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MERGERS AND TAKEOVERS IN SPAIN: EMPIRICAL EVIDENCE ON ABNORMAL RETURNS AND INSIDER TRADING

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Abstract

This paper aims to the measurement of returns on takeovers on firms listed in the Spanish stock market in the period 1990 to 1993. Using several estimation and testing methods, abnormal positive returns are found for the targets. Some evidence of insider trading is presented and its implications for market regulation are addressed.

Key Words
Takeovers, Abnormal residuals, Market model.

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Comments welcome.

1. Introduction

Mergers and takeovers are one of the most researched areas in finance as exemplified by the book by Weston et al. (1990). However most studies concentrate on US markets and, more recently, on UK markets, see for instance Higson and Elliott (1993). Yet there is still little additional evidence coming from small or emerging markets to complement the results already established for bigger markets. This paper aims to extend those classical research lines to an small (about 1% out of the total world market in 1993) market but one that is reaching significant magnitudes relative to most of the European stock markets.

This is, in our best knowledge, the first study of takeovers in Spain based on the Spanish stock market data. Before the Stock Market Act (1989) there were no recorded takeovers because of lack of legal regulation on these matters. After the Stock Market Law an increasing number of takeovers has been registered[1]. However the number of operations is not comparable with the major markets and therefore, our sample is relatively small and therefore, the results should be viewed as tentative. However, some interesting suggestions emerge from the analysis.

Two particular aspects of takeover activity are analyzed in this paper. First, we find abnormal positive returns for the target firms. Second, we find evidence suggesting significant insider trading before formal announcements. In comparison with the well-known

[1] From 1990 to 1993 the number of registered takeovers was 103. On average, the total amount of resources involved is about 2% of total market value each year. The peak was reached in 1991 when the resources involved amounted to more than 4% of the total market value of that year.

results for the US market by Keown and Pinkerton (1981), abnormal returns in the spanish market for the targets seem to be bigger. Also the extent of insider trading may be more significant than in other markets.

The rest of the paper is organized as follows. Section 2 presents the data and section 3 the methodology. The empirical results are presented in section 4, where we also include a comment on Spanish Regulation on Inside Trading. In section 5 we address some concluding comments.

2. Data

A total of 103 successful takeovers (OPA) were recorded in the Madrid Stock Market (MSM) during the period 1990 to 1993. The sample includes takeovers of industrial, commercial and financial companies[2]. About 93% of the takeovers were friendly (i.e. the first bid was not rejected by the target management). There are 110 bidders[3] (many bidders are foreign companies whose shares are not traded in Spain) and 103 targets. From that sample, we selected the firms which meet the following requirements:

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[2] It is interesting to note that, in our sample, typically the bidder's market value was about 200% the market value of the average firm in the Indice General de la Bolsa de Madrid (IGBM). This is a value-weighted index that is made up by the 72 main firms listed in the MSM and is used in this study as a "market factor". The target's value was about 50% of the average firm in the IGBM. This result suggesting that acquired firms are smaller is in agreement with many published studies, see Morck et al. (1987).

[3] The number of bidders is greater than the number of targets because in some cases there is a joint offer from a group of companies. For instance when CAMPSA was the target, the OPA was jointly managed by five different firms: PETRONOR, REPSOL, CEPSA, ERTOIL and PETROMED.

(i) The stock is continuously listed on the MSM for 244 days before the takeover's announcement date, and 60 days after, at least.

(ii) The announcement and the outcome date must be officially registered by the Comision Nacional del Mercado de Valores (CNMV), which is the Spanish version of the US's SEC[4].

(iii) Events which involve the transformation of a public corporation into a privately-held firm (Going Private) are excluded from the sample.

After applying those criteria, our final sample consists of 59 targets and 27 bidders. Therefore the degree of statistical confidence one could assume analyzing bidders is somewhat limited, and therefore we concentrate in the analysis of targets.

3. Methodology

In order to analyze the data we adopt the standard approach, developed by Fama et al. (1969), and Brown and Warner (1980, 1985). Event studies in finance measure stock performance after subtracting a benchmark return based on beta risk. We compute abnormal returns over three periods: a) the pre-announcement period, including 244 days pre-announcement to the day before official announcement (when the target's stock trade is

[4] The takeover procedure is as follows. The bid must be presented in the CNMV which sets the announcement date and automatically stops the target's stock trade. If the bid is accepted by all parts (CNMV, bidder and target) target's stock trade is resumed and an outcome date is fixed. The outcome date is the date on which the offer becomes unconditional.

suspended), b) the announcement period, from the day when target's stock trade is resumed (day 0) to the day in which the bid goes unconditional, and c) the post-takeover period. Periods b) and c) must cover at least 3 months (60 trading days). The reason is that the duration of the announcement period varies across takeovers, but in most cases (almost 90%) the outcome date is one to three months after the bid announcement.

