“Mimickers” Of Corporate Insiders And Testing For Market Efficiency: The Case Of Greece

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Abstract

Most prior research shows that corporate insiders can systematically earn abnormal returns by trading their own securities, but the majority of studies suggest that outsiders cannot earn abnormal returns by “mimicking” the trades of insiders after the latter report their trades. Our study is the first to investigate the case of “mimicking” in the Greek stock exchange, and the findings indicate that indeed, outsiders cannot earn significant abnormal returns by mimicking insiders’ trades, a result that is consistent with the concept of a semi-strong form of market efficiency.

1.0 Introduction

“Mimicking” success is a fact of life. Everybody wants to duplicate the success of winners and follow in their footsteps. In the financial world, an improvement in wealth and wealth change many times seem to rely upon speculation that by emulating the activities of what is perceived as higher-quality firms and individuals.

When low-quality firms that have lower market-to-book ratios and information asymmetry, and are smaller, riskier, and less profitable, issue convertible bonds in an attempt to raise capital, quite often mimic the convertible bond contract terms of higher-quality firms, in order to induce a more positive reaction by the bond market (Bhabra & Patel, 1996). Similarly, outsider traders not “in the know”, mimic the trading activities of insider traders who are or are perceived to be knowledgeable about the future direction of a stock. The process by which the market infers information from insider trading is complicated, because the relationship between insiders’ purchases and increases in the price of a particular stock can be documented on a day-by-day basis, but not on the basis of a trade-by-trade analysis. Cornell & Sirri (1992) compared this situation with a river’s flow, where even though the river’s current is obvious on a macroscopic level, the same current cannot be identified by merely examining the motions of individual water molecules.

Rozeff & Zaman (1998) go one step further in claiming that market prices reflect investor overreaction, where insider trades attempt to profit from market overreaction, i.e. price movements that predictably reverse. Their study found that the proportion of buy transactions in insider trades is positively related to the ratio of cash flow to price, as well as book value to price, and negatively related to prior stock return, quite consistent with a well-informed contrarian approach to stock investing. In contrast, outside investors overvalue growth stocks and undervalue value stocks.

Most prior research has revealed that corporate insiders can systematically earn abnormal returns by trading their own securities (Lorie & Niederhoffer, 1968; Jaffe, 1974; Finnerty, 1976a; Finnerty 1976b; Pratt & Devere, 1978; Seyhun, 1986). More recently, Seyhun (1992), and Rozeff & Zaman (1988) examined the profitability of the

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trading of outsiders and concluded that in their case, no insider trading anomaly exists, and clearly showed that outsiders attempting to earn abnormal returns by “mimicking” the trades of insiders after the latter report their trades, cannot earn similar abnormal returns, a result that is consistent with the concept of a semi-strong market efficiency.

In contrast, some other studies indicate that outsiders can certainly earn significant abnormal returns by mimicking insiders’ trades. Jaffe (1974) and Pratt & Devere (1978) provided evidence that an insider-trading anomaly can indeed exist, and outsiders who mimic insiders may earn abnormal returns. As a matter of fact, one of the clearest conclusions from a University of Michigan research study which examined more than 1 million trades insiders made in the open market from 1975 to 1996, is that mimicking insiders works best for small company stocks whose market capitalization is under $25 million (Barker, 1998). Consequently, these findings support the proposition that the market is not efficient enough up to a semi-strong degree, or in other words, it is not efficient with respect to all publicly available information. This result however, is inconsistent with the concept of a semi-strong form of market efficiency, which is prevalent in the literature.

Given the importance of the issue of insider–trading anomaly and the growing body of empirical literature suggesting that the market cannot have a semi-strong form of efficiency (Bernard, 1991; Brock, Lakonishok & LeBaron, 1992), Bettis, et al. (1997) reinvestigated whether outsiders who mimic the trading activities of insiders can earn abnormal returns by using publicly available insider trading data. Their study found that outsiders using publicly available insider trading data could mimic certain transactions of NYSE and Amex corporate insiders and earn significant abnormal returns (net of assumed transaction costs), for both long and short positions. These results however, are once again inconsistent with the concept of a semi-strong form of market efficiency.

