ECONOMIC STUDIES

DEPARTMENT OF ECONOMICS
SCHOOL OF ECONOMICS AND COMMERCIAL LAW
GÖTEBORG UNIVERSITY
142

ESSAYS ON THE INFORMATION AND CONFLICTS OF INTEREST IN STOCK RECOMMENDATIONS

Erik Lidén

ISBN 91-85169-01-3
ISSN 1651-4289 print
ISSN 1651-4297 online

Abstract

This thesis brings together three separate empirical essays on the information and conflicts of interest in stock recommendations.

The first essay analyzes stock-price reactions to recommendations published in printed Swedish media and also trading volumes at and around the publication day, bid/ask spreads, and the post-publication drift in recommended stocks for the period 1995-2000. Its small size and limited number of actors makes the Swedish stock market an interesting comparison to the U.S. stock markets. The positive publication-day effect for buy recommendations was almost fully reversed after 20 days, supporting the price-pressure hypothesis, and the effect for sell recommendations was negative and prices continued to drift down, supporting the information hypothesis. Analysts seem to hand their information to private clients before publication, whereas no such information-leaking pattern was observed for recommendations from journalists. The impact to recommendations from journalists was significantly larger than analyst recommendations, implying a tradeoff between the size of pre-publication cumulative abnormal returns and the publication-day effect.

The second essay analyzes the initiated and changed recommendations published in six well-known Swedish newspapers and business magazines for the period 1996-2000 using a buy-and-hold abnormal returns (BHARs) approach. As was done in essay 1, the results here distinguish between recommendations from analysts and journalists. Buy recommendations were misleading investors, whereas sell recommendations were leading them correctly. Overall all buy- and sell recommendations yield returns in line with the market. This asymmetry could be due to positive information from the management of the company being more intricate to interpret than negative and generally exaggerated in a positive direction. This phenomenon holds for recommendations from both analysts and journalists. Following buy- *and* sell recommendations from analysts yielded BHARs in line with those from following journalist recommendations, which in turn gives rise to returns in line with the market.

The third essay examines the credibility in underwriter analyst stock recommendations of Scandinavian IPO firms for the period 1996-2001. The excess returns for recommendations from underwriter analysts' versus those from non-underwriter analysts' in an environment without the *quiet-period* regulation is analyzed. Underwriter analyst recommendations are found to outperform non-underwriter analyst recommendations during the first year from publication, yielding substantially higher mean excess returns. Recommendations from underwriters comes sooner after the IPO date and performs

worse before and in the days surrounding the recommendation date, showing no evidence that underwriters try to "boost" IPO firms in the aftermarket trading. The results support the superior information hypothesis.

Key words: Stock recommendations, Printed media, Price-pressure hypothesis, Information hypothesis, Journalists, Analysts, EMH, Initiations, Information asymmetry, Initial public offerings, Quiet period, Underwriter analysts.

Acknowledgement

As with all achievements in life, this thesis would not have been accomplishable without the guidance, assistance, and support from various colleagues, friends and family.

First of all I would like to present my deepest gratitude to my supervisor Professor Clas Wihlborg. The spontaneous approach in your comments about this work, as well as humorous character, always made our "sessions" productive and fun. I also appreciate the introduction you have given me to the world of research through conferences and doctoral seminars. The encouragement from you in submitting my work to various journals has given me valuable insights into academic research which I am certain will prove important in my future career.

This thesis would not have been possible without the many friends and colleagues that I have met at the Department of Economics and who provided me with assistance and guidance in various matters. I am especially grateful to have met all the friends in the class of -99. You are all inspiring people. Especially, I would like to thank my friend Marcus Eliason. Your patience in listening to my stories of how financial markets work as well as helping me with my programming-problems, have been priceless. I also want to thank my friend Sorin Maruster who made my coursework easier especially by explaining the wonderful world of optimization. I also thank my former roommate, Ahmet Yaprak, with whom I shared many enjoyable moments. A special thanks goes to Doctor Ann Veiderpass for her support as well as often interesting and fruitful discussions.

I would also like to give a special thanks to the administrative staff at the department for always giving timely support and assistance.

I am grateful for the unlimited, as well as continuous, financial data support given to me by Henrik Röhs at *SIX Markets Estimates*. I also thank *Thomson Financial*, and especially Maria Bodö and Suzanne Felicité, for letting me becoming a member of the *Thomson Financial* Academic Program from which I gained access to various financial data, and also for the tailored recommendations files.

I owe my colleague Rick Wicks a great deal for the professional as well as tough review of my papers. His valuable comments improved my work tremendously. For the comments to essays 1 and 2, I would like to thank associate Professor Boo Sjöö. Thank you, Professor Richard Sweeney for many interesting as well as important comments to essay 1 and for making me understand the importance of "selling" a paper to referees. I am also grateful for the comments to essay 3 from Professor Jay Ritter. Professor Brad Barber patiently answered many of my "annoying" questions on event-study method-

ology. The valuable comments from Doctor Thomas Andrén regarding the econometrics in paper 3 was also very much appreciated. I would also like to thank the following colleagues for their comments on varying aspects of this thesis: Professor Hemang Desai; Doctor Eugene Nivorozhkin; Professor Roni Michaely; as well as the participants of: the 2002 Financial Management Association (FMA) Doctoral Tutorial in Copenhagen, Denmark; the 2003 FMA Doctoral Tutorial in Dublin, Ireland; and the 2004 Swedish Network for European Studies in Economics and Business conference in Mölle.

The financial support from Göteborg University, Adlerbertska Stipendiefonden, Jan Wallenders och Tom Hedelius Stiftelse, and Bankforskningsinstitutet is gratefully acknowledged.

I would like to thank my parents and my sister for their support and love in me.

Finally, Karin, it is only with your unmatched support and love, that I could become what I am, and for this thesis to become what it is. Not only did you give me invaluable support, you also assisted me in collecting data and correcting my papers. Your encouragement in me and my research, along with your eye for the important aspects in life, is something for which I am forever indebted. Thank you!

Erik R. Lidén Göteborg, November 2004

Contents

Chapter 1

Introduction and Summary

The three essays in this thesis deal with the information contained in publicly available stock recommendations and the conflicts-of-interest issues that may affect the non-publicly available recommendations.[1]

The Efficient Market Hypothesis (EMH), which is one of the most known hypotheses in finance, stems from the work of Fama (1965). According to this hypothesis, buying and selling shares in an attempt to outperform the market should be a game of chance rather than skill if markets are efficient and current prices fully reflect all available information. In practice, this means that an investor who uses publicly available information should not be able to consistently outperform the market.

This thesis mainly deals with the Swedish stock market. In Sweden, investing in stocks is very common. According to a recent survey by TEMO, as much as 80 percent of the population were stockholders in year 2000. The companies listed in this stock exchange contain several well-known multinationals, but also a large number of small research-intensive companies in the IT- and biotech sectors.

Both printed and broadcasted media have adapted to the continuously increasing need for new information. So, the flow of information constantly increases, which makes it more difficult to decide what information may be accurate and inaccurate. Investment advice in the form of stock recommendations are no exception to the above-described information flow. While the stock market attracts more investors, the amount of stock recommendations surfacing also increases. With the increase in this type of information, it is important to analyze whether such information may potentially harm investors more than make them wealthy.

[1]With non-publicly available recommendations I refer to those recorded on *First Call* who are only available to subscribers. The subscribers to *First Call* are generally banks and brokerage firms.

Printed media often publish investment advice. The investment advice is mostly in the form of stock recommendations where investors are recommended to buy or sell shares in a specific company, sometimes over a certain horizon. In Sweden, printed media covering the stock markets can be divided into three general groups: (1) serious newspapers and business magazines which usually avoid direct investment advice; (2) newspapers that publish stock recommendations in order to attract new readers and thereby sell more single copies; and (3) newspapers and business magazines which can be expected to publish recommendations because of their finance- and business profiles.

Generally, stock recommendations in the Swedish newspapers and business magazines are written either by a journalist employed by that newspaper or business magazine, or a financial analyst. In society, journalists and analysts act as information intermediaries.[2] They sell information to the public, who find it too costly to gather the information themselves. Journalists are usually employed by a specific newspaper or business magazine, and analysts are employed by a bank or a brokerage firm. The information journalists possess is sold via the newspaper or business magazine they write for. The information analysts possess is sold primarily to private clients, and is secondarily released (free of charge) to the public via printed or broadcasted media. The main part of the recommendations are written by journalists who generally have no incentive to give either a positive or negative recommendation of a certain stock. This is so because journalist stock trades are monitored by the board. Furthermore, they (and their families) are not allowed to trade in stocks they cover, or in the stocks that the other journalists of that newspaper or business magazine cover. The newspapers and business magazines only require of the particular analyst to follow industry regulation and the rules adopted by the bank or brokerage firm he or she represents. There are, however, incentives for analysts to give a certain type of recommendation. They may have clients who have an interest in the company, or the bank that the analyst represents may have an interest in the company and would need a certain type of recommendation. These incentive-differences, which in turn originate from the differences in job description, leads us to assume there are behavioral differences between analysts and journalists when giving recommendations.

According to the EMH, recommendations (from either source) should not be profitable for an investor to follow. If there is some "private" information contained in the recommendation not yet priced into the stock, prices should react instantaneously to this information at the open of the market.

[2]See, for example, Healy and Palepu (2001).

This indicates that it is useless to follow stock recommendations in printed media since they, at best, will perform in line with the market. An investor would be equally well off holding the market index, i.e. by, for example, investing in an index fund. The bulk of previous research on stock recommendations in newspapers and business magazines has found that prices of buy-recommended stocks react positively to the recommendation as such at the publication day (examples to this are: Canes and Lloyd-Davies (1978); Liu et al. (1990); Beneish (1991); and Barber and Loeffler (1993)) whereas the publication-day effect to sell recommendations has been found to be negative (examples are: Canes and Lloyd-Davies (1978); Liu et al. (1990); and Beneish (1991)). That is, the information in buy recommendations has a positive effect on stock prices whereas the information in sell recommendations has a negative effect on prices. Often the positive reaction at the publication day was followed by a negative drift in securities prices for buy recommendations in the first post-recommendation weeks, thus supporting the so-called Price-Pressure hypothesis (examples are: Liu et al. (1990); Mathur and Waheed (1995); Sant and Zaman (1996); and Ferreira and Smith (1999)). This hypothesis suggests that the recommendations create temporary buying- or selling pressure from naïve investors who cause the abnormal returns trying to profit from them. The post-recommendation drift to sell recommendations also tend to be negative, instead supporting the so-called Information Hypothesis (an example would be: Sant and Zaman (1996)). This hypothesis suggests that the recommendations reveal relevant (and potentially profitable) information, which creates fundamental revaluation of stock prices upon arrival on the financial markets. In the long run, previous research has found these publicly available stock recommendations to be of no value for an investor following them (see for example: Liang (1999); Mathur and Waheed (1995); and Muradoğlu and Yazici (2002)), although for recommendations from analysts in printed media, private clients of the analyst's bank may profit from knowing the recommendation before publication (see for example: Muradoğlu and Yazici (2002)).

Investment banks play an important role in the financial system. Among other things, they have corporate-finance clients consisting of ordinary companies. Investment banks may, for example, help these companies to be introduced at the stock exchange via an Initial Public Offering (IPO). In an IPO there is an underwriting syndicate which guarantees the introduction. This syndicate may consist of one or more lead managers and co-managers. The lead manager(s) is(are) responsible for the due diligence, the pricing of the company, and the selling of shares, while the co-manager(s) is(are) responsible for performing research and sometimes selling shares. There are certain issues which are important for the success of an investment bank in

its daily work. Investment banks want happy clients. By keeping them in a good spirit, they may receive future corporate-finance deals. Since winning future deals is probably the most important task for an investment bank, keeping its corporate-finance clients happy is prioritized. This can be done by, for example, a very successful IPO or by favorable bank recommendations in the company stock after the IPO date. It is also important to obtain *new* corporate-finance clients. This can be done by issuing favorable recommendations for that firm. There are, however, other clients in an investment bank. These clients pay for investment advice on which they make investment decisions administered via the investment bank. These clients will receive the recommendations concerning the corporate-finance clients. So, if the investment bank wants to issue a positively-biased report leading to a buy recommendation in order to increase the possibility of winning future deals, this will end up on the sell-side clients table. On one hand the investment bank wants to give the company a buy recommendation, but on the other hand this may create unhappy sell-side clients. The described situation will lead to a conflicts-of-interest issue. In previous research on underwriter analyst recommendations versus non-underwriter analyst recommendations, Michaely and Womack (1999) found underwriter-recommended stocks to perform worse before the recommendation, in the days surrounding it, and in the first year after it took place. Michaely and Womack (1999) argue that underwriters try to "boost" low performing IPO's in the aftermarket trading, leading to these recommendations underperforming the market.

The first essay examines whether stock recommendations in Swedish printed media during the period 1995-2000 give rise to a price reaction in the recommended stocks, and if so, whether this reaction is due to price pressure or information content. In line with previous research, the reaction to buy recommendations were found to support the price-pressure hypothesis, and sell recommendations to support the information hypothesis. We argue that the asymmetry in reaction to positive and negative information is mainly due to the structural differences that exist between buy- and sell recommendations. Buy recommendations draw new readers to the newspaper or business magazine, increasing single copies sold. These recommendations are presumably given with less background information whereas sell recommendations are more sudden in nature and demand more investigative work than buys. The major contribution of this paper is that we can show that the information in analyst recommendations are taken advantage of several days before publication in the printed media. This supports our hypothesis that since the private clients of banks must get value for the fees they pay in relation to the trades they make, information is handed to them before publication. Another contribution is that we are able to show that there is

a tradeoff effect between "leaking" the information in the recommendations to private clients before publication, and the size of publication-day effect. That is, the larger the reaction is in the pre-recommendation periods, the less it will be at the publication day.

The second essay analyzes the long-run returns from initiated and changed recommendations in Swedish printed media during the period 1996-2000. This paper tries to answer the simple question: "Can these recommendations be used to earn abnormal returns in the long run?". In this essay, buy recommendations were found to mislead investors whereas sell recommendations were leading them correctly. Stock recommendations are usually a result of company information, i.e. the management of the company plays an important role in how this information is presented and ultimately interpreted. I argue that the company management is always positively biased about the future prospects of the company, regardless of whether they present positive or negative information. Their bias in information makes it difficult to interpret this information. When the company presents positive information, analysts and journalists have a difficult task in interpreting whether the stock may be worth more based on this information or not. If they find that the stock is undervalued, it leads to buy recommendations. When negative information is presented by the management, there is no question that it is worse than told. This leads to sell recommendations. The idea is that positive information is overall more difficult to interpret than negative, leading to buy recommendations more often being misleading and sell recommendations generally being leading investors correctly. Acting on both buy- and sell recommendations an investor would earn returns in line with the market. Also, an investor would be equally well off to follow analyst recommendations as to follow journalist recommendations.

The third essay investigates the credibility in underwriter analyst recommendations for Scandinavian IPOs during the period 1996-2001. The absence of a quiet-period regulation makes these markets interesting to study, since most research on underwriter analyst recommendations has been performed on the U.S. stock markets. During the quiet period, regulation prohibits these underwriters from: (1) issuance of forecasts, projections, or predictions relating but not limited to revenues, income, or earnings per share; and (2) publishing opinions concerning values. The initiated buy recommendations of the IPO firms registered in the *First Call*'s database from underwriter analysts are compared with the recommendations by other analysts in these IPO firms. Excess returns were calculated during the post-publication period, event period, and various post-recommendation periods. Underwriter analyst recommendations were found to outperform non-underwriter analyst recommendations in the first year after publication, yielding more than

26 percent higher excess returns. Also, recommendations from underwriters come much sooner than those from non-underwriters, and perform worse before and during the days surrounding the recommendations. This means that there were no signs that, by issuing buy recommendations, underwriters try to "boost" low performing IPO firms in the aftermarket trading, a view that was previously argued by Michaely and Womack (1999). They found the recommendations by lead managers to outperform those by non-lead managers. I argue that there are two reasons why the results in this paper are different: First, there is less competition in the Swedish market, and second, there are different regulations in the U.S. stock market.

The inferences to be drawn from the results of this thesis are threefold. First, financial analysts hand their information to private clients to profit from before it is published in the printed media. The recommendations by analysts that surface in newspapers and business magazines are nothing more than "second-hand" recommendations. As such the only purpose they serve is to assist clients of the analyst's bank, or the bank itself, to make profits from misleading other investors. Second, initiated or changed stock recommendations in newspapers and business magazines are based on positively biased information from the company management. Because of this bias, buy recommendations tend to be misleading and sell recommendations to be leading investors correctly. Overall, these recommendations perform in line with the market. Nevertheless, this assumes that sell-recommended stocks are possible to *short* at any given time, which we know is hardly the case. Third, the underwriter analysts of Scandinavian IPOs tend to give buy recommendations that are affected by their superior information gained in the IPO process, and as such they are more worthy of trust.

Chapter 2

Swedish Stock Recommendations: Information Content or Price Pressure?

Abstract

The paper analyzes stock-price reactions to stock recommendations published in printed Swedish media and also trading volumes at and around the publication day, bid/ask spreads, and the post-publication drift in recommended stocks for the period 1995-2000. Its small size and limited number of actors makes the Swedish stock market an interesting comparison to the U.S. stock markets. The positive publication-day effect for buy recommendations was almost fully reversed after 20 days, supporting the price-pressure hypothesis, and the effect for sell recommendations was negative and prices continued to drift down, supporting the information hypothesis. Analysts seem to hand their information to clients before publication, whereas no such information-leaking pattern was observed for journalists. The impact to recommendations from journalists was significantly larger than analyst recommendations, implying a tradeoff between the size of pre-publication cumulative abnormal returns and the publication-day effect.

Key words: Price-pressure hypothesis, Information hypothesis, Journalists, Analysts.
JEL Classifications: G10, G14, G20.

2.1 Introduction

The buy- and sell recommendations of stocks published in newspapers and business magazines are based on analysts' and journalists' interpretations of information they possess, hence they are second-hand information. In an efficient market, recommendations containing new "relevant" information should lead to a price reaction exclusively on the publication day (PD). Previous literature has proposed two different hypotheses regarding observed abnormal returns (ARs) on and about the PD. The *price-pressure* hypothesis (PPH) suggests that the recommendations create temporary buying- or selling pressure from naïve investors who cause the abnormal returns trying to profit from them. The *information* hypothesis (IH) suggests that the recommendations reveal relevant (and potentially profitable) information, which creates fundamental revaluation of stock prices upon arrival on the financial markets. Using data on stock recommendations in Swedish printed media, I discuss whether observed ARs on the PD have a *temporary* (supporting PPH) or *permanent* effect (supporting IH).

Previous literature on stock recommendations in newspapers and business magazines have focused on the U.S. stock markets, and mainly on recommendations presented in the *Wall Street Journal* and *Business Week*. Exploiting the reaction to recommendations published in printed media outside the U.S. will thus contribute to a more complete picture. A summary of all the referenced studies on stock recommendations in newspapers and business magazines is presented in Table 2.7.1 in the Appendix.

Compared to the U.S. stock markets, the Swedish stock market consists of a small number of firms with large market capitalization, and a large number of firms with relatively low market capitalization. More importantly, there are fewer active journalists and analysts on the Swedish market, thus lower competition between those analyzing stocks. Examining stock recommendations from the G7 countries (i.e. Canada, France, Germany, Great Britain, Italy, Japan, and United States), Jegadeesh and Kim (2003) show that the *lower* the competition between those analyzing the market, the more difficult it gets uncovering mispriced stocks, something supported by two previous studies on stock recommendations published in different Turkish magazines. Analyzing the recommendations published in the column "Investor Ali" of *Moneymatik* magazine during the period 1993-98, Muradoğlu and Yazici (2002) found that a small investor acting on the recommendations would not earn statistically significant ARs. However, "preferred investors" could earn ARs on this information prior to publication. The evidence in Kiymaz (2002), which studied the "gossip" published in *Ekonomik Trend* weekly during the period 1996-97, presented similar results. Although both

of these studies were based on a limited number of observations and focused exclusively on buy recommendations, they suggest that published recommendations in stock markets with less competition among journalists and analysts provide less value to small investors.

The main contribution of this paper to the existing literature, is testing whether stock prices react to published stock buy- and sell recommendations in various Swedish printed media during the period 1995-2000 and whether there are differences in the recommendations published by journalists to analysts. To my knowledge, this have not been done in previous research. It is also discussed whether found stock-price reactions at the publication day was due to information content or price pressure. Because of the substantial as well as potentially important differences in the job description between journalists and analysts, analyzing the differences in recommendation behavior is an important issue since analysts have clear incentives to publish stock recommendations in the newspapers or business magazines. Analysts may therefore use printed media as an outlet for second-hand recommendations, i.e. there is a potential bias to be expected from their recommendations. If this is found to be the case, editors of the newspapers and business magazines publishing stock recommendations should ask themselves whether or not to publish recommendations in the best interest of their readers or in the best *financial* interest of a limited number of analysts and their clients.

The results in this paper show that buy recommendations result in a statistically significant positive PD effect. At the publication day, a decreasing bid/ask spread and an increased trading volume was documented, clear evidence of price pressure. The documented reversion in stock prices following these recommendations also supports the price-pressure hypothesis. Sell recommendations result in a statistically significant negative PD effect, followed by an increased bid/ask spread, indicating that the market maker faced informed traders. During the following six-month period, stock prices continued to decrease, thus supporting the information hypothesis. Previous research have failed to come up with an explanation to why buy recommendations generally support the PPH while sell recommendations generally support the IH. We believe that this may be due to structural differences in buy- to sell recommendations. Publishing favorable recommendations, the newspaper or business magazine probably sell more single copies. Because of their positive nature, these recommendations can be given with less background information. Sell recommendations are more sudden to its nature, probably demands more of investigative work, and since a source to mispricing has been found, they create further confusion regarding the "true" value of the stock on the markets. These structural differences may explain the found asymmetry.

Also, journalist recommendations had greater impact than did those of analysts, a finding in line with previous research. I show that this is mainly due to analysts handing their information to clients prior to publication, which is also supported by higher-than normal trading volumes prior to publication. Analysts' clients consequently get value for fees paid, leaving no further value for those informed later. Another interesting finding is that the larger the effect during the pre-publication period was, the lower was the PD effect. Finally, the most positive buy recommendations were published during weekdays, and the most negative sell recommendations were published during weekends.

