

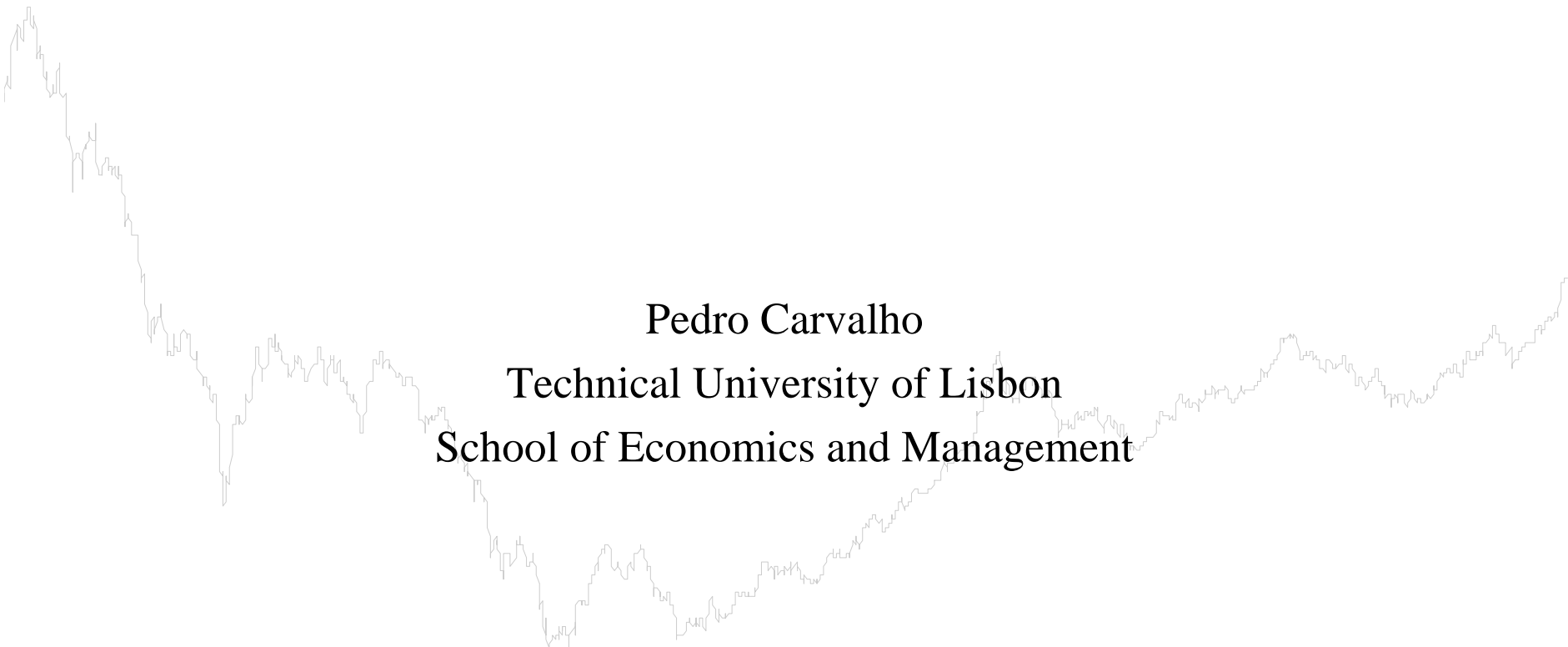


# *Do Insiders Time Their Trades? Evidence from Euronext Lisbon*

Pedro Carvalho

Technical University of Lisbon

School of Economics and Management





Our **investigation** pretends to detect and measure the existence of insider trading **abnormal profits** during the period from January 2001 to December 2005. It will cover, when available, all insider transactions on companies from Euronext Lisbon belonging to the Eurolist.

✓ Do insiders buy (sell) shares prior to stock price raise (decline)?

we use the traditional methodology of event studies to:

- ✓ measure the abnormal profits,
- ✓ and test if the magnitude and duration of abnormal returns depend on firm-specific and transaction-specific factors.



## final sample

	Purchases	Sales	All Transactions	Ratio of purchases to sales	Number of companies
Financial	247	144	391	1,72	5
Basic Materials	58	31	89	1,87	5
Communications	142	114	256	1,25	5
Consumer, Cyclical	154	25	179	6,16	4
Consumer, Non-cyclical	8	10	18	0,80	3
Diversified	1	0	1	-	1
Industrial	47	55	102	0,85	3
Technology	3	1	4	3,00	1
Utilities	7	5	12	1,40	1
Total	667	385	1.052	1,73	28

✓ Purchases outnumber sales, split into 667 (63%) purchases and 385 (37%) sales...

✓ ...but the average number of shares per transaction is larger for sales (64.945) than for purchases (26.152).



## methodology



The methodology and notation for the modelling of abnormal returns ( $AR_{i\tau}$ ) follow largely MacKinlay (1997) and Campbell *et al.* (1997).

