Market Responses to Buy Recommendations Issued by German Personal Finance Magazines: Effects of Information, Price-Pressure, and Company Characteristics

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Abstract

This paper analyzes explicit buy recommendations for stocks published by German *Personal Finance Magazines* from 1995 to 2003. These recommendations earn significant abnormal returns of 2.58 percent within the five days around the publication day. Results are mainly driven by high abnormal returns for small stocks and value stocks. However, price reactions, although smaller in magnitude, are also significantly positive for big stocks and glamour stocks. On the publication day, excess trading volumes rise to 161 percent of the normal level giving an indication that readers of the analyzed magazines as a group do significantly impact trading volumes. Both the price-pressure hypothesis as well as the information hypothesis can be confirmed by our data. The price-pressure effect is most extreme for small stocks and glamour stocks. However, whereas the initial price reaction to small stocks is additionally driven by permanent information value, this does not hold true for glamour stocks. In contrast, value stocks are associated with high cumulative abnormal returns that are solely driven by information value.

Keywords: Financial experts' recommendations, private investors, German stock market, price-pressure, market reaction, personal finance magazine, journalism

JEL Classification: G11, G14

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1. Introduction

By definition, private investors are not members of the financial community itself, since they have to spend most of their time making a living outside of Wall Street. Nevertheless, they invest substantial amounts of their wealth in direct stock holdings. Since this is a crucial decision as it affects their standard of living in the future, they consult so-called financial experts to come up with reasonable advice for investment decisions. Private investors usually find this kind of advice at brokerage houses, investment newsletters, 'financial gurus' and journalists.

Whereas the market reaction to the information provided by the first three groups of financial experts has been analyzed extensively by academics, investment advice published by journalists has not been very thoroughly researched so far. Probably the best way to account for financial advice published by this group is to analyze stock recommendations of *Personal Finance Magazines* (*PFMs*). Unlike other sources, journalists working for these magazines do not only report second-hand information previously published by other financial experts, but often provide, besides general investment related information about capital markets, direct buy recommendations of stocks based on self-contained research procedures. In the U.S., magazines such as *Barron's*, *Kiplinger* and *SmartMoney* can be classified as *PFMs*. For the British market, *Moneywise* represents this business press branch, and for the German market, e.g., the *Effecten-Spiegel* and *Börse Online* serve the same purpose.

Traditionally, research on the market reaction to financial experts' recommendations accepted the semi-strong form of the efficient market hypothesis (EMH) by Fama (1970), which predicts that security prices instantly reflect all publicly available information. Consequently, observed increases in prices were routinely attributed to new, unknown information comprised in buy recommendations. Because the assumption of the EMH (that close

substitutes for securities exist in the market) is questionable, two competing hypotheses based upon research by Kraus and Stoll (1972) and Scholes (1972) emerged in the literature, enlarging the framework of the EMH: First, based on a line of arguments building on the limits of arbitrage in security markets, the price-pressure hypothesis (PPH) assumes that investors must be compensated for transaction costs and portfolio risks when they agree to immediately buy or sell securities which they otherwise would not trade. Hence, this compensation is provided by a temporary price increase (decline) for large quantities of stocks offered for purchase (sale). In the context of our study, the PPH states that an initial price reaction to *PFMs* buy recommendations is solely driven by temporary buying-pressure from naïve investors, which should be reversed afterwards. Second, the information hypothesis (IH), which we evaluate in our study as well, assumes that abnormal returns are caused by new, relevant information, leading to a permanent revaluation of the security.

We suspect that the information environment of a recommended stock plays a decisive role regarding whether market reactions are induced by price-pressure effects or information effects. Therefore, we predict first that the lower the frequency for company specific information releases, the larger the information effect of a recommendation. Second, we expect that the less liquid the market of a stock is, the higher the price-pressure effect. As far as we know, these two hypotheses have not been empirically evaluated for financial experts' recommendations in terms of the information environment.

In order to evaluate both predictions, we use the market value of a company as a proxy for the information environment, since previous studies have frequently documented that information on small companies is processed less frequently to the market than for big companies. (see, e.g., Arbel and Strebel (1983) and Arbel (1985)). Hence, stock prices of small companies should be exposed particularly to the information effect. In addition, since market liquidity for

small companies is usually much lower, recommendations on small stocks should also be severely exposed to the price-pressure effect. The price-to-book ratio of a stock serves as another proxy for the information environment. In particular, value companies were quite out of favour during our investigation period, where high-tech companies received most of the attention by the financial community. Consequently, we suspect rare recommendations on value stocks to induce a market reaction due to the information effect. At the same time, markets for less closely followed companies, e.g. value companies, are less liquid. Hence, we assume recommendations of these stocks to be particularly exposed to price-pressure effects.

With our study, we aim to contribute to current research in several ways. First, with a unique data set we analyze the market reaction to buy recommendations issued by a widely neglected sub-group of financial experts: the journalists of *Personal Finance Magazines (PFMs)*. Furthermore, we distinguish if this market reaction seems to be based on temporary buying-pressure by naïve investors or if valuable information content leads to a fundamental revaluation of the stock. Confirming the latter effect would clearly support the economic role of journalism while contradicting the prejudice that journalists just pass on worthless second-hand information. Finally, we relate both competing effects to different company characteristics. This has, to the best of our knowledge, not been done before. Selecting German *PFMs* for the analysis is especially appropriate since these magazines have a long tradition in providing investment advice and are particularly important to German private investors. This is largely due to the fact that banks which control the brokerage business in Germany refrained from issuing direct buy and sell recommendations for specific stocks for a long time, since they feared legal actions for damages if a stock investment were to fail. In addition, other sources of information like investment newsletters are largely irrelevant in the German market. Hence, *PFMs* have emerged as one of the primary sources of information for private investors. In 2000, for example, around one out of five German private investors

consulted *PFMs* for their investment decisions. Furthermore, analyzing the German stock market seems to be a beneficial task in several respects: due to the foundation of the *Neuer Markt* in 1997 and the high number of IPOs around the millennium, German private investors felt an increasing necessity for credible investment advice to cope with this period of fundamental transition in the German stock market. Due to limited other sources, *PFMs* were crucial in providing German private investors with needed investment advice.

The results in this paper show a significant market reaction before and around the publication day itself. Furthermore, around the publication of recommendations, excess volumes show increased trading activity; first evidence that price-pressure effects might be at work. While analyzing the impact of company characteristics to the market reaction, we find that small stocks and value stocks are subject to greater price reactions than big stocks and glamour stocks. Whereas small (big) stocks are defined as stocks that belong to the quintile with the smallest (biggest) market capitalization in each year, value (growth) stocks are defined as stocks that belong to the quintile with the smallest (biggest) price-to-book ratio in each year. Moreover, riskier stocks, as classified by their high beta factors, are associated with greater price reactions compared to stocks with lower betas. Robustness checks reveal that the observed market reaction is neither severely biased by confounding corporate news prior to the event day nor by short-term momentum effects. However, results show that the price reaction within years of bear markets, i.e. years with a decreasing market in terms of a decreasing Composite DAX (CDAX), are less pronounced compared to years of bull markets, i.e. years with a rising market.

Finally and probably most importantly, we aim to segregate pure price-pressure effects from permanent information effects in order to decompose the initial price reaction. Overall, we confirm for our entire sample that more than half of the market reaction seems to be due to the

information effect. When focusing on sub-groups of the sample, it can be shown that the market reaction of small stocks is not only driven by information effects but also by price-pressure effects. This does not apply to the high abnormal returns realized by value stocks, which seem to be solely driven by the information effect. In contrast, low but still significant abnormal returns of glamour stocks are solely generated by price-pressure effects. In conclusion, journalists seem to publish novel, valuable information at least for the group of small and value stocks; a result which is not yet visible in this area of research.

The remainder of the paper is structured as follows. Section 2 describes related research while section 3 describes the database and provides some descriptive statistics. The employed event-study methodology is also briefly discussed in this section. Section 4 presents our empirical findings. Finally, we provide a discussion in section 5 and conclude in section 6.

