneous and lagged volatility (σ , $\sigma(-1)$), a dummy variable signifying the presence of traded options on that stock (O_Dum), and lagged long (lv(-1)) and short sales volume (ss(-1)).

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
vo(-1)	0.0757* (1.58)	0.1000* (1.80)	-0.0757* (1.28)	-0.0878* (1.40)	-0.0996* (1.42)	-0.0115* (1.40)	-0.00637 (1.17)	-0.0809 (1.44)	
ss(-1)									-0.0002 (2.26)
lv(-1)									-0.0022* (0.35)
r(-1)		-0.0527 (5.18)	-0.2628 (26.76)	-0.263 (26.73)	-0.263 (26.73)	-0.2651 (24.44)	-0.265 (27.51)	-0.265 (27.53)	-0.2645 (27.52)
r(-4)			0.2375 (47.38)	0.2318 (43.78)	0.2318 (43.78)	0.2298 (41.77)	0.2303 (41.91)	0.2305 (42.01)	0.2301 (42.13)
r(-52)				0.0049 (7.10)	0.0048 (6.84)	0.0039 (5.59)	0.0048 (6.35)	0.0047 (6.14)	0.0049 (6.13)
IO1					0.0004 (0.77)				
IO2					0.0003 (0.62)				
σ						0.1482 (3.81)	0.1884 (4.36)	0.1945 (4.39)	0.1937 (4.37)
$\sigma(-1)$							-0.1707 (5.78)	-0.1639 (5.52)	-0.1645 (5.51)
O_Dum								0.0014 (2.96)	0.0017 (3.53)

The Information Content of Trading Volume and Short Sales

Demand for and supply of stock for borrowing



Results: Information content of shorting behaviour

- Changes in Demand are informative
 - In particular, outward shifts in demand.
 - Inward demand shifts do not signify positive returns, but less negative sentiment for a stock.
 - Inward shifts in the supply also have a role to play but are less useful.
 - The information provided by short selling tends to be fairly short lived.
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Results: Information content of shorting behaviour

- It appears that it is short sales trading volume that provides the channel for the transmission of sensitive information about prices
 - In particular, changes in Demand are the most informative about the future direction of stock prices, although inward shifts in the supply also have a role to play.
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