Section 2 describes the tested hypotheses, Section 3 discusses the data, while Section 4 explains the methods used. The results are presented in Section 5, while Section 6 summarizes and draws conclusions.

2.2 Hypotheses

Assuming that the Swedish stock market is (at least) semi-strong efficient, we expect the recommendations to have an effect on stock prices at the PD only. In fact, most of the previous research indicates that buy recommendations result in a statistically significant positive PD effect, while a discernible negative PD effect is observed for sell recommendations; hence stock prices react to published recommendations.[1] If drifts from the stock-price levels on the PD are observed on average in the short run, this gives support to either the PPH, or the IH. For example, if we observe a positive publication-day effect to buy recommendations followed by an increase in prices, this indicates that those recommendations had information content. The described pattern would violate the Efficient Market Hypothesis, which states that an investor should not be able to consistently profit from following this information. The majority of studies also support the notion that investors *overreact* to buy recommendations, thus supporting the PPH.[2] Furthermore, investors tend to *underreact* to sell recommendations in the short term, thus supporting the IH.[3] This leads us to our first hypothesis.

[1] See Canes and Lloyd-Davies (1978), Liu et al. (1990), and Barber and Loeffler (1993).

[2] See Canes and Lloyd-Davies (1978), Liu et al. (1990), Barber and Loeffler (1993), Mathur and Waheed (1995), and Liang (1999).

[3] See Liu et al. (1990), Palmon et al. (1994), Sant and Zaman (1996); all report statistically insignificant but negative cumulative abnormal returns from the day following the PD to the end of the event window.

HYPOTHESIS 1: *If the recommendations contain new information, stock prices should react to this information exclusively on the publication day.*

A few words on the differences between journalists and analysts in publishing stock recommendations. In society, journalists and analysts act as information intermediaries.[4] They sell information to the public, who find it too costly to gather the information themselves. Journalists are usually employed by a specific newspaper or business magazine, and analysts are employed by a bank or a brokerage firm. The information journalists possess is sold via the newspaper or business magazine they write for. The information analysts possess is sold primarily to private clients, and secondarily released (free of charge) to the public via printed or broadcasted media. Furthermore, analysts generally work exclusively with a set of companies which they cover, whereas journalists cover a much larger spectra of companies. As a consequence of the above, journalists are *expected* to publish articles, whereas recommendations from analysts are voluntary. Since analysts have incentives to give either a favorable or an unfavorable recommendation from which they themselves or their clients can profit, we can expect these recommendations to be second-hand. These differences in job description between journalists and analysts leads to differences in expected recommendation behavior between the groups:

HYPOTHESIS 2: *The profitable information in analyst recommendations, irrespective of its kind, will be taken advantage of well before publication.*

If the profitable information contained in analyst recommendations has been taken advantage of prior to its publication, the impact should be lower on the PD compared to recommendations from journalists. This can be expected since the information is known to some actors on the marketplace, and therefore surprises fewer actors on the PD than would have been the case for journalist recommendations. That the above expectation is realistic was found and argued for in Sant and Zaman (1996). This leads to our final hypothesis:

HYPOTHESIS 3: *The impact to analyst recommendations on the publication day, irrespective of its kind, will be lower than recommendations from journalists.*

[4]See, for example, Healy and Palepu (2001).

2.3 Data Description

The data consists of buy- and sell recommendations of stocks published in six large and well-known Swedish newspapers and business magazines for the period 1995-2000, collected from the *Mediearkivet*- and *Affärsdata* databases.[5] These sources contain *all* relevant articles published during the period of interest. Data was extracted from the articles using various search-strings with regularly-used keywords for stock recommendations, such as: "stock", "buy", "sell", "increase", "decrease", and "recommend". The recommendations were written by either a journalist or an analyst. "Journalist" was defined as a person employed by a newspaper or business magazine to write articles. "Analyst", on the other hand, was defined as a person employed by a bank, brokerage firm, or similar. Each newspaper and business magazine is briefly described here, with more details in Appendix, Table 2.7.2.

Affärsvärlden (AFV) is a weekly business magazine whose journalists regularly give stock recommendations. *Aftonbladet* (AB) is an evening newspaper that publishes recommendations written by both journalists and invited analysts, usually on weekends. *Finanstidningen* (FT)[6] is a morning business newspaper that publishes recommendations on a daily basis written by their journalists. *Göteborgsposten* (GP), a morning newspaper, publishes recommendations by analysts on weekends. *Privata Affärer* (PA) is a monthly business magazine which publishes recommendations originating from their own journalists. Finally, *Veckans Affärer* (VA) is a weekly business magazine with their own journalists giving recommendations.

The internal codes of conduct for the newspapers and business magazines (as explained in Appendix, Table 2.7.2) are weaker than, for example, the one used by the *Financial Times*, whose journalists must follow the Code of Practice from the Press Complaints Commission: They must not buy or sell, directly or through agents, shares or securities about which they have written recently or about which they intend to write in the near future; furthermore, they should not speculate by buying or selling shares on a short-term basis. For the newspapers and business magazines in this study, however, journalists were in general allowed to trade in a stock after publication of a buy- or sell recommendation, and there were no limits on short-term speculation in stocks not covered by the newspaper or business magazine.

[5]See Appendix 2.7.2. Only recommendations of common stocks listed in the A- or O-lists of the *Stockholm Stock Exchange* (SSE) were considered; the A-list contains the most traded stocks.

[6]During 2002 (after the study-period), *Finanstidningen*, *Ekonomi24*, and *Vision* formed a new business newspaper called *Finans Vision*. Both *Ekonomi24* and *Vision* were previously information providers established mainly on the Internet.

The sample consists of 2282 recommendations, of which 1918 were buy, and 364 sell.[7] Table 2.1 shows the number of buy- and sell recommendations of each newspaper and business magazine in the sample (displayed in panel A), as well as the totals by journalists and analysts (displayed in panel B).

Table 2.1: **Distribution of recommendations in newspapers and business magazines during 1995-2000, and its characteristics.** Abbreviations: **AFV**=*Affärsvärlden*, **AB**=*Aftonbladet*, **FT**=*Finanstidningen*, **GP**=*Göteborgsposten*, **PA**=*Privata Affärer*, **VA**=*Veckans Affärer*, **W**=published during weekdays, **WE**=published during weekends.

Panel A

Type	AFV	AB	FT	GP	PA	VA	Total
Buy	215	293	238	265	472	435	**1918**
Sell	75	163	48	-	2	76	**364**
Total	290	456	286	265	474	511	**2282**

Panel B

	Journalists			Analysts		
Type	W	WE	Total	W	WE	Total
Buy	1152	200	1352	182	384	566
Sell	185	137	322	18	24	42
Total	1337	337	1674	200	408	608

The three smallest newspapers and business magazines are business oriented, and thus may nonproportionally attract relatively large actors on the financial markets, whose cumulative actions might be more likely to have an affect on the price of any given stock, because of the size of their individual trades (circulation figures are shown in Table 2.7.2 in the Appendix). We might consequently expect some newspapers and business magazines to have a larger impact on stock prices than others. The ratio of buy-to-sell recommendations in the sample was roughly 5:1 (Table 2.1). During the study-period, no sell recommendations were found for GP and only two for PA. Excluding GP and PA, the ratio decreases to approximately 3:1.[8] Jour-

[7]There were occasions when more than one journalist/analyst published the same recommendation in the same newspaper or business magazine on the same day. Those instances were considered as *one* buy or sell. Contradictory recommendations, however, were disregarded totally.

[8]The ratio between buy- and sell recommendations found in similar studies are: 3:1 in Canes and Lloyd-Davies (1978), 2:1 in Liu et al. (1990), 5:2 in Beneish (1991), 11:2 in

nalists gave about 4 times more buy- than sell recommendations, whereas analysts gave 13 times more.

The sample was also divided into recommendations being published on weekdays and those published on the weekends (Table 2.1). One of the main explanations to the well-documented *Monday*- or *weekend*-effect is that negative news are more frequently released during weekends. The buy-to-sell ratio for recommendations being published during weekdays was 13:2, whereas the ratio for weekend-publications were 7:2, hence sell recommendations were almost twice as common during weekends. It is worth mentioning that no sell recommendations were published on Saturdays.

The sample firms had mean- and median market capitalizations of Swedish krona (SEK) 55 billion and 4.6 billion on the day of the recommendation. Recommended stocks were thus relatively large compared to the SSE as a whole, for which the mean- and median market capitalization in 2000 was SEK 11.6 billion and SEK 0.9 billion. Analysts generally recommended larger firms (mean market capitalization of SEK 70 billion) than did journalists (mean market capitalization of SEK 50 million); both differences from the SSE average are statistically significant.[9]

The daily stock prices came from the *Scandinavian Information Exchange* (SIX) and were adjusted for dividends being reinvested in the stock on the ex-dividend day.[10]

2.4 Research Design

To analyze the price- and volume reactions to recommendations, an event-study method in which the estimation- and event windows are separated was used. This design gives estimators that are not influenced by the returns around the event.

Each recommendation was assigned t=0 for the PD.[11] The event window consisted of the 40 days of trading surrounding the PD, plus the PD itself, hence t=-20,. . . ,+20. The estimation window consisted of 120 days of

Palmon et al. (1994), 8:1 in Sant and Zaman (1996), 1:1 in Ferreira and Smith (1999), and 4:1 in Jordan and Sarkar (2000). The ratio naturally depends on what columns are studied; as some columns mainly focus on buy recommendations.

[9]The hypothesis that the means of market values for recommendations from analysts and from journalists were equal can be rejected at the 3-percent level.

[10]SIX provides software called TRUST, which is a database containing historical stock prices and volumes traded on each day.

[11]When a recommendation was published on a day when markets were closed, the next open day was designated as the PD.

trading preceding the event window, i.e., t=-140,. . . ,-21.[12] As discussed in the previous section, recommendations were grouped into different portfolios depending on whether it was a buy or a sell, in which newspaper or business magazine it was published, and whether it originated from a journalist or an analyst.

2.4.1 Abnormal Return (AR)

To estimate the abnormal return (AR) for each stock, i, on any day, t, during the event window, the market model and its standard assumptions were used. The estimated AR for stock i at time t ,AR_{it}, during the event period is:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \qquad t = -20, \ldots, +20. \tag{2.1}$$

Because the estimation window consisted of 120 days of trading, approximately 6 months of data was used in the OLS to get estimates $\hat{\alpha}_i$ and $\hat{\beta}_i$, the coefficients from the market model. As a proxy for the market return, R_m, the SIX return index (SIXRX) was used. The SIXRX is a value-weighted index consisting of all stocks included in the A- and O-lists of SSE (where the A-list contains the most traded stocks), adjusted by reinvesting dividends on ex-dividend dates.

The mean AR for each portfolio, $\overline{AR}$, was calculated from day -20 to +20, and cumulated during the same period in order to obtain the mean cumulative abnormal return, $\overline{CAR}$. In order to test the statistical significance of $\overline{AR}_t$ on days t and of $\overline{CAR}_{T_1,T_2}$ during the interval T_1 to T_2, the ARs were standardized.[13]

2.4.2 Abnormal Volume (AV)

In order to establish whether observed reactions were due to price pressure or information content, it was also tested whether abnormal volume in the event window was zero. When testing for abnormal volume (AV) during the event period, the market model for log-transformed trading volume suggested

[12] According to MacKinlay (1997), standard practice in an event-study is to set the estimation window to 120 days, thus keeping the intertemporal correlation low and obtaining a large sample. Barber and Loeffler (1993) used a 100-day estimation window and an event window of 51 days. Liu et al. (1990) used a longer estimation window, i.e., 250 days. Others have used longer event windows than estimation windows, for example Liang (1999), where estimation:event was 100:150.

[13] Standardizing the estimated ARs for each stock is recommended in Brown and Warner (1980, 1985) and later used, for example, by Liu et al. (1990).

in Ajinkya and Jain (1989), was used. The market model for trading volume can be motivated by assuming a multivariate normal distribution for the cross-section of securities in a manner similar to the motives behind the market model for returns as a statistical model. This method is superior to others for two reasons. First, using log-transformed volume yields a variable that more closely approximates a normal distribution. Second, because the market model brings additional information about the market, it increases the power of tests over the otherwise frequently used mean-adjusted method. In this case, the log-transformed market model for volume can be written as

$$ln(1 + SKV_{it}) = \alpha_i + \beta_i ln(1 + SKV_{mt}) + e_{it}, \tag{2.2}$$

where SKV_{it} is the total Swedish kronor value traded in stock i on day t; SKV_{mt} is the total Swedish kronor value traded in the market on day t; e_{it} is the predicted error for stock i on day t; and α_i and β_i are the regression coefficients specific to stock i. Ajinkya and Jain (1989) argue that daily trading volumes should be calculated as the total value of trade (Swedish kronor volume) rather than the otherwise frequently used number of shares traded or the fraction of outstanding shares traded.

The AV for stock i on day t is estimated as the prediction error, which is the difference between the actual and the predicted log-transformed trading volume on day t, or

$$AV_{it} = \upsilon_{it} - (\hat{\alpha}_i + \hat{\beta}_i \upsilon_{mt}), \tag{2.3}$$

where υ_{it} and υ_{mt} are the log-transformed kronor volume for stock i and the market on day t and $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the OLS estimates of α_i and β_i. For a portfolio of N stocks, the mean AV for day t, $\overline{AV}_t$, is just the averaged AV for all N stocks during day t. The test statistic for the mean AV on day t for a sample of N securities , $t_{\overline{AV}_t}$, is the ratio of the mean excess trading volume to its estimated standard deviation. Mean cumulative abnormal volumes (CAVs) are also tested for over several windows.

2.5 Empirical Results

2.5.1 Abnormal Return (AR)

The purpose of this study was to analyze price reactions to published stock recommendations, and to discuss whether they generated temporary or permanent price changes. If mean ARs and CARs at and immediately after

the PD are different from zero, this indicates the desired price reactions. If CARs then tend back towards zero, this indicates that the recommendations revealed no new information making market participants revaluate stock prices. Observing how CARs evolve can therefore give us the information needed.

Buy Recommendations

Table 2.2 presents the mean daily ARs, mean CARs, and the t-statistics for overall buy recommendations. The results indicate that the published recommendations had a significant impact on stock prices, and that they revealed *some* information that was not already known to all market participants.[14]

Testing the null hypothesis that the daily ARs are equal to zero in the event window, is rejected 4 times out of 41 at the 1-percent level. The mean AR on the PD is 0.79 percent (t-value: 13.49), but this is *not* inconsistent with an efficient market, since if new and "relevant" information arrives on the financial markets, a price reaction should be expected. On the day prior to the PD it was 0.32 percent (t-value: 5.37), and on day +1, 0.19 percent (t-value: 3.35). The statistically significant AR on the day prior to the PD may be due to some market participants already knowing the contents of the article.

The strong positive reaction to buy recommendations on the days before and after the PD is followed by a reversed trend in the mean AR from day 1 to day 20. The mean CAR for the period was -0.58 percent (t-value: -1.52). Although the reversed trend for these recommendations seems to be due to temporary buying pressure, it seems likely that these recommendations revealed *some* information. Buy recommendations nevertheless support our Hypothesis 1, meaning that there was no drift different from zero after the PD from which an investor could have profited.

Sell Recommendations

Table 2.3 presents the mean daily ARs, mean CARs, and the t-statistics for sell recommendations. The results indicate that the published recommendations had significant impact on stock prices, and that they revealed new and "relevant" information.

[14]Calculations were also done correcting for possible first-order autocorrelation in the residuals of equation (1), and for the standard deviation to allow for residuals being heteroscedastic and contemporaneously correlated across observations. The results were not altered when including these corrections, and they are therefore not presented here.

Table 2.2: **Mean abnormal return ($\overline{AR}$) and mean cumulative abnormal return ($\overline{CAR}$) during 1995-2000 for Swedish buy recommendations, in percent.** This portfolio consists of the buy recommendations from Table 2.1. Time is given in days relative to the PD. The mean abnormal return and cumulative abnormal return were estimated as: $\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$, and $\overline{CAR}_{T_1,T_2} = \sum_{t=T_1}^{T_2} \overline{AR}_t$. AR_{it} was estimated using estimates from market model regressions for each recommendation i: $AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$. ** = significant at the 5-percent level, and *** = significant at the 1-percent level, using a two-tailed t-test.

Buy recommendations (N=1918)				
Day	$\overline{AR}$	t-value	$\overline{CAR}$	t-value
-20	-0.01%	-0.19	-0.01%	-0.19
-19	-0.01	0.48	-0.02	0.21
-18	0.04	1.20	0.02	0.87
-17	-0.04	-0.26	-0.02	0.62
-16	0.02	0.37	0.00	0.76
-15	-0.02	0.02	-0.02	0.70
-14	-0.05	0.12	-0.06	0.69
-13	0.05	1.79	-0.02	1.28
-12	-0.05	-0.89	-0.07	0.91
-11	0.03	0.08	-0.04	0.89
-10	-0.03	-0.22	-0.07	0.78
-9	-0.05	-0.90	-0.12	0.49
-8	0.03	1.10	-0.09	0.78
-7	-0.06	-0.61	-0.15	0.59
-6	0.00	0.41	-0.15	0.67
-5	0.06	1.66	-0.10	1.06
-4	-0.04	0.40	-0.14	1.13
-3	0.10	2.28**	-0.03	1.63
-2	0.06	1.03	0.03	1.83*
-1	**0.32**	**5.37*****	0.34	2.98***
PD	**0.79**	**13.49*****	1.13	5.86***
1	**0.19**	**3.35*****	1.32	6.43***
2	-0.10	-1.30	1.22	6.02***
3	0.00	0.76	1.22	6.05***
4	-0.11	-2.11**	1.11	5.50***
5	-0.12	-2.10**	1.00	4.99***
6	-0.04	-0.69	0.96	4.76***
7	0.11	2.16**	1.07	5.08***
8	-0.07	-1.30	1.00	4.75***
9	-0.03	-0.15	0.97	4.64***
10	-0.04	-0.25	0.93	4.52***
11	0.02	0.62	0.95	4.56***
12	-0.04	0.42	0.91	4.57***
13	-0.11	-1.15	0.80	4.30***
14	0.04	0.46	0.84	4.32***
15	0.05	1.47	0.89	4.50***
16	-0.15	-3.13***	0.74	3.93***
17	-0.05	-1.22	0.69	3.68***
18	-0.06	-1.40	0.63	3.41***
19	-0.13	-2.29**	0.50	3.00***
20	0.05	1.07	0.55	3.13***

Table 2.3: **Mean abnormal return ($\overline{AR}$) and mean cumulative abnormal return ($\overline{CAR}$) during 1995-2000 for Swedish sell recommendations, in percent.** This portfolio consists of the sell recommendations from Table 2.1. Time is given in days relative to the PD. The mean abnormal return and cumulative abnormal return were estimated as: $\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$, and $\overline{CAR}_{T_1,T_2} = \sum_{t=T_1}^{T_2} \overline{AR}_t$. AR_{it} was estimated using estimates from market model regressions for each recommendation i: $AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$. ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

	Sell recommendations (N=364)			
Day	$\overline{AR}$	t-value	$\overline{CAR}$	t-value
-20	0.07%	0.80	0.07%	0.80
-19	-0.08	-0.43	-0.01	0.26
-18	0.19	1.57	0.19	1.12
-17	-0.32	-1.25	-0.14	0.34
-16	0.33	1.36	0.19	0.92
-15	0.03	0.15	0.23	0.90
-14	-0.09	0.37	0.14	0.97
-13	0.20	1.41	0.34	1.41
-12	-0.02	0.56	0.32	1.51
-11	0.12	1.13	0.44	1.80*
-10	0.06	-0.03	0.50	1.70*
-9	-0.13	-0.59	0.37	1.46
-8	-0.40	-1.74	-0.03	0.92
-7	-0.23	-2.50**	-0.27	0.21
-6	0.12	1.84	-0.15	0.68
-5	-0.22	-1.50	-0.37	0.28
-4	0.10	0.27	-0.28	0.34
-3	**-0.35**	**-2.63*****	-0.63	-0.29
-2	-0.35	-1.68	-0.98	-0.67
-1	-0.24	-0.80	-1.22	-0.83
PD	**-1.50**	**-8.89*****	-2.73	-2.76***
1	-0.14	-0.39	-2.86	-2.78***
2	0.23	1.21	-2.63	-2.46**
3	-0.22	-1.83	-2.86	-2.79***
4	0.20	0.76	-2.66	-2.58**
5	-0.27	-1.68	-2.93	-2.86***
6	-0.15	-0.35	-3.08	-2.87***
7	-0.36	-2.02**	-3.45	-3.20***
8	-0.32	-1.99**	-3.77	-3.52***
9	-0.05	0.57	-3.82	-3.36***
10	-0.23	-0.71	-4.05	-3.43***
11	-0.36	-2.25**	-4.42	-3.78***
12	0.04	0.34	-4.38	-3.66***
13	0.16	0.96	-4.22	-3.44***
14	0.08	0.41	-4.14	-3.32***
15	-0.16	-0.18	-4.31	-3.30***
16	0.10	1.83	-4.20	-2.96***
17	0.10	0.64	-4.10	-2.81***
18	-0.28	-1.17	-4.38	-2.97***
19	-0.33	-1.56	-4.71	-3.18***
20	-0.33	-2.65***	-5.04	-3.55***

The null hypothesis that the daily ARs are equal to zero can be rejected at the 1-percent level 3 times out of 41 in the event window. Surrounding the PD, strong negative price reactions were observed. The PD effect is -1.50 percent (t-value: -8.89). The AR on day -3 (before the publication), -0.35 percent, was also significant at the 1-percent level. As before, the effect on the PD could be explained by the contents of the article, and the return observed on day -3 could be due to leakage. Analyzing each and every of the individual sell portfolios (from each newspaper and business magazine) on day -3 shows no unanimous picture, thus the found reaction was not due to leakage. If market participants were already aware of the contents of articles at day -3, it must have taken three days for the information to be passed on to readers.

The mean CARs indicate that sell recommendations contained information not fully known to market participants prior to publication. At the end of the event window, mean CAR was still significant at the 1-percent level. Furthermore, for the 20 days following the PD, it was -2.29 percent (t-value: -2.28). Of these 20 days, 13 showed a negative mean. These recommendations therefore revealed new information generating the seemingly permanent price changes, i.e. rejecting Hypothesis 1.

