Strange Days: The turn-of-the-month effect in Sweden

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ABSTRACT

We analyze daily price data for the Swedish stock market during 2003-2012 and find evidence of a turn-of-the-month effect. Furthermore, the effect in Sweden occurs earlier in the month compared to previous studies, as predicted by the preferred habitat theory. We find more pronounced effects for equal-weighted indexes, suggesting that individual investor behavior help explaining the effect. For mid-sized firms, our findings suggest that that the Friday effect is driven by the TOM effect. Finally, our findings indicate that the TOM effect is inversely related to the long term trend of the stock market, supporting our expectation of constrained investor liquidity as an explanation to the TOM effect.

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1. INTRODUCTION

The notion that markets are perfectly efficient and that prices reflect all available information is a well-established, yet often-debated, concept of finance. Research argues not only that prices sometimes do not incorporate all available information, but also that investors often behave irrationally (Barber & Odean, 2000; Barberis & Thaler, 2003). A considerable body of research focuses on calendar anomalies resulting from such irrational investor behavior (Lakonishok & Smidt, 1988; Ritter, 1988). One such anomaly is the turn-of-the-month effect (TOM effect), a recurring pattern where daily average returns are abnormally high around the turn-of-the-month compared to the rest of the month.

Previous studies support the existence of a TOM effect in a wide range of markets, although the Swedish stock market has been given limited attention in this particular field (Ariel, 1987; Kunkel, Comption, & Beyer, 2003; Ogden, 1990). The purpose of this paper is to investigate whether a TOM effect exists in Sweden and in that case, whether the effect differs between different indexes of the Nasdaq OMX Stockholm Stock Exchange. Given that research proposes that improved investor liquidity in the end of the month drives the TOM effect, another area of focus is the importance of the date for salary payments (Booth, Kallunki, & Martikainen, 2001). Since salaries are paid out earlier in Sweden than in most other countries, it makes sense to investigate whether a TOM effect in Sweden occurs earlier in the month. Another topic of interest is whether individual investor ownership drives the TOM effect, something that has not been extensively explored by previous studies. Since theory describes individual investors as overconfident and irrational, while statistics show that they own a disproportionate share of equity on smaller indexes in Sweden, individual investor behavior may drive a TOM effect on small firm indexes rather than on large firm indexes (Barberis & Thaler, 2003; Finansinspektionen & Statistiska Centralbyrån, 2006-2012). Furthermore, drawing upon previous studies of the Friday effect, where returns have been found to be significantly higher on Fridays compared to other weekdays, we also seek to evaluate whether or not the TOM effect is stronger for Fridays (Rogalski, 1984). Finally, we seek to further explore the impact of investor liquidity constraints on the TOM effect by comparing the effect during periods of positive and negative stock market trends, respectively.

In order to test our hypotheses, we construct variations of the AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget indexes, using different time periods and weightings. The index returns are regressed on dummy variables for three different turn-of-the-month windows as well as dummy variables for different weekdays during the turn-of-the-month. We test for robustness

by controlling for other calendar anomalies for all indexes and the OMXS30 for the smaller indexes.

Our results provide support for all of our hypotheses. First, our findings indicate that a TOM effect exists in Sweden, both for AFGX, representing the overall stock market, and OMXS30, Mid Cap and Small Cap, representing different firm sizes. However, no significant effect can be discerned for Aktietorget. Second, the effect is strongest during the -3 to +2 window, two days earlier than what comparable studies have found in the US (Ariel, 1987), implying that the date for salary payments influences the timing of the effect. Third, although there is no clear inverse relationship between firm size and the TOM effect, a comparison of equal- and value-weighted variations of the indexes suggests that individual investor behavior might help explaining the TOM effect. Fourth, the effect is stronger for Fridays, while Fridays during the turn-of-the-month display significantly higher returns than Fridays during the rest of the month. Finally, all indexes display a more pronounced TOM effects during negative stock market trends, supporting the notion that constraints on investor liquidity influence the effect.

The rest of this paper is organized as follows. In the following section, we review theory and previous empirical findings in order to develop our hypotheses. In Section 2, we describe the data sources and the different time series. In Section 3, we present the econometric tools used in order to address the hypotheses. In Section 4, we present our empirical results and discuss them in light of theory, previous findings and economic intuition. Finally, we conclude the paper in Section 5 with a brief summary and a discussion of the limitations of the study.

2. THEORETICAL FRAMEWORK

Since market anomalies describe deviations from a normal state of the market predicted by theory, an initial step when discussing anomalies is to establish what is actually considered normal market conditions. We do this by first presenting the efficient market hypothesis and its assumptions, in order to then review the existing literature on market anomalies in general and the turn-of-the-month effect in particular.