2. Related Research

A number of papers focus on the market reaction associated with recommendations issued by brokerage houses and security analysts in the U.S. Besides Stickel (1995), who reveals in an event-study that buy recommendations are associated with short-term price increases around the publication day (PD), similar results are reported, for example, by Womack (1996). Mikhail et al. (2004) report that returns are significant and positively associated with the analysts' prior performance in the short-run and long-run. In contrast to these studies, Barber et al. (2001) and Barber et al. (2003) take a more investor-oriented, calendar-time perspective for a long-run analysis. The first study documents that purchasing the most favorable consensus recommendations of security analysts yields significant positive abnormal returns. The latter study, however, points out that between the years 2000 and 2001, it was not the most but the least favoured stock that outperformed the market.

Second, Jaffe and Mahoney (1999) and Metrick (1999) analyze the stock selection abilities of U.S. investment newsletters. Both studies take advantage of the *Hulbert Financial Digest* database which has been tracking recommendations of investment newsletters since 1980. Within both studies there is no consistent evidence for significant abnormal returns in the short-run. This implies that investment newsletters do not seem to provide valuable information to investors.

Third, second-hand information which is published by financial gurus, e.g. recommendations made by prominent money managers at *Barron's Annual Roundtable* or by panelists of the *Wall $treet Week* television show, is examined thoroughly in the literature. For example, Desai and Jain (1995) and Ferreira and Smith (2003) find that buy recommendations earn significant positive abnormal returns around the PD. Barber and Loeffler (1993) and Liang (1999) get similar results concerning the *Pros' Picks* published in the *Dartboard* column of the *Wall Street Journal*. Furthermore, the latter study finds this market reaction to be mainly based on temporary price-pressure effects. Additionally, within both studies the market reaction around the PD is found to be connected to significantly higher trading volumes.

On the contrary, studies analyzing the market reaction of stock recommendations which originate from the information generating process done by journalists are rare exceptions and can mainly be found for European markets. Lidén (2004), who analyzes the Swedish market for daily newspapers and *PFMs*, reports a positive publication day effect for buy recommendations although this effect is almost fully reversed within 20 days, supporting the price-pressure hypothesis. Abnormal returns around the PD are also associated with higher trading volumes for buy recommendations. In addition, a very limited number of studies focus exclusively on the recommendations of *PFMs*. For Germany, both Pieper et al. (1993) and

Röckemann (1994) report significant positive abnormal returns around the event day. However, both studies focus on a small dataset and analyze stock recommendations for a rather limited time period. On the contrary, Yazici and Muradoğlu (2002) do not find evidence that the published investment advice within the Turkish magazine *Moneymatik* helps private investors to earn abnormal returns.

3. Data and Methodology

3.1. Description of Database

In Germany, quite a number of magazines belong to the general business press branch[1]. Within our investigation period from 1995 to 2003, 13 of these magazines can be classified under *Personal Finance Magazines* (*PFMs*) since they provide private investors with investment related information about capital markets[2]. A major criterion which must be fulfilled by any of those 13 *PFMs* to be chosen for our analysis is a regular, easy-to-see recommendation box. This box has to contain explicit advice for the reader – i.e. direct buy recommendations. This characteristic assures that these recommendations are easy to implement for any naïve private investor. Finally, only five *PFMs* fulfill these requirements and remain in our sample[3]. With the exception of the *Telebörse*, all these publications have existed within the entire investigation period. Nevertheless, including the *Telebörse* helps to control for survivorship bias. Hence, there will be no upward bias in our abnormal return calculation due to the ex-post choice of only surviving *PFMs*.

[1] Data is provided by the media service of the VDZ (Verband Deutscher Zeitschriftenverleger e.V.).
[2] Specifically, these are *Der Aktionär*, *Börse Online*, *Börsenberater, Capital (Capitaldepesche), Euro, Finanzen*, *Focus Money*, *Geldidee*, *Investormagazin*, *Telebörse*, *Wertpapier*, *Aktien Research* and *Effecten-Spiegel*.
[3] These are *Wertpapier*, *Effecten-Spiegel*, *Börse Online*, *Telebörse* and *Capital (Capitaldepesche)*.

In 1995, the *PFMs* in our sample jointly distributed around 190,000 magazines weekly. During the late 1990s, when financial markets experienced an extraordinary boom, the number of distributed magazines rose steadily and peaked at around 1,165,000 in 2000[4]. This number implies that around one out of five private investors consulted one of the magazines on a regular basis[5]. Later, this trend was reversed, and the combined weekly number of distributed magazines decreased to around 260,000 in 2003.

In order to be included in our sample, a recommendation has to fulfill the following criteria: first, as mentioned before, the recommendation must have an explicit character, i.e. a direct buy recommendation. Any implicit information, which needs to be interpreted, is excluded from the analysis. Second, only stocks, neither options nor bonds, are used in our sample. Third, as our study focuses on the German capital market, we only include recommendations for stocks which have their primary listing on a German stock exchange. Fourth, buy recommendations of forthcoming IPOs are excluded from our sample. Fifth, return data for the period from 199 trading days prior to the publication day to 20 trading days subsequent to the publication day must be available via *Datastream*.

3.2. Descriptive Statistics

Based on the above-mentioned criteria, we hand-collected 2,860 recommendations[6] to build up a unique database of *PFMs'* buy recommendations. Table I displays summary statistics for these recommendations.

[Insert Table I here]

[4] Data is provided by the media service of the VDZ (Verband Deutscher Zeitschriftenverleger e.V.) which provides print run data collected by IVW (Informationsgemeinschaft zur Feststellung von Werbeträgern e.V.).
[5] In 2000, the number of German private stock holders is reported to be 6.21 million. Data on the German capital market is provided by DAI (Deutsches Aktieninstitut e.V.).
[6] Before applying the mentioned criteria, the database contained 3,021 recommendations. 161 recommendations failed the selection criteria, hence 94.67 percent of the original sample remain for the final analysis.

Two properties of the sample deserve particular attention. First, to evaluate the risk of each recommended stock, we calculate stock-specific betas on monthly return data for a 36-month time period prior to the event day[7]. The median beta equals roughly 0.80. This is a noteworthy deviation from related studies for the U.S. market. Barber and Loeffler (1993) find that the *Pros' Picks'* stock recommendations from investment analysts which are published in the monthly *Dartboard* column, have a median beta of 1.16. Desai and Jain (1995) reveal that buy recommendations made by prominent money managers at *Barron's Annual Roundtable* have a median beta of 1.13. Hence, editors of German *PFMs* seem to recommend less risky stocks compared to U.S. financial experts. Within the years from 1995 to 1999, the median beta is reported to fluctuate between 0.88 and 0.96. From 2000 on, betas sharply dropped to 0.53 in 2002 which corresponds to the burst of the stock market bubble at the beginning of 2000. As investors became more cautious, *PFMs* started to recommend less risky stocks for purchase.

Second, we measure the percentage of recommendations which are accompanied by confounding events. Since companies are obliged to report new information such as earnings forecast revisions, dividend adjustments or other major corporate news, we control for these confounding events via ad hoc announcements[8]. We control for the announcements which are released in the period five to three days prior to the event, as these might influence the decision process of the editorial staff about which stock is recommended for purchase. As can be seen in column (9), 9.64 percent of the recommendations are preceded by ad hoc announcements.

[7] In order to calculate beta factors, we employ the Composite DAX (CDAX) as a proxy for the market portfolio.
[8] To control for ad hoc announcements, we examine the database of the DGAP (Deutsche Gesellschaft für Ad-hoc-Publizität).