Journalists and Analysts

Table 2.4 shows the mean CARs for the buy recommendations grouped by journalists versus analysts for several windows.

The buy recommendations from journalists performed worse during the pre-publication periods (the first one measured from day -20 to -6, and the second between days -5 and -2) than recommendations from analysts did (Panel A). During the firs pre-recommendation period, the difference in CARs is negligible. During the second period, however, the difference is substantial, i.e. -1.49 percent (with a z-value of -2.20).[15] The results mean that stocks being buy-recommended from journalists performed as well as the market during this period, whereas those from analysts substantially *outperformed* the market (1.52 percent with a t-value of 3.33). Either analysts published buy recommendations of stocks that by pure coincidence performed way better than the market just days before publication, or more probably, they handed the information to their clients to take advantage of before being published in the newspaper or business magazine. Assuming that analysts possess information they think is unknown to other market participants, then one can also assume that the information will not be imme-

[15] For simplicity, only the univariate tests are considered in discussion of obtained results.

Table 2.4: **Mean cumulative abnormal return ($\overline{CAR}$) for buy and sell recommendations, by journalists versus analysts, in percent.** The period for which the cumulative abnormal returns are calculated is displayed in the period-column. The univariate test of difference in cumulative returns between journalists' and analysts' recommendations were performed using a Wilcoxon ranksum test. The multivariate test was performed running a regression where the dependent variable is the cumulative abnormal return over a certain period, and independent variables was a dummy controlling for the which of the two groups the recommendation came (journalist or analyst) and for the size of the recommended stock measured as the log of market capitalization. The figures for the PD are for mean abnormal returns, and not cumulative abnormal returns. * = significant at the 10-percent level, ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

Panel A: Buy recommendations

	Journalists (N=1352)		Analysts (N=566)		Journalists v.s. Analysts Univariate		Multivariate	
Period	$\overline{CAR}$	t-value	$\overline{CAR}$	t-value	$\overline{CAR}$	z-value	$\overline{CAR}$	t-value
(-20,-6)	-0.28%	-0.02	0.16%	1.26	-0.44%	-0.62	-0.38%	-0.69
(-5,-2)	0.03	1.04	1.52	3.33**	-1.49	-2.20**	-0.53	-1.77*
(-1,+1)	1.50	11.91***	0.83	5.19***	0.67	1.20	0.44	1.45
PD	0.97	13.59***	0.37	3.83***	0.60	3.23***	0.46	2.69***
(+2,20)	-0.99	-2.67***	-0.27	-0.16	-0.72	-0.94	-0.74	-1.21
(-20,+20)	0.26	1.72*	1.24	3.10***	-0.98	-1.36	-1.20	-1.26

Panel B: Sell recommendations

	Journalists (N=322)		Analysts (N=42)		Journalists v.s. Analysts Univariate		Multivariate	
Period	$\overline{CAR}$	t-value	$\overline{CAR}$	t-value	$\overline{CAR}$	z-value	$\overline{CAR}$	t-value
(-20,-6)	0.18%	1.22	-2.70%	-1.37	2.52%	0.41	2.88%	0.91
(-5,-2)	-1.06	-3.38***	0.89	1.17	-1.95	-1.82*	-1.94	-1.20
(-1,+1)	-2.25	-6.71***	0.94	1.40	-3.65	-3.10***	-3.19	-2.68***
PD	-1.66	-9.21***	-0.36	-0.74	-1.30	-2.54**	-1.30	-1.86*
(+2,20)	-2.45	-2.38**	-0.10	-0.04	-2.35	-1.39	-2.35	-1.19
(-20,+20)	-5.58	-3.76***	-0.98	-0.06	-4.60	-2.14**	-4.60	-1.11

diately passed on to the readers of certain newspapers or business magazines. Instead, we can assume this information to be initially handed to clients who pay large sums of money for "profitable" (and possibly first-hand) information. Journalists, on the other hand, have no such clients to consider before publishing a recommendation. The journalists may, however, consider to profit from the information themselves. This problem is monitored by the editor(s) of the respective newspaper or magazine, as presented in Table 2.7.2 of the Appendix. Nevertheless, the fact that analyst buy recommendations outperform those from journalists in the second pre-recommendation period

supports Hypothesis 2. The profitable information in analyst recommendations were thus profited from before published in the newspaper or business magazine.

During the event window (measured from the day prior to the publication to the day after the publication day), there was a 0.67 percent difference in CARs. The market obviously reacts more positively to buy recommendations being from a journalist than if it comes from an analyst. This is displayed even more clearly in the reaction on the publication day. Buy recommendations from journalists has an abnormal return of 0.97 percent (with a t-value of 13.59), whereas analysts' buy recommendations has a publication-day effect of 0.37 percent (with a t-value of 3.83). The difference between the two, 0.60 percent, was found to be statistically significant, i.e. supporting Hypothesis 3. During the short-run post-recommendation period (measured from day +2 to +20), prices of buy-recommended stocks from both journalists and analysts decreased. This means that the support to Hypothesis 1 from buy recommendations is consistent when dividing the sample into recommendations from journalists and analysts.

Stocks that were sell-recommended by journalists increased in price during the first pre-publication period, whereas those from analysts decreased substantially (Panel B). Although the difference between the two is substantial, it is far from statistically significant. For the second pre-recommendation period, however, sell-recommended stocks from journalists decreased and those from analysts increases in price, leaving the difference in CARs at -1.95 percent (with a z-value of -1.82). For buy recommendations, analysts were found to presumably leaking information to their private clients during days -5 to -2, whereas for sell recommendations they leaked information during days -20 to -6, again supporting Hypothesis 2. During the event-period, recommendations from journalists decreases in price while those from analysts increases. As was found to be the case for buy recommendations, the sell recommendations from journalists had a significantly larger impact than those from analysts (supporting Hypothesis 3). The difference in abnormal return during the publication day is -1.30 percent (with a z-value of -2.54). During the post-recommendation period, stocks that were sell-recommended by journalists continued to decrease. This means that the results of sell recommendations from journalists reject Hypothesis 1, whereas that from analysts are in *favor* of the same hypothesis.

When dividing the sample into buy-and sell recommendations originating from journalists and analysts, we discover several interesting results. Analysts seem to hand their information to private clients before being published in the newspaper or business magazine. This is done well in advance of the publication, and the profitable information from sell recommendations seems

to be taken advantage of sooner than for buy recommendations. This can only be interpreted as sell recommendations being fewer, and therefore more sensitive in their nature than buy recommendations. The results for sell recommendations from analysts should be interpreted with caution, considering the small sample size (42 observations). Another interesting observation is that analysts recommends three times more buy recommendations in relation to sell's than journalists. This is also in line with our expectations that analysts publish the information that serves their own purpose as well as the purpose of their clients. Publishing a buy recommendation may increase trading from investors in that stock for their brokerage house, leading to increased transaction profits. The presented results also indicate that journalist are informative when stocks are down, but they are uninformed when stocks are up. Can we expect journalists to be informed for a certain type of recommendations but not for the other? The information which their buy recommendations are based upon do, to a large extent, originate from analysts. Recommendations are also "lagged" to the "real" event that triggers it, because of time to being published etcetera. Sell recommendations from journalists have a more investigative character, and as such they are surprising to the markets, relatively speaking. In relation to analysts, the journalists and their employers, do not either have the time or resources in discovering underpriced stocks. Therefore, we should not be surprised by the found asymmetry in the informational content of these recommendations. Also, analysts seem to be uninformed for both buy- and sell recommendations, but pre-recommendation CARs showed that this is partly an illusion. In fact, analysts seem to hand their information to clients to take advantage of before being published.

Weekday- and Weekend Recommendations

Table 2.5 shows the mean CARs for buy recommendations published during weekdays and weekends for several windows.

Stocks that were buy-recommended during weekdays had an unchanged CAR between the days -5 to -2, whereas recommendations published during weekends had a CAR of 0.72 percent (with a t-value of 4.44) (Panel A). This implies that there is some lag in buy recommendations being published during weekends in comparison to those published during weekdays. The recommendations during weekends are stocks that have performed relatively well in the last few days. During the event period, weekday-recommendations outperformed the weekend-recommendations by 0.60 percent (with a z-value of 1.71). Also the PD-effect was significantly larger for weekday recommendations, i.e. 0.51 percent larger (with a z-value of 2.61). In the post-

Table 2.5: **Mean cumulative abnormal return ($\overline{CAR}$) for buy and sell recommendations, by weekdays versus weekends, in percent.** The period for which the cumulative abnormal returns are calculated is displayed in the period-column. The univariate test of difference in cumulative returns between journalists' and analysts' recommendations were performed using a Wilcoxon ranksum test. The multivariate test was performed running a regression where the dependent variable is the cumulative abnormal return over a certain period, and independent variables was a dummy controlling for the which of the two groups the recommendation came (journalist or analyst) and for the size of the recommended stock measured as the log of market capitalization. * = significant at the 10-percent level, ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

Panel A: Buy recommendations

	Weekdays (N=1334)		Weekends (N=584)		Weekdays v.s. Weekends Univariate		Multivariate	
Period	$\overline{CAR}$	t-value	$\overline{CAR}$	t-value	$\overline{CAR}$	z-value	$\overline{CAR}$	t-value
(-20,-6)	-0.17%	0.53	-0.12%	0.42	-0.05%	-0.12	0.10%	0.19
(-5,-2)	-0.06	0.28	0.72	4.44**	-0.78	-2.96***	-0.92	-3.01***
(-1,+1)	1.48	11.76**	0.88	5.46**	0.60	1.71*	0.13	0.43
PD	0.95	13.30***	0.44	4.35***	0.51	2.61***	0.21	1.21
(+2,20)	-0.66	-1.61	-1.05	-1.77*	0.39	0.52	0.41	0.65
(-20,+20)	0.60	2.49**	0.43	1.91*	0.16	0.36	-0.27	-0.27

Panel B: Sell recommendations

	Weekdays (N=203)		Weekends (N=161)		Weekdays v.s. Weekends Univariate		Multivariate	
Period	$\overline{CAR}$	t-value	$\overline{CAR}$	t-value	$\overline{CAR}$	z-value	$\overline{CAR}$	t-value
(-20,-6)	0.86%	1.36	-1.42%	-0.51	2.28%	1.29	2.01%	0.98
(-5,-2)	-0.64	-2.49**	-1.08	-1.39	0.44	1.12	0.49	0.46
(-1,+1)	-2.29	-5.51***	-1.36	-2.59**	-0.93	-1.33	-0.63	-0.80
PD	-2.01	-8.71***	-0.87	-3.62***	-1.14	-2.69***	-0.92	-2.02**
(+2,20)	-1.21	-1.10	-3.41	-2.12**	2.20	1.51	1.92	1.03
(-20,+20)	-3.28	-2.19**	-7.27	-2.88***	3.98	1.02	3.79	1.19

recommendation period both stocks recommended during weekdays and weekends decreased in price.

The stocks that were sell-recommended during weekends fell during the pre-recommendation period (day -20 to day -2), whereas those stocks sell-recommended during weekdays marginally increased in price (Panel B). During the event period, as well as at the publication day, sell-recommended stocks during weekdays decreased more in price than those during weekends. The difference in abnormal return at the publication-day was -1.14 percent (with a z-value of -2.69). In the post-recommendation period, however, the prices of sell-recommended stocks from weekends decreases more than those

during weekdays.

The Monday effect means that generally average stock returns are lower on Mondays than during other days. Furthermore, researchers have found individual investors to trade more actively, and institutional investors less actively, on Mondays. The frequency of sell transactions have also been found to be higher on Mondays than during other trading days. What could be expected from these findings here, is for the impact at the PD to buy recommendations published during weekends to be lower than those published on weekdays, and the impact to sell recommendations published on weekends to be larger. The impact to buy recommendations published on weekends is significantly smaller than weekday-recommendations, i.e. as assumed by the Monday effect, whereas sell recommendations on weekends was found to have significantly smaller impact than weekday-recommendations, i.e. contradicting the "assumption" from the Monday effect. There is only one reasonable explanation to these findings. From the 161 sell recommendations published on weekends, all but one originates from *Aftonbladet*, one of the evening tabloids. The impact to these recommendations was much less than for sell recommendations from any other newspaper or business magazine.

The most positive buy recommendations were published during weekdays, and the most negative sell's were published during weekends.

2.5.2 Abnormal Volume (AV)

The daily mean AVs for the portfolios consisting of buy- and sell recommendations are presented in Table 2.6. Figures 2.1 and 2.2 displays the daily mean AVs and mean CARs for the buy- and sell recommendations. The published stock recommendations also appear to have had significant impacts on the daily traded volumes in those stocks.[16]

For buy recommendations, the mean AV on the PD was 47 percent and mean AVs on the two following days were also substantial and significant at the 1-percent level.[17] Mean AVs increased especially in the days just before the publication (as did also the mean ARs) and consequently CAR increased too (Figure 2.1).

For sell recommendations, mean AV on the PD was also large, i.e. 43 percent (with a t-value of 4.40). Mean AVs increased just when mean CAR started to decrease (Figure 2.2). At the PD, when mean AV peaked (and

[16]High volumes could be expected near expiration dates for options, something that is not corrected for here. Correcting for possible first-order autocorrelation in the residuals of equation 11 did not change the estimations of the AV.

[17]When calculating the mean AVs, numbers were first obtained in logs. If the log was 0.39, consequently the AV in percentage terms would be $(e^{0.39} - 1)$*100%=47%.

Table 2.6: **Mean abnormal volume ($\overline{AV}$) for buy- and sell recommendations, in percent.** Time is given in days relative to the PD. Mean abnormal volume was estimated as: $\overline{AV}_t = \frac{1}{N}\sum_{i=1}^{N} AV_{it}$. AV_{it} was calculated using estimates from the log-transformed market model for each recommendation i: $AV_{it} = \upsilon_{it} - (\hat{\alpha}_i + \hat{\beta}_i \upsilon_{mt})$. ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

	Buy (N=1918)		Sell (N=364)	
Day	$\overline{AV}$	t-value	$\overline{AV}$	t-value
-20	6.22%	0.63	9.27%	0.94
-19	3.75	0.38	-1.54	-0.16
-18	4.82	0.48	15.26	1.55
-17	6.14	0.62	4.91	0.50
-16	-2.27	-0.23	-3.30	-0.34
-15	-2.02	-0.20	-3.27	-0.33
-14	6.10	0.61	0.95	0.10
-13	13.32	1.34	-0.26	-0.03
-12	5.89	0.59	4.33	0.44
-11	5.07	0.51	0.22	0.02
-10	7.72	0.78	8.12	0.83
-9	10.73	1.08	15.86	1.61
-8	7.63	0.77	14.76	1.50
-7	4.77	0.48	6.63	0.67
-6	9.60	0.97	5.69	0.58
-5	12.73	1.28	3.98	0.40
-4	16.80	1.69	12.48	1.27
-3	18.34	1.85	25.33	2.57**
-2	19.30	1.94	17.65	1.79
-1	17.60	1.77	10.23	1.04
PD	**47.20**	**4.75*****	**43.27**	**4.40*****
1	37.50	3.77***	18.46	1.88
2	27.67	2.79***	4.66	0.47
3	15.77	1.59	19.45	1.98
4	13.17	1.33	13.64	1.39
5	18.41	1.85	12.48	1.27
6	19.96	2.01**	9.66	0.98
7	8.24	0.83	3.93	0.40
8	14.97	1.51	5.51	0.56
9	7.53	0.76	6.05	0.61
10	7.44	0.75	-3.60	-0.37
11	3.97	0.40	-6.99	-0.71
12	4.00	0.40	-4.88	-0.50
13	10.26	1.03	0.82	0.08
14	6.16	0.62	-4.62	-0.47
15	5.62	0.57	-5.01	-0.51
16	4.12	0.41	6.79	0.69
17	3.12	0.31	2.38	0.24
18	3.34	0.34	2.64	0.27
19	-2.93	-0.30	-7.97	-0.81
20	0.69	0.07	7.96	0.81

mean AR was −1.49 percent), CAR fell sharply. As mentioned earlier no reversal is observed for the sell recommendations. Added together, it suggests

that published recommendations revealed information, i.e., supporting the information hypothesis.

The mean cumulative abnormal volumes (CAVs) for the portfolios consisting of buy- and sell recommendations from journalists and analysts are shown in Table 2.7.

Table 2.7: **Mean cumulative abnormal volume ($\overline{CAV}$) for buy and sell recommendations, by journalists versus analysts, in percent.** The period for which the cumulative abnormal returns are calculated is displayed in the period-column. The univariate test of difference in cumulative returns between journalists' and analysts' recommendations were performed using a Wilcoxon ranksum test. The figures for the PD are for mean abnormal volumes. * = significant at the 10-percent level, ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

Panel A: Buy recommendations

	Journalists (N=1352)		Analysts (N=566)		Journalists v.s. Analysts	
Period	$\overline{CAV}$	t-value	$\overline{CAV}$	t-value	$\overline{CAV}$	z,t-value
(-20,-6)	75.3%	2.35**	113.0%	2.60**	-37.7%	-1.22
(-5,-2)	61.2	4.76***	81.5	5.40***	-20.3	-0.58
(-1,+1)	110.3	10.56***	78.3	6.93***	32.0	1.25
PD	53.8	4.31***	32.5	4.30***	21.3	1.06
(+2,20)	148.0	3.23***	212.7	3.69***	-64.7	-1.80*
(-20,+20)	383.7	4.65***	480.4	4.55***	-96.7	-1.89*

Panel B: Sell recommendations

	Journalists (N=322)		Analysts (N=42)		Journalists v.s. Analysts	
Period	$\overline{CAV}$	t-value	$\overline{CAV}$	t-value	$\overline{CAV}$	z,t-value
(-20,-6)	60.7%	0.85	186.9%	0.88	-126.2%	-0.35
(-5,-2)	58.9	1.86	54.8	0.85	4.1	-0.16
(-1,+1)	74.9	3.12***	31.5	0.35	43.4	-0.14
PD	45.6	3.80***	26.3	1.08	19.3	0.53
(+2,20)	48.3	0.44	133.2	0.42	-84.9	0.54
(-20,+20)	235.6	1.16	405.0	0.78	-169.4	0.05

When volumes are cumulated over different windows (the same windows as in TableřefJournalists.vs.Analysts), we see that the recommendations generates higher-than normal trading volumes at the publication day for both buy- and sell recommendations and from both journalists and analysts. Buy recommendations from both journalists and analysts were followed by higher trading volumes in the next couple of weeks after the publication day. The most interesting aspect of Table 2.7 is the difference in mean CAVs between journalist and analyst recommendations over these windows. If we focus on the window for the whole event period, i.e. days -20 to +20, the trading

Figure 2.1: **Mean abnormal volume and mean cumulative abnormal return for 1918 buy recommendations from newspapers and business magazines.**

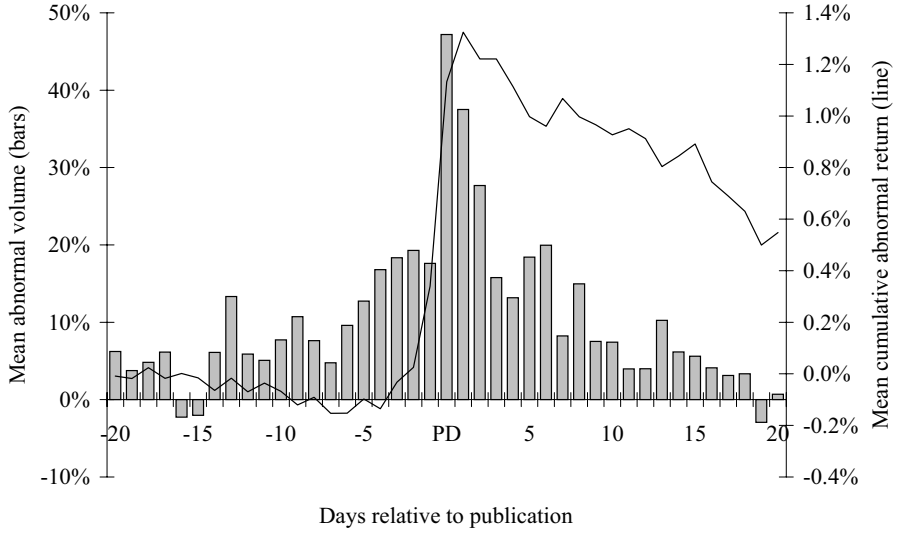
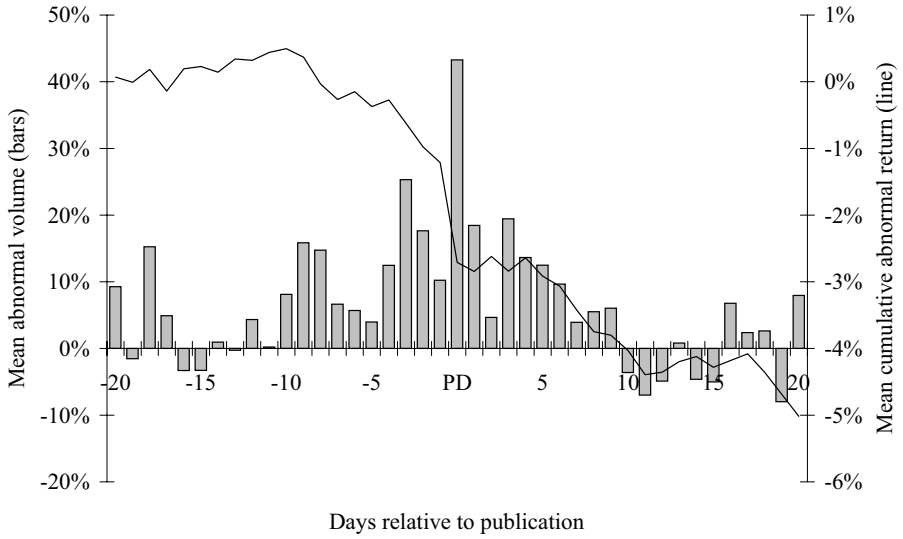


Figure 2.2: **Mean abnormal volume and mean cumulative abnormal return for 364 sell recommendations from newspapers and business magazines.**



volume in analyst-recommended stocks is much higher than in journalist-recommended stocks. This is true for both buy- (Panel A) and sell recommendations (Panel B).