2.1. The efficient market hypothesis

Since Fama's article '*Efficient Capital Markets: A Review of Theory and Empirical Work'* in 1970, the efficient market hypothesis (EMH) has been a core concept of financial theory. The EMH rests upon the assumption that all investors at any given time have access to all available information and are equally proficient in analyzing this information. Consequently, the EMH proposes that assets are priced correctly at any given time since prices "*fully reflect all available information*" (Fama, 1970, p. 388).

Since its introduction, the EMH has been extensively debated by scholars; some supporting the notion of an efficient market, some disputing it. Many researchers argue that since professional investors, on average, are unable to beat the market, the market does follow a random walk and can consequently be considered efficient (Metcalf & Malkiel, 1994; Rubinstein, 2001). Fama (1998) also provides additional support for the EMH, arguing that any deviations from the EMH are accounted for in the long run, resulting in an efficient market. This is line with Friedman (1953), who argues that any mispricing in the market is quickly eliminated by rational traders seeking to benefit from arbitrage. At the same time, there is a considerable body of research that questions the EMH and its assumptions. A central theoretical school of thought in this context is behavioral finance, which proposes that investors are subject to cognitive biases and do not behave rational at all times. Drawing upon psychology, behavioral finance seeks to explain trends and movements in the market as the result of investor biases such as overconfidence (Alpert & Raiffa, 1982), wishful thinking (Weinstein, 1980), conservatism (Edwards, 1968) and belief perseverance (Lord, Ross, & Lepper, 1979). This conflicts with the assumptions of the EMH that all investors at any given time are able to analyze all available information in order to make a trading decision, thus resulting in efficient pricing of financial assets. Behavioral finance research proposes that although irrational investor behavior might result in mispriced assets, executing a trading strategy that exploits such mispricing could be too risky and costly for rational investors, resulting in persistent mispricing (Barberis & Thaler, 2003).

In order to test the EMH, researchers have explored whether anomalies exist in financial markets. Since the definition of an anomaly is a deviation from what can be considered normal, a market anomaly would be any evidence that prices do not follow a random walk, i.e. displaying patterns over time. Studies have found that daily returns during certain recurring time periods are significantly different from average daily returns. Such anomalies include the weekday effect, the pre-holiday effect, the turn-of-quarter effect, the turn-of-the-year/January effect and the turn-of-the month effect (Lakonishok & Smidt, 1988).

The rest of the theoretical framework is organized as follows. First, we briefly describe the turn-of-the year effect in order to provide support for that anomalies do exist and review some common drivers of anomalies. Second, we provide an in-depth discussion of the turn-of-the-month effect, its existence internationally and the key explanations of the effect proposed by theory. Third, we draw upon previous studies of the turn-of-the month and weekday effects, investor behavior and the relationship between the TOM effect and investor liquidity in order to formulate our hypotheses.

2.2. Introduction to anomalies – the turn-of-the-year effect

One often-mentioned market anomaly is the turn-of-the-year effect (TOY effect), usually referred to as the January effect, where shares of small firms in particular display unusually high returns in the beginning of January. Ritter (1988) finds a regular TOY effect for small stocks on the NYSE between 1971 and 1985. During this period, small stocks displayed 8.17% higher returns than large stock for the first 9 trading days of the year. Similar findings are documented by other authors, notably Banz (1981) and Keim (1983).

In his article, Ritter (1988) reviews potential explanations for the TOY effect, most notably the *omitted risk-factor hypothesis,* the *tax-loss selling hypothesis,* the *information release/insider trading hypothesis,* the *seasonality of risk return hypothesis,* the *parking the proceeds hypothesis* and the *window dressing hypothesis.* First, the omitted risk-factor hypothesis proposes that investors are exposed to and compensated for risks not captured by the standard CAPM, and that these risks have a greater impact on smaller firms. However, since investors are assumed to be compensated for these risks, the EMH is not violated. Second, the tax-loss selling hypothesis is based on the idea that stocks whose prices have declined throughout a year face additional downward pressure in the end of the year since investors sell off the stocks in order to realize capital losses (Reinganum, 1983; Starks, Yong, & Zheng, 2006). At the beginning of the following year, prices revert back to their equilibrium levels as investors repurchase stocks. Third, the information release/insider

trading hypothesis states that investors demand higher returns in January in order to protect themselves against the risk of non-public information often becoming available to insiders in the beginning of the fiscal year (Williams, 1986). Fourth, the seasonality of risk return hypothesis proposes that the positive relationship between risk and return is significant only in January, causing the TOY effect (Tinic & West, 1984). Fifth, the parking the proceeds hypothesis, as put forward by Ritter (1988), is similar to the tax-loss-selling hypothesis in the sense that individual investors' realization of losses at the end of the year grant them increased liquidity at the beginning of the following year. Ritter argues that these proceeds are then invested in smaller companies. This argument rests on the assumption that individual investors prefer to invest in smaller firms, a notion confirmed by other studies (Blume & Friend, 1986; Statistiska Centralbyrån, 2013). Finally, the window dressing hypothesis builds upon the idea that institutional investors tend to sell off underperforming stocks while buying overperforming stocks before the end of the fiscal year in order to make their funds more attractive to shareholders and potential investors (Lakonishok & Smidt, 1988).