For each of the sample securities daily rates of return were calculated as:

$$R_{jt} = \ln(P_{jt}+D_{jt}) - \ln(P_{jt-1}) \qquad (1)$$

where P_{jt} is the closing price for security j on day t and D_{jt} is the cash dividend on day t.

Abnormal returns were estimated by means of the market model:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt} \qquad (2)$$

where R_{mt} is the return on IGBM stock index and α_j, β_j are parameters to be estimated and ϵ_{jt} are random innovations. The estimated abnormal return is given by the following equation

$$\hat{\epsilon}_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt}) \qquad (3)$$

where hats above parameters and innovations denote estimators of the corresponding variables. Three methods were used to estimate these parameters. First, ordinary least squares (OLS). Second the method by Cohen et al. (1983) (CHMSW) with a maximum of five days in price adjustments, which generalizes Scholes and Williams (1977), to take into account frictions in the trading process (nonsynchronous trading, etc.). Third, the Market

Adjusted Return method (MAR) which can be thought as a particular case of OLS, where $\alpha_j=0$, $\beta_j=1$ for all firms. Since α_j, for daily data, is small and the average β_j over all firms is 1, this approximation usually produces acceptable results.

To eliminate possible event-driven bias in the estimates of α_j, β_j the parameters were estimated using the three methods (OLS, CHMSW, MAR) over the first 224 trading days of the study, thus excluding the 25 trading days prior to the announcement date[5]. Then, for these 25 days and for periods b) and c) (usually 90 data points in total), we computed average abnormal returns (AAR) over all stocks in day t as follows:

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} \hat{e}_{it} \qquad (4)$$

where N is the number of securities in the sample with a return in t. The cumulative average abnormal return (CAAR) from event day t_1 to t_2 is:

$$CAAR_{t_1}^{t_2} = \sum_{t=t_1}^{t_2} AAR_t \qquad (5)$$

If there are no unusual price movements prior to the announcement date, one would expect both AAR and CAAR to fluctuate randomly. It should be noted however that CAAR follows a random walk and can give easily the appearance of "significant" positive or negative drift when none is present.

Testing for abnormal returns is performed with four different statistics, two for AAR and two

[5] A check of the stability of β_j (estimated by OLS) between the first 112 and last 112 trading days of this 224 trading day sample indicated the β_j's were stable over this period

for CAAR. For AAR we compute the standard t-ratio and T_2 which is the signs test which counts the number of positive and negative abnormal returns and computes their significance using z-statistics which is approximately normally distributed with mean 0 and variance 1 under the null hypothesis. For CAAR we compute T_3 which is the ratio of the cumulative mean excess return to its estimated standard deviation with autocorrelation adjustments, see Brown and Warner (1985, pp. 29), and T_4 which is the nonparametric test proposed by Corrado (1989)

4. Empirical Results

Daily AAR and CAAR for the whole sample were computed using the three methods. Test statistics and graphs are given in Tables[6] 1 to 3 and figures 1 and 2. In examining figure 1 (standardized AAR with asymptotic confidence intervals) the first striking feature is the huge positive residual (about 17%) in day 0 which suggests a market reaction consistent with the semistrong form efficient market hypothesis. Also there is a bunch of positive abnormal residuals, some of them nearly significant in the 20 previous trading days before the announcement date. This could suggest information leakage before the announcement date.