3.3. Methodology

The purpose of our study is to reveal if *PFMs'* recommendations impact prices and trading volumes of the recommended stocks. Hence, we analyze if abnormal returns, i.e. returns that significantly deviate from the 'normal' return, and excess volumes exist around the PD of the recommendation. To measure the market reaction to buy recommendations, we apply standard event-study methodology outlined by MacKinlay (1997). For each recommendation, calendar time is converted to event time by defining the PD as event day [0]. The estimation period encompasses the period from [-199] to [-21] whereas the period from [-20] to [+20] is defined as the event period.

Abnormal returns for any given point in time and stock are simply the difference between realized[9] and normal returns. In order to estimate these expected, normal returns, we choose the market model as surveyed by Brown and Warner (1985). First, for raw returns of each recommended stock, we estimate OLS parameters in the estimation period while using the value-weighted CDAX[10] as the independent variable. This index consists of the entire universe of stocks traded on the *Frankfurt Stock Exchange*. Within the context of the market model, the normal return on each day in the event period is defined as the return of the CDAX, adjusted by the estimated OLS parameters. Since abnormal return calculation might be sensitive to the employed model, we also calculate ARs based on the constant mean model and the market adjusted model. Since all models yield virtually identical results, we exclusively report results based on the market model which accounts for individual stock risk. To calculate the market reaction for more than one day, we cumulate abnormal returns for the respective period.

[9] To calculate realized returns, we download the data type *RI* from *Datastream* which includes adjustments for dividends and stock splits.

[10] For our study, we compute returns based on a non-logarithmic calculation. To test for robustness, we also perform the analysis on logarithmic returns. Since the results are virtually the same across the two different methods of calculation, we report and discuss only results based on non-logarithmic returns.

In a second step, we calculate the average excess volume (EV) for each trading day which is the stock-specific ratio of the trading volume on each day in the event period to the average trading volume from the estimation period (see Womack (1996)). A limitation of the volume data is that it does not cover all existing regional German stock exchanges but only daily turnover volumes of the *Frankfurt Stock Exchange*.

In order to test for statistical significance of abnormal returns (ARs) and cumulative abnormal returns (CARs), we apply the traditional t-test based on Brown and Warner (1985). Since this method has shown to be sensitive to asymmetrically distributed returns and event-induced increases in variance as Brown and Warner (1985) and Boehmer et al. (1991) have shown, we also employ the nonparametric rank test based on Corrado (1989) to test for robustness. This type of test is correctly specified no matter how skewed the cross-sectional distribution of abnormal returns is. Furthermore it is less affected by event-induced increases in variance compared to parametric tests. Since turnover data does not seem to be symmetrically distributed, we also perform the nonparametric rank test based on Corrado (1989) to test significance of excess volumes.

4. Empirical Results

4.1. Market Reaction

Assuming that journalists working for *PFMs* are either capable of generating novel and relevant information while recommending a specific stock or at least initiating price-pressure by inducing naïve investors to buy a specific stock, we should observe an immediate increase in the stock's valuation associated with buy recommendations. Thus, we implicitly test for the null hypothesis that *PFMs'* recommendations do not lead to a revaluation of stocks.

Table II reports abnormal returns (ARs), cumulative abnormal returns (CARs) and excess volumes (EVs) for buy recommendations within the event period [-20,+20]. We observe positive and statistically significant ARs on trading days [-7] through [+2]. However, apart from these days, subsequent trading days display ARs which fluctuate without consequently being positive or negative. The maximum value of a daily AR is reported for trading day [-1], the day prior to the official publication, with 1.08 percent, while on the PD itself we find a highly significant market reaction of 0.64 percent.

[Insert Table II here]

Since new information is usually incorporated into prices gradually, one has to examine the cumulative abnormal returns in order to measure not only the price reaction of one single day, but also the entire market reaction to *PFMs'* recommendations. Thus, the second information displayed in Table II is the cumulative abnormal return starting from trading day [-20]. Statistically significant positive CARs under the parametric as well as the nonparametric test are reported from day [-5] on, hence CAR [-20,-5]. The maximum positive value of 4.61 percent is displayed over the period [-20,+2]. As can be seen in the table, although significant CARs start long before the PD, there is still a noticeable increase in absolute CARs from trading day [-1] on, which reveals that following buy recommendations might be both a realizable and profitable strategy for private investors.

However, we should not analyze cumulative abnormal returns which start long before the recommendations are known to any market participant. As it would be more appropriate to evaluate shorter periods, Table III displays CARs for some selected periods which should be influenced more directly by our event. Most *PFMs* decide on trading day [-3] at the latest which stocks are included on the buy list for the current week's edition. Hence, a price reaction which we assign to the recommendations should first start when the decision is fixed.

Based on the findings of Table II, this price reaction does not last longer than up to trading day [+2], when no further significant price increase can be documented.

[Insert Table III here]

For all buy recommendations, Panel A of Table III displays the highest market reaction of 2.58 percent for the period [-2,+2]. Thus, the null hypothesis that *PFMs'* recommendations do not lead to a revaluation of stocks can be rejected for short-term periods around the event. Furthermore, we analyze if the positive market reaction holds only in bull markets, i.e. years of a rising CDAX, as shown in Panel B, or if we can also observe price increases in bear markets, i.e. years of a decreasing CDAX as displayed in Panel C. The CAR for the period [-2,+2] in the bull market is 2.88 percent, whereas in times of bear markets, the CAR still displays 2.22 percent. Results are significant for both states of the market.

To analyze if *PFMs'* recommendations also have significant impact on the trading volume around the PD, we calculate average excess trading volumes, also displayed in Table II. Each excess trading volume statistically differs from its average level within the period [-1,+2]. On the event day itself, the excess trading volume peaks at around 161 percent of the normal trading level. Since the increase in trading volume caused by the recommendations concentrates on a few trading days around the event day this indicates that generated abnormal returns seem to be induced by *PFMs'* recommendations.

To gain further insight in the factors influencing the market reaction we estimate cross-sectional regressions on company specific factors. Following Fama and French (1993), company size, price-to-book ratio and risk might be important to explain abnormal returns. With respect to the size of a company we include the dummy variables BIG and SMALL for stocks belonging to the extreme quintiles in each year in terms of market capitalization. Similarly, GLAMOUR and VALUE represent dummy variables for stocks belonging to the

extreme quintiles in each year in terms of price-to-book ratios. Furthermore, we include the variable BETA based on monthly return data for the 36-month period prior to the event day which accounts for longer-term risks additional to what is already incorporated in the market model. Additionally, we control for confounding news and the short-term momentum effect (see, e.g., Jegadeesh and Titman (1993) and Rouwenhorst (1998)) which might be significant determinants for cumulative abnormal returns around the event day. Hence, we include the dummy variable ADHOC if confounding news is released by the company the week prior to the event [-5,0] and the variable PASTPERF which represents the performance of cumulative abnormal returns in the period [-20,-3]. Finally, we check if results are driven by the state of the market, i.e. by bull or bear markets. Hence, we include the dummy variable BEARMARKET which represents years of a negative market movement. We estimate the following model:

$$\begin{aligned} CAR_i[t,t+s] = c \\ &+ \beta_1 BIG_i + \beta_2 SMALL_i \\ &+ \beta_3 GLAMOUR_i + \beta_4 VALUE_i \\ &+ \beta_5 BETA_i \\ &+ \beta_6 ADHOC_i + \beta_7 PASTPERF_i + \beta_8 BEARMARKET_i \\ &+ \varepsilon_i \end{aligned}$$

where CAR_i [t,t+s] represents the cumulative abnormal return for recommendation i from trading day [t] to trading day [t+s].

Table IV reports results for the multivariate ordinary least square regressions[11]. As revealed by the adjusted R^2 of the distinct regressions, our model offers the highest explanatory power for the cumulative abnormal return of the periods [-2,+2] and [-1,+2]. Therefore, we focus on these results in the following discussion.

[11] We solved the problem of heteroscedasticity (revealed via the White heteroscedasticity test) by reporting robust standard errors (White heteroscedasticity-consistent standard errors). See also White (1980).