2.3. The turn-of-the-month effect

A phenomenon similar to the turn-of-the-year effect is the turn-of-the-month effect (TOM effect). In one early study of this anomaly, Ariel (1987) finds that total stock returns for the CSRP index during 1963 – 1981 are driven solely by returns in the first half of the month. The results remain significant, although less pronounced, when controlling for the January effect. Consequently, the TOM effect cannot simply be dismissed as a manifestation of the TOY effect. Similarly, Lakonishok & Smidt (1988) study daily returns of the DIJA index during 1897 – 1986 and find higher-than-usual returns around the turn-of-the-week, the turn-of-the-month, the turn-of-the-year and around public holidays. More specifically, cumulative returns during the last and the first three trading days, the -1 to +3 window, each month exceed the total returns for the rest of the month. Pettengill and Jordan (1988) find a significant TOM effect for a -1 to +3 day window around the turn-of-the-month for both large and small companies on the NYSE, where returns during this window often make up more than 50 percent of total monthly returns. Internationally, Kunkel et. al. (2003) study 19 developed countries, Sweden not included, representing 88% of the market cap at the time, during 1988 – 2000. The authors find that the -1 to +3 window at the turn-of-the-month accounts for 87% of average monthly returns. Furthermore, the authors argue that since there is no observable effect in the US during 1994 – 2000, TOM effects in international markets during this period cannot simply be dismissed as spillover effects from the US market.

When seeking to understand the TOM effect, neither the realization of tax-losses nor the unique risk-return characteristics of January used when explaining the TOY effect are applicable, since they only concern abnormal returns in the beginning of the year. Instead, Wiley and Zumpano (2009) provide a framework with two primary approaches for explaining the TOM effect; *portfolio window dressing* and the *preferred habitat theory*. As for the TOY effect, portfolio window dressing results in a concentration of buying activity of institutional investors in the end of the month. This explanation acknowledges the behavior of institutional investors as the direct cause of the TOM effect. The other explanation, the preferred habitat theory, was first provided by Ogden (1990), who proposes that the abnormal buying behavior at the end of the month is a result of the monthly payments of salaries, dividends, interest and other liabilities. It shall be noted that Ogden does not distinguish between individual and institutional investors. Similarly, Booth et. al. (2001) examine liquidity constrained investors as a potential cause of the TOM effect. Looking at the Helsinki Stock Exchange, the authors find that bid quotes, used as a proxy for investor liquidity, increases at the end of the month, supporting the preferred habitat theory. In addition to the window dressing and preferred habitat theories, the findings of Nikkinen et. al. (2009) suggest that the TOM effect is primarily driven by macroeconomic news announcements in the US.

Considering the lack of published research studying the TOM effect in Sweden, a first step will be to determine whether such an effect exists or not for the Swedish market. Since the anomaly is found for the stock markets of many other developed countries, we expect to find an effect also for the Swedish stock market.

H1: A TOM effect exists for the Swedish stock market

2.3.1. The timing of the TOM effect

Based on the preferred habitat theory, the actual date salaries are paid out should influence the timing of the TOM effect. Since Ariel's study in 1987, the -1 to +4 window has frequently been used when testing for a TOM effect. In addition, Agrawal and Thandon (1994) as well Cadsby and Ratner (1992) find effects for the -1 to +3 window in the US.

In terms of international evidence, Ziemba (1991) finds a TOM effect for the -5 to +2 window for the Tokyo stock exchange during 1949 – 1988. Interestingly, the TOM effect occurs earlier in the month in Japan than in the US. Combined with the fact that salaries in Japan are paid out around the 25th every month, earlier than in the US, this suggests that the timing of the TOM effect depends on when salaries are paid out. Oguzsoy and Güven (2006) conduct a

similar study of the Istanbul Stock Exchange during 1988 – 1999, where they find abnormally high returns for the days surrounding the middle of the month. Since salaries to public employees in Turkey are paid out on the 15th every month, this further supports the notion that the date of liquidity injections affects the timing of the TOM effect.