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau} | X_{\tau}).$$

Given the market model parameter estimates, one can measure and analyse the  $AR_{i\tau}$ , measured as

$$\hat{A}R_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau}.$$

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it},$$

$$E(\varepsilon_{it}) = 0 \quad \text{var}(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2.$$

Under  $H_0$  the distribution of the sample abnormal return of a given observation in the event window is

$$\hat{A}R_{i\tau} \sim N(0, \sigma^2(\hat{A}R_{i\tau})).$$



## aggregation through time and across securities

The individual securities' abnormal returns can be aggregated using the equation  $\hat{AR}_{i\tau}$  for each event period  $\tau = T_1 + 1, \dots, T_2$ . Given  $N$  events, the sample aggregated abnormal returns for period  $\tau$  is

$$\overline{AR}_\tau = \frac{1}{N} \sum_{i=1}^N \hat{AR}_{i\tau}, \quad \longrightarrow \quad \theta_1 = \frac{\overline{AR}_\tau}{\text{var}(AR_\tau)^{1/2}} \sim N(0,1),$$

The average abnormal returns can afterwards be aggregated over the event window

$$\overline{CAR}(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \overline{AR}_\tau, \quad \longrightarrow \quad \theta_2 = \frac{\overline{CAR}(\tau_1, \tau_2)}{\text{var}(\overline{CAR}(\tau_1, \tau_2))^{1/2}} \sim N(0,1).$$



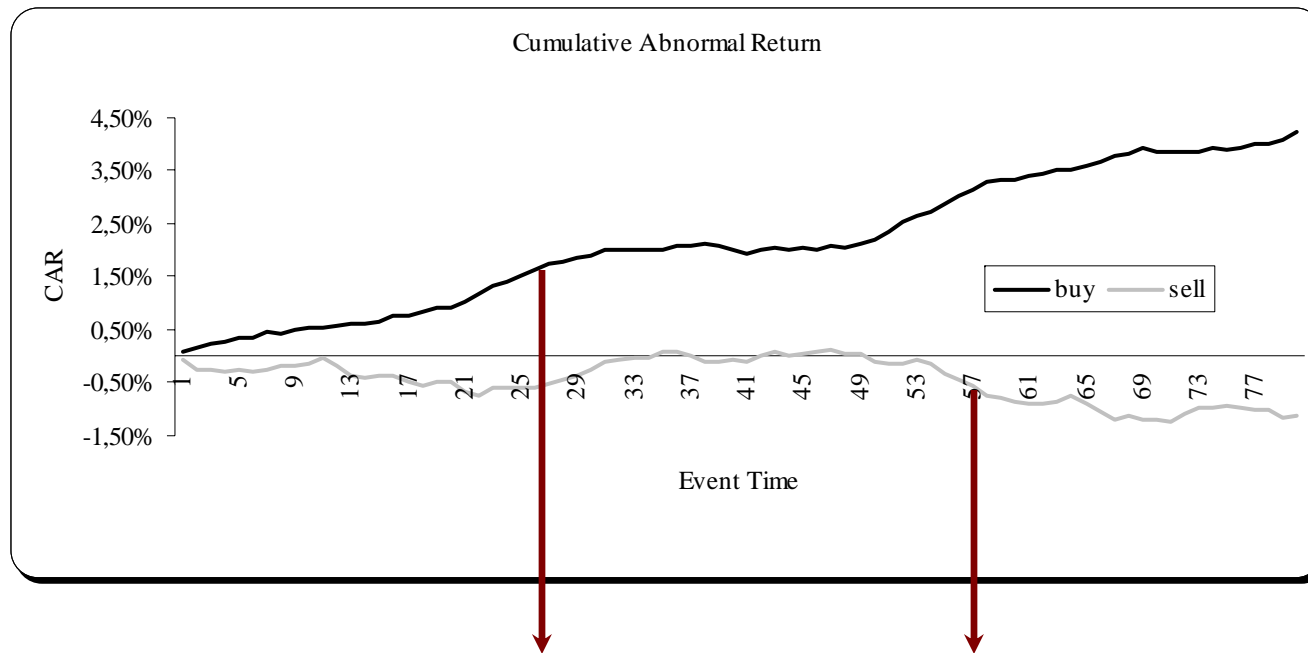
The individual day's abnormal returns were thereafter added to compute the cumulative abnormal return (**CAR**)

Cumulative daily abnormal returns for insider trading events								
Event Window	Overall sample			Insider purchase			Insider sales	
	CAR		Test $\theta_2$	CAR		Test $\theta_2$	CAR	Test $\theta_2$
Pre-event window [-5, -1]	-0,75%	-7,046	***	-0,18%	-1,340		1,74%	9,646 ***
Transaction day [0]	-0,34%	-7,214	***	-0,15%	-2,570	**	0,67%	8,366 ***
Post-event window [+1, +5]	0,31%	2,943	***	0,35%	2,678	***	-0,25%	-1,361
Post-event window [+1, +10]	0,40%	2,647	***	0,54%	2,922	***	-0,15%	-0,575
Post-event window [+1, +20]	0,76%	3,604	***	0,92%	3,501	***	-0,50%	-1,387
Post-event window [+1, +80]	3,11%	7,329	***	4,25%	8,105	***	-1,14%	-1,579

CAR for pre-event window [-5, -1] confirms that an insider purchases (sales) occur after a period of low (high) stock price. After the event took place, the overall sample results (N=1.052) show that prices tend to increase after insider purchases and decrease after insider sales, for all the four post-event windows analysed.



insider **buying** is a **stronger** indicator than **selling**...



for the shares bought (N=667), the patterns and results remain identical to those from the aggregated sample

from the sales sample (N=385), although being always negative, CAR points towards the absence of significant excess return



some insiders' transactions may comprise more information than others



✓ For the **shares bought**, we find that the largest and persistent abnormal returns are found in purchases that have some common denominators: the firm belongs preferentially to the communication industry; the firm is small or medium in terms of market capitalization; the relative trading volume of the purchase is high and the P/B and the P/E is small.

✓ For the **shares sold**, although the results from analysing the entire sample point towards the absence of significant negative excess returns, there are some firm and transaction-specific factors that lead abnormal returns to fall within the statistical significant regions: the firm is usually a consumer (cyclical) or an industrial; large in terms of market value; the relative trading volume is low and the P/B and P/E of the shares sold are typically high.



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