In the movement of the CAAR (figure 2) there appear to be a more or less random behavior during the first days. However around day -20 there seems to be a change and CAAR takes on abnormal characteristics, rising quickly. This suggests that an active market for information develops about impending takeovers bids. A number of identifiable influences

[6] To save space we present only the results of OLS estimation because no significant difference was found between this methodology and the others. The results for the MAR and CHMSW methods are available on request.

on prebid trading has been put forth by Jarrell et al. (1988). These include articles in the financial press, information that develops on the bidder's foothold acquisition in the target and even preliminary communications. They argue that factors such as these influence the earlier price runup and that these influences are distinct from illegal insider trading. Also Jarrell and Poulson (1989) show that 40% of the total price increase associated with successful tender offers occurs before the first public announcement of a bid or related events, and they argued that the prebid run-up may have little to do with insider activity. On the other hand, Meulbroek (1990) and Cornell and Sirri (1992) find that insider trading caused a substantial price run-up before the tender offer announcement. Unfortunately, our data are not sufficiently disaggregated and detailed to allow a trade-by-trade analysis of the impact of insider trading, but further consideration of information leakages is given in the next subsection.

In total, almost a 45% positive abnormal return goes to target shareholders in our sample of successful tender offers. Of this more than one-third are earned before the announcement date. It is clear that targets in our sample earn substantial premiums. If we take the viewpoint that at least some trading before announcement date is essentially based on (illegal) inside information, we may observe substantial profits from trading upon these information concerning the prospective merger, beginning approximately one month before the announcement date and developing steadily up to the announcement date. This is consistent with the available evidence on US and UK markets.

A comment on Spanish Regulation on Inside Trading

Regulation of inside trading based on private information has been addressed only in relatively recent times in Spain. The Securities Exchange Act of 1989 regulated trading by insiders and requires trading by corporate directors and substantial owners (above 5%) to be reported to CNMV. Trading on the basis of nonpublic information is considered illegal and subject to not very stiff penalties when discovered[7]. The Takeover Decree of 1991 further regulated the trading by insiders specifically in takeovers, and the degree of severity of offenses to the regulation rules is similarly small.

Since 1989 to the end of 1993, the regulatory authorities only acknowledge four registered (by the CNMV) cases of inside trading. Only one has been fined, two others are still under scrutiny by CNMV and the fourth has been supersede.

The empirical results presented in this paper suggests that a significant leakage of takeover related inside information has been present, even after the regulations took place. The record of the regulatory authorities in prosecuting cases of inside information does not seems to be particularly impressive, perhaps reflecting the very difficult burden of proving that the trade was motivated by the trader's access to nonpublic information. On the other hand, the light penalties are an additional incentive to engage in these illegal activities.

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[7] There are no imprisonment penalties. Fines are at most five times the gross profit from the illegal trade or five million pesetas (about $40.000 USD) or 5% of equity value (if the offence comes from a firm).

The question of what should be the most efficient institutional framework is an interesting, albeit not extensively researched one. For instance, Leland (1992) suggests that as the degree of development of financial market increases, insider trading becomes less harmful. Some authors, Estrada (1993), suggests that inside trading regulations may generate not only reallocation of wealth but also reallocation of risk in a given economy. This might have important effects on social welfare.

Summing up, it seems that despite insider trading is formally prohibited, no effective deterring mechanism has been put forward. The policy implications to improve efficiency and avoid this ambiguity should be either to promote more active prosecution or deregulation.

5. Concluding Remarks

The empirical evidence examined in this paper suggests that the behavior of stock prices during takeovers in a small market (Spain) is pretty similar to the pattern observed in the larger U.S. and U.K. stock markets. Specifically, we have found evidence on large positive abnormal returns and on the existence of insider trading.

While these findings are relevant for the particular market considered, it is still too early to conclude that small stock markets share the characteristics of large ones. First, there are few studies of small markets. Second, merger activity during the period considered results, at least in part, from a particular institutional change, namely the opening of the spanish economy to the E.C.'s common market. And third, spanish regulation on takeovers is new so that merger activity may have been somehow biased during the period considered.