[Insert Table IV here]

First, with respect to the company size, Table IV displays that the coefficient on BIG is significantly negative whereas the coefficient on SMALL is significantly positive. Hence, small stocks, as compared to big stocks, seem to display a greater price reaction to buy recommendations compared to big stocks. Second, in order to test the influence of price-to-book ratios on abnormal returns, Table IV shows the coefficient on GLAMOUR as negative. However, statistical significance under the 10%-level can only be reported for the CAR [-2,+2]. In contrast, the coefficient on VALUE is significantly positive; buying value stocks results in higher CARs. Although the evidence on glamour stocks is less clear-cut, overall, we can conclude that value stocks seem to be subject to a greater price reaction to buy recommendations than glamour stocks. Third, the coefficient on BETA is significantly positive, revealing that the purchase of high beta stocks, thus more risky stocks, results in higher CARs.

Additionally, Table IV displays results for the included control variables. The dummy variable ADHOC, controlling for biases caused by confounding corporate news, is reported to be insignificant in all regressions. Hence, the observed price reaction on buy recommendations does not seem to be affected in a systematic manner by the release of confounding ad hoc announcements. Next, by controlling for the short-term momentum effect, we find the coefficient on PASTPERF to be mostly insignificant. So, we do not find a sufficient indication that abnormal returns around the event are biased due to the short-term momentum effect. Finally, the dummy variable BEARMARKET is found to be significantly negative, demonstrating that CARs within times of bear markets are lower than within bull markets. However, as shown in Panel C of Table III, CARs in absolute terms are still significantly positive even when exercising recommendations in bear markets.

4.2. Price-Pressure versus Information Value

In this section of the paper, we address two issues. First, we examine the entire sample to determine how much of the price reaction can be attributed to new information in *PFMs'* buy recommendations, and what fraction seems to be associated with temporary price-pressure. Second, we aim to address the information hypothesis and the price-pressure hypothesis more directly in the context of companies' characteristics. Therefore, we will broaden current research by distinguishing between different sub-groups of stocks like small stocks and big stocks, glamour stocks and value stocks.

[Insert Table V here]

Table V reports CARs for three periods in order to separate pure price-pressure effects from information effects. The CAR for the period [-2,+2] represents the total price reaction around the PD, since both effects take place contemporaneously. This total price reaction can be divided into two components: the CAR for the period [-2,+20] and the CAR for the period [+3,+20]. The CAR [-2,+20] represents the information effect since the whole price reaction around the event day and its future development up until trading day [+20] are included. Assuming that the pure information value should result in a fundamental revaluation of the stock, this effect must be permanent up until trading day [+20]. The CAR [+3,+20] represents the price-pressure reversal effect. Since we assume increased buying-pressure around the event day to be reversed after the event, this period best captures the possible reversal effect and hence estimates the size of the price-pressure effect. We choose the period starting at trading day [+3] through [+20] since Table II shows that the reversal of CAR for buy recommendations starts at trading day [+3]. We define the price-pressure itself to be of

equal size but of the opposite sign compared to the measurable price-pressure reversal from the period [+3,+20].

Panel A of Table V displays results for the entire sample of buy recommendations. With respect to the permanent information effect, we observe a significant increase in stock prices of 1.54 percent for the period [-2,+20]. The price-pressure reversal effect CAR [+3,+20] accounts for -1.04 percent. Hence, we assume stock prices to increase by 1.04 percent due to price-pressure around the event itself. Since the total price reaction CAR [-2,+2] of 2.58 percent almost evenly splits between the information effect and the price-pressure effect, we find support for both the information hypothesis and the price-pressure hypothesis for the entire sample.

Panel B reports results for sub-samples based on the stocks' characteristics. With respect to the size of the recommended stocks, we predict that the information effect is bigger for stocks with a lower frequency of company specific information releases, i.e. small stocks. In accordance with this, small stocks significantly increase by 3.12 percent in the period [-2,+20], whereas big stocks only generate a respective value of a significant 0.97 percent. Thus, the permanent information effect CAR [-2,+20] confirms that editors of *PFMs* are mainly capable of generating valuable information for small stocks compared to big stocks. Additionally, we expect stocks within less liquid markets, like small stocks, to be exposed to higher price-pressure. This is confirmed since stock prices of small stocks significantly decrease by -1.92 percent within the period [+3,+20], whereas big stocks only display a respective value of a statistically insignificant -0.08 percent. Thus, the price-pressure effect can only be confirmed for small stocks. Combining both effects, stock prices of small stocks increase by 5.04 percent within the period [-2,+2] which is partly due to the information effect and partly due to the temporary price-pressure effect. In contrast, big

stocks display a significant CAR [-2,+2] of 1.05 percent, entirely due to the information effect.

[Insert Figure I here]

Figure I plots cumulative abnormal returns for buy recommendations of both small stocks and big stocks in order to give a more graphical and intuitive impression of the price reaction for the period [-2,+20]. As can be seen in Figure I, small stocks heavily outperform big stocks[12].

Second, we predict recommendations of value stocks to have greater information value due to the fact that they are also less closely followed by the financial community. In line with this prediction, stock prices of value stocks are reported to significantly increase by 4.22 percent in the period [-2,+20], representing the information effect, whereas glamour stocks display a statistically insignificant -0.64 percent. Hence, we can conclude that *PFMs'* editors disclose particularly valuable information when recommending value stocks, while recommendations on glamour stocks have no information value at all. With respect to the price-pressure effect, glamour stocks reveal a statistically significant CAR [+3,+20] of -2.25 percent indicating that extreme price-pressure might be at work here whereas recommendations on value stocks are associated with an insignificant 0.21 percent for the corresponding period. Although we mainly predicted value stocks to be associated with price-pressure (as markets of value stocks might be less liquid compared to markets of glamour stocks), this prediction cannot be confirmed. In contrast, we find that glamour stocks show an extreme price-pressure reversal effect. Combining both effects, stock prices of value stocks increase by 4.02 percent in the period [-2,+2], mainly due to the information effect. The total price reaction for glamour

[12] As an additional robustness check, we expand the period of investigation for ten further trading days beyond the chosen event period. For both small and big stocks the CAR [+21,+30] is insignificant. Hence, we can conclude that there are no short-term price changes due to the price-pressure effect and the information effect after trading day [+20].

stocks is 1.61 percent, exclusively generated by the price-pressure effect since there is no significant information effect.

[Insert Figure II here]

Figure II displays cumulative abnormal returns for buy recommendations of both value stocks and glamour stocks for the period [-2,+20]. The figure highlights that value stocks heavily outperform glamour stocks in the period [-2,+2][13].

5. Discussion

The first striking fact about the market reaction is that a substantial increase in prices can be observed well before the journalists themselves decide upon an inclusion of a specific stock on the buy list. The CAR for the period [-20,-3] is shown to be 2.03 percent, almost half of the total price reaction. However, we do not suspect information leakage to be the reason for this up-front market reaction. It seems to be quite unlikely that information about *PFMs'* recommendations could be anticipated by the market, since our event does not represent a major change in companies' prospects which might be foreseen. Unlike in cases of a prospective merger, very few individuals might be informed about an upcoming *PFM* recommendation. Furthermore, structuring a merger deal usually requires several months, whereas the decision to recommend a stock for purchase is usually made in a few days. Hence, the observed market reaction can hardly be explained by insider trading. Alternatively, one could think of two possible explanations for the pre-event market reaction. First, the editorial staff might follow short-term momentum strategies. Concretely, journalists might be

[13] We additionally expand the period of investigation for ten further trading days to analyze the robustness of the findings. Whereas the CAR [+21,+30] is found to be insignificant for glamour stocks, revealing no further decrease in stock prices beyond trading day [+20], the CAR [+21,+30] of value stocks reveals a statistically significant increase, stressing our result that the market reaction for value stocks is not exposed to price-pressure effects at all.

tempted to recommend those stocks for purchase which performed best in the week preceding the day of the recommendation. In this case, high abnormal returns prior to the event day would trigger a buy recommendation and not vice versa. Second, there might be other confounding events prior to the publication day which lead to the pre-event market reaction. As displayed in Table I, 9.64 percent of the recommendations are preceded by ad hoc announcements representing confounding events. When testing a smaller sample with randomly resampled recommendations, only 5.60 percent of the recommendations are accompanied by concurrent events. This fact indicates that journalists are tempted to cover stocks of companies that announced important company news recently.