Sweden is similar to Japan in the sense that salaries are paid on the 25th, or the closest preceding weekday if the 25th occurs on a weekend. Since previous studies find TOM effects in a range of countries for the -1 to +4 window, and salaries in these countries are paid out later than in Sweden, we expect the effect to occur earlier in the month for Sweden than for other countries.

H2: The TOM effect occurs earlier in the Swedish market than the -1 to +4 window observed internationally

2.3.2. Ownership as a driver of the TOM effect

The idea of portfolio window dressing as an explanation for the TOM effect implies that the effect is driven by the behavior of institutional investors. However, the preferred habitat theory does not make a distinction between individual and institutional investors. Consequently, it is unclear whether or not such a preferred habitat in the end of the month results from the behavior of individual investors. In order to explore ownership as a potential explanation of the TOM effect, the following sections describe the characteristics of institutional and individual investors as well as their investment behavior.

2.3.2.1. Institutional investor characteristics and investment behavior

Research suggests that institutional investors prefer to invest in large companies. By examining stock ownership of US mutual funds during 1991 – 1992, Falkenstein (1996) concludes that mutual fund managers prefer highly visible stocks with low transaction costs. Focusing on minimizing transaction costs results in a preference for liquid stocks and an aversion towards stocks with low nominal prices. Furthermore, Kang and Stultz (1997) find that foreign investors in the Japanese market held a disproportionate number of shares in large firms with low idiosyncratic risk during 1975 – 1991. Similarly, Dahlquist and Robertsson (2001) find that foreign investors, usually large institutional investors, prefer large firms, with high market liquidity and geographically diversified operations, when investing in Sweden. Direct evidence of institutional investors' preference for large stocks is presented by Gompers and Metrick (2001), who find that not only did institutional investors almost double their share of the US stock

market between 1980 and 1996, they also shifted their investments from small cap to large cap stocks. Furthermore, institutional investors have been found to be more accurate when processing information and better able to time stock price volatility (Aggarwal & Rao, 1990; Busse, 1999).

Institutional ownership has been found to improve the pricing efficiency of shares. Boehmer and Kelley (2009) find that on the NYSE, shares with high institutional ownership are priced more efficiently than shares with low institutional ownership during 1983 – 2004. Such efficiency of prices is a result of both institutional trading activity and institutional holdings. These findings are supported by Yan and Zhang (2009), who find that institutional trading results in faster daily stock price adjustments in the short run. Consequently, since institutional ownership seems to improve pricing efficiency, we expect less efficient prices, i.e. anomalies, to be more prevalent for firms with low institutional ownership.

2.3.2.2. Individual investor characteristics and their effects on stock trading

Several studies indicate that individual investors are irrational. Among other things, individual investors seem to wait too long with selling losing investments, while selling profitable investments too soon (Odean, 1998a), trade excessively due to overconfidence – particularly male investors – (Barber & Odean, 2000; 2001) and display herding behavior (Barber, Odean, & Zhu, 2009). Herding, where individual investors as a group buy and sell the same stocks during a given month, is often referred to as investor sentiment and is supported by the findings by Kumar & Lee (2006). Furthermore, research argues that betting against investor sentiment is costly, implying that institutional investors are less likely to invest in stocks whose prices are considerably influenced by individual investor sentiment, resulting in less efficient pricing (Shleifer & Vishny, 1997). The notion of individual investors as not being fully rational is supported by a range of studies, where researchers view individual investors as less-informed noise traders with a short-term, speculative investment perspective and a vulnerability to psychological biases (Chopra, Lakonishok, & Ritter, 1992; Kaniel, Saar, & Titman, 2008).

Kumar (2009) provides evidence that individual investors prefer stocks with lottery characteristics and consequently invest larger proportion of their capital in stocks with such characteristics than institutional investors do. Such lottery-type stocks are usually smaller companies with low trading volumes and low institutional ownership (Barber & Odean, 2000). Kumar also observes similar behavior of individual investors investing in lottery-type companies as for lottery players in the US. Similarly, McLean (2000) argues that the law of large numbers

makes small stocks more attractive than large stocks for gambler-type investors. For an individual investor, large percentage gains appear more likely for stocks with low nominal prices.

Individual investors have also been proposed to be liquidity constrained. Barber and Odean (2000) argue that the behavior of individual investors is affected by liquidity shocks, explaining some of their trading activity as a result of changes in their liquidity. For non-professional investors, we assume salary payments to constitute an important addition in liquidity in the end of the month, influencing the investment behavior of individual investors.

2.3.2.3. Stock ownership in Sweden

Considering the many arguments for irrational individual investor behavior, we chose to explore the stock preferences of such investors in Sweden (Finansinspektionen & Statistiska Centralbyrån, 2006-2012). Tables 1-3 present a selection of this data.