The controversy of the findings and the conflicting results in the literature require that this open issue needs to be investigated further, and readdressed maybe in a stock exchange other than NYSE or Amex, the usual subjects of research studies on this contentious topic. Empirical studies by Fowler & Rorke (1984), on Canadian firms, and Pope et al. (1990) in the United Kingdom found significant evidence of insiders purchases before abnormal price increases, and sales before abnormal price decreases. In contrast, a recent study by Eckbo & Smith (1998) attempting to estimate the performance of insider trades on the closely held Oslo Stock Exchange in Norway during a period of lax enforcement of insider trading regulations, found that insiders on the average do not outperform the average mutual fund, and abnormal insider portfolio performance was statistically either insignificant or negative.

This study is the first to investigate insider trading in the Greek stock exchange, based on information on Greek insider trading that the Athens stock exchange has recently systematically collected during a two and a half year period. This is also the first study to examine whether Greek outsider investors can obtain excess and abnormal returns by “mimicking” Greek insider investors’ trading activity. The Greek business environment is a “small world” where everybody knows each other and the same individuals serve different constituencies under multiple roles, such as bank managers, company consultants, fund managers, or partners in a stockbroker firm (Lekkas, 1998). Even though the use of insider information, regardless of how it is acquired, is punishable under article 30 of law 1806/1988 by at least a three month jail sentence a and a fine, and even though Greece was one of the first EU countries to integrate its legislation with the 89/592 directive of the European Commission on insider trading imposing a fine of five times the amount of illegal profits, insider trading in the Greek Stock Market is common practice. However, even though research has shown that enforcement of insider trading laws and penalties induc managers to disclose more information on their trades, and consequently making stock prices more efficient, such short sales prohibitions on insiders have exactly the opposite effect (Narayanan, 2000). When short-term traders sell their shares, informationally efficient share prices lead to larger transfers from long-term traders to short-term traders when the future returns are high, and smaller transfers from long-term traders to short-term traders when the future returns are low. This specific situation improves risk sharing among outsiders, compensating for adverse selection losses; otherwise, as is conventionally thought, insider trading is harmful to the outsiders’ welfare, due to adverse trade selection losses (Bhattacharya & Nicodano, 2001).
2.0 Data And Research Methodology

It was not until January 1999 that the Greek Stock Exchange started keeping data on reported insider trading. These structural constraints limited our chosen sample study period, which ran from January 1999 until December 1999. Our data was initially made up of the 40 stocks that were included and represented in the FTSE-40 index of the Athens stock exchange during 1999. However, in order to maintain consistency throughout the study period, since eight of them were dropped out from the index in 2000 because they were found to lag behind expectations, only the remaining 32 stocks were included in the final research sample.

The methodology used in this study is similar to the one employed by Bettis, Vickrey, & Vickrey (1997). Daily returns were obtained for each of the 32 stocks included in the sample. The first day for outsider trading is considered to be the day following a week after the insiders’ transactions took place, which means that the outsiders will presumably start trading a week after they get information on the specifics of insider trading.

The market model that was used to estimate the mimickers’ expected returns is:

\[ R_{i,t} = a_i + b_i R_{m,t} + v_i D_i + e_{i,t} \]  

(1)

Where,

- \( R_{i,t} \) = The daily return on security \( i \) in day \( t \).
- \( a_i, b_i, \) and \( v_i \) = The market model parameters.
- \( R_{m,t} \) = The portfolio’s daily return for all stocks at day \( t \).
- \( D_i \) = A dummy variable assuming the value of one for the days that insiders performed large volume trades, and zero when they did not.
- \( e_{i,t} \) = The security specific error component of the return.