In subsection 2.5.1, we were able to show that the information in analyst buy recommendations were presumably profited from during days -5 to -2, and analyst sell recommendations were profited from during days -20 to -6. For buy recommendations, days -5 to -2 had a 20 percent higher mean CAV for analyst recommendations than journalist recommendations. During the event prior to that (e.g. days -20 to -6), mean CAV was about 38 percent higher for analyst recommendations. Furthermore, journalist recommendations had higher mean CAV surrounding the publication day (days -1 to +1), but before and after that period, analyst-recommended stocks gave rise to larger mean CAVs. Sell recommendations from analysts gave rise to a 187 percent larger mean CAV for the period when analyst clients presumably take profit from the information in the recommendations published.

The same pattern observed for buy recommendations was found for sell recommendations as well, namely that before and after the period just surrounding the publication day, analyst-recommended sell recommendations gave rise to much higher trading volumes. That mean CAVs are higher during the periods when analysts or their clients are assumed to take advantage of the information that will later be published in the recommendations confirms previous expectations, namely that there exist a difference in recommendation behavior between journalists and analysts. That stocks being recommended by journalists have higher mean CAVs in the period surrounding the publication day could be expected since they generally report on recently released information related to that stock.

2.5.3 Bid/Ask Spread

Examining the bid/ask spread for published recommendations have been proposed in Glosten and Milgrom (1985) as important in distinguishing the information hypothesis from the price-pressure hypothesis. It is argued that a market maker will widen the spread when facing informed traders to recoup losses from informational disadvantages, and decreasing the spread when facing uninformed traders. Therefore, a lowered spread is considered as supporting the PPH since naive investors are trying to profit from the recommendations, and an increased spread is considered as supporting the IH since the market maker then faces informed investors. The relative bid/ask spread was first calculated for each individual recommendation as the ratio of ask price less bid price divided by the midpoint of bid and ask prices and then averaged over all stocks for the same type. This approach was previously

used in Liang (1999).

The bid/ask spread for buy- and sell recommendations are presented in Table 2.8.

Table 2.8: **Bid/ask spreads in percentage to buy- and sell recommendations.** The bid/ask was calculated as the the difference in ask and bid price divided by the midpoint between the two. Considered prices are the closing prices each day. t-stats are reported in parentheses, where for example the the t-stats below the spread for the publication day tests the hypothesis that spreads are equal between day -1 and the publication day. * = significant at the 10-percent level, ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

	Buy Recommendations			Sell Recommendations		
Day	All	Journalists	Analysts	All	Journalists	Analysts
-1	1.086%	1.144%	0.948%	1.483%	1.479%	1.517%
PD	1.054	1.118	0.901	1.539	1.501	1.833
	(1.92*)	(1.20)	(1.94*)	(-0.65)	(-0.24)	(-1.28)
1	1.046	1.139	0.823	1.394	1.398	1.367
	(0.20)	(-0.69)	(1.19)	(1.67*)	(1.09)	(2.28**)

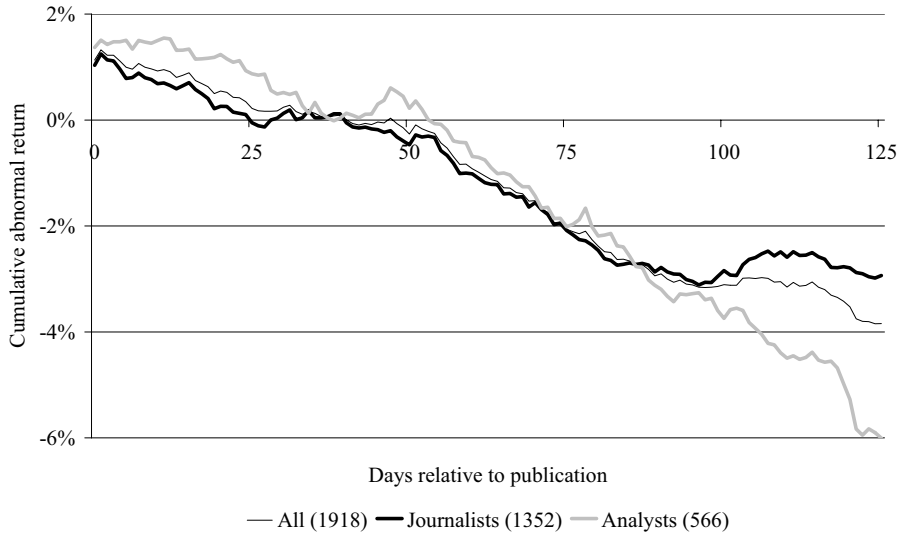
Stocks that were given a buy recommendation experienced a lowered bid/ask spread on the PD relative to the previous day, hence market makers faced uninformed traders who try to profit from these recommendations. Sell recommendations experienced an increased spread on the PD. The increase was marginal, but implies that market makers faced informed traders. The sell recommendations giving the largest increase in bid/ask spread when published was those originating from analysts. Following the PD, sell-recommended stocks experienced a decreased spread, possibly because of the reduced informational asymmetry the publications gave rise to. Results indicate that buy recommendations support the PPH, whereas sell recommendations support the IH, which is in line with previous presented results.

2.5.4 Post-Publication Drift

Whether the observed stock-price reactions to published recommendations were due to price pressure or information content can be further supported by analyzing the post-publication drift. The post-publication drift for buy recommendations are displayed in Figure 2.3 and the drift for sell recommendations are displayed in Figure 2.4.

Studying Figure 2.3, it is obvious that the ARs observed for all buy recommendations did not last for long. Investors seemingly overreacted to the

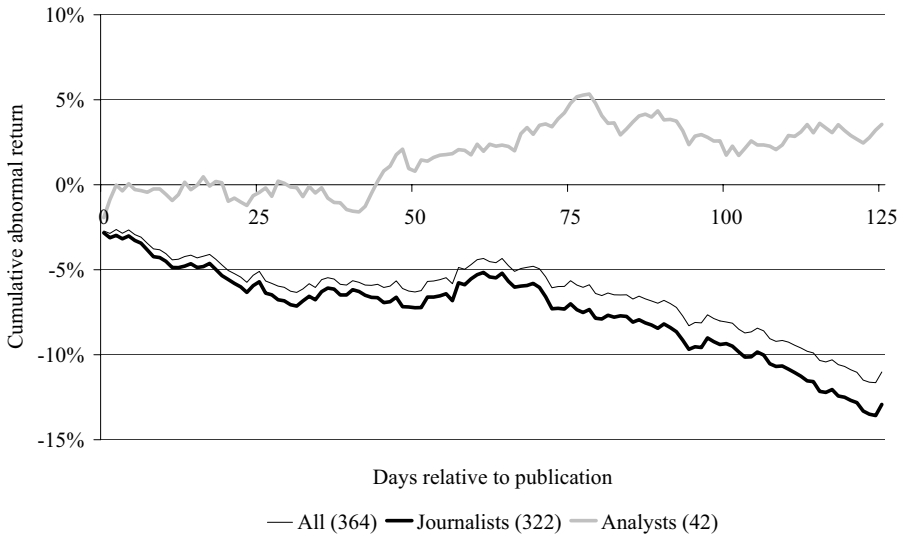
Figure 2.3: **Post publication drift in securities prices for buy-recommended stocks.** Figures in parentheses indicates the number of recommendations from the respective group. Abnormal returns are calculated using betas and alphas estimated during a 120-day estimation period from day -140 to day -21. Cumulative abnormal returns are calculated from day -20 to day 125, but displayed from the day of publication.



information contained in the recommendations. In fact, the stock-price reaction following buy recommendations was rather small and trivial. Buy recommendations originating from journalists and analysts showed similar pictures. Buy recommendations, irrespective of its origin, gave rise to a positive and statistically significant PD effect, a result of buying pressure caused by investors trying to profit from these recommendations. Following the PD effect, there was a mean-return reversal erasing that effect and more. Following these buy recommendations for 125 days (approximately six months), an investor would have lost 3.8 percent.

The negative PD effect that was earlier observed for sell recommendations, was followed by further decreasing stock prices. An investor acting on these recommendations would have earned 11.0 percent over the following six months. The PD effect was permanent and it is clear that sell recommendations support the information hypothesis. When these recommendations were divided into those from journalists and analysts, we can see that analyst recommendations initially displayed a negative drift. After about 40 days, however, the sell-recommended stocks experienced increasing stock prices.

Figure 2.4: **Post publication drift in securities prices for sell-recommended stocks.** Figures in parentheses indicates the number of recommendations from the respective group. Abnormal returns are calculated using betas and alphas estimated during a 120-day estimation period from day -140 to day -21. Cumulative abnormal returns are calculated from day -20 to day 125, but displayed from the day of publication.



While journalists sell recommendations contain information of real value, leading to a permanent change in securities prices, analysts recommendations did not. The only reasonable explanation is the small sample size of these recommendations.

2.6 Summary and Conclusions

This paper examined the stock-price reaction to buy- and sell recommendations for common stocks published in Swedish newspapers and business magazines during the period 1995-2000. In order to clarify whether the found PD stock-price reactions were due to either price pressure or the informational content, trading volumes on and about the PD, bid/ask spreads, and post publication drifts were analyzed.

The results favor the price-pressure hypothesis (i.e. in support of our Hypothesis 1) for buy recommendations. The statistically *significant* PD effect for these recommendations, as well as the following mean-return reversal is evidence of price pressure. This is also supported by the found larger-than

normal trading volumes at and about the PD, decreasing bid/ask spread, and the negative post-publication drift in securities prices. For sell recommendations the results support the information hypothesis (i.e. rejecting our Hypothesis 1). These recommendations experienced a statistically significant negative PD effect, followed by further falling stock prices instead of reverting. Again larger-than normal trading volumes were observed, but for these recommendations, the bid/ask spread increased on the PD (although statistically insignificant). The observed PD effect for these recommendations gives rise to a permanent change due to the fundamental revaluation of the stocks from market participants.

The observed PD effect for all buy recommendations (0.79 percent) is relatively small compared to the referenced studies. In this paper, all buy- and sell recommendations published in newspapers and business magazines were used, in comparison to some studies where no reiterations were accepted. The PD for sell recommendations (-1.50 percent) is relatively large. Because of its relative rarity, the reaction to sell recommendations is large, and as shown, give rise to permanent price changes.

Separating the recommendations into those originating from journalists and from analysts and analyzing the results over certain windows, it was found that the impact on stock prices from analysts' recommendations was lower than that of journalists. That is, our Hypothesis 3 is supported in full. Buy recommendations from both analysts and journalists resulted in significant PD effects, followed by reversion erasing almost all the ARs. On the other hand, sell recommendations from journalists contained new information whereas those of analysts did not. Overall the results are in favor of Hypothesis 1, but the results from sell recommendations by journalists reject the hypothesis since these recommendations could be used to make profits after the PD. Our expectations prior to generating and analyzing the results were that it could not be profitable to invest according to the recommendations and earn abnormal returns. The only deviation registered to that expectation was the sell recommendations from journalists which turned out to be profitable to follow. Investing according to those recommendations involves taking short positions in recommended stocks, which may not always be possible. The outcome of such a limitation may be that the profitability from following these recommendations disappears altogether.

Information contained in analysts recommendations were leaked earlier, both for buy- and sell recommendations, which supports Hypothesis 2. Furthermore, information in sell recommendations were leaked before that in buy recommendations. The first is explained by the very job nature of analysts and that they hand the information to their private clients to profit from before being published. The second can only be explained by sell recommen-

dations being seen as more sensitive and consequently taken advantage of earlier. That journalists are informative when stocks are down, but they are not when markets are up, can be explained in buy recommendations simply being "market reports" and therefore not surprising the market, whereas sell recommendations, which have a more investigative flavor, does.

Evidence shows that the most positive buy recommendations were published during weekdays, whereas the most negative sell recommendations were published during the weekend. Positive information seems to be released as they surface, whereas there seems to be a lag in publication of negative information. Just as the well-documented *Monday* effect assumes, the impact to buy recommendations published during the weekend is smaller than for those published during the weekdays. The *Monday* effect would also assume the impact to sell recommendations being published on weekends to be larger than during weekdays. However, the results found here showed to be the other way around, which can only be explained by these recommendations originating from one and only source (*Aftonbladet*).

The mean AVs observed before the PD also suggest that the information published was already known to at least *some* market participants. This raises a serious question to the editors of the newspapers and business magazines. Since analysts' recommendations appear to contain no new information (at least to the public by the time they are published), why then are their recommendations published in the first place?

The observed difference in quality between buy- and sell recommendations suggests that less effort was put into buy recommendations, and in fact the sample had a five-to-one ratio of buy- to sell recommendations, which this finding might account for. Newspapers and business magazines may thus focus more on quantity than on quality - just because it is easier.

2.7 Appendix

2.7.1 Results From Previous Research

Research	NP/M (Country)	Column (Period)	PD (t-stat)	Post-publ. (t-stat)	Window
		Buy recommendations			
Canes and Lloyd-Davies (1978)	WSJ (U.S.)	HOTS (1970-71)	0.92 (9.55***)	0.24 (0.50)^X	[1,20]
Liu et al. (1990)	WSJ (U.S.)	HOTS (1982-85)	1.54 (16.37***)	-0.70 (-1.91)^X	[1,10]
Beneish (1991)	WSJ (U.S.)	HOTS (1978-79)	0.90 (6.14***)	0.27 (0.43)	[5,30]
Barber and Loeffler (1993)	WSJ (U.S.)	DB (1988-90)	3.53 (12.19***)	-2.08 (-1.56)	[2,25]
Palmon et al. (1994)^Y	BW (U.S.)	IWS (1983-89)	1.91 (13.08***)	-0.05 (n.a.)	[1,10]
Mathur and Waheed (1995)^Y	BW (U.S.)	IWS (1981-89)	1.71 (8.26***)	-1.54 (-4.79***)	[1,20]
Bolster and Trahan (1995)^Y	BA (U.S.)	UP & INV (1988)	2.10 (10.22***)	-0.79 (n.a.)	[1,21]
Sant and Zaman (1996)^Y	BW (U.S.)	IWS (1976-88)	1.16 (7.44***)	-1.07 (-1.96**)	[7,26]
Ferreira and Smith (1999)	WSJ (U.S.)	SSF (1993)	0.80 (2.51**)	-1.61 (-3.21***)	[1,5]
Liang (1999)^Y	WSJ (U.S.)	DB (1990-94)	2.84 (12.81***)	-2.42 (n.a.)	[1,25]
Muradoğlu and Yazici (2002)	MM (TUR)	IA (1993-98)	2.35 (n.a.)	-3.35 (n.a.)	[1,20]
Kiymaz (2002)	ET (TUR)	HOTS (1996-97)	0.07 (0.36)	-1.78 (-1.54)	[1,20]
		Sell recommendations			
Canes and Lloyd-Davies (1978)	WSJ (U.S.)	HOTS (1970-71)	-2.37 (-9.87***)	0.30 (0.70)^X	[1,20]
Liu et al. (1990)	WSJ (U.S.)	HOTS (1982-85)	-1.99 (-15.46***)	-0.46 (-1.03)^X	[1,10]
Beneish (1991)	WSJ (U.S.)	HOTS (1978-79)	-1.30 (-3.67***)	0.42 (0.37)	[5,30]
Palmon et al. (1994)^Y	BW (U.S.)	IWS (1983-89)	-0.67 (-1.86)	-0.24 (n.a.)	[1,10]
Sant and Zaman (1996)^Y	BW (U.S.)	IWS (1976-88)	-0.25 (-0.11)	-1.44 (-0.27)	[7,26]
Ferreira and Smith (1999)	WSJ (U.S.)	SSF (1993)	0.48 (1.37)	-0.66 (-1.28)	[1,5]

Abbreviations: NP/M=Newspaper/Magazine, PD = Publication day, WSJ = *Wall Street Journal*, BW = *Business Week*, BA = *Barron*'s, UP = Up and Down Wall Street, INV = Investment News and Views, MM = *Moneymatik*, ET = *Ekonomik Trend*, HOTS = Heard on the street, DB = Dartboard, SSF = Small stock focus, IWS = Inside Wall Street, and IA = Investor-Ali. ^{X} = Author's own calculations. ^{Y} = Z-stat instead of t-stat. ** = significant at the 5-percent level, and *** = significant at the 1-percent level.

2.7.2 Description of Newspapers and Magazines

This table shows the type of each newspaper and business magazine sampled, who wrote the stock recommendations (a journalist or an analyst), whether or not the journalist/analyst was allowed to own stocks, and any restrictions they must follow.

Source	Type	Circulation	Who	May own stocks	Restrictions
AFV	BM	27,600	J	Yes	Must inform the management board of holdings. May not trade in recommended stocks before publication. If a profit is made, recommended and bought stocks must be held at least 3 months.
AB	EN	117,000	J/A	-	-
FT	BD	38,300	J	Yes	All trades must be reported to the chief editor. Recommended and bought stocks must be held at least 3 months.
GP	MN	380,600	A	Yes	Information found in employees' work should not be used to make profits on stocks.
PA	BM	27,400	J/A	Yes	May not trade in recommended stocks before publication. Relatives are included. May not write recommendations or analytic articles where they have a personal interest.
VA	BW	288,500	J/A	Yes	May not trade in recommended stocks before publication.

Abbreviations: J = Journalist, A = Analyst, BW = Business weekly, EN = Evening newspaper, BD = Business daily, MN = Morning newspaper, BM = Business monthly. * = average over weekend days, and ** = Sunday figures. *Source*(circulation): TS AB.

Chapter 3

Stock Recommendations in Swedish Printed Media: Leading or Misleading?

Abstract

This paper analyzes the initiated and changed recommendations published in six well-known Swedish newspapers and business magazines for the period 1996-2000 using a buy-and-hold abnormal returns (BHARs) approach. The results distinguish between recommendations from analysts and journalists. Buy recommendations were misleading investors, whereas sell recommendations were leading them correctly, overall yielding returns in line with the market. This asymmetry is due to positive information from the management of the company being more intricate to interpret than negative. The information provided by management is generally positively biased, both for good and bad information. This phenomenon holds for recommendations from both analysts and journalists. Following buy- *and* sell recommendations from analysts yielded BHARs in line with the BHARs from following journalist recommendations, which in turn give rise to returns in line with the market.

Key words: Stock recommendations, EMH, Printed media, Initiations, Information asymmetry.
JEL Classifications: G10, G14, G20.

3.1 Introduction

Buy- and sell recommendations by financial analysts and journalists are regularly published in newspapers and business magazines, and many investors rely upon such investment advice. Recent scandals in the financial industry have unfortunately put their trust in doubt. It is therefore of primary interest to evaluate whether such advice has any real long-term value. Many of the recommendations that surfaces in the printed media are nothing else than reiterations of previous recommendations, often of the same journalist or analyst published in the same source. This paper studies the post-publication performance of *new* buy- and sell recommendations published in Swedish newspapers and business magazines during the period 1996-2000, an approach enabling us to judge on the stock-picking skills of those behind the recommendations.

It has been suggested that stock recommendations in newspapers and business magazines would be profitable for investors to follow.[1] Other studies claim the opposite, concluding that markets are (at least) semi-strong efficient.[2] Prior studies have nevertheless failed to establish whether or not abnormal profits could be made based on this kind of investment advice, and why buy recommendations have no investment value while sell recommendations have. We try to bring clarity to the issue by answering whether stock recommendations in Swedish printed media are leading investors correctly or if they are misleading them. Unfortunately, there are few long-term performance studies on published stock recommendations in newspapers and business magazines, and previous long-term performance research has mainly addressed stock recommendations in other sources.[3]

The competition among newspapers and business magazines is fierce to sell as many single copies as possible. More than 80 percent of the population in Sweden were stockholders in the year of 2000, so publishing stock recommendations was a way for them to attract additional subscribers.[4] Pub-

[1] See Desai et al. (2000).

[2] See Liang (1999), Mathur and Waheed (1995), and Muradoğlu and Yazici (2002).

[3] In Womack (1996) it was found that the post-publication drift for buy recommendations from U.S. brokerage houses was modest and short-lived but for sell recommendations it was large and extended for six months; in Bjerring et al. (1983) it was shown that investors following the advice from a Canadian brokerage house would have earned significant abnormal returns; in Ferreira and Smith (2003) the recommendations presented on Louis Rukeyser's *Wall $treet Week* TV-show were shown to generate significant holding-period returns a year after the announcement, and in Barber et al. (2001) an investor who followed the most favorable consensus recommendations was shown to earn an annual return of four percent.

[4] From a survey by TEMO in 2000. In 1995 it was 53 percent, thus a 51-percent increase.

lishing stock recommendations is nevertheless a sensitive task for newspapers and business magazines since they may receive future critique from investors who lost money from following them. Some would even go as far as arguing that newspapers and business magazines bear a part of the responsibility for the "bubble" that occurred on stock markets during the latter half of the nineties. With ever-increasing stock prices, some analysts and journalists kept on recommending so-called dot-com firms, and as we know, prices eventually became unrealistically high for a majority of these stocks.

Most studies in this area have been conducted on the considerably larger U.S. stock markets. The Swedish stock market should be appealing to researchers since it is much smaller with a more limited number of actors, and because its concentration of telecommunication- and internet companies.[5] About a third of the total market share was owned by foreign owners during the studied period. Compared with the fraction of U.S. equities held by foreign investors which was 12 percent in June 2002, foreign ownership is about three times as common on the Swedish stock markets.[6]

Short-term abnormal returns from stock recommendations published in Swedish newspapers and business magazines were previously studied in Lidén (2003). Sell recommendations were found to generate a statistically significant negative cumulative abnormal return for the 20 post-publication days which essentially implies that money could be made from following these recommendations; recommendations from journalists had a larger impact, at and about the publication day, than those from analysts; the most positive buy recommendations were published during weekdays, whereas the most negative sell recommendations were published during weekends.

The results of this study show that stock markets react to initiated or changed recommendations at and about the publication day, and that the impact during these few days was much higher to journalist recommendations than it was for analyst recommendations just as was found in Lidén (2003). If an investor was to follow the investment advice (both buy- and sell recommendations) published by either analysts or journalists, he/she would earn returns in line with the market over the 24 post-publication months. One has to keep in mind that this strategy involves *shorting* the stocks that were sell-recommended, an action which is not always feasible. If one were

[5]See Karmin (2000) where the Swedish stock market was pointed out as a market with many investment opportunities in telecommunication- and internet companies. Because of its high concentration of these stocks, it drew much attention during 1999 and 2000 from domestic as well as foreign investors.