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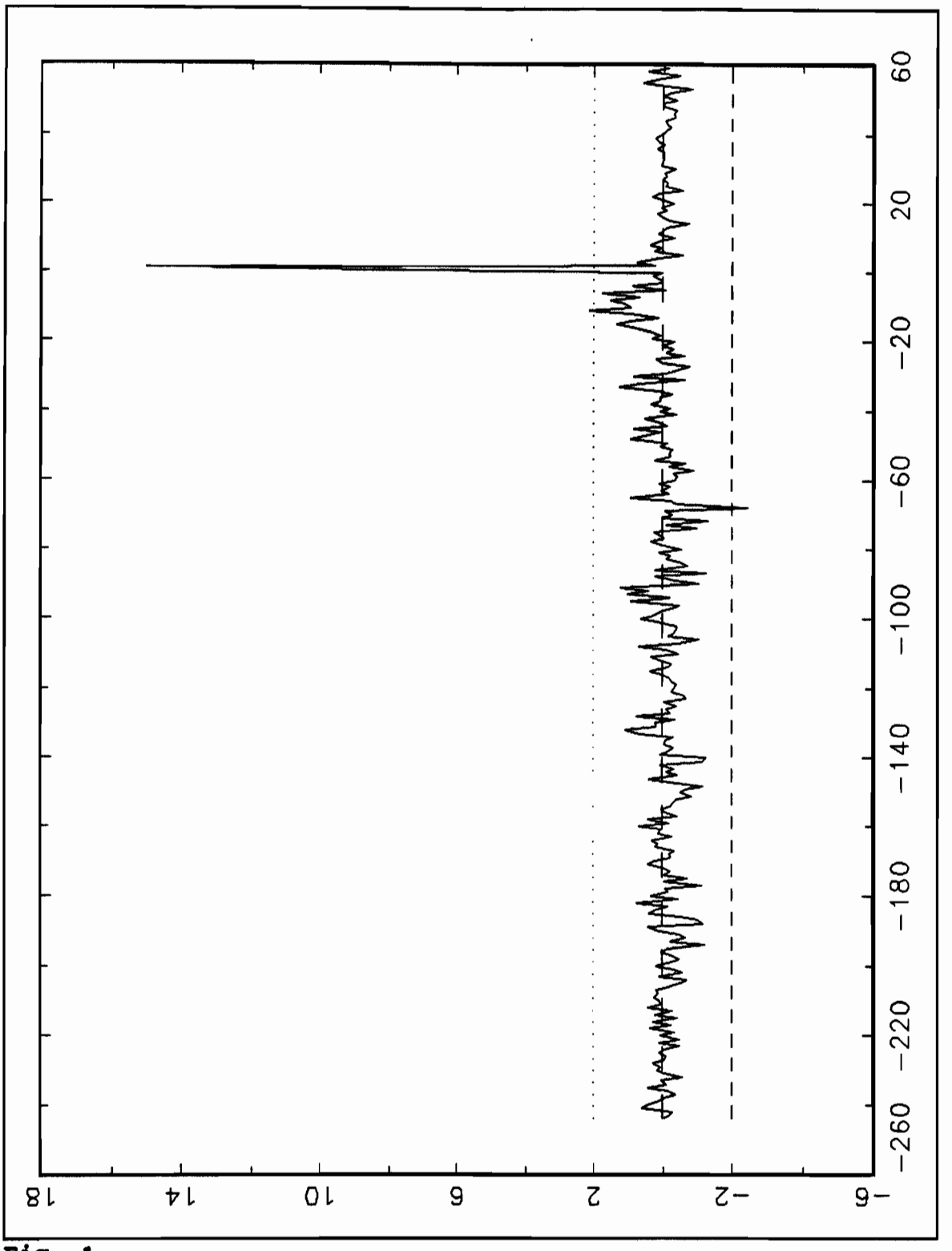