Although our study focuses on market responses in the very short-run and thus does not focus on the potential investment value for private investors, we would like to briefly discuss our results in this respect. As Table III shows, the benefit for private investors heavily depends on the time when recommendations are exercised. Subscribers who usually receive their copy of the magazine on trading day [-1] will earn a significant CAR [-1,+2] of 2.42 percent whereas for investors who trade on the event day a CAR [0,+2] of solely 1.34 percent remains. Consequently, in order to profit from the recommendations, readers of *PFMs* should buy the recommended stocks as soon as possible. Taking explicit costs like commissions charged by the broker[14] and the bid-ask spread into account (see Keim and Madhavan (1998) and Berkowitz and Logue (2001) for the different components of transaction costs), it seems as if in general, exercising recommendations is solely beneficial for investors who have the opportunity to trade on trading day [-1]. However, our results concerning recommendations for specific groups of stocks like value stocks and small stocks give a more promising picture for private investors as can be seen in Panel D-G of Table III. Subscribers investing in value

[14] In 1995, online brokerage houses charged commissions (i.e. costs charged by brokers and additional fees per order for the custody bank) of about 1.2 percent for a round-trip transaction. Nowadays, this fee has sharply declined to about 0.6 percent

stocks will earn a significant CAR [-1,+2] of 3.77 percent, while regular readers who purchase their copy on the official publication day still secure a CAR [0,+2] of 2.16 percent. The same yields for trading solely in small stocks which offers a CAR [-1,+2] of 4.88 percent, while for regular readers the CAR [0,+2] is still 2.67 percent. Showing that the market reaction of both small stocks and particularly of value stocks contains information content (although small stocks are also influenced by price-pressure) supports the eligibility of journalists within the information generating process for at least specific types of stocks.

Given the substantial market response to *PFMs'* buy recommendations, journalists could face the accusation that they trade prior to the publication for their own benefit. Although abnormal returns are reported to be significant from trading day [-7] onwards, they are low, compared to the abnormal return of trading day [-1] when most subscribers of the *PFMs* are able to trade. Even more important, observable excess trading volumes are statistically insignificant before trading day [-1]. Hence, as far as our data reveals, journalists do not seem to take advantage of their insider information. This empirically supports what one would expect since all of our *PFMs* follow the *German Press Code*, which emphasizes the responsibility of journalists not to mix personal economic interests with their profession as journalists (see guideline 7.4 of the *German Press Code* for further information). Additionally, some of the magazines established an even stricter code of conduct prohibiting any trade in stocks, directly or through agents, before the information is officially published and prohibiting any trade at all if journalists cover stocks regularly and imposing further disclosure requirements which are checked by assigned notaries. Comparable editorial policies are found by Lidén (2004) for Swedish newspapers and *PFMs*.

When relating our findings to other studies, which are mentioned in section 2, it is difficult to compare results due to different event windows. However, it seems as if our results are in line

with routinely found positive abnormal returns based on recommendations published by brokerage houses and financial gurus. On the contrary, recommendations of investment newsletter do not show evidence for significant abnormal returns. Within the group of studies covering journalists' recommendations, results are mixed. In direct comparison to the findings of Lidén (2004), the most recent study covering journalists, our results indicate that the increase in prices is twice as high as for Swedish journalists.

Our results can also be interpreted in light of literature on the investment behavior of private investors. As has been shown recently by Barber and Odean (2005), out of the myriad of possibilities, private investors seem to choose investments according to whether a specific stock catches their attention. By analyzing, among other things, trading records of private investors, they have shown that news, increased trading volumes and extreme returns in the recent past classify as measures which grab the attention of private investors and thereby induce trading activity by this group of investors. We find complementing evidence that the recommendations of *PFMs* might be another source of information which grabs the attention of private investors, since we can document increased trading volumes around the publication day of *PFMs* as well.

Having documented that journalists are capable of generating valuable investment advice, according to Admati and Pfleiderer (1990), it still seems an open issue why journalists choose to directly sell their information via the publication of *PFMs* instead of selling it indirectly through the creation of mutual funds. Private information would then enter into portfolio choices to manage the funds. In this case, the sale of information is done via selling shares of the fund to investors. Although Admati and Pfleiderer (1990) show that for a number of cases selling information indirectly dominates selling it directly, we must focus on the special case of investors who are heterogeneous in the type and amount of private information they have.

This best represents what can be observed in reality. For this case, the direct sale of information results in strictly higher profits compared to the indirect sale. The reason for this, as Admati and Pfleiderer (1990) argue, is that direct sale traders, hence our private investors, can unbundle a vector of information signals and optimally combine them with their private information. Under these circumstances, obtaining information indirectly is likely to be suboptimal for private investors since their information endowments are individually different. Hence, it seems to be a rational choice for journalists to decide to sell the information via the release of *PFMs*.

6. Conclusion

In order to trade on the stock market, private investors depend on investment advice from financial experts like brokerage houses, investment newsletters, 'financial gurus' and journalists. Unlike the first three groups, financial advice from journalists has not been extensively analyzed by academics so far. Therefore, we base our empirical study on five different German *Personal Finance Magazines* (*PFMs*) covering the years 1995 to 2003. Altogether, 2,860 buy recommendations of stocks are analyzed. As found in related studies, buy recommendations are associated with positive cumulative abnormal returns. For a five-day period around the event, a cumulative abnormal return of 2.58 percent is reported. In addition, the trading volume increases to around 161 percent of the normal level at the event day.

Unlike most previous studies on the market reaction to financial experts' recommendations, we partition the total price effect into two components: the permanent information effect and the temporary price-pressure effect. Thereby, we test both the information hypothesis and the price-pressure hypothesis. The price-pressure effect is shown to be most extreme for small

stocks and glamour stocks. However, whereas the initial price reaction to small stocks is additionally driven by permanent information value, this does not hold true for glamour stocks. In contrast, value stocks are associated with high CARs that are solely driven by novel fundamental information, since a decreasing trend after the initial price reaction is absent. It might be a beneficial task to analyze if our results for German *PFMs'* recommendations are unique in an international context or if one can find similar evidence for U.S. financial experts' recommendations by focusing on specific stock characteristics. Furthermore, since little research has been conducted on the longer-term investment value of recommendations issued by journalists, it might be interesting if private investors could profit from *Personal Finance Magazines* in the longer term.

References

Admati, A. R. and Pfleiderer, P. (1990) Direct and Indirect Sale of Information, *Econometrica* **58**, 901-928.

Arbel, A. and Strebel, P. (1983) Pay attention to neglected firms! *Journal of Portfolio Management* **9**, 37-42.

Arbel, A. (1985) Generic Stocks: An Old Product in a New Package, *Journal of Portfolio Management* **11**, 4-13.

Barber, B. M., Lehavy, R., McNichols and M., Trueman, B. (2001) Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns, *Journal of Finance* **56**, 531-563.

Barber, B. M., Lehavy, R., McNichols and M., Trueman, B. (2003) Reassessing the Returns to Analysts' Stock Recommendations, *Financial Analysts Journal* **59**, 88-96.

Barber, B. M. and Loeffler, D. (1993) The "Dartboard" Column: Second-Hand Information and Price Pressure, *Journal of Financial and Quantitative Analysis* **28**, 273-284.

Barber, B. M. and Odean, T. (2005) All that Glitters: The Effect of Attention and News on the Buying Behaviour of Individual and Institutional Investors, *Working Paper*.

Berkowitz, S. A. and Logue, D. E. (2001) Transaction Costs, *Journal of Portfolio Management* **27**, 65-74.