Table 1
Individual investor ownership as percentage of total index value during 2006-2012
Table adapted from *Ownership of shares in companies listed on Swedish Exchanges* (Finansinspektionen & Statistiska Centralbyrån, 2006-2012)

Index	2006	2007	2008	2009	2010	2011	2012
Large Cap	13%	12%	14%	13%	12%	10%	10%
Mid Cap	23%	20%	20%	21%	19%	18%	16%
Small Cap	34%	32%	29%	29%	26%	26%	27%
NGM equities	32%	29%	25%	31%	31%	26%	24%
Aktietorget	54%	51%	49%	50%	45%	45%	43%
First north	21%	26%	23%	26%	21%	23%	22%
NGM nordic	28%	50%	47%	38%	33%	24%	31%
Total	14%	13%	15%	14%	13%	11%	11%

As can be seen in Table 1, individual investors own 11% of the total listed equity in Sweden, following their relatively low ownership stake in the OMX Large Cap index, which constitutes the majority of the total listed equity in Sweden. The data also shows that individual investors own a larger share of the small firm indexes, while individual investor ownership as a percentage of total ownership has decreased in recent years.

Table 2
Individual investor ownership per index as percentage of total individual investor ownership during 2006-2012
Table adapted from *Ownership of shares in companies listed on Swedish Exchanges* (Finansinspektionen & Statistiska Centralbyrån, 2006-2012)

Index	2006	2007	2008	2009	2010	2011	2012
Large Cap	77%	82%	83%	81%	82%	81%	83%
Mid Cap	14%	12%	11%	12%	12%	13%	11%
Small Cap	5%	3%	4%	5%	4%	4%	4%
NGM equities	1%	1%	0%	0%	0%	0%	0%
Aktietorget	1%	1%	1%	1%	1%	1%	1%
First north	2%	2%	1%	1%	1%	1%	1%
NGM nordic	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%

Table 2 shows that although individual investors own a relatively large share of the capital for small firm indexes, the majority of their capital is invested in the large firm indexes. Still, individual investors have a larger share of their capital invested in small firm indexes compared to institutional investors.

Table 3
Ownership of male individual investors as percentage of total individual investor ownership per index during 2006-2012
Table adapted from *Ownership of shares in companies listed on Swedish Exchanges* (Finansinspektionen & Statistiska Centralbyrån, 2006-2012)

Index	2006	2007	2008	2009	2010	2011	2012
Large Cap	69%	70%	71%	71%	70%	65%	62%
Mid Cap	75%	74%	72%	72%	72%	63%	73%
Small Cap	81%	79%	79%	80%	80%	70%	78%
NGM equities	88%	86%	85%	84%	85%	79%	82%
Aktietorget	90%	91%	89%	91%	90%	84%	90%
First north	87%	86%	84%	85%	86%	90%	81%
NGM nordic	85%	78%	83%	87%	88%	82%	87%
Total	71%	71%	72%	72%	71%	65%	65%

Breaking down individual ownership further, Table 3 presents the split between male and female individual investors. We observe that men invest more than women, particularly in the small firm indexes. Combined with the argument of Barber and Odean (2001) that male investors are more overconfident than female investors, this suggest that irrational behavior is more prevalent for the small firm indexes, resulting in less efficient pricing.

Conclusively, several factors suggest that individual investor behavior has a larger impact on the small firm indexes. First, although owning a relatively low share of the total listed equity in

Sweden, individual investors own a large proportion of the shares listed on the small firm indexes. Furthermore, small firm indexes constitute a larger share of total stock ownership for individual investors compared to other investors. Finally, a considerable majority of individual investors investing in small firm indexes are male, who have been found to behave more irrational than female investors.

2.3.2.4. Hypothesis formulation

As discussed, theory propose that institutional investors are rational, act on all available information and prefer to invest in large firm stock, while individual investors behave irrationally and are more prone to invest in small firm stock. Furthermore, the assumption that individual investors are more liquidity constrained than institutional investors implies a larger effect of salary payments on their investment behavior. Consequently, we expect to see a stronger TOM effect for small firm indexes, following the higher ownership share of individual investors for these indexes, and formulate our third hypothesis accordingly. This reasoning is further supported by McGuinness (2006), who finds a stronger TOM effect for the small-cap Hong Kong stock index than for the blue chip Hang Seng index.