[6]Figure B of the Appendix shows how market share is divided between Swedish- and foreign ownership during the period 1982-2002. For the U.S. numbers, see Bertaut and Griever (2004).

to follow the sell recommendations alone, an investor would earn significant BHARs. An investor adopting the strategy to short *all* stocks being recommended irrespective of its origin and type, would earn a 24-month BHAR of about 10 percent. Finally, buy recommendations were misleading investors whereas sell recommendations were leading them correctly. This asymmetry is due to the complexity in interpreting the positive information from the company management leading to buy recommendations. Indeed, management seems to be overoptimistic both when they present positive and negative information. The task for analysts and journalists is to translate this positively biased information into more realistic estimations, free from overoptimism.

Section 2 describes the data, while Section 3 explains used method and analyzed hypotheses. The results are presented in Section 4. Section 5 summarizes and draws conclusions.

3.2 Sample Selection and Descriptive Statistics

The data consists of stock recommendations in Swedish printed media during the period 1996-2000. The recommendations from the following six newspapers and business magazines were considered: *Affärsvärlden* (AFV); *Aftonbladet* (AB); *Finanstidningen* (FTi); *Göteborgsposten* (GP); *Privata Affärer* (PA); and *Veckans Affärer* (VA).[7] Circulation figures are presented in Section 3.6.1 of the Appendix. The columns containing the recommendations were allocated using the online articles databases *Mediearkivet* and *Affärsdata*.

The total sample in the 1996-2000 period consists of 1775 recommendations. Reiterations of previous recommendations occur frequently, though some newspapers and business magazines are over-represented. From these, 1234 (69 percent) are reiterated recommendations. We assume that considered newspapers and business magazines make up the Swedish printed media when it comes to publishing stock recommendations. When a stock receives a buy recommendation in one newspaper or business magazine, if it then receives a buy in another printed source, before it receives a sell, it is deleted from the final sample irrespective in what newspaper or business magazine it is published. By using this approach, we hope to include only the *new* buy- and sell recommendations in the Swedish printed media.[8] Allowing only initiations or changes from a buy- to a sell recommendation, or vice versa,

[7]For a description of the respective newspaper or business magazine, see Lidén (2003).
[8]This approach have also been used in Womack (1996), among others.

the sample totals to 541 recommendations. Finally, we allow this procedure to be used from 1995, although we are interested in the period beginning at 1996, just to ensure that we are left with initiated recommendations or changes from a previous view in that stock. This practically means that a stock which is buy-recommended in 1995 and then receives a buy recommendation in 1996 (without a sell recommendation in between), is deleted from the final sample. The number of buy recommendations are 317 (59 percent of initiations and changes) and sell recommendations 224; thus a buy-to-sell ratio of 3:2. A recommendation could be given either by an analyst or a journalist.

Table 3.1 describes the distribution of added-to-buy and added-to-sell recommendations among the six newspapers and business magazines, and also partitioned into those originating from analysts and journalists.

Table 3.1: **Distribution of initiated and chnaged recommendations over newspapers and business magazines during the period 1996-2000 in Swedish printed media.**

	Newspaper/Business magazine								
Type	AFV	AB	FTi	GP	VA	PA	Total	Analysts	Journalists
Buy	40	39	46	54	74	64	317	99	218
Sell	42	103	33	-	7	39	224	35	189
All	82	142	79	54	81	103	541	134	407

3.2.1 Analysts and Journalists

We define an analyst as a person employed by a bank, a brokerage firm, or similar; and a journalist as a person employed by a newspaper or business magazine to write articles. Usually, an analyst is asked directly by the newspaper or business magazine to publish articles containing recommendations in that newspaper or business magazine. The bank or brokerage firm the analyst represents, have private clients which they on a regular basis give investment advice. Clients pay with commission for this advice. The "private" information the analyst may possess will thus be passed on to clients to profit from before disseminating it for free to the public. Certainly, the recommendations published in the newspaper and business magazines from analysts will be second-hand information. Journalists, on the other hand, often publish recommendations as a routine in their daily work. They may

support their recommendations on: previous reports from the company; an analysis from a bank; or they can be a result of more "investigative" work. There are two major differences between analysts and journalists to consider when we analyze investment advice published from these groups.

First, the available information differs. A journalist is typically working on articles for a very limited period of time and does not have the access to all detailed information that the analyst would have. Furthermore, analysts are supported by a whole chain of staff specialized in processing detailed information and presenting it in a standardized manner. This is clearly an informational advantage for analysts over journalists. Also CEOs, CFOs, and other senior officers at a company, may be more willing to meet with analysts to discuss the company than meeting with journalists, since analysts can attract (more) potential investors. This way, analysts can gather information which journalists generally will not.

Second, there is a clear difference in the set of incentives. There are typically no incentives for journalists to give either a favorable or an unfavorable recommendation. The reason is that all newspapers and business magazines demand a non-trade policy from journalists including the family, in stocks that they cover.[9] The analyst, on the other hand, has several incentives to give a certain type of recommendation (other than personal). Newspapers and business magazines only require of analysts to follow the rules imposed on them by their employer. The bank or brokerage firm the analyst represents may be involved in, or hope to win, a corporate finance deal with the company at hand. Also, the buy-side clients of the bank, or the bank itself, may have taken positions or intend to take positions that would "need" a recommendation along the way. Finally, the bank can give a recommendation in order to increase income from increased transaction volume.

All these situations may tempt analysts to give a certain type of recommendation. The above-mentioned differences in job description between analysts and journalists consequently motivates us to distinguish between them in the analysis of the results.

3.2.2 Descriptive Statistics

Table 3.2 displays summary statistics for the recommended firms by analysts and journalists including mean, median, and standard deviation of market capitalization (Panel A), as well as sector-index classification (Panel B).

The mean market capitalization of *all* firms in the sample was Swedish

[9]For a detailed explanation of how the newspapers and business magazines included in this paper monitor and regulate journalist stock trades, see Lidén (2003).

Table 3.2: **Sample statistics**. Market capitalization figures are presented in Swedish krona (SEK) billion. Numbers in parentheses indicates percentage of group total.

Panel A: Market capitalization

	Analysts		Journalists		All	
	Buy	Sell	Buy	Sell	Buy	Sell
	99	35	218	189	317	224
Mean	42.7	18.2	22.4	40.7	28.7	37.2
Median	3.2	2.9	2.1	3.3	2.3	3.2
Standard deviation	175.0	26.2	71.0	143.0	114.0	132.0

Panel B: Industry distribution

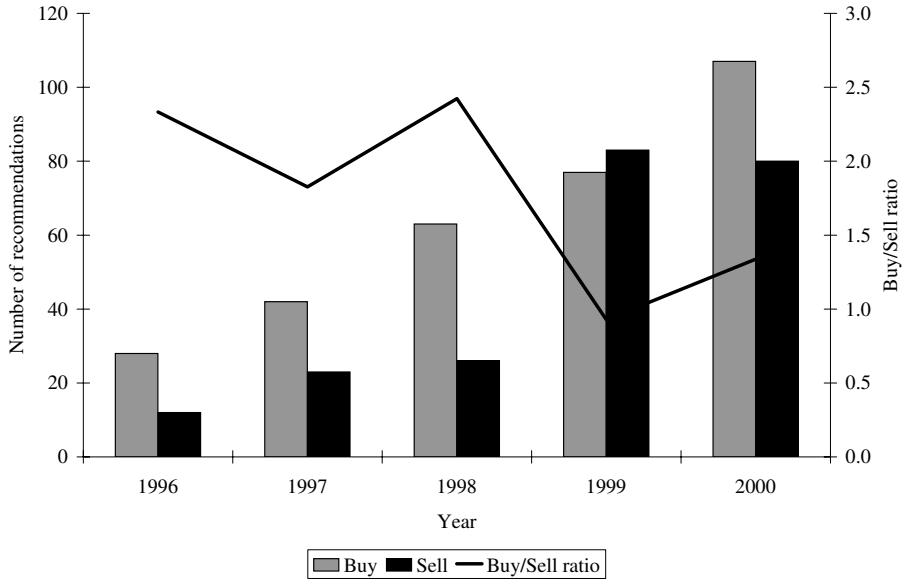
	Analysts		Journalists		All	
Industry	Buy	Sell	Buy	Sell	Buy	Sell
	99	35	218	189	317	224
Energy	1(1)	1(3)	0(0)	0(0)	1(1)	1(0)
Materials	11(11)	3(9)	14(6)	18(10)	25(8)	21(9)
Industrials	28(28)	12(34)	65(30)	49(26)	93(29)	61(27)
Consumer discretionary	14(14)	6(17)	31(14)	20(11)	45(14)	26(12)
Consumer staples	0(0)	0(0)	9(4)	5(3)	9(3)	5(2)
Health-care	12(12)	1(3)	14(6)	16(8)	26(8)	17(8)
Financials	14(14)	5(14)	31(14)	24(13)	45(14)	29(13)
Information technology	18(18)	6(17)	51(18)	54(29)	69(22)	60(27)
Telecommunication services	1(1)	0(0)	3(1)	3(2)	4(1)	3(1)
Utilities	0(0)	1(3)	0(0)	0(0)	0(0)	1(0)

krona (SEK) 32.2 billion, while the median was SEK 2.7 billion. At the end of year 2000, the mean of all firms listed on Stockholm Stock Exchange (SSE) was SEK 11.6 billion, while the median was SEK 0.9 billion. Recommended firms consequently had a substantially higher market capitalization than the average firm listed at the SSE. Firms sell-recommended by journalists were discernably larger than those sell-recommended by analysts, whereas the opposite was true for buy recommendations, though the difference in that case was not statistically significant. Overall, the industrials sector received most buy recommendations and the information technology sector most sell's (Panel B). The dispersion of recommendations over industry sectors was similar for analysts and journalists.

Figure 3.1 shows the number of added-to-buy and added-to-sell recom-

mendations per year in the sample, as well as the ratio between the two during that particular year.

Figure 3.1: **Recommendations per year.** Grey bars indicate added-to-buy recommendations and the black bars added-to-sell recommendations. The line indicates their ratio.



The number of new recommendations had a fivefold increase from 1996 to 2000. From the figure we can also see that the buy-to-sell ratio of initiations and changes decreased from its highpoint in 1998 of 5:2, to approximately 1:1 in 1999, and 3:2 in 2000. The main reason to the decrease in the ratio is the "overheated" market during 1999 and 2000, which lead to an increased sceptism to buy stocks at the time. In 1999, added-to-sell recommendations actually outnumbered added-to-buy recommendations.

Figure 3.2 displays the number of added-to-*buy* recommendations by analysts (light grey bars) and journalists (dark grey bars) by year.

We can see that during the years when the stock market reached its highpoint, i.e. 1999 and 2000, journalists acted as the cheerleader for buying stocks by increasing the number of new buy recommendations. While journalists doubled the number of initiated and changed recommendations from 1998 to 2000, the number of analyst recommendations remained about unchanged.

Figure 3.3 shows the distribution of recommendations over calendar months of publication.

Figure 3.2: **Added-to-buy recommendations per year.** Light grey bars indicate added-to-buy recommendations from analysts, and dark grey bars indicate added-to-buy recommendations from journalists.

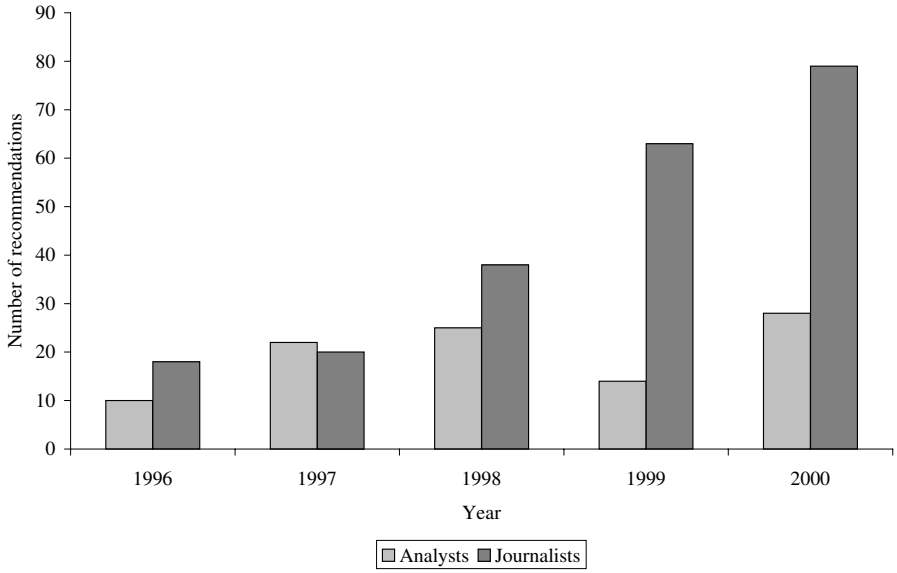
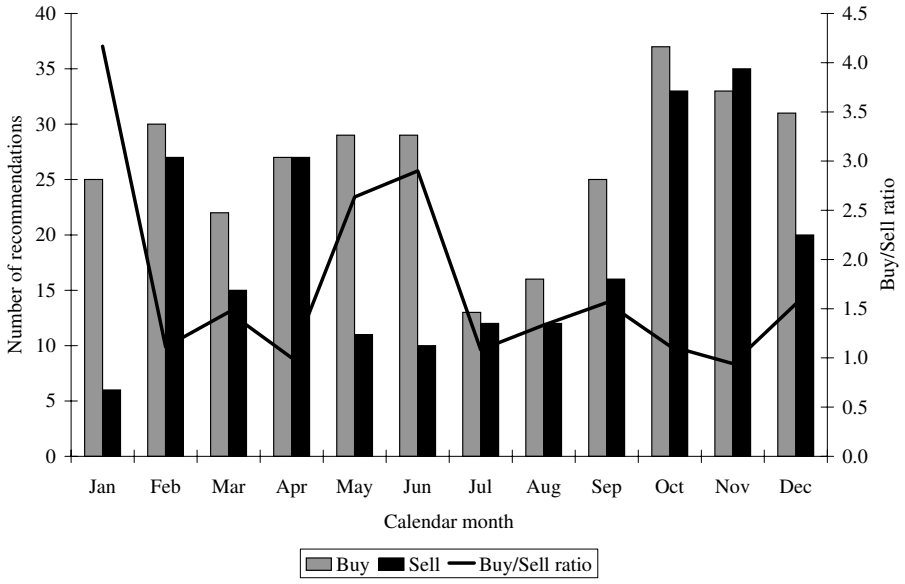


Figure 3.3: **Recommendations per calendar month.** Grey bars indicate added-to-buy recommendations and the black bars added-to-sell recommendations published per calendar month. The line indicates their ratio.



Added-to-buy recommendations were fairly evenly distributed over calendar months with no clear higpoint, whereas added-to-sell recommendations were somewhat "clustered" during October-November. The buy-to-sell ratio reached 4:1 during January, which was the highpoint, and in June it was 3:1. The ratio in January comes as no surprise since printed media publishes recommendations of stocks to buy during the new year. The peak in June, however, is a surprise. In fact, we could have expected relatively more sell recommendations for people who needed money for their holidays. The ratio reached its lowpoint in November, with many recommendations to sell for tax reasons.

The daily stock prices come from the *Scandinavian Information Exchange* (SIX) and were adjusted for dividends being reinvested in the stock from the ex-dividend day.

3.3 Method and Hypotheses

Previous research on long-term performance after various corporate events has evaluated abnormal performance based either on the buy-and-hold abnormal return method (BHAR), or the cumulative abnormal return method (CAR). A reason for the widespread use of BHAR is that it more accurately captures investor experience from holding a security for a long post-publication period; hence it is more intuitive than other methods. However, some have argued that this method does not correct for the cross-sectional dependence of observations due primarily to overlapping returns.[10] Because we here allow only initiations and changes from previous recommendations, the amount of overlapping returns, and thereby its potential problem, can be kept at an absolute minimum. In Barber and Lyon (1997) it was also discussed that, even though BHARs give rise to negatively biased test statistics, it is nevertheless preferred for detecting overperformance of published recommendations.

3.3.1 Buy-and-hold Abnormal Return (BHAR)

Each recommendation was assigned $t = 0$ for the publication-day (PD), and the event-period (EP) consists of the days -1 to +1. Data was required to be available one month before the start of the EP (21 trading days) and up to 24 months after the PD. Because it is almost impossible for an investor to profit from information contained in an announcement released before the

[10] Criticism towards BHAR for this reason have been raised by Brav and Gompers (1997), Fama (1998), Barber et al. (1999), and Mitchell and Stafford (2000).

opening, we assume an investor to invest at the day after the PD for our post-recommendation performance calculations.[11] To minimize the effect of survivorship bias when a firm did not survive the 24 months, abnormal performance was estimated for as many months as data were available, a procedure also used in Kothari and Warner (1997).

Calculating the BHARs for each recommended stock i during the period T, we use the procedure

$$BHAR_{iT} = \prod_{t=1}^{T}[1 + R_{iT}] - \prod_{t=1}^{T}[1 + R_{IT}], \tag{3.1}$$

where the period T will be calculated for the month prior to the EP (from day -22 to day -2), during the EP, as well as for 6-, 12-, 18-, and 24 post-event months; and I is the return on a value-weighted industry index to which stock i belongs. By industry index we mean sector index as classified by the Global Industry Classification System (GICS) jointly created by *Morgan Stanley Capital International* and *Standard & Poors*. Mean BHARs for a certain type of recommendations and from a certain group were calculated as a simple mean, i.e. each stock in that portfolio is equally weighted. This way of calculating the mean BHAR is preferred since it, in practice, means than an investor mimicking the recommendations would invest an equal amount of money in each recommended stock.

3.3.2 Hypotheses

If we assume that markets are at least semi-strong efficient, investing according to publicly available stock recommendations should not yield abnormal long-run returns. Markets tend to react rapidly to new information. They react so fast to this information that it would be almost impossible for a professional investor with all available tools to profit from it. Indeed, Kim et al. (1997) have shown that it only takes about 5 and 15 minutes for stock prices at NYSE and NASDAQ to react to the private information in analyst recommendations. This leads us to our first hypothesis:

Hypothesis 1: *The main body of previous research have found stock recommendations in printed media to be of practically no additional value, therefore we should not expect the Swedish printed media to be any different.*

Analysts, and the bank or brokerage firm he or she represents, spends huge

[11] That it is close to impossible to profit from this information have been showed in Kim et al. (1997).

resources in order to pick a few investment opportunities. In order to compensate their commission-paying clients and themselves for this research-cost, these investment advice should, on average, be outperforming the appropriate comparison measure. Prior to being published in the respective newspaper or business magazine, this information have thus already been passed on to private clients. So, if this information was somehow first-hand initially, i.e. profitable, it should not be profitable by the time they are published. These recommendations are then second-hand at the PD, just as journalist recommendations are assumed to be. As such, they should perform in line with the market, at best. Our second expectation can therefore be stated as:

HYPOTHESIS 2: *There should be no difference between the long run performance of analyst and journalist recommendations.*

3.4 Empirical Results

The buy-and-hold abnormal returns for all buy- and sell recommendations are presented in Table 3.3.

Buy recommendations were of stocks that performed as the market in the month prior to the recommendation (Panel A). During the EP these stocks gave rise to an abnormal return of 2.31 % (with a t-value of 3.48), but during the post-publication periods, these recommendations yielded negative BHARs. For the 18 months following the publication day, they would actually have yielded a return of -10.32 % (with a t-value of -1.67) for an investor acting on them after accounting for the return in the industry of the particular stock.[12]

In the literature, smaller companies are said to react more heavily to company-related announcements than larger companies.[13] It is therefore important to control for market capitalization when talking about BHARs. It could also be that the BHARs are driven by earnings-announcements just before, at, or after the recommendation is published. Therefore, we also run the following regression:

[12]We also run a regression having the 18-month BHAR as the dependent variable, and as dependent variables a dummy controlling from whom the recommendation originated, a variable controlling for market capitalization differences, a dummy controlling for whether the recommendation was published during the year 2000, and dummies controlling for in what newspaper or business magazine it was published. The result from this regression shows that the constant is no longer statistically significant, hence we cannot say that it would have been a profitable investment strategy to short these stocks.

[13]The well-known size-effect in this setting is discussed in Dimson and Marsh (1986).

Table 3.3: **BHARs for buy- and sell recommendations.** The pre-event period consists of the month prior to the event period (from day -22 to -2). In Panels A-C, the BHAR-columns displays the BHAR for buy recommendations, sell recommendations, and the combined effect from the two (where the return from sell recommendations have been assigned a negative sign). In Panel D, the first BHAR-column measures the difference between the first BHAR-columns of Panel C and B, the second BHAR-column displays the difference between the second BHAR-columns of Panel C and B, etc, performing a *Wilcoxon* ranksum test. * = significant at the 10-percent level, ** = significant at the 5-percent level, and *** = significant at the 1-percent level using a two-tailed t-test.