The estimated parameters \( a_i \), \( b_i \) and \( v_i \) were calculated for the whole period of analysis for the FTSE-40 stocks, and for the 250 working days of the Greek Stock Exchange, using ordinary least squares in 32 regressions. The basic prediction error of the abnormal return \( PE_{i,t} \) was then obtained by subtracting the mimickers’ expected return from that of the actual daily return on security \( i \) for day \( t \), or:

\[ PE_{i,t} = R_{i,t} - (a_i + b_i R_{m,t} + v_i D_i) \]  

(2)

The prediction error of the abnormal return \( PE_{i,t} \) can also be considered as the basis for calculating the average abnormal return of the market as a whole for a specific day. The average portfolio prediction error for day \( t \) or the average total prediction errors for that day \( APE_t \) can be obtained by taking the sum of the daily prediction errors of abnormal returns among stocks \( (\sum PE_{i,t}) \), and dividing it by the total number of prediction errors for that day \( K_t \), or:

\[ APE_t = \frac{\sum PE_{i,t}}{K_t} \]  

(3)

The average total prediction error \( APE \) values for insiders were calculated by subtracting the expected return from the actual return, and finding the average daily residual of the 32 FTSE-40 stocks in the days where large volume trades existed. The average total prediction error \( APE \) values for the outsiders were calculated by the residuals of the 32 stocks of the FTSE-40 a week following the day of the insiders’ trading.

Furthermore, the actual abnormal return was obtained from the so-called \( CAPE \), which is the summation of each average daily prediction error up to the final day of observation.

\[ CAPE(T) = \sum APE_t \]  

(4)

We obtained \( CAPE \) for the following holding-period weeks: T= 2, 4, 13, 26, 39, and 52, with each week consisting of five working exchange days.
3.0 Results

The results below relate to both insider and outsider profits. Any possible transaction costs that might exist are ignored for comparison purposes. The comparison made to both parties is evident in Table 1. The table indicates any possible abnormal profits that could be realized in the weeks that are under examination.

<table>
<thead>
<tr>
<th>Holding Period T</th>
<th>CAPE (Insiders)</th>
<th>CAPE (Outsiders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>9.66</td>
<td>4.02</td>
</tr>
<tr>
<td>4</td>
<td>-1.32</td>
<td>-2.11</td>
</tr>
<tr>
<td>13</td>
<td>7.5</td>
<td>0.7</td>
</tr>
<tr>
<td>26</td>
<td>23.42</td>
<td>0.85</td>
</tr>
<tr>
<td>39</td>
<td>48.38</td>
<td>18.24</td>
</tr>
<tr>
<td>52</td>
<td>17.82</td>
<td>-27.94</td>
</tr>
</tbody>
</table>

The abnormal profits in the above table are represented by the CAPE values of both insiders and outsiders. It can be observed that the insider CAPE values for the first couple of weeks are positive, then turning negative for week 4, and finally turning once again to positive for the remaining of the observation periods. These results indicate that if insiders decide to invest for a short period, they would only realize very limited returns, but if they decide to invest for the long run they would realize enormous profits.

In contrast, the CAPE values of the outsiders are consistently lower than the values of the insiders throughout the observation period, and this leads us to believe that the outsiders should decide investing for the short to the medium run, rather than the long run. It is interesting to note that during the first two holding week observations, T = 2, 4, the CAPE values of both insiders and outsiders move in the same direction, but after that the returns of the insiders grow at a much faster rate than those of the outsiders. During the long run observation period, which is depicted by the holding period T = 52, the outsiders realized soaring negative returns, while the insiders experienced lower returns relative to previous holding weeks, but they nevertheless stayed on the positive side. Looking at these PACE values, it is evident that the outsiders’ returns cannot be compared favorably to those of the insiders, and cannot even come close in realizing similar abnormal profits.