Boehmer, E., Musumeci, J. and Poulsen, A. B. (1991) Event-Study Methodology under Conditions of Event-Induced Variance, *Journal of Financial Economics* **30**, 253-272.

Brown, S. J. and Warner, J. B. (1985) Using Daily Stock Returns – The Case of Event Studies, *Journal of Financial Economics* **14**, 3-31.

Corrado, C. J. (1989) A Nonparametric Test for Abnormal Security-Price Performance in Event Studies, *Journal of Financial Economics* **23**, 385-395.

Desai, H. and Jain, P. C. (1995) An Analysis of the Recommendations of the ”Superstar“ Money Managers at Barron’s Annual Roundtable, *Journal of Finance* **50**, 1257-1273.

Fama, E. F. (1970) Efficient Capital Markets: A Review on Theory and Empirical Work, *Journal of Finance* **25**, 383-417.

Fama, E. F. and French, K. R. (1993) Common Risk Factors in the Return on Stocks and Bonds, *Journal of Financial Economics* **33**, 3-56.

Ferreira, E. J. and Smith, S. D. (2003) “Wall $treet Week”: Information or Entertainment? *Financial Analysts Journal* **59**, 45-53.

Jaffe, J. F. and Mahoney, J. M. (1999) The Performance of Investment Newsletters, *Journal of Financial Economics* **53**, 289-307.

Jegadeesh, N. and Titman, S. (1993) Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency, *Journal of Finance* **48**, 65-91.

Keim, D. B. and Madhavan, A. (1998) The Cost of Institutional Equity Trades, *Financial Analysts Journal* **54**, 50-69.

Kraus, A. and Stoll, H. R. (1972) Price Impacts of Block Trading on the New York Stock Exchange, *Journal of Finance* **27**, 569-588.

Liang, B. (1999) Price Pressure: Evidence from the “Dartboard” Column, *Journal of Business* **72**, 119-134.

Lidén, E. R. (2004) Swedish Stock Recommendations: Information Content or Price Pressure? *Working paper*.

MacKinlay, A. C. (1997) Event Studies in Economics and Finance, *Journal of Economic Literature* **35**, 13-39.

Metrick, A. (1999) Performance Evaluation with Transactions Data: The Stock Selection of Investment Newsletters, *Journal of Finance* **54**, 1743-1775.

Mikhail, M. B., Walther, B. R. and Willis, R. H. (2004) Do Security Analysts exhibit Persistent Differences in Stock Picking Ability? *Journal of Financial Economics* **74**, 67-91.

Pieper, U., Schiereck, D. and Weber, M. (1993) Die Kaufempfehlungen des „Effecten-Spiegel“, *Zeitschrift für betriebswirtschaftliche Forschung* **45**, 487-509.

Rouwenhorst, K. G. (1998) International Momentum Strategies, *Journal of Finance* **53**, 267-284.

Röckemann, C. (1994) Anlageempfehlungen von Börseninformationsdiensten und Anlegerverhalten, *Zeitschrift für betriebswirtschaftliche Forschung* **46**, 819-851.

Scholes, M. S. (1972) The Market for Securities: Substitution versus Price Pressure and the Effects of Information on Share Prices, *Journal of Business* **45**, 179-211.

Stickel, S. E. (1995) The Anatomy of the Performance of Buy and Sell Recommendations, *Financial Analysts Journal* **51**, 25-39.

White, H. (1980) A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity, *Econometrica* **48**, 817-838.

Womack, K. L. (1996) Do Brokerage Analysts' Recommendations Have Investment Value? *Journal of Finance* **51**, 137-167.

Yazici, B. and Muradoğlu, G. (2002) Dissemination of Stock Recommendations and Small Investors: Who Benefits? *Multinational Finance Journal* **6**, 29-42.

Table I
Descriptive Statistics for Buy Recommendations, from 1995 to 2003

The table displays the number of buy recommendation for each year and the entire investigation period. The market capitalization (MC) is given in millions of euros. Data on price-to-book ratios (PTB) is available for 2,772 buy recommendations; resulting in a corresponding coverage ratio of 96.92 percent. The calculation of betas is based on monthly return data of each stock over the 36-months period prior to the event. Due to a not negligible number of stocks with a short performance history, betas can just be calculated for 2,271 buy recommendations. This corresponds to 79.41 percent of all buy recommendations. Column (9) displays the percentage of events in which ad hoc announcements were released by the company between three and five trading days prior to the event. Data on ad hoc announcements is available starting from 1996. Hence, 2,604 buy recommendations could be screened for ad hoc announcements. That is 91.05 percent of the original sample.

Buy Recommendations

(1) Year	(2) No. of Rec.	(3) MC Median	(4) MC Mean	(5) PTB Median	(6) PTB Mean	(7) Beta Median	(8) Beta Mean	(9) % in Sample w/ concurrent Ad Hoc News
1995	256	184.98	1331.73	1.87	2.41	0.96	0.97	n/a
1996	261	188.41	1425.44	1.67	2.06	0.96	0.98	3.07%
1997	279	273.17	2103.90	2.13	2.88	0.90	0.94	9.68%
1998	250	613.11	5276.46	2.30	3.53	0.94	0.93	10.00%
1999	281	651.60	5040.34	2.19	3.73	0.88	0.86	10.68%
2000	371	997.72	6723.14	2.21	4.12	0.63	0.66	12.67%
2001	428	467.83	4098.41	2.03	3.08	0.53	0.67	11.92%
2002	382	464.52	4225.43	1.74	2.28	0.53	0.77	11.26%
2003	352	282.52	1982.48	1.26	1.49	0.81	0.94	5.68%
Average all Years	2860	403.44	3704.81	1.87	2.84	0.80	0.85	9.64%

Table II
Abnormal Returns, Cumulative Abnormal Returns and Excess Volumes for Buy Recommendations

This table shows abnormal returns (AR_t), cumulative abnormal returns (CAR_t) and excess volumes (EV_t) for the event period [-20,+20]. To test for statistical significance, t-statistics, based on Brown and Warner (1985), are displayed next to the (cumulative) abnormal returns. ***,**,* indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the parametric t-test. $^{+++}$,$^{++}$,$^{+}$ indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the nonparametric rank test based on Corrado (1989). Due to limited data on daily turnover, the analysis of excess volumes is based on 1,676 buy recommendations. This corresponds to 58.60 percent of the original sample. A further limitation of the volume data is that it does not cover all existing regional German stock exchanges but only daily turnover volumes of the Frankfurt Stock Exchange.