Panel A: All recommendations

	Buy recommendations			Sell recommendations			All combined		
Period	BHAR	t	n	BHAR	t	n	BHAR	t	n
Pre-publication	0.16	0.13	317	1.29	0.70	224	-	-	-
Event-period	2.31	3.48***	317	-1.36	-3.30***	224	-	-	-
6 months	-2.59	-1.10	317	-4.96	-1.89*	224	0.54	0.30	541
12 months	-2.63	-0.76	315	-10.62	-2.70***	223	2.85	1.09	538
18 months	-10.32	-1.67*	308	-11.42	-2.58**	213	-1.41	-0.34	521
24 months	-6.57	-1.32	296	-15.88	-3.51***	208	2.70	0.77	504

Panel B: Analyst recommendations

Period	BHAR	t	n	BHAR	t	n	BHAR	t	n
Pre-publication	-3.68	-2.51**	99	-3.25	-1.60	35	-	-	-
Event-period	1.15	1.94*	99	0.21	0.31	35	-	-	-
6 months	2.07	0.41	99	-7.94	-2.06**	35	3.60	0.92	134
12 months	-0.96	-0.16	99	-14.76	-2.19**	35	3.14	0.65	134
18 months	-4.00	-0.57	95	-30.58	-2.87***	34	5.11	0.85	129
24 months	-7.77	-0.90	94	-35.73	-3.25***	33	3.53	0.49	127

Panel C: Journalist recommendations

Period	BHAR	t	n	BHAR	t	n	BHAR	t	n
Pre-publication	1.91	1.11	218	2.13	1.00	189	-	-	-
Event-period	2.84	3.06***	218	-1.65	-3.51***	189	-	-	-
6 months	-4.71	-1.87*	218	-4.41	-1.45	189	-0.47	-0.24	407
12 months	-3.39	-0.80	217	-9.85	-2.19**	188	2.76	0.89	405
18 months	-13.14	-1.57	213	-7.80	-1.62	180	-3.55	-0.70	393
24 months	-6.01	-0.99	203	-12.15	-2.47**	176	2.42	0.61	379

Panel D: Analysts versus journalists

Period	BHAR	z	BHAR	z	BHAR	z
Pre-publication	-5.59	-0.92	-5.38	-0.57	-	-
Event-period	-1.69	-1.00	1.86	1.86*	-	-
6 months	6.78	0.52	-3.53	-0.63	4.07	0.16
12 months	2.43	0.40	-4.91	-0.25	0.38	-0.22
18 months	9.19	0.04	-22.78	-1.57	8.66	1.10
24 months	-1.76	-1.08	-23.53	-1.67*	1.11	-0.85

$$
\begin{aligned}
BHAR^{Buy}_{(EP,i)} &= 18.59 - 0.74Size_i - 1.95Earn_i \\
&\quad (1.89^{*})(-1.76^{*}) \quad (-0.55) \\
&\quad \bar{R}^2 = 0.02; \qquad (3.2)
\end{aligned}
$$

where $BHAR^{Buy}_{(EP,i)}$ measures the BHAR for buy recommendations during the period starting from the day prior to the PD and ending on the day after the PD for each stock i; $Size_i$ is the log of market capitalization; and $Earn_i$ is a dummy which takes the value of one if the company being buy-recommended issued an earnings-announcement during the EP and zero otherwise. Standard errors are corrected for heteroscedasticity using the procedure in White (1980). T-statistics are reported in parentheses.

The regression result in equation 3.2 shows that, even though market capitalization differences comes out statistically significant, the constant does as well. This means that buy recommendations give rise to a positive price-reaction during the EP. The fact that nine companies issued earnings announcements during the EP does not seem to be an important factor explaining the BHAR during this period. The companies issuing earnings-announcements nevertheless decreased by almost two percent during this period.

Sell recommendations were also of stocks that had a price increase during the month prior to the recommendation. During the EP, these stocks decreased in price. For the coming two years they yield statistically significant negative BHARs, e.g. -15.88 % (with a t-value of -3.51). This means that it would be a profitable investment strategy to *short* the sell-recommended stocks.

As was previously done with buy recommendations, we ensure that the reaction to the sell recommendations was not due to differences in market capitalization, and whether the company issued an earnings announcement during the event period by running the following regression:

$$
\begin{aligned}
BHAR^{Sell}_{(EP,i)} &= -14.96 + 0.61Size_i - 1.40Earn_i \\
&\quad (-3.27^{***})(3.13^{***}) \quad (-0.41) \\
&\quad \bar{R}^2 = 0.04; \qquad (3.3)
\end{aligned}
$$

where $BHAR^{Sell}_{(EP,i)}$ measures the BHAR for sell recommendations during the EP for each stock i; the other variables are as before. Standard errors are corrected for heteroscedasticity using the procedure in White (1980). T-statistics are reported in parentheses. As was the case for buy recommendations, the stock market seems to react to published sell recommendations

since prices decreases, i.e. there is some information in the recommendations making the market "adjusting" prices. The BHAR during the EP can partly be explained by differences in market capitalization, i.e. smaller stocks have a larger price-reaction than larger stocks have. Again, the six occasions of documented earnings announcements during the EP does not seem to be an important factor in explaining the EP-BHAR.

We also run a regression where BHAR for the 24-month post-publication period is the dependent variable, and as independent variables: a variable controlling for market capitalization; also ,in order to control for recommendations given during year 2000 being different in BHARs from the 1996-1999-period, a dummy controlling for whether the recommendation was given during the year of 2000 or not was introduced; and dummies controlling for in which newspaper or business magazine it was published:

$$\begin{aligned} BHAR^{Sell}_{(24\ post-months,i)} &= -209.82 + 8.95Size_i + 15.78y2000_i \\ &\quad (-4.51^{***})(4.90^{***}) \quad (2.00^{**}) \\ &\quad + newspaper\ dummies \\ &\quad \bar{R}^2 = 0.11. \end{aligned} \tag{3.4}$$

Standard errors are corrected for heteroscedasticity using the procedure in White (1980). T-statistics are reported in parentheses. The multivariate regression in equation 3.4 shows that increasing market capitalization of the recommended stock as well as if the recommendation was published during the year 2000 influenced the 24-month post-publication BHAR "positively". This means that sell recommendations during 2000 that were of relatively large companies generally performed *worse* than did other recommendations. That these recommendations performed worse means that the stock price of the respective company did not decrease as much as did the relatively smaller companies sell-recommended during the 1996-1999 period. The statistically significant constant should be interpreted as it would be a profitable investment strategy to short the sell-recommended stocks.[14]

Combining the impact from buy- and sell recommendations, we can see that they would have left an investor following them with a return of 2.70 % (with a t-value of 0.77) more than there industry peers for the 24-month period. So, the initiated or changed stock recommendations published in Swedish printed media performed in line with their industry peers. In subsection 3.1 it was stated that we should not expect the sample recommendations to outperform the market (Hypothesis 1). Although sell recommendations

[14]It should be stressed, however, that shorting stocks may not always be possible.

on its own may be profitable to follow, taking the negative contribution from buy recommendations into account, these recommendations perform in line with the market. The results therefore support the hypothesis.

The fact that buy-recommended stocks decrease in price during the 24 post-publication months, while sell-recommended stocks increase, makes us believe that shorting stocks receiving any recommendation could be profitable. If the investor would have adopted this strategy for the period of interest, he/she would have gained some 10.42 % (with a t-value of 3.00).

The above results have shown that buy recommendations were misleading investors, while sell recommendations were leading them correctly. Sell recommendations were thus informative but buy recommendations were not. The management in the company are usually overoptimistic about the future prospects of the company. Naturally, this means that the estimations presented by the management will be positively biased. When there is positive information, management tend to be excessively upbeat about the future. This sometimes leads to buy recommendations from analysts and journalists. The market reacts to the information in the recommendations leading to increasing stock prices, but after the PD, stock prices falls back. This is a classical *overreaction*. The reaction, however, takes considerable time, i.e. the market does not initially recognize the full extent of the positive bias. On the other hand, when management releases negative information, this is again presented as being slightly better than it actually is. This sometimes leads to sell recommendations from analysts and journalists. Again, the market reacts to the information with decreasing stock prices as a result. This time stock prices also decreases after the PD, i.e. the market *underreacts*. As for buy recommendations, it takes a considerable amount of time for the market to understand the positive bias in management information.

One may say that there is an informational-asymmetry dilemma between management on the one hand, and analysts and journalists on the other. If we analyze the results presented in this section, it is obvious that analysts and journalists were fooled by the overoptimism from the positive information, but they were not from negative information. In turn, this is due to positive information being more intricate to interpret.

3.4.1 Analysts versus Journalists

Table 3.3 also shows BHARs divided into recommendations from analysts (Panel B) and journalists (Panel C), as well as a comparison between the two groups (Panel D).

Buy-recommended stocks from analysts performed worse than those from journalists during the pre-publication month. During the EP, the stock-

price reaction to these recommendations were much lower than it was to buy recommendations from journalists. The *market* consequently believes that journalist buy recommendations contain relatively more new information. During the following months, however, these recommendations performed marginally better than journalist recommendations (as displayed by the 6-, 12-, and 18-month BHARs in the first BHAR-column of Panel D).

The pre-publication month BHAR to sell-recommended stocks from analysts was about 5 percent lower than it was for journalist sell recommendations. The EP BHAR to the sell-recommended stocks by analysts was higher than it was to sell-recommended stocks from journalists, i.e. sell recommendations from journalists were valued higher by the market during this period (just as for buy's). During the post-publication periods, however, these recommendations gave rise to continuous decreases in stock prices, leading to sell recommendations from analysts outperforming those from journalists. Sell recommendations from analysts "outperformed" sell recommendations by journalists with 23.53 % (with a z-value of -1.67) for the 24-month post-publication period.[15]

We also run a regression where we let the 24-month BHAR to sell recommendations be the dependent variable, and in addition to the independent variables in equation 3.4, we also include the dummy Who_i which takes one if an analyst gives the recommendation and a zero if it is a journalist. Standard errors are corrected for heteroscedasticity using the procedure in White (1980). T-statistics are reported in parentheses.

$$\begin{aligned} BHAR^{Sell}_{(24\ post-months,i)} &= -194.95 - 18.31 Who_i + 8.65 Size_i \\ &\quad (-4.25^{***})(-1.56) \qquad (4.74^{***}) \\ &\quad +12.85 y2000 + newspaper\ dummies \\ &\quad (1.52) \\ &\quad \bar{R}^2 = 0.11. \end{aligned} \tag{3.5}$$

The results in equation 3.5 clearly show that when we take into account differences in size between recommendations, as well as year of recommendation and in which newspaper the recommendation was given, the Who_i-variable does not come out as a statistically significant factor in explaining the 24-month BHAR for sell recommendations. This means that we cannot say that sell recommendations from analysts outperforms sell recommendations from journalists.

[15] A word of caution should be raised by the limited sample of sell recommendations from analysts, i.e. only 35 sell recommendations.

The last column of Table 3.3 in Panel D compares the last two columns of Panel B and C. From rows 3 to 6 of that column, we can see that an investor who follow analyst initiated or changed recommendations would earn just marginally more than the comparative investor following journalist recommendations although not statistically different from zero. The overall picture of the results tells us that analyst and journalist recommendations yields returns in line with the market. This finding supports our previously stated hypothesis (Hypothesis 2) that recommendations from analysts and journalists should be performing equally as well.

Buy recommendations were earlier found to be misleading and sell recommendations to be leading investors correctly. Dividing the sample into recommendations from analysts and journalists, these results still holds. That is, buy recommendations from both analysts and journalists were misleading, whereas sell recommendations from them were leading.

3.4.2 Transaction Costs

So far we have totally ignored costs imposed from transacting. In reality this can not be foreseen and should always be included when we evaluate the profitability from mimicking a set of recommendations. Nowadays, costs from transacting in stocks approaches levels close to negligible. Since the results are calculated such that the investor mimicking these recommendations would buy (or sell) the stock and hold on to them for a certain period of time, and then sell (or buy back) the stock, this gives rise to a two-trip transaction cost. Assuming that the investor is based in Sweden, online brokerage firms charge a fee of around 0.10 % on the value of the transaction each way. Obviously, including for transaction costs, the results would not change dramatically, i.e. only about 0.20 %.

3.5 Summary and Conclusions

This paper analyzes the long-run returns from mimicking initiated or changed stock recommendations given by analysts and journalists and published in Swedish printed media. The sample period is 1996-2000, which covers the turbulent 1999-2000 period. If an investor followed all initiations and changes, he or she would not earn more than the market return. This result is in line with our beliefs prior to performing this study, as well as the major body of previous research in the field. Following only sell recommendations, however, an investor could earn substantial buy-and-hold abnormal returns. This holds for sell recommendations from both analysts and journalists. One

should of course keep in mind that following such recommendations means taking short positions which may or may not be possible in the recommended stock at that point in time, i.e. there may be a liquidity problem involved in such a transaction. This liquidity problem may lead to a shrinking possibility to profit from that information. Following all recommendations from either analysts or journalists yields returns in line with industry peers, and no sizeable difference between the two groups was observed. Our expectations that analysts would hand their information to private clients to profit from before publication, leading to analyst and journalist recommendations performing equally as well in the post-recommendation periods, is therefore supported. Since all recommendations perform in line with their industry peers, an investor would be equally well off holding the market index.

Apart from the profitable trading strategy to short stocks that receives a sell recommendations, there is yet another feasible and potentially profitable trading strategy. This strategy involves shorting all buy- and sell-recommended stocks, i.e. going against buy recommendations but in line with sell's. This strategy would have yielded a statistically significant BHAR of about 10 percent, assuming that shorting these stocks is possible at the time of the recommendation.

The results of this paper have shown stock recommendations in Swedish printed media during the period to be both misleading (regarding buy recommendations) and leading (regarding sell recommendations). We have also shown that this asymmetry exists for recommendations originating both from analysts and journalists. As we have mentioned earlier in the paper, this could possibly be due to winners being more difficult to pick than losers. The explanation behind the asymmetry is that company management are generally overoptimistic about the future prospects of its company. This overoptimism generates positively biased information from the management to the public, in good times and bad. Because of the complexity in understanding the future prospects of the company, the overoptimism in positive information from management deceives analysts and journalists to issue misleading buy recommendations.

Another detail that previous research have seemed to ignore, is the existing conflicts-of-interest issues when analysts give recommendations in printed media. The ties between the analyst employer and the recommended company was consistently foreseen in the sample recommendations. Ongoing corporate-finance activities must be fully disclosed in connection to a recommendation. How can we otherwise expect investors, i.e. readers of the newspapers and business magazines, to make good and healthy investments based on these investment advice?

3.6 Appendix

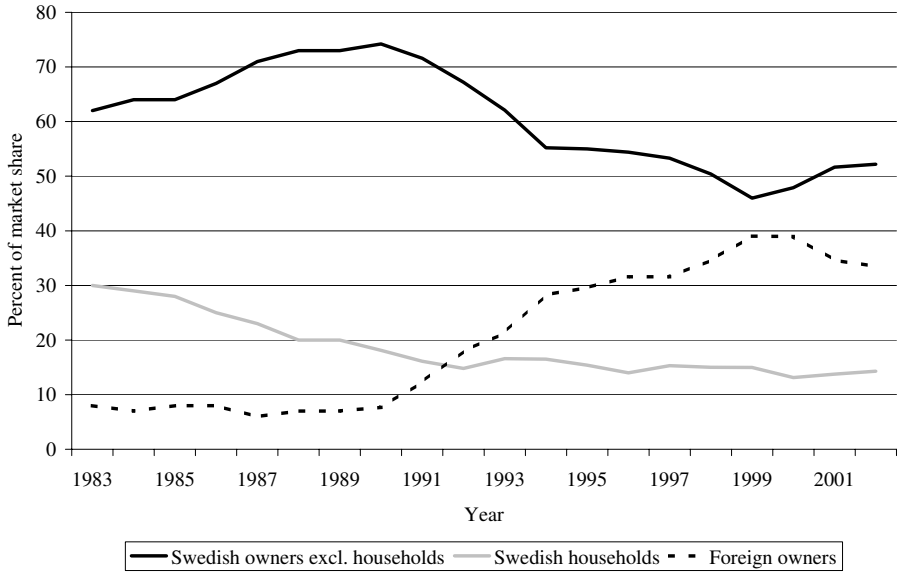
3.6.1 Circulation Estimates

Circulation estimates for the sample newspapers and business magazines as of 31 December 2000. * Average over weekend days ** Sunday figures. *Source*: TS AB.

Newspaper	Circulation
AFV	27,600
AB	117,000*
FTi	38,300
GP	380,600**
PA	27,400
VA	288,500

3.6.2 Stockholm Stock Exchange Ownership

The black line indicates Swedish ownership excluding the households, the grey line indicates the Swedish households ownership, and the dashed black line foreign ownership. All figures are in percentage of total market share. *Source*: Statistics Sweden (SCB).



Chapter 4

Credible Underwriter-Analyst Recommendations: Scandinavian Evidence

Abstract

Excess returns for Scandinavian IPO-firm recommendations from underwriter analysts for 1996-2001, in a market without the *quiet-period* regulation, were compared to those from non-underwriter analysts. Underwriter-analyst recommendations were found to outperform non-underwriter-analyst recommendations during the first year after publication, yielding substantially higher mean excess returns. Recommendations from underwriters came sooner after the IPO date and performed better than the market before, and worse in the days surrounding the recommendation date, showing no evidence that underwriters try to "boost" IPO firms in the aftermarket trading. The results support the superior-information hypothesis.

Key words: Initial public offerings, Quiet period, Stock recommendations, Underwriter analysts
JEL Classifications: G14, G15, G18, G24.

4.1 Introduction

When a firm goes public via an initial public offering (IPO), it often receives a first favorable recommendation by its underwriter(s).[1] It has been argued by some that these initial buy recommendations do not give additional information since the prospectus prepared by the underwriters already contains an *indirect* buy recommendation (see Dunbar et al. (1999)). Whether these recommendations are indeed a result of underwriter-analyst bias (i.e., we've arranged the IPO, so therefore it must be good) or their possession of superior information remains an open question. Three possible explanations have been hypothesized: There might be incentives for underwriters to give positively biased recommendations of the firms they underwrite, the "conflict of interest" hypothesis. Or positively biased recommendations may be caused by the IPO firm's choice of underwriter, the "selection bias" hypothesis. Or underwriter recommendations could result from the superior information they gather during the due-diligence process, the "superior-information" hypothesis. Either of the first two hypotheses might apply if underwriter recommendations perform worse than non-underwriter recommendations in the post-recommendation period.

Recently the competition for corporate-finance deals in the investment-banking community has increased. For example, Ellis et al. (2004) present evidence that 43% of the companies changed lead underwriters from their previous equity offering. In the competitive process of winning deals, corporate-finance departments may tailor the contract such that aftermarket performance becomes an essential part of the compensation. Thus positive recommendations during the post-IPO period might be highly appreciated by them. That the described situation is no illusion has been shown by many studies of underwriters' overoptimism (Dugar and Nathan (1995); Dechow et al. (2000); Lin and McNichols (1998); Michaely and Womack (1999); Bradshaw et al. (2003); Rajan and Servaes (1997); and Hong and Kubik (2003)). On the other hand, it has also been shown that such overoptimism has not increased the probability of winning *future* deals (see Ljungqvist et al. (2003)). But if an underwriter seems unlikely to win a deal, they might give a favorable recommendation in an attempt to win. This would be an obvious example of conflicts of interest. If an underwriter is instead highly likely to win a deal, they would not need to be overoptimistic. Thus observed recommendations might be negatively correlated with the unobserved probability of winning deals.

In another type of conflicts of interest, Hong and Kubik (2003) found

[1] For a review of theory and evidence on IPO activity, see Ritter and Welch (2002).

evidence that favorable job loss separation for analysts covering stocks underwritten by their own houses depended more on optimism than on forecasting accuracy. Thus the overoptimism evidence could be a result of analysts "investing" in their own careers rather than in the possibility of winning future corporate-finance deals. This is supported by Boni and Womack (2002) where buy-side professionals were found to consider sell-side analysts' stock recommendations as of "questionable value"; they instead favored analyst's own knowledge of the industry covered.

While previous studies have analyzed underwriter-analyst recommendations on U.S. stock markets where the quiet-period regulation applies, other markets have not yet been analyzed (at least not to my knowledge). Doing so would add to the story about underwriter-analyst recommendations as such, but would also tell us how markets work without a quiet-period regulation. This study therefore analyze the buy recommendations of 148 IPOs for the period 1996-2001 in the Scandinavian countries of Denmark, Norway, and Sweden. There are often *several* underwriters in the syndicate handling an IPO, including lead manager(s) and co-manager(s). The roles of lead managers and co-managers vary in the underwriting syndicate. Lead managers are responsible for the due diligence, for building the book, for setting the price of the IPO, selling shares, and for aftermarket price support. Co-managers, on the other hand, are responsible for research on the IPO firm, as well as finding buyers for some of the shares. If the deal value of the IPO is relatively low, it might only require one manager. For larger IPOs it is more common to have several managers.

It can be argued that lead managers are more responsible for aftermarket price support and may therefore have more to gain from publishing positive recommendations, so Michaely and Womack (1999) analyzed results separately for lead managers versus non-lead managers. But co-managers also possess information that would not be available to other brokerage firms, so it would be misleading to put them in the same category as non-underwriters. It is true that the insight into an IPO-firm may differ between a lead- and a co-manager, but this is true also between different lead managers. Because of this informational advantage for *any* underwriter (i.e. both lead- and co-managers) over non-underwriters, results here have been analyzed separately for these groups (underwriters and non-underwriters).

This paper thus contributes to the existing literature with empirical results on excess returns following underwriter-analyst recommendations versus non-underwriter-analyst recommendations on markets free from the quiet-period regulation.

The results show that both underwriters and non-underwriters tended to give buy recommendations to firms that had performed relatively well in the

recent past. Thus there was no apparent attempt on behalf of underwriters to boost previously low-performing IPOs in the aftermarket trading. Also, the market initially registered underwriter-recommendations skeptically relative to those from non-underwriters, i.e. they were discounted on publication day.

Post-recommendation excess returns reveal that underwriter recommendations substantially outperformed the market, but more importantly they also *significantly* outperformed non-underwriter recommendations. The informational advantage of underwriter analysts seemed to produce better buy recommendations than non-underwriters, thus supporting the superior-information hypothesis.

Even though recommendations from underwriters occurred earlier after an IPO than did those from non-underwriters, the absence of a quiet-period regulation on these markets did not seem to be a problem. Separating recommendations from lead managers versus non-lead managers as in Michaely and Womack (1999), yielded similar results. Thus the results cannot be explained by either how the markets were regulated or how the recommendations were grouped. Instead lower competition for winning corporate-finance deals may explain the different results obtained here and in Michaely and Womack (1999).

Finally, the long-run post-recommendation performance of IPO firms recommended by their underwriters only was no different from the performance of firms recommended by non-underwriters only, as was also found to be the case in Michaely and Womack (1999).

Section 2 explains the conflict-of-interest issue, Section 3 gives more background on the quiet period and the Scandinavian stock markets. Section 4 describes the data, while Section 5 explains the method used. The results are presented in Section 6, while Section 7 discusses the implications and draws conclusions.

4.2 Conflicts of Interest and Hypotheses

Conflicts of interest is a phenomenon that has always existed on the financial markets scene and nothing points against that it will also exist in the future. What then constitutes a source to conflicts of interest? One example would be when a bank internally communicate a certain stock as being worthless, but at the same time rating it as a 'buy' to its clients.[2] Another source to conflicts of interest could exist when an underwriter posts a positively

[2]New Yorks attorney general, Elliot Spitzer, found the investment bank Merril Lynch in internal e-mails to be talking about certain stocks as 'horrible' and 'piece of crap' for which they publicly rated 'accumulate' and buy.

biased recommendation in a recent IPO-firm, as was shown in Michaely and Womack (1999).