H3: The TOM effect is more pronounced for small firm indexes with a larger proportion of individual investors

2.3.3. The TOM effect for different weekdays

In addition to the TOY- and TOM effects, the weekday effect is a frequently documented market anomaly, where daily average returns vary depending on the day of the week. The two primary variations of the weekday effect are the Monday- and Friday effects, where returns are abnormally low and high for Mondays and Fridays, respectively. The Friday effect is of particular interest when discussing the TOM effect, since the higher returns on Fridays might help explain the TOM effect. Considering that the Monday effect is a negative return anomaly, we deem it less relevant when studying the abnormally high daily average returns around the turn-of-the-month. In the following, we first review the Monday effect in order to understand the general dynamics of weekday anomalies, and then discuss the Friday effect and formulate our fourth hypothesis.

A large body of research seeks to explain the Monday effect, where average stock returns on Mondays are both lower than on other weekdays, and negative (Kamara, 1997; Tong, 2000). Some researchers argue that the effect is simply a result of data mining, while others attribute the anomaly to announcement effects, where firms postpone the announcement of bad news until the closing of Fridays (French, 1980). Similarly, Chang et. al. (1998) find that the timing of macro

news announcements help explains the effect. Furthermore, Miller (1988) study a sample of net selling individual investors and argue that, since these investors tend to process information over the weekend, they therefore execute their trades on Mondays, resulting in a downwards pressure on stock prices. Another proposed explanation is that the Monday effect is caused by investors being more optimistic on Fridays and less optimistic on Mondays (Sigel, 1998).

In contrast, the Friday effect refers to abnormally high daily average returns on Fridays compared to other weekdays (Rogalski, 1984; Cross, 1973). Keim and Stambaugh (1984) investigate the potential relationship between the Friday effect and firm size, and find that average returns on Fridays tend to be higher for smaller firms, a phenomenon also observed by Gibbons and Hess (1981). Although abnormally high Friday returns are concentrated to January and could therefore simply be a reflection of the January effect, the Friday effect is present also for the remaining months of the year. Theory proposes similar explanations for the Friday effect as for the Monday effect, most notably the notion that investors are more optimistic on Fridays, resulting in increased buying activity (Sigel, 1998; Rystrom & Benson, 1989). Furthermore, Chen and Singal (2003) argue that speculative short sellers tend to close their speculative positions before the weekend and reestablish them on the following Monday, thereby inflating Friday returns

Given the range of previous studies documenting the existence of weekday anomalies, we find it appropriate to investigate whether the TOM effect varies depending on the day of the week. Based on previous findings, we argue that a stronger TOM effect could be observed for Fridays than for other weekdays. Our reasoning is supported by research suggesting that the weekday effect is influenced by a monthly seasonal effect (Pettengill & Jordan, 1988).

H4: The TOM effect is stronger for Fridays than for other weekdays

2.3.4. The TOM effect and long term stock market trends

Considering the preferred habitat theory and constraints on investor liquidity as an explanation to the TOM effect, we hypothesize that any change in investor liquidity should have an impact on the magnitude of the TOM effect. More specifically, abnormal returns during the turn-of-the-month window should be directly related to investor liquidity constraints. Assuming that investor liquidity decreases in economic downturns, the relative importance of liquidity injections such as salaries is likely to increase during such periods. Exhibit Figure 1 shows that household sentiment is correlated with the stock market, implying that individual investors' expectations on future liquidity decreases in downturns, further increasing the importance of liquidity injections. Ogden

(1990) examines the preferred habitat theory by using stringency of monetary policy as a proxy for investor liquidity and finds an inverse relationship with stock returns on trading days around the turn-of-the-month. However, as can be seen in Exhibit Figure 1, monetary policy actions lag behind the development in the stock markets. Consequently, investors are likely to experience constrained liquidity already when the stock market starts to trend downwards. Therefore, we hypothesize that any abnormal daily average returns during the turn-of-the-month are inversely related to the long term trend of the stock market.

H5: The TOM effect is inversely related with the long term trend of the stock market

3. DATA

3.1. Construction of logarithmic return series

3.1.1. Value-weighted price indexes

In order to address the first hypothesis, daily price data for the OMXS30 and AFGX (OMX Affärsvärldens Generalindex) indexes is collected directly from Nasdaq OMX and Affärsvärlden, respectively. The OMXS30 index is rebalanced semi-annually and consists of the 30 most actively traded stocks on the OMX Stockholm Stock Exchange and is frequently used as an underlying index for derivatives and structured products due to its high liquidity. AFGX provides a value-weighted price index for the whole Stockholm Stock Exchange. Time series data for the small firm OMX Mid Cap, Small Cap and Aktietorget indexes is collected from the website of Nasdaq OMX and requested directly from Aktietorget. Exhibit Figure 2 plots the value-weighted price indexes for 2003 – 2012.