Fig. 1

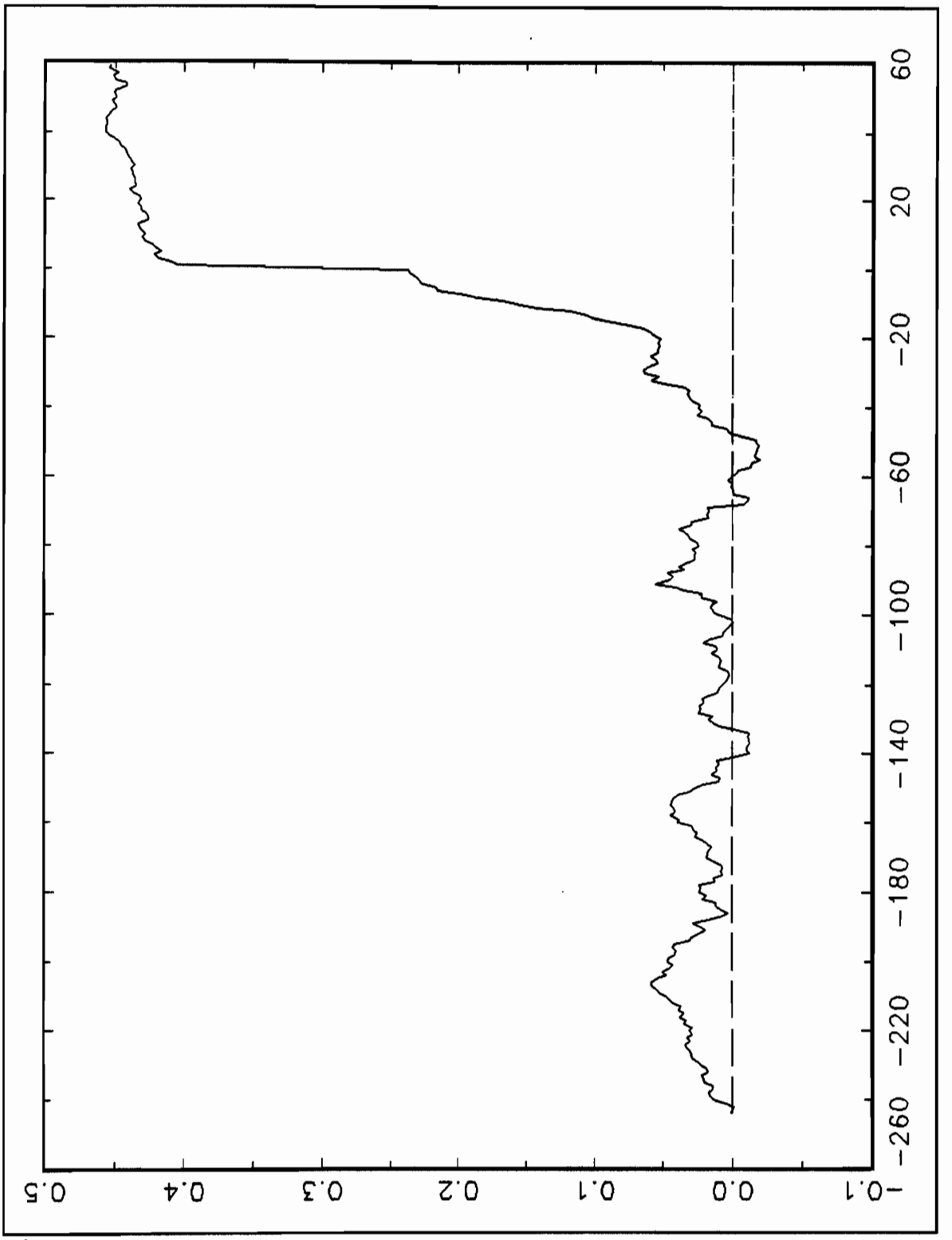

Fig. 2

Sample	% Resid > 0	P val
(-60,60)	64	0.029
(-40,40)	65	0.027
(-20,20)	72	0.015
(-10,10)	74	0.013
(-5,5)	72	0.015
(-60,0)	64	0.029
(-40,0)	64	0.029
(-20,0)	66	0.025
(-10,0)	62	0.037
(-5,0)	62	0.037
(0,60)	74	0.013
(0,40)	72	0.015
(0,20)	74	0.013
(0,10)	67	0.024
(0,5)	66	0.025

Table I Statistic T_2 (Signs test)

Sample	CAAR	T val
(-60,60)	46.32	6.48
(-40,40)	39.18	6.52
(-20,20)	22.81	5.23
(-10,10)	17.35	5.63
(-5,5)	6.11	2.74
(-60,0)	14.01	3.27
(-40,0)	12.33	4.03
(-20,0)	8.97	4.01
(-10,0)	6.16	3.75
(-5,0)	0.87	1.21
(0,60)	32.77	20.31
(0,40)	27.64	12.11
(0,20)	14.41	4.68
(0,10)	11.65	2.70
(0,5)	5.74	2.09

Table II Statistic T_3 (Borg & Warner)

Sample	RMA	T val
(-60,60)	164.85	5.72
(-40,40)	165.78	6.01
(-20,20)	168.46	4.91
(-10,10)	169.24	5.11
(-5,5)	174.89	2.21
(-60,0)	164.84	2.74
(-40,0)	166.18	3.11
(-20,0)	177.30	3.08
(-10,0)	168.42	2.96
(-5,0)	156.69	0.87
(0,60)	178.32	17.16
(0,40)	170.05	8.41
(0,20)	170.19	3.11
(0,10)	166.49	2.21
(0,5)	166.92	1.73

Table III Statistic T_4 (Corrado)