That there have been positively biased and directly misleading recommendations from underwriters was confirmed in the 2003 global research $870 million settlement between the SEC and ten investment banks and two individuals.[3] According to the SEC final judgement, the investment banks and individuals were discovered to have: (1) engaged in acts or practices that created or maintained inappropriate influence by investment banking over research analysts and therefore imposed conflicts of interest on research analysts; (2) published research reports that were contrary to the beliefs of its research analysts; (3) implicitly or explicitly promised favorable research coverage to investment-banking clients or potential clients; (4) given preferential allocations of shares in IPOs to directors, officers, or executives of existing or potential investment banking clients. It should therefore come as no surprise that there are potential sources to conflicts of interest.

During the due-diligence process underwriters are assumed to gather information that is not easily accessible for others outside the underwriting syndicate. Thus they can be expected to have an informational advantage that becomes visible when they publish their recommendations. Essentially the information gained in the IPO process is used in an 'economies of scope' for giving recommendations.[4] The global research settlement clearly showed that analysts were deeply involved in the IPO process, and that there were no perfectly working 'Chinese wall' between the corporate finance- and research departments at the time. Taking this into consideration we may state our first hypothesis:

HYPOTHESIS 1: *Members of the underwriting syndicate have superior information regarding the "true" value of the IPO firm, and therefore their buy recommendations will, on average, outperform those from non-underwriters.*

Due to the informational advantage of underwriters versus non-underwriters, they will accordingly find mispriced IPOs (in the aftermarket trading) earlier. Since these markets have no quiet-period regulation there is no advantage measured in number of days, i.e. 25 calendar days, during which a non-underwriter may publish a recommendation. Taking this into account, we should expect underwriters to issue initiations well ahead of non-underwriters. Thus our second hypothesis can be stated as:

[3]See http://www.sec.gov/litigation/litreleases/lr18438.htm accessed 1st October 2004, where the SEC litigation release #18438 is detailed.

[4]That is, since analysts actually themselves participated in the IPO process, they gained superior information relative to non-underwriter analysts.

HYPOTHESIS 2: *Because underwriters are already up-to-date on the IPO firm, they will tend to publish recommendations sooner after the IPO date than will non-underwriters.*

4.3 Background

4.3.1 The Quiet Period

The quiet-period regulation applied to IPOs on U.S. stock markets is explained by the *U.S. Securities and Exchange Commission* (SEC) as follows:

> "The term 'quiet period', also referred to as the 'waiting period', is not defined under the federal securities laws. The quiet period extends from the time a company files a registration statement with the SEC until SEC staff declares the registration statement 'effective'. During this period, the federal securities laws limit what information a company and related parties can release to the public... Despite the restrictions, the SEC has encouraged companies to continue making normal corporate announcements in the ordinary course of business during the quiet period."

"Related parties" means the lead- and co-managers in the underwriting syndicate. During the quiet period, regulation prohibits these underwriters from: (1) issuance of forecasts, projections, or predictions relating but not limited to revenues, income, or earnings per share; and (2) publishing opinions concerning values. When the quiet period is over, the underwriters usually put a buy recommendation on the IPO-firms stock. Bradley et al. (2003) found that underwriter analysts made buy- or sell recommendations on 76% of the IPO firms immediately after the quiet period ended, almost always with a "buy".

During 1990-91 such analyst coverage of IPO firms and the publishing of related stock recommendations was not as common as it is today (Michaely and Womack (1999)). Michaely and Womack (1999) argued that the 25-day quiet period therefore provided "a convenient testing ground" of whether the underwriting relationship biased analysts' recommendations. Because recommendations were fewer then, biased recommendations would easily show up. The quiet period was extended to 40 calendar days in July 2002, mainly to allow the market to price the stock "correctly" during a longer period of aftermarket trading, free from "biased" recommendations.

4.3.2 Scandinavian Stock Markets

The Scandinavian stock markets are regulated by the financial authority in each country, using a principle-based regulation which is more flexible than the compliance-based regulation used in the U.S., but which demands more of the financial authority. As noted earlier, these markets do not have a quiet period during which underwriters are prohibited from publishing stock recommendations on the IPO firm. Investment banks are supposed to follow a "sound" business practice and "fairness" in giving investment advice. This means that investment advice could turn out to be poor with no repercussions as long as the investment bank giving the recommendation acted in "good faith".

The European Commission also sets out directives that the financial authority of each member state has to enforce. Developments on U.S. stock markets have shown that it is important to regulate what information stock recommendations should contain, so Article 6 of a 2003 directive from the Commission (Directive 2003/125/EC) stated that:

> 1. In addition to the obligations laid down in Article 5, Member States shall require that any recommendation produced by an independent analyst, an investment firm, a credit institution, any related legal person, or any other relevant person whose main business is to produce recommendations, discloses clearly and prominently the following information on their interests and conflicts of interest:
>
> ...
>
> (d) where applicable, a statement that the relevant person or any related legal person has been lead manager or co-lead manager over the previous 12 months of any publicly disclosed offer of financial instruments of the issuer.

And furthermore:

> 4. Member States shall require that investment firms and credit institutions disclose, on a quarterly basis, the proportion of all recommendations that are 'buy', 'hold', 'sell' or equivalent terms, as well as the proportion of issuers corresponding to each of these categories to which the investment firm or the credit institution has supplied material investment banking services over the previous 12 months.

While the SEC has its quiet period during which the market is given time to correctly price IPO firms, Scandinavian financial authorities thus now require

underwriters to disclose their relationship with recommended firms as well as summary statistics on their recommendations. During the period studied here, however, no such requirements were in place.

4.4 Data, Sample Selection, and Descriptive Statistics

4.4.1 Return Data for IPOs

All Danish, Norwegian, and Swedish IPOs during 1996-2001 were identified using *Thomson One Banker-Deals*, an online database provided by *Thomson Financial* which includes corporate-transactions data. This information was double-checked against information from each stock exchange. For each IPO, the company name, deal value, offering date, offering price, lead managers, co-managers, and industry classification (sector) were collected. Stock returns were then collected from a database called *TRUST*, which is run by *SIX Information Estimates*, the main financial data provider in the Nordic region.

No restrictions were put on minimum deal values, other than that the company should be initially listed on the Copenhagen- (Denmark), Oslo- (Norway), or Stockholm (Sweden) stock exchanges.[5]

A total of 148 IPOs were identified. Table 4.1 describes the IPO sample by country in terms of offering year, market capitalization, and industrial sector.

IPO activity averaged about 25 per year (Panel A), peaking in 1997 (38) and again in 2000 (43), before falling to only 13 in 2001 after the dot-com crash. About 50% (73) of the sample IPO firms were Swedish.

The Scandinavian stock markets have a few large-cap stocks and many small-caps. Thus 62% (92) of the IPOs were for firms with market capitalization less than $50 million (Panel B). Eight companies (5%) had market capitalization greater than $400 million: F*red Olsen Energy* ($453 million), *Saab-Scania* ($497 million), *Eniro* ($649 million), *Tele1Europe* ($891 million), *Telenor* ($1,608 million), *Den Norske Stats Oljeselskap* ($2,966 million), *Scania* ($3,026 million), and *Telia* ($9,267 million).

[5]Michaely and Womack (1999) excluded IPOs with a deal value less than $5 million. Using such a restriction here, 15 of the IPO firms would have been excluded from the sample. Excluding IPOs with a deal value less than $10 million, 27 IPO firms would have been excluded. But even such an exclusion would only have lead to losing 6 of the recommendations in the sample.

Table 4.1: **Distribution of Scandinavian companies conducting initial public offerings in the period 1996-2001.** Average deal values and market capitalization are in USD million. Market capitalization is measured as the stock price multiplied by the number of outstanding shares at the end of the first trading day.

Panel A: IPOs by country and year

Year	Denmark	Norway	Sweden	Total	Percent
1996	5	9	5	19	12.8
1997	4	18	16	38	25.7
1998	8	4	12	24	16.2
1999	4	2	14	20	13.5
2000	7	7	20	43	23.0
2001	3	4	6	13	8.8
All	**31**	**44**	**73**	**148**	**100.0**

Panel B: IPOs by country and market capitalization

Market capitalization	Denmark	Norway	Sweden	Total	Percent
Less than $50	17	32	43	92	62.2
$50 - $99.9	5	5	13	23	15.5
$100-$199.9	7	3	9	19	12.8
$200-$399.9	2	1	4	7	4.7
$\geq$ $400	0	3	5	8	5.4
All	**31**	**44**	**73**	**148**	**100.0**

Panel C: IPOs by country and sector

Sector	GICS	Denmark	Norway	Sweden	Total	Percent
Energy	10	0	10	0	10	6.8
Materials	15	1	1	0	2	1.4
Industrials	20	3	6	7	16	10.8
Consumer discretionary	25	7	4	12	23	15.5
Consumer staples	30	0	3	3	6	4.1
Health care	35	5	3	10	18	12.2
Financials	40	2	4	6	12	8.1
Information technology	45	13	12	31	56	37.8
Telecommunications	50	0	1	4	5	3.4
All		**31**	**44**	**73**	**148**	**100.0**

The IPO firms were well distributed over industrial sectors (Panel C), with representation in almost all industries, classified according to the Global Industry Classification Standard (GICS) developed jointly by *Morgan Stanley Capital International* and *Standard & Poors*. The largest block of sample IPOs (56, 38%) were information-technology stocks. There were ten IPOs in the energy sector, all from the Norwegian market.

In line with previous international evidence, there seems to have been substantial underpricing on the IPO date (13.57% mean excess return the

first day, with a t-value of 6.44, where mean excess return was measured as the average of the return on each recommendation less the return on its sector index). Underpricing on Scandinavian IPOs has been studied for earlier periods in various studies: Danish IPOs during 1984-1998 had first-day excess return of 5.4% (Jakobsen and Sørensen (2001)), compared with 11.7% for the Danish IPOs here; Norwegian IPOs during 1984-1996 had 12.5% (Ritter (2003)), compared with 12.7% here; and Swedish IPOs during 1980-1998 had 30.5% (Ritter (2003)), compared with 14.8% here. Over the next two years these IPO firms yielded a negligible increase in stock prices (5.19%, with a t-value of 0.54). Of the 148 IPO firms in the sample, 111 (75%) are still individually active; the 37 other firms where either bought up by another company, merged with another company, delisted, or went bankrupt.

Table 4.2 shows the ten most active and forty-five other underwriters involved in the sample IPOs as lead manager or co-manager. The five most active underwriters were Swedish; there were also two American, one German, one Norwegian, and one Danish underwriter among the top ten. As one might expect, more active firms tend to be a lead manager more often then co-manager, and vice-versa for less active firms. The final column of Table 4.2 displays the average 2-year excess returns. From that column we can see that the post-IPO performance of underwriters differs to a large extent.

4.4.2 Analysts' Recommendations Data

Information about analysts' recommendations of IPO-firms, obtained from *First Call*, included (1) the recommendation date; (2) the name of the recommended company; (3) broker ID; (4) analyst's name; and (5) text of the recommendation itself. Brokerage houses use a variety of terms for different types of recommendations. In the database, these are standardized using Institutional Brokers Estimate System (I/B/E/S) recommendation-codes, which indicate "strong buy", "buy", "hold", "underperform", and "sell". Only initial buy recommendations were considered here. By doing so, we obtain a recommendation sample that is free from news announcements which would have been the case if we instead included also changes from one category of recommendations to another. An analyst will therefore not appear as recommending the same company more than once, reducing the problem with overlapping returns to a minimum.

Table 4.2: **Number of events participating in the IPO syndicate of Scandinavian IPOs differentiated by underwriter.** Underwriters are divided into the ten most active underwriters, and 45 smaller underwriters. The total activity for an underwriter was calculated as the combined number of IPOs where the underwriter acted as either a lead manager or co-manager. Average market capitalization was calculated as the average of the number of outstanding shares multiplied by the closing price at the end of the first trading day, displayed in USD millions.

Underwriter	Country	Lead manager	Alone	Co-manager	Alone	Total activity	Average market cap.	Average 3-day ER (%)	Average 2-year ER (%)
1	Sweden	39	24	9	1	48	308	20.92	-2.23
2	Sweden	28	17	6	2	34	61	8.30	0.00
3	Sweden	15	7	6	0	21	910	12.80	-38.04
4	Sweden	16	7	3	0	19	58	4.23	32.65
5	Sweden	13	11	3	0	16	37	16.71	50.44
6	United States	12	3	0	0	12	1,490	12.56	-17.53
7	Germany	3	1	6	0	9	87	-6.48	-42.37
8	Norway	6	3	3	0	9	775	-2.68	-13.57
9	Denmark	5	2	3	3	8	125	8.56	18.31
10	United States	7	2	1	0	8	535	20.28	7.02
	Others (45)	54	26	56	8	110	386	8.86	29.00

During the 1996-2001 period that we analyze, there are 469 comments in the *First Call* database that apply to the 148 Scandinavian IPO firms within one year of their offering dates.

Table 4.3: **Scandinavian IPOs and their brokerage analyst 1996-2002**. Recommendation-information on the 148 IPOs firms in 1996-2001 was taken from *First Call*. An underwriter is a brokerage analyst representing any of the underwriting managers in the syndicate, whether lead- or co-manager.

Panel A: Number of IPOs by source of recommendations

	Number of IPOs	Percent
Buy recommendations by underwriters only	31	21.0
Buy recommendations by non-underwriters only	20	13.5
Buy recommendations by both U and non-U	37	25.0
Non-buy recommendations only (by U or non-U)	10	8.1
No recommendations	50	33.8
All	**148**	**100.0**

Panel B: Number of IPOs, by number of first-year buy recommendations

	Number of IPOs	Percent
No buy recommendations in first year	60	33.8
1 recommendation	33	27.0
2 recommendations	23	16.9
3 to 5 recommendations	18	12.8
6 to 10 recommendations	13	8.8
More than 10 recommendations (The Norwegian telecommunications company *Telenor* received 12 recommendations)	1	0.7
All	**148**	**100.0**

Table 4.3 displays how often brokerage analysts initiated or changed opinion in the 148 Scandinavian IPO firms during the first year after the IPO date. Fifty firms had no recommendations during the first year after the IPO date (Panel A). The remaining 98 IPO firms are categorized in four ways: (1) IPO firms that only received buy recommendations from underwriters (31 firms); (2) IPO firms that only received buy recommendations from non-underwriters (20 firms); (3) IPO firms that received buy recommendations from both underwriters, and non-underwriters (37 firms); and (4) IPO firms that only received non-buy (e.g. hold, underperform, and sell) recommendations (10 firms).

Panel B of Table 4.3 displays that in 33 of the 88 IPO firms that received a buy recommendation during the first year, only one recommendation was

given. Roughly speaking, four out of ten IPO firms that receive buy recommendations only receive one buy recommendation during its first year. More than 10 recommendations was given to one IPO firm only, i.e. the Norwegian telecommunication-services company *Telenor* which received 12.

From the whole sample of recommendations on IPO firms one year after the IPO date, 28 were "sell" (6.3%). Not surprisingly, only one of those were given by an underwriter (a co-manager). Also, there were 125 recommendations to "hold" (28.3%), and 47 "underperform" (10.6%). In two instances, recommendations were published *before* the IPO date, one by an underwriter.

Table 4.4: **Description of buy recommendations from brokerage analysts on Scandinavian IPO firms, 1996-2002, by underwriter status**. Two recommendations were made before the IPO date, and one on the IPO date. Numbers in parentheses are percentages of each category.

Panel A: By underwriter status, and time before, at, and after the IPO date

	Underwriters	Non-underwriters	Total
During first month after IPO date	2(2)	12(8)	14(6)
During second month after IPO date	12(13)	9(6)	21(9)
During months $3-6$ after IPO date	51(54)	48(33)	99(41)
During months $7-12$ after IPO date	30(32)	78(53)	108(45)
All	**95(100)**	**147(100)**	**242(100)**

Panel B: By underwriter status and market capitalization (millions)

	Underwriters	Non-underwriters	Total
Less than \$50	34(36)	29(20)	63(26)
\$50-\$99.9	13(14)	17(12)	30(12)
\$100-\$199.9	14(15)	36(24)	50(21)
\$200-\$399.9	14(15)	24(16)	38(16)
$\geq$ \$400	20(21)	41(28)	61(25)
All	**93(100)**	**147(100)**	**242(100)**

Panel C: By underwriter status and sector

Industry (GICS code)	Underwriters	Non-underwriters	Total
Energy (10)	4(4)	19(13)	23(10)
Materials (15)	3(3)	4(3)	7(3)
Industrials (20)	17(18)	28(19)	45(19)
Consumer Discretionary (25)	12(13)	19(13)	31(13)
Consumer Staples (30)	3(3)	8(5)	11(5)
Health Care (35)	10(11)	8(5)	18(7)
Financials (40)	4(4)	7(5)	11(5)
Information Technology (45)	31(33)	38(26)	69(29)
Telecommunication Services (50)	11(12)	16(11)	27(11)
All	**95(100)**	**147(100)**	**242(100)**

Table 4.4 shows the 242 initial brokerage-analyst buy recommendations (54.8%) differentiated by source (underwriter or non-underwriter), according to the length of time after the IPO (Panel A), market capitalization of the IPO firm (Panel B), and industrial sector (Panel C). Only in 14 instances (5.8%), did an IPO firm receive a buy recommendation within the first month of the IPO date, the quiet period, if such a regulation applied (two recommendations even occurred *before* the IPO date itself). The majority of underwriter recommendations were given during months 3-6, whereas the majority from non-underwriters were given during months 7-12 (Panel A).

Underwriters tended to give buy recommendations to stocks with relatively low market capitalization (Panel B), whereas non-underwriters tended to recommend larger stocks, though the difference is not statistically significant. The average market capitalization of underwriter-recommended stocks was $536 million, and $583 million for non-underwriter recommendations.

Recommendations were well dispersed over industries (Panel C), with representation of all IPO-firm industries. The recommendations over industries compared with the IPO firms differentiated by industries (Table 4.1, Panel C), shows that the percentages are fairly similar. In practice this means that underwriters tended to recommend the same fraction of buy recommendations to IPO firms of a certain sector as the fraction of IPOs in the same sector.

4.5 Method

A buy-and-hold strategy was used to calculate the excess returns an investor would get from following the recommendations of underwriters and non-underwriters. We deploy here an industry-adjusted buy-and-hold strategy which is defined as the buy-and-hold return on the stock minus the buy-and-hold return on the relevant industry index:[6]

$$ER^i_{a\ to\ b} = \left[\prod(1 + r^i_t) - \prod(1 + r^{industry(C)}_t)\right], \tag{4.1}$$

where r^i_t is the raw return on stock i on day t, and $r^{industry(C)}_t$ is the return on the corresponding sector index for that country on that day; $ER^i_{a\ to\ b}$ is thus the excess return on stock i from time a to b. The event period of a recommendation is defined as the day prior to, the day of, and the day after the recommendation, so that $(a\ to\ b)$ means $(-1, +1)$. Excess

[6]It would also have been interesting to use benchmarks for market capitalization decile indices, but unfortunately they were not available for these markets.

returns were also calculated for 3 months, 6 months, and 12 months after the recommendation, with one month defined as 21 trading days.

The excess returns (ER^i) for portfolios of underwriter- and non-underwriter-recommended stocks were averaged for each period according to

$$PER_{a\ to\ b} = \frac{1}{n}\left(\sum_{i=1}^{n} ER^i_{a\ to\ b}\right), \tag{4.2}$$

where n is the number of stocks with returns in the period of interest. Following Michaely and Womack (1999), if a firm became delisted from the exchange, the proceeds are equally distributed among the remaining stocks in the portfolio. The t-statistics were calculated using the cross-sectional variance of excess returns in the relevant period.

4.6 Empirical Results

4.6.1 Market Reactions to Recommendations Differentiated by Underwriting relationships

Table 4.5 reports the reaction to recommendations of recent IPO firms by underwriters and non-underwriters.

The immediate (3-day) return suggests that the market discounted recommendations from underwriters (0.07% return, t-value: 0.12) relative to those from non-underwriters (0.75% return, t-value: 1.55); however the difference was not statistically significant. Nonparametric results reveals that 52% of the stocks recommended by underwriters increased in the 3-day period, whereas 56% from non-underwriters increased. Recommendations by underwriters came much sooner (47 days, t-value: -3.48) than non-underwriter recommendations, supporting Hypothesis 2.

We also run the following regression in order to find whether observed 3-day differences were due to market capitalization, time-since-issuance, or if the recommendation was the first in that stock:

Table 4.5: **Excess returns (percent) on Scandinavian IPOs, before, at, and after analyst buy recommendations by underwriter status and period, 1996-2002.** * = significant at the 10% level, ** = significant at the 5% level, and *** = significant at the 1% level using a two-tailed t-test.

Buy recommendations	Total (N=242)	Underwriters (N=95)	Non-underwriters (N=147)	t-stat of U vs. non-U
Month before event				
Mean	2.86	2.12	3.34	-0.46
Median	0.77	0.14	1.59	-0.54
3-day event				
Mean	0.48	0.07	0.75	-0.91
Median	0.19	0.03	0.40	-0.50
Days after IPO, mean	177	148	195	-3.48***
Days after IPO, median	168	120	203	-6.29***
Event + 3 months				
Mean	0.38	4.72	-2.41	1.87*
Median	-0.32	0.87	-1.55	0.60
Event + 6 months				
Mean	2.11	8.05	-2.70	1.47
Median	-2.45	-0.82	-3.00	0.31
Event + 12 months				
Mean	1.72	15.79	-7.34	2.02*
Median	-9.00	-0.89	-13.94	1.07

$$\begin{aligned} ER^i_{(-1,1)} &= -0.44 - 0.51U_i + 0.18Size_i + 0.002Time_i - 0.09First_i \\ &\quad (-0.26)\ (-0.69) \quad (0.75) \qquad (0.40) \qquad (-0.12) \\ &\quad \bar{R}^2 = 0.007; \end{aligned} \tag{4.3}$$

where $ER^i_{(-1,1)}$ is the 3-day excess return in percent; U_i is a dummy taking the value 1 if the recommendation originated from an underwriter, otherwise 0; $Size_i$ is the log of market capitalization at the end of the first trading day; $Time_i$ is the number of days between the IPO date and the recommendation date; and $First_i$ is a dummy taking the value 1 if the recommendation was the first in that stock since issuance, otherwise 0. Standard errors were corrected for heteroscedasticity using the procedure in White (1980). Numbers in parentheses are t-values.