3.1.2. Equal-weighted price indexes

In addition to the value-weighted indexes, we construct equal-weighted variations of the OMXS30, AFGX, Mid Cap and Small Cap indexes. Equal-weighted indexes assign equal weights to the stock price development of all firms within an index, regardless of their market cap. Consequently, the returns of smaller firms have a larger impact on the overall return of the index for equal-weighted indexes than for value-weighted indexes. This feature makes equal-weighted indexes particularly interesting when addressing the third hypothesis regarding a stronger TOM effect for smaller firms. Over time, weights for equal-weighted indexes deviate from being equal towards being over- or under-weighted depending on individual stock performance, whereupon the index needs to be rebalanced on a quarterly basis. Since equal-weighted indexes are not provided, neither by OMX Nasdaq nor third-party providers such as Thomson Reuters Datastream, we construct these indexes by collecting quarterly constituent data for each index and daily prices for each constituent company using Thomson Reuters Datastream. The equal-weighted indexes are then rebalanced on a quarterly basis in order to accurately reflect the companies for each index as well as periodically reassign equal weights to the constituents. Exhibit Figures 3 – 4 plot the equal-weighted and value-weighted price indexes for 2007-2012.

3.1.4. Indexes for long term stock market trends

In order to explore the relationship between investor liquidity, using the long term trend of the stock market as a proxy, and the TOM effect, we split AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget into four sub-periods; two sequences of upwards trending, and two sequences of downwards trending price indexes, respectively. For each index, the upwards trending- and downwards trending sequences are then aggregated into two new samples. All indexes display increasing stock prices from early 2003 until the first indications of the financial crisis in 2007, as well as from late 2008, when the financial markets reached their bottom, until the peak in the middle of 2011. The remaining two periods, which include the financial crisis, are assumed to reflect downwards trending stock markets. The distinctions between long term stock market trends for each index are illustrated in Exhibit Figures 4-8.

3.2. Time periods

The time periods used in this paper are subject to the availability of price data for the selected indexes. Data is available for OMXS30 since 1986, for AFGX since 1901, for Mid Cap and Small Cap since 2003 and for Aktietorget since 1997. The Mid Cap and Small Cap were established following the restructuring of the Stockholm Stock Exchange in 2006. Prior to 2006, the Stockholm stock exchange was divided into A-listan, O-listan, Xterna listan and First North. Since the previous structure, unlike the current structure, does not distinguish between companies based on their size, it is not feasible to extend the Mid Cap and Small Cap indexes further back in time than to 2003. Furthermore, since previous studies of calendar anomalies propose that investor behavior has changed over time, following innovations such as online trading, we chose not to use time series spanning several decades (Doyle, 2009). Comparable research generally relies on time series data for periods of 5-10 years when testing for a TOM effect for small firm indexes, whereupon we consider the 2003-2012 period for the value-weighted indexes to be sufficient. Since constituent data is only available since June 2006, the time period for the equal-weighted indexes is set to 2007 – 2012. However, it should be noted that the equal-weighted indexes are only used when addressing the third hypothesis and are thus not the focus of the analysis.

3.3. Potential issues

The construction of indexes in this paper is subject to some potential biases. First, when using return series for small firm indexes, where volume is likely to fluctuate, there is a risk that prices of individual stocks remain unchanged during periods of no trading activity. Such stale prices are

a result of imperfect markets rather than irrational investor behavior and do not represent market prices at which a stock can be traded (Ahn, Boudoukh, Richardson, & Whitelaw, 2002). Second, this paper relies on price indexes, unadjusted for dividend payments, when constructing the time series. Total return indexes, on the other hand, adjust for dividend payments by assuming that any dividends are reinvested into the company. Consequently, these indexes allow for a more precise comparison of the returns for non-dividend-paying and dividend-paying companies. The use of price indexes is a potential issue primarily for the blue chip OMXS30 and the value-weighted versions of AFGX, but should have little impact on the small firm indexes, since the companies listed on these indexes are likely to reinvest any profits in order to grow their businesses.

3.4. Logarithmic returns of indexes

In order to adequately test the five hypotheses formulated in the theoretical framework, logarithmic returns, rather than prices, are analyzed for each index. The main argument for using logarithmic returns is the assumption that prices are log normally distributed and logarithmic returns therefore are normally distributed. Once the price time series are constructed for each index and time period, we calculate the logarithmic return for each index. Table 4 below presents the summary statistics for the return series of each index.

Table 4

Summary statistics for the different time series

The table below presents the time series used in the empirical analyses. Value-weighted price index data for AFGX, OMXS30, Mid Cap and Small Cap is collected using Thomson Reuters Datastream while price index data for Aktietorget is collected directly from OMX Nasdaq. For the equal-weighted indexes, constituent data and daily price data is collected using Thomson Reuters Datastream.