	Buy Recommendations						
Event Day	AR_t	t-stat		CAR	t-stat		EV_t
-20	-0.06%	-1.12		-0.06%	-1.12		0.96 $^{+}$
-19	0.03%	0.68		-0.02%	-0.31		0.97 $^{+}$
-18	-0.02%	-0.45		-0.05%	-0.52		0.96
-17	-0.04%	-0.74		-0.08%	-0.82		1.02
-16	-0.09%	-1.81 *		-0.18%	-1.54		0.96
-15	0.01%	0.17		-0.17%	-1.34		1.01
-14	0.11%	2.17 **		-0.06%	-0.42		1.06
-13	0.06%	1.21		0.01%	0.04		1.05
-12	-0.05%	-0.97		-0.04%	-0.29		1.06
-11	-0.01%	-0.22		-0.06%	-0.34		1.07
-10	0.16%	3.12 ***		0.10%	0.62		1.03
-9	0.23%	4.47 ***	$^{+}$	0.33%	1.88 *		1.02
-8	0.08%	1.56		0.41%	2.24 **		1.04
-7	0.14%	2.78 ***		0.55%	2.90 ***		1.07
-6	0.18%	3.59 ***	$^{+}$	0.73%	3.73 ***		1.18
-5	0.30%	5.97 ***	$^{+++}$	1.04%	5.10 ***	$^{++}$	1.24
-4	0.49%	9.69 ***	$^{+++}$	1.53%	7.30 ***	$^{+++}$	1.28
-3	0.50%	9.91 ***	$^{+++}$	2.03%	9.43 ***	$^{+++}$	1.31
-2	0.16%	3.18 ***		2.20%	9.91 ***	$^{+++}$	1.25
-1	1.08%	21.22 ***	$^{+++}$	3.28%	14.40 ***	$^{+++}$	1.55 $^{+++}$
0	0.64%	12.61 ***	$^{+++}$	3.92%	16.81 ***	$^{+++}$	1.61 $^{+++}$
1	0.44%	8.58 ***	$^{+++}$	4.35%	18.25 ***	$^{+++}$	1.43 $^{++}$
2	0.26%	5.11 ***	$^{++}$	4.61%	18.92 ***	$^{+++}$	1.37 $^{+++}$
3	-0.14%	-2.73 ***		4.47%	17.96 ***	$^{+++}$	1.24
4	-0.02%	-0.36		4.46%	17.52 ***	$^{+++}$	1.23
5	-0.07%	-1.36		4.39%	16.92 ***	$^{+++}$	1.23
6	0.04%	0.85		4.43%	16.77 ***	$^{+++}$	1.20
7	-0.11%	-2.09 **		4.32%	16.07 ***	$^{+++}$	1.22
8	-0.08%	-1.66 *		4.24%	15.48 ***	$^{+++}$	1.03
9	-0.12%	-2.37 **		4.12%	14.79 ***	$^{+++}$	1.09
10	-0.11%	-2.09 **		4.01%	14.17 ***	$^{+++}$	1.07
11	-0.01%	-0.13		4.01%	13.93 ***	$^{+++}$	1.06
12	0.05%	0.94		4.05%	13.88 ***	$^{+++}$	1.09
13	-0.14%	-2.68 ***		3.92%	13.21 ***	$^{+++}$	1.04
14	-0.13%	-2.47 **		3.79%	12.61 ***	$^{+++}$	1.08
15	-0.03%	-0.61		3.76%	12.33 ***	$^{+++}$	1.09
16	0.00%	-0.10		3.76%	12.15 ***	$^{+++}$	1.06
17	0.00%	0.07		3.76%	12.00 ***	$^{+++}$	1.08
18	-0.13%	-2.55 **		3.63%	11.43 ***	$^{+++}$	1.07
19	-0.03%	-0.53		3.60%	11.20 ***	$^{+++}$	1.08
20	-0.03%	-0.54		3.58%	10.98 ***	$^{+++}$	1.16

Table III
Cumulative Abnormal Returns for Buy Recommendations

This table reports cumulative abnormal returns for distinct periods around the event day [0] for buy recommendations. To test for statistical significance, t-statistics, based on Brown and Warner (1985), are displayed next to the CARs. ***,**,* indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the parametric t-test. $^{+++}$,$^{++}$,$^{+}$ indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the nonparametric rank test based on Corrado (1989).

		Buy Recommendations						
		Mean	t-stat	Minimum	First Quarter	Median	Third Quarter	Maximum
Panel A: Overall Results								
CAR	[-2,+2]	2.58%	22.67 *** $^{+++}$	-28.91%	-1.11%	1.64%	5.43%	107.34%
CAR	[-1,+2]	2.42%	23.76 *** $^{+++}$	-24.72%	-0.94%	1.56%	4.81%	78.80%
CAR	[0,+2]	1.34%	15.18 *** $^{+++}$	-19.34%	-1.24%	0.77%	3.43%	47.68%
CAR	[+1,+2]	0.70%	9.68 *** $^{+++}$	-39.43%	-1.14%	0.31%	2.26%	32.61%
Panel B: Bull Market								
CAR	[-2,+2]	2.88%	21.52 *** $^{+++}$	-23.19%	-0.68%	1.91%	5.51%	39.11%
CAR	[-1,+2]	2.64%	22.07 *** $^{+++}$	-15.14%	-0.60%	1.76%	5.00%	40.53%
CAR	[0,+2]	1.50%	14.48 *** $^{+++}$	-17.35%	-1.02%	0.89%	3.45%	33.97%
CAR	[+1,+2]	0.80%	9.48 *** $^{+++}$	-17.30%	-0.97%	0.32%	2.17%	32.61%
Panel C: Bear Market								
CAR	[-2,+2]	2.22%	11.15 *** $^{+++}$	-28.91%	-1.78%	1.06%	5.05%	107.34%
CAR	[-1,+2]	2.15%	12.06 *** $^{+++}$	-24.72%	-1.35%	1.17%	4.50%	78.80%
CAR	[0,+2]	1.13%	7.34 *** $^{+++}$	-19.34%	-1.82%	0.58%	3.37%	47.68%
CAR	[+1,+2]	0.54%	4.25 *** $^{+++}$	-39.43%	-1.62%	0.28%	2.45%	25.28%
Panel D: Small								
CAR	[-2,+2]	5.04%	17.20 *** $^{+++}$	-26.93%	-0.16%	3.52%	8.20%	107.34%
CAR	[-1,+2]	4.88%	18.63 *** $^{+++}$	-13.57%	-0.15%	3.34%	7.74%	78.80%
CAR	[0,+2]	2.67%	11.75 *** $^{+++}$	-16.35%	-0.93%	1.49%	5.53%	47.68%
CAR	[+1,+2]	1.25%	6.76 *** $^{+++}$	-39.43%	-1.04%	0.56%	2.89%	28.97%
Panel E: Big								
CAR	[-2,+2]	1.05%	5.97 *** $^{+++}$	-15.52%	-1.34%	0.68%	3.38%	19.52%
CAR	[-1,+2]	0.75%	4.77 *** $^{+++}$	-16.66%	-1.37%	0.49%	2.97%	16.86%
CAR	[0,+2]	0.54%	3.95 *** $^{+++}$	-17.38%	-1.25%	0.38%	2.20%	12.27%
CAR	[+1,+2]	0.40%	3.59 *** $^{+++}$	-9.30%	-1.03%	0.19%	1.60%	13.48%
Panel F: Value								
CAR	[-2,+2]	4.02%	15.56 *** $^{+++}$	-28.91%	-0.43%	2.72%	6.77%	107.34%
CAR	[-1,+2]	3.77%	16.30 *** $^{+++}$	-24.72%	-0.33%	2.26%	6.31%	78.80%
CAR	[0,+2]	2.16%	10.82 *** $^{+++}$	-17.94%	-0.89%	1.22%	4.38%	35.81%
CAR	[+1,+2]	1.18%	7.19 *** $^{+++}$	-18.40%	-1.00%	0.60%	2.71%	28.97%
Panel G: Glamour								
CAR	[-2,+2]	1.61%	5.24 *** $^{+++}$	-24.03%	-2.14%	1.05%	5.25%	31.73%
CAR	[-1,+2]	1.73%	6.29 *** $^{+++}$	-17.64%	-1.41%	1.17%	4.67%	43.41%
CAR	[0,+2]	0.58%	2.42 ** $^{+++}$	-19.34%	-1.94%	0.34%	3.00%	25.05%
CAR	[+1,+2]	0.26%	1.32 $^{+}$	-14.29%	-1.60%	0.09%	1.92%	21.66%

Table IV
Determinants of Cumulative Abnormal Returns for Buy Recommendations

This table shows results based on multivariate OLS regressions of possible determinants on CARs of different periods for buy recommendations. The independent variables are defined as follows: (i) BIG (SMALL) are dummy variables for stocks belonging to the quintile with the highest (lowest) market capitalization in a given year. (ii) GLAMOUR (VALUE) represent dummy variables for stocks belonging to the quintile with the highest (lowest) price-to-book ratio in a given year. (iii) BETA is the variable for the stock's risk. Its calculation is based on monthly return data of each stock over a 36-month period prior to the event. (iv) ADHOC represents a dummy variable which equals one if an ad hoc announcement is released by the company the week prior to the event [-5,0]. (v) PASTPERF represents the performance of CAR in the period [-20,-3]. (vi) BEARMARKET is a dummy variable for those years with a negative CDAX movement. ***,**,* indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the parametric t-test. The OLS regression is based on 1,986 buy recommendations. That is 69.44 percent of the original sample. The problem of heteroscedasticity (revealed via the White heteroscedasticity test) is solved by reporting robust standard errors (White heteroscedasticity-consistent standard errors).