Size had a positive coefficient, as did *Time*, whereas recommendations coming *First*, and coming from underwriters (U) had negative coefficients. The results from the univariate analysis was a difference of 0.68 percentage

points between underwriters and non-underwriters, and after accounting for the other factors, it was 0.51 points.

4.6.2 Pre-recommendation Price Performance

The conflict-of-interest hypothesis discussed in the introduction of this paper and Section 4.2 suggests that underwriters might be tempted to "boost" stocks that performed poorly in aftermarket trading by issuing a favorable recommendation. If that was the case, we would find a tendency towards a negative pre-recommendation excess return for underwriters, as was found in Michaely and Womack (1999) for syndicate lead managers. And in fact, 49% of the underwriter-recommended stocks had negative excess returns during the month prior to the recommendation, whereas only 38% of the non-underwriter recommendations did so.

Table 4.5 shows one-month pre-recommendation excess returns. Recommendations by both underwriters and non-underwriters were of stocks that had positive average excess returns during that month, though, on average, underwriter-recommended stocks had performed less well (2.12%, t-value: 0.96) than had non-underwriter-recommended stocks (3.34%, t-value: 2.17). Thus, there is no indication here that underwriters were trying to boost aftermarket low-performing IPO-stocks.

The following regression results also illustrate this:

$$\begin{aligned} ER^i_{pre} &= 11.70 - 2.13U_i - 1.31Size_i - 0.01Time_i \\ &\quad (1.90^*)\,(-0.83) \quad (-1.51) \quad\quad (-0.65) \\ &\quad \bar{R}^2 = 0.012; \end{aligned} \tag{4.4}$$

where $ER^i_{(pre)}$ is the excess return during the month prior to the recommendation date; and U_i, $Size_i$, and $Time_i$ are the same as before. The significant intercept-coefficient indicates that both underwriters and non-underwriters tended to recommend stocks that had performed relatively well in the month prior to the recommendation. However, stocks recommended by underwriters had performed 2.13 percentage points worse, on average. Larger stocks (and those recommended later) had also performed worse.

4.6.3 Post-recommendation Price Performance

Excess returns on underwriter- and non-underwriter-recommended stocks 3-, 6-, and 12 months after the recommendation date are shown in Table 4.5. In 3 months, underwriter-recommended stocks had outperformed their sector by

4.72 percentage points (t-value: 1.35), while non-underwriter-recommended stocks had underperformed by -2.41 percentage points (t-value: -1.15), and the 7-percent-point difference between the two groups is statistically significant at the 10% level. Over the next 9 months, the stocks recommended by underwriters continued to outperform, whereas those from non-underwriters continued to underperform. So not only did the underwriter recommendations outperform their sectors by a substantial amount (15.79% over 12 months), but the non-underwriter recommendations were *significantly* outperformed by 23.13% (t-value: 2.02).

The nonparametric results show that 45% of the recommendations from underwriters outperformed their sector during the first year after the IPO date, while only 35% of the non-underwriter recommendations did so.

Out of the total sample of 148 IPOs, 60 never received a buy recommendation during its first year. One may argue that there is a selection bias in the firms that underwriters choose to cover and firms for which *First Call* records recommendations. That is, *First Call* may not keep record of *all* recommendations and, more importantly, underwriters may choose to cover firms which their clients have most interest in (for example firms that are large enough to be considered as an investment opportunity for the client). With this said, we should correct for this potential selection bias. One way to do this is to use a Heckman (1979) selection bias model. This model has previously been used by Rajan and Servaes (1997) correcting for selection biases in I/B/E/S's choice of analysts.

The first stage is a maximum likelihood probit model that determines when the dependent variable in the second stage is not missing. In the second stage the dependent variable is the excess return on recommended firms. In the first stage we should include variables that explains why certain firms were given buy recommendations while others were not. The institutional clients of the brokerage firm are generally interested in investing in larger firms. Naturally, this leads to analysts focusing on larger firms. Since recommendation coverage may therefore depend on the size of the IPO firm we include a variable controlling for this (see Rajan and Servaes (1997)). If a firm was covered by one or more analysts giving earnings estimates during its first IPO year, it should be more likely to receive a buy recommendation during this period. We therefore introduce a dummy which is equal to one if one or more analysts cover the firm, and zero otherwise. It is very likely that *First Call* keeps record of close to all recommendations given by brokerage firms of the IPO firms, but it is also likely that the number of brokerage firms tied to *First Call* increases over time. Therefore we also include a set of year-dummies controlling for coverage increasing over time.

Apart from whether the recommendation was given by an underwriter

or a non-underwriter, we also include the following explanatory variables in the second stage: a dummy controlling for whether the underwriter had its headquarters in the U.S. ($Quiet_i$), 27 recommendations; $Size_i$ (as before); $Time_i$ (as before)); $First_i$ (as before); and the Scandinavian IPO market share of the brokerage firm giving the recommendation ($MktShare_i$).[7] Standard errors were again corrected for heteroscedasticity using the procedure in White (1980), and t-stats are reported in parentheses. Table 4.6 reports

Table 4.6: **Excess returns from recommendations of Scandinavian IPOs, 1996-2001.** Panel B presents the second stage estimates (using the two-step procedure in Heckman (1979)) of the post-recommendation excess returns from recent IPOs for one year after the recommendation date. Panel A contains coefficient estimates for the first stage model, a maximum likelihood probit model that determines when the dependent variable in the second stage is not missing.

Panel A: First stage estimates, explaining when the dependent variable in the second stage is not missing (The coefficients on year dummies are not reported).

Variable	Coefficient	z-value
Log equity size	0.45	3.61***
Analysts covering the IPO firm	2.19	5.97***
Constant	-3.22	-4.36***
Number of observations		148

Panel B: Second stage estimates: Dependent variable excess return.

Variable	Coefficient	t-value
Underwriter	26.87	2.11**
Quiet	-15.59	-1.29
Log equity size	-4.73	-1.34
Time	-0.01	-0.20
First	-2.85	-0.25
Market share	-1.03	-0.62
λ (Heckman's lambda)	-42.53	-1.77*
Constant	31.59	1.20
Number of observations		240

[7]Underwriters with higher reputation tend to take on IPOs with less risk, leading to lower returns, as was shown in Carter and Manaster (1990). Market share of the underwriter was used rather than performing a Scandinavian Carter-Manaster ranking as a measure of reputation, mainly because these rankings do not perform as well for small markets (such as in Scandinavia) as they do for the U.S. IPO market. Market share was calculated as the underwriter's share of the accumulated IPO total on Scandinavian markets during the period 1996-2001. Data on market share came from *Thomson Financial*.

We also ran a regression where dummies for which brokerage firm the analyst represented were included as explanatory variables. The results were not altered and are therefore not presented here.

the results on the excess return for the first year after the recommendations on the IPO firms. Heckmans lambda (the correction-variable for the potential selection bias in the first stage, i.e. λ) turns out statistically significant at the 10-percent level which implies that there might be selection bias in the firms underwriters choose to cover. Having corrected for this potential bias, underwriter-recommendations outperform non-underwriter recommendations by 26.87 percent during the first post-recommendation year. This figure should be compared to the parametric result of about 23 percent. The excess return is negatively affected by: whether the analyst giving the recommendation was employed by a U.S. brokerage firm; increasing size of recommended firms; increasing number of days between the IPO date and the recommendation; whether the recommendation was the first in that IPO firm; and increasing market share of the analyst brokerage firm.

So far we have seen that the market initially discounted underwriter recommendations relative to those from non-underwriters, and the stocks that underwriters recommended had performed worse in the pre-recommendation period. However, the positive pre-recommendation excess returns on stocks recommended by their underwriter(s) showed no evidence that underwriters need to "boost" stock prices. From the higher post-recommendation excess returns on underwriter recommendations, we see instead that there is support for the "superior-information" hypothesis, i.e. Hypothesis 1.

The IPOs themselves were previously classified according to type and source (underwriter or non-underwriter) of the recommendations (Table 4.3, Panel A). Table 4.7 reports excess returns for IPO firms during the first day and 3 days, as well as the first two years after the IPO date according to the same classification.

One would expect the best-performing stocks to receive the most buy recommendations, and a really "good" stock to be recommended by both underwriters and non-underwriters. Sure enough, the highest two-year excess returns were on stocks that received buy recommendations from both underwriters and non-underwriters. As one would also expect, IPO firms that did not receive any buy recommendations in the first year after the IPO date had the lowest performance in the short run as well as the longer run, 20 percentage points lower than those which received recommendations from both underwriters and non-underwriters.

4.6.4 Robustness

Several concerns could be raised about the results presented so far. Were the IPOs studied a complete set of all the IPOs on Scandinavian markets during 1996-2001? The IPOs found in the *Thomson One Banker-Deals* were

Table 4.7: **Excess returns (percent) on Scandinavian IPOs by source of recommendation and period, 1996-2001.**

	Buy recommendations by underwriters only (N=31)	Buy recommendations by non-underwriters only (N=20)	Buy recommendations by both by U and non-U (N=37)	Firms w/ No recommendations (N=50)
First trading day				
mean	14.14	18.16	14.94	11.30
median	5.97	11.02	8.51	3.47
First three days				
mean	15.64	17.31	14.01	11.33
median	3.91	8.20	8.82	5.96
First two years				
mean	11.92	12.18	14.98	-5.44
median	-26.91	-4.94	-9.36	-8.99

double-checked against, and supplemented with, information from the stock exchanges. Thus we can be almost certain that all IPOs during the period were included.

Were all brokerage-analyst recommendations published on those IPO firms found and used? Michaely and Womack (1999) double-checked the recommendations in the *First Call* against those available through *Investext*, and found very few additional recommendations. Since all major brokerage houses continued to make their recommendations available in the *First Call* database during the period studied, we can be sure that all or close to all available recommendations were found.

Were the results found here driven by dividing the recommendations into those from underwriters versus those from non-underwriters? Michaely and Womack (1999) divided their recommendations into those from lead managers and those from non-lead managers. Dividing our recommendations in the same way yields Table 4.8, which is almost identical to Table 4.5. Lead managers published recommendations well before non-leads (a difference of 54 days). However, the difference in the one-year excess returns (19.46%) is no longer statistically significant at any conventional level.

4.7 Discussion and Conclusions

Published underwriter- and non-underwriter recommendations of IPO-stocks on the Scandinavian stock markets during 1996-2001 were analyzed. Under-

Table 4.8: **Excess returns (percent) on Scandinavian IPOs before, at, and after analyst buy recommendations by manager status and period, 1996-2002.** The sample have been divided into recommendations from lead managers and non-lead managers. * = significant at the 10% level, ** = significant at the 5% level, and *** = significant at the 1% level using a two-tailed t-test.

Buy recommendations	Total (N=242)	Lead managers (N=74)	Non-lead managers (N=168)	t-stat of LM vs. non-LM
Month before event				
Mean	2.86	1.88	3.29	-0.51
Median	0.77	-0.14	1.24	-0.45
3-day event				
Mean	0.48	-0.08	0.73	-1.02
Median	0.19	0.03	0.31	-0.38
Days after IPO, mean	177	139	193	-3.77***
Days after IPO, median	168	116	200	-6.31***
Event + 3 months				
Mean	0.38	6.89	-2.46	2.32**
Median	-0.32	2.10	-1.10	0.69
Event + 6 months				
Mean	2.11	9.95	-1.30	1.60
Median	-2.45	-3.73	-2.29	-0.18
Event + 12 months				
Mean	1.72	15.26	-4.20	1.60
Median	-9.00	-2.69	-11.73	0.65

writer recommendations were found to yield substantially higher excess returns, directly contradicting previous research which has shown underwriters to publish positively biased buy recommendations (Michaely and Womack (1999)). The information gained by underwriters in the IPO-process thus appears to be superior to the information of non-underwriters. Little, if any, was found that underwriters attempted to "boost" IPO-firms performing poorly in aftermarket trading by publishing buy recommendations. But underwriters were found to publish recommendations on average almost two months before non-underwriters, again supporting the superior-information hypothesis; presumably underwriters were therefore earlier able to recognize mispriced stocks. If underwriters were really attempting to influence IPO-stock-prices in the aftermarket, however, one would expect recommendations to come much sooner, and to perform much worse.

The clear difference from previous research (i.e. Michaely and Womack (1999)) may be explained by differences in the overall regulatory approaches

between Scandinavian and U.S. stock markets. The Scandinavian financial regulatory system may tend to reduce conflicts-of-interest to a minimum, whereas the U.S. system may tend to induce conflicts-of-interest issues. But it might also be that analysts employed by U.S. brokerage firms behave in the best interest of themselves, i.e. career concerns with the related overoptimism, or that the SEC regulation (i.e. quiet period) generates this behavior. The behavior on behalf of the underwriters on the Scandinavian stock markets seems to be relatively free from conflicts of interest, implying that tighter regulation might be unnecessary.

To what extent might reduced competition for corporate-finance deals in Scandinavia explain the different results? There are very few underwriters active in Scandinavia (Table 4.2); the five most active (measured by the number of IPOs where the broker was a member of the underwriting syndicate) were all Swedish. If competition is lower, underwriters may not be "forced" to issue buy recommendations when a stock is first introduced, as has previously been found to be the case on U.S. stock markets. Analysts under less stress may thus produce "healthier" recommendations overall. This seems to be the most appealing argument for the different results obtained here and in Michaely and Womack (1999).

The European Commission Directive 2003/125/EC is a good step to further disclosing potential sources to conflicts of interest. It gives the possibility for an investor to more easily judge whether given recommendations of IPO firms are driven by overoptimism from underwriters. Further research on both European and other stock markets will show whether current regulation is adequate as the results here suggest, or whether there is need for tighter regulation of the underwriting relationship with the recommended firm.

Bibliography

Ajinkya, B. B. and P. C. Jain (1989). The Behavior of Daily Stock Market Trading Volume. *Journal of Accounting and Economics 11*, 331–359.

Barber, B. M., R. Lehavy, M. McNichols, and B. Truemann (2001). Can investors profit from the prophets? *Journal of Finance 56*(2), 531–563.

Barber, B. M. and D. Loeffler (1993). The Dartboard Column: Second-Hand Information and Price Pressure. *Journal of Financial and Quantitative Analysis 28*(2), 273–284.

Barber, B. M. and J. D. Lyon (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics 43*, 341–372.

Barber, B. M., J. D. Lyon, and C.-L. Tsai (1999). Improved methods for tests of long-run abnormal stock returns. *Journal of Finance 54*(1), 165–201.

Beneish, M. B. (1991). Stock Prices and the Dissemination of Analysts' Recommendations. *Journal of Business 64*(3), 393–416.

Bertaut, C. C. and W. L. Griever (2004). Recent Developments in Cross-Border Investment in Securities. *Federal Reserve Bulletin Winter*, 19–31.

Bjerring, J. H., J. Lakonishok, and T. Vermaelen (1983). Stock Prices and Financial Analysts' Recommendations. *Journal of Finance 38*(1), 187–204.

Bolster, P. J. and E. A. Trahan (1995). The Impact of *Barron*'s Recommendations on Stock Prices. *Quarterly Journal of Business and Economics 34*(4), 3–15.

Boni, L. and K. Womack (2002). Solving the Sell-Side Research Problem: Insights from Buy-Side Professionals. *Working paper*.

Bradley, D. J., B. D. Jordan, and J. R. Ritter (2003). The Quiet Period Goes out with a Bang. *Journal of Finance 58*(1), 1–36.

Bradshaw, M. T., S. A. Richardson, and R. G. Sloan (2003). Pump and Dump: An Empirical Analysis of the Relation Between Corporate Financing Activities and Sell-Side Analyst Research. *Working paper*.

Brav, A. and P. A. Gompers (1997). Myth or reality: The long-run underperformance of initial public offerings. *Journal of Finance 52*, 1791–1821.

Brown, S. J. and J. B. Warner (1980). Measuring Security Price Performance. *Journal of Financial Economics 8*(3), 205–258.

Brown, S. J. and J. B. Warner (1985). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics 14*(1), 3–31.

Canes, M. and P. Lloyd-Davies (1978). Stock Prices and the Publication of Second-Hand Information. *Journal of Business 51*(1), 43–56.

Carter, R. and S. Manaster (1990). Initial Public Offerings and Underwriter Reputation. *Journal of Finance 45*(4), 1045–1067.

Dechow, P. M., A. Hutton, and R. G. Sloan (2000). The Relation Between Analysts' Forecasts of Long-term Earnings and Stock Price Performance Following Equity Offerings. *Contemporary Accounting Research 17*, 1–32.

Desai, H., B. Liang, and A. K. Singh (2000). Do All-Stars Shine? Evaluation of Analyst Recommendations. *Financial Analysts Journal May/June*, 22–29.

Dimson, E. and P. Marsh (1986). Event Study Methodologies and the Size Effect. *Journal of Financial Economics 17*, 113–142.

Dugar, A. and S. Nathan (1995). The Effect of Investment Banking Relationships on Financial Analysts' Earnings Forecasts and Investment Recommendations. *Contemporary Accounting Research 12*(1), 131–160.

Dunbar, C., C.-Y. Hwang, and K. Shastri (1999). Underwriter Analyst Recommendations: Conflict of Interest or Rush to Judgment? *Working paper*.

Ellis, K., R. Michaely, and M. O'Hara (2004). Competition in Investment Banking: Proactive, Reactive, or Retaliatory? *Working paper*.

Fama, E. F. (1965). The behavior of stock market prices. *Journal of Business 38*, 34–105.

Fama, E. F. (1998). Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics 49*, 283–306.

Ferreira, E. J. and S. D. Smith (1999). Stock Price Reactions to Recommendations in the *Wall Street Journal* "Small Stock Focus" Column. *Quarterly Review of Economics and Finance 39*, 379–389.

Ferreira, E. J. and S. D. Smith (2003). Wall $treet Week: Information or Entertainment? *Financial Analysts Journal January/February*, 45–53.

Glosten, L, R. and R. Milgrom, P (1985). Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics 14*, 71–100.

Healy, P. M. and K. G. Palepu (2001). Information Asymmetry, Corporate Disclosure and the Capital Markets: A Review of the Empirical Disclosure Literature. *Journal of Accounting and Economics 31*, 405–440.

Heckman, J. (1979). Sample Selection Bias as a Specification Error. *Econometrica 47*, 153–161.

Hong, H. and J. D. Kubik (2003). Analyzing the Analysts: Career Concerns and Biased Earnings Forecasts. *Journal of Finance 57*(1), 313–351.

Jakobsen, J. and O. Sørensen (2001). Decomposing and Testing Long-run Returns, With an Application to Initial Public Offerings in Denmark. *European Financial Management 7*, 393–415.

Jegadeesh, N. and W. Kim (2003). Value of Analyst Recommendations: International Evidence. Working paper, Emory University, and University of Illinois at Urbana-Champaign, May.

Jordan, D. J. and S. K. Sarkar (2000). Stock Price Reactions to Regional *Wall Street Journal* Securities Recommendations. *Quarterly Journal of Business and Economics 39*, 50–61.

Karmin, C. (2000). Investors Jump on the Nordic Track in Search Of Hot Telecommunications and Internet Shares. *Wall Street Journal 59*(235), C20.

Kim, S. T., J.-C. Lin, and M. B. Slovin (1997). Market Structure, Informed Trading, and Analysts' Recommendations. *Journal of Financial and Quantitative Analysis 32*(4), 507–524.

Kiymaz, H. (2002). The Stock Market Rumours and Stock Prices: A Test of Price Pressure and Size Effects in an Emerging Market. *Applied Financial Economics 12*(7), 469–475.

Kothari, S. P. and J. B. Warner (1997). Measuring long-horizon security price performance. *Journal of Financial Economics 43*, 301–339.

Liang, B. (1999). Price Pressure: Evidence from the "Dartboard" Column. *Journal of Business 72*(1), 119–134.

Lidén, E. R. (2003). Swedish Stock Recommendations: Information Content or Price Pressure? Working Paper in Economics No. 98, Department of Economics, School of Economics and Commercial Law, Göteborg University.

Lin, H.-W. and M. McNichols (1998). Underwriting Relationships: Analysts' Earnings Forecasts and Investment Recommendations. *Journal of Accounting and Economics 25*, 101–127.

Liu, P., S. D. Smith, and A. A. Syed (1990). Stock Price Reactions to The *Wall Street Journal's* Securities Recommendations. *Journal of Financial and Quantitative Analysis 25*(3), 399–410.

Ljungqvist, A., F. Marston, and W. J. Wilhelm (2003). Competing for Securities Underwriting Mandates: Banking Relationships and Analyst Recommendations. *Working paper*.

MacKinlay, C. A. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature 35*(1), 13–39.

Mathur, I. and A. Waheed (1995). Stock Price Reactions to Securities Recommended in *Business Week's* "Inside Wall Street". *Financial Review 30*(3), 583–604.

Michaely, R. and K. L. Womack (1999). Conflicts of Interest and the Credibility of Underwriter Analyst Recommendations. *The Review of Financial Studies 12*(4), 653–686.

Mitchell, M. L. and E. Stafford (2000). Managerial Decisions and Long-Term Stock Price Performance. *Journal of Business 73*(3), 287–329.

Muradoğlu, G. and B. Yazici (2002). Dissemination of Stock Recommendations and Small Investors: Who Benefits? *Multinational Finance Journal 6*(1), 29–42.

Palmon, O., H.-L. Sun, and A. P. Tang (1994). The Impact of Publication of Analysts' Recommendations on Returns and Trading Volume. *Financial Review 29*(3), 395–417.

Rajan, R. and H. Servaes (1997). Analyst Following of Initial Public Offerings. *Journal of Finance 52*(2), 507–529.

Ritter, J. (2003). Differences Between European and American IPO Markets. *European Financial Management 9*(4), 421–434.

Ritter, J. R. and I. Welch (2002). A Review of IPO Activity, Pricing, and Allocations. *Journal of Finance 57*(4), 1795–1828.

Sant, R. and M. A. Zaman (1996). Market Reactions to *Business Week's* "Inside Wall Street" Column: A Self-Fulfilling Prophecy. *Journal of Banking and Finance 20*, 617–643.

White, H. (1980). A Heteroscedasticity Consistent Covariance Matrix Estimator and a Direct Test of Heteroscedasticity. *Econometrica 48*, 817–838.

Womack, K. L. (1996). Do Brokerage Analysts' Recommendations Have Investment Value? *Journal of Finance 51*(1), 137–167.