		Obs.	Mean	Median	Min	Max	SD	Skewness	Kurtosis
2003-12, VW	AFGX	2515	0.0329	0.0899	-7.2930	8.7089	1.4008	-0.0540	7.4334
	OMXS30	2515	0.0321	0.0733	-7.5127	9.8650	1.4997	0.0460	7.0415
	Mid Cap	2515	0.0413	0.1304	-6.8868	9.4624	1.1261	-0.4564	9.9323
	Small Cap	2515	0.0397	0.1495	-7.1189	7.0059	0.9060	-1.0808	12.1843
	Aktietorget	2511	0.0239	0.0349	-7.4939	11.4433	1.2990	0.1616	7.9293
2007-12, VW	AFGX	1509	-0.0063	0.0430	-7.2930	8.7089	1.6132	0.0310	6.4290
	OMXS30	1509	-0.0025	0.0421	-7.5127	9.8650	1.7096	0.1097	6.3045
	Mid Cap	1509	-0.0096	0.0878	-6.5503	9.4624	1.3074	-0.2359	7.9384
	Small Cap	1509	-0.0178	0.0877	-6.6652	7.0059	0.9846	-0.8108	10.9771
2007-12, EW	AFGX	1509	-0.0149	0.0795	-7.0453	8.0418	1.1466	-0.4838	8.9960
	OMXS30	1509	0.0014	0.0350	-8.3931	10.0243	1.8049	0.0651	6.4775
	Mid Cap	1509	-0.0184	0.0584	-6.7923	8.6904	1.2081	-0.3345	8.3072
	Small Cap	1509	-0.0239	0.0327	-6.6682	5.6320	0.9408	-0.8364	10.8819
Positive	AFGX	1669	0.1083	0.1381	-5.4172	8.7089	1.2121	0.2118	7.9459
trends	OMXS30	1669	0.1023	0.1020	-5.5506	9.8650	1.3247	0.3152	7.8739
	Mid Cap	1646	0.1253	0.1784	-6.8868	5.4585	0.9193	-0.4868	8.9786
	Small Cap	1686	0.1273	0.2116	-7.1189	5.3149	0.7857	-1.1041	12.5893
	Aktietorget	1757	0.1199	0.1013	-7.4939	11.4433	1.2832	0.4345	8.7598
Negative	AFGX	846	-0.1158	-0.0349	-7.2930	8.6001	1.7042	-0.1098	5.9640
trends	OMXS30	846	-0.1065	-0.0001	-7.5127	8.6004	1.7884	-0.0669	5.5790
	Mid Cap	869	-0.1179	-0.0060	-6.5503	9.4624	1.4257	-0.2075	8.1371
	Small Cap	829	-0.1387	-0.0430	-6.6652	7.0059	1.0903	-0.8036	10.2849
	Aktietorget	754	-0.1989	-0.1370	-6.8274	6.0248	1.3094	-0.4061	5.9663

4. METHODOLOGY

The standard way of analyzing calendar anomalies is to run regressions of daily returns on one or more dummy variables that represent the calendar date of interest. We apply this methodology when analyzing our indexes, using both an OLS estimation with Newey-West standard errors, and a GARCH estimation. In addition, we add control variables in order to test for robustness.

In the rest of this section, we describe the general methodology used when exploring the TOM effect in Sweden and discuss how we test for robustness as well as how the effect varies with weekdays and long term stock market trends.

4.1. The TOM effect in Sweden

We create dummy variables for trading days during the -1 to +4, -4 to +1 and -3 to +2 windows, in order to investigate different windows around the turn-of-the-month. First, the dummy variable for the -1 to +4 window allows us to compare our findings with those of previous research, which usually explores the effect for this window. Second, the dummy variable for the -4 to +1 window is used in order to capture a potentially earlier TOM effect in Sweden than for other countries. Finally, the dummy variable for the -3 to +2 window overlaps the two other windows in order to allow for a more nuanced analysis.

Since we are using daily stock returns, regression residuals are likely to be serially correlated and display time-varying variance. Furthermore, Table 4 shows that the kurtosis of the time series ranges between 5.5790 and 12.5893, indicating leptokurtic distributions. In order to test for autocorrelation we rely on Breusch-Godfrey and Ljung-Box test statistics. Furthermore, we use a combined skewness and kurtosis test for normality (see the Appendix). These tests indicate significant autocorrelation, which also makes a further test for heteroskedasticity invalid. Consequently, we choose to use Newey-West OLS regressions in order to obtain heteroskedasticity- and autocorrelation-consistent standard errors (Newey & West, 1987).

In addition to the OLS estimation with Newey-West standard errors, we also use a GARCH approach (Bollerslev, 1986) for all regressions outlined below. The