4.0 Discussion

These types of investment behavior by outsiders and insiders and their resulting returns following opposite directions, could be attributed to the performance of the Athens Stock Exchange, and the socioeconomic and political events surrounding it. In the beginning of our sample observation period during the first four months of 1999, the index of the Greek stock market was around 3200 units, rising gradually from 2738 units on December 31st, 1998. The main explosion of buying interest reached its peak in the summer of 1999, when individuals from all socioeconomic strata and wealth level joined the stock buying frenzy, many mortgaging assets or borrowing in order to take advantage of the seemingly endless opportunities in the “ever-rising” stock market. The peak reached a “bubble” at right over the 6,000 mark during a very short period of time, an increase of over 100 percent.

The reason for this phenomenal increase of the index during 1999 was a consequence of the devaluation of the drachma in March 1998, which resulted initially in many foreign investors investing in Greek stocks. The drachma devaluation brought stability and certainty in the Greek economy and also resulted in a reduction of the inflation rate, which in turn made investors realize that their cash reserves could realize a higher return in real value terms. This increase in real value enabled investors and consumers to buy goods and services with less money, therefore creating an excess of money supply and holdings. Moreover, the award to Greece of the 2004 Olympic Games, as well as, the conviction (which later proved to be correct) that Greece would be eligible finally to join the European Monetary Union and the common euro currency, created further favorable investment conditions, increased stock prices, and further strengthened the Greek economy, which exhibited an impressive improvement in its microeconomic elements during that period. As a result, excess cash reserves held by firms and individuals were rushed to be invested mainly in stocks, especially of firms in the communications, computer systems, and construction industries.
Toward the end of 1999, the “bubble” busted and the index began gradually to fall, until its stagnant current levels of around 2,000 units. It appeared that after 1999 many firms had already sold large parts of their capital stock and they either lost interest and/or lacked the financial power to purchase it back, while small investors had lost already a great deal of their investments by mimicking the trades of insiders, and did not have any money left for further stock purchases.

Finally, the role of brokerage houses in Greece was also decisive in the creation of this “bubble” as they succeeded in attracting many unsophisticated individual investors from the countryside, who bought shares mainly on the basis of rumors, speculative advice, and mimicking of insider trading, rather than on the basis of solid financial and investment analysis.

5.0 Conclusions

The case of the Greek stock exchange 1999 “bubble”, a premature market over the period under investigation, is added to the evidence supporting semi-strong form of efficiency. During that period the market experienced its greatest expansion ever, reaching a high mark of over 6000 units, and leading into a frenzy of stock trade activities of outsiders mimicking the trades of insiders after the latter reported their trades. This expansion was due to two major factors. One factor was the influx of foreign capital into the Greek stock exchange, in expectation of higher returns relative to other investment options. The other factor was the mimicking activities of domestic capital, often the unregistered product of an abnormally large underground economy and quite often the life savings of small investors, which was poured into the stock exchange. The former was the efficient direction of money into formal and typical international investment activities, while the latter was a an inefficient direction of money into atypical means by outsiders of receiving considerable abnormal returns in order to realize their life long dreams, by attempting to mimic insiders’ trades.

Suggestions for Future Research

As mentioned earlier, our study is the first to investigate the case of mimicking in the Greek stock exchange. The size of the Greek stock exchange led to the smoothing out of most trading anomalies and resulted in a semi-strong form of market efficiency. The findings are consistent with the literature, and indicate that indeed, outsiders cannot earn significant abnormal returns by mimicking insiders’ trades, a result that is consistent with a semi-strong form of market efficiency. It would be interesting however, to extend the data period in order to see if during the years of the market contraction the findings of this study remain the same. Further research could also reexamine the consistency of the results by considering the specific impact of the influx of foreign capital into the Greek stock exchange, as well as the impact of the underground economy that made available the out of the ordinary enormous amounts of capital that influenced the direction of the market during that period.

References