	Buy Recommendations							
	(1)		(2)		(3)		(4)	
Variable	CAR[-2,+2] Coefficient	t-stat	CAR[-1,+2] Coefficient	t-stat	CAR[0,+2] Coefficient	t-stat	CAR[+1,+2] Coefficient	t-stat
C	0.0179	5.16 ***	0.0141	4.25 ***	0.0104	3.79 ***	0.0060	2.62 ***
BIG	-0.0090	-3.23 ***	-0.0117	-4.68 ***	-0.0038	-1.80 *	-0.0005	-0.27
SMALL	0.0258	5.74 ***	0.0265	6.39 ***	0.0134	3.96 ***	0.0065	2.33 **
GLAMOUR	-0.0073	-1.89 *	-0.0045	-1.21	-0.0080	-2.79 ***	-0.0038	-1.65 *
VALUE	0.0092	2.37 **	0.0078	2.25 **	0.0050	1.77 *	0.0034	1.46
BETA	0.0088	2.52 **	0.0110	3.37 ***	0.0040	1.47	0.0010	0.45
ADHOC	0.0074	1.46	0.0067	1.44	0.0027	0.70	0.0027	0.87
PASTPERF	-0.0300	-1.49	-0.0302	-1.67 *	-0.0020	-0.15	0.0059	0.54
BEARMARKET	-0.0109	-3.56 ***	-0.0083	-2.93 ***	-0.0070	-3.04 ***	-0.0039	-2.08 **
Adj. R^2	6.20%		7.60%		3.22%		1.02%	
Prob(F-statistic)	0.0000		0.0000		0.0000		0.0004	

Table V

Cumulative Abnormal Returns for Buy Recommendations, Segregated by the Information Effect and the Price-Pressure Effect

This table reports CARs for buy recommendations segregated by the information effect and the price-pressure effect. Panel A reports both components of CARs for the entire sample. Panel B presents information for sub-samples based on stock-size quintiles and price-to-book ratio quintiles. In particular, BIG (SMALL) displays results for those buy recommendations which belong to the quintile with highest (lowest) market capitalization in a given year. Accordingly, GLAMOUR (VALUE) displays results for those buy recommendations which belong to the quintile with the highest (lowest) price-to-book ratio in a given year. To test for statistical significance, t-statistics, based on Brown and Warner (1985), are displayed next to the CARs. ***,**,* indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the parametric t-test. $^{+++}$,$^{++}$,$^{+}$ indicate statistical significance at the 1%-, 5%-, 10%-level (two-tailed test) according to the nonparametric rank test based on Corrado (1989). Panel B also reports differences of the CARs of respective sub-samples, e.g. BIG vs. SMALL. To control for statistical significance of these differences, the traditional t-test is used to test the equality of mean and the nonparametric Wilcoxon/Mann-Whitney test is used to test the equality of median. $^{\circ\circ\circ}$,$^{\circ\circ}$,$^{\circ}$ indicate statistical significance at the 1%-,5%-,10%-level (two-tailed test) based on the Wilcoxon/Mann-Whitney test.

	Buy Recommendations					
	Total Price Reaction = Information Effect + Price-Pressure Effect		**Information Effect**		**Price-Pressure Reversal Effect**	
	CAR[-2,+2]	t-stat	CAR[-2,+20]	t-stat	CAR[+3,+20]	t-stat
Panel A						
Overall	2.58%	22.67 *** $^{+++}$	1.54%	6.32 *** $^{+}$	-1.04%	-4.81 *** $^{++}$
Panel B						
BIG	1.05%	5.97 *** $^{+++}$	0.97%	2.58 ***	-0.08%	-0.23
SMALL	5.04%	17.20 *** $^{+++}$	3.12%	4.96 *** $^{+}$	-1.92%	-3.46 *** $^{++}$
Difference (SMALL-BIG)	3.99%	9.33 *** $^{\circ\circ\circ}$	2.15%	2.84 *** $^{\circ\circ}$	-1.84%	2.97 *** $^{\circ\circ\circ}$
GLAMOUR	1.61%	5.24 *** $^{+++}$	-0.64%	-0.96	-2.25%	-3.85 *** $^{+++}$
VALUE	4.02%	15.56 *** $^{+++}$	4.22%	7.62 *** $^{+++}$	0.21%	0.42
Difference (VALUE-GLAMOUR)	2.41%	4.97 *** $^{\circ\circ\circ}$	4.86%	5.88 *** $^{\circ\circ\circ}$	2.45%	3.57 *** $^{\circ\circ\circ}$

Figure I
Cumulative Abnormal Returns for Small Stocks versus Big Stocks

This figure plots cumulative abnormal returns for buy recommendations for small stocks and big stocks for the period [-2,+20]. The solid line represents CARs for those stocks which belong to the quintile with lowest market capitalization in a given year, hence small stocks. The dashed line represents CARs for those stocks which belong to the quintile with the highest market capitalization in a given year, hence big stocks. The CAR of day [t] equals the sum of ARs from trading day [-2] to [t].

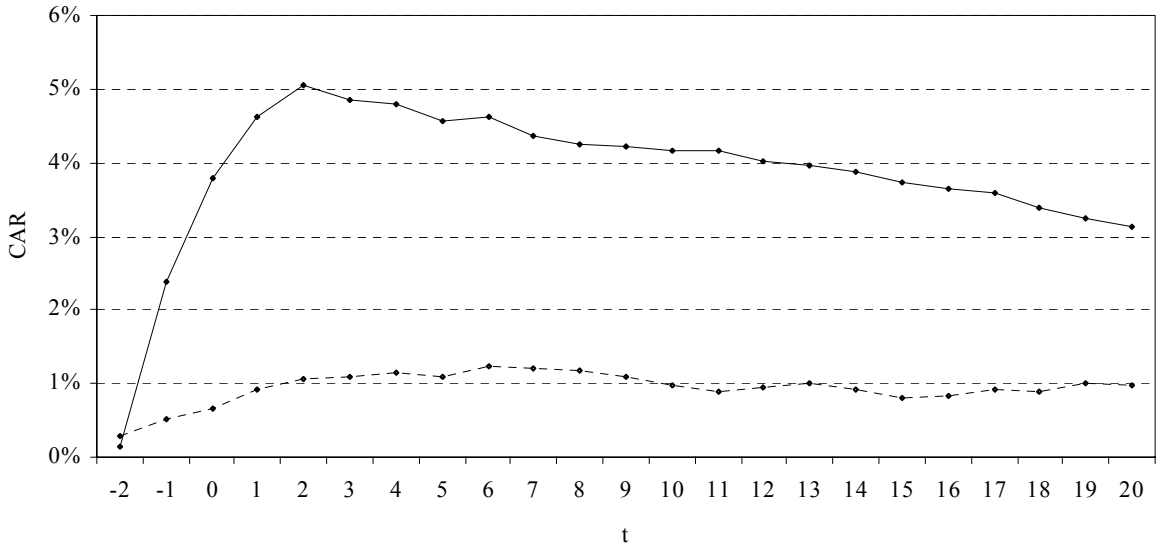

Figure II
Cumulative Abnormal Returns for Value Stocks versus Glamour Stocks

This figure plots cumulative abnormal returns for buy recommendations for value stocks and glamour stocks for the period [-2,+20]. The solid line represents CARs for those stocks which belong to the quintile with lowest price-to-book ratio in a given year, hence value stocks. The dashed line represents CARs for those stocks which belong to the quintile with the highest price-to-book ratio in a given year, hence glamour stocks. The CAR of day [t] equals the sum of ARs from trading day [-2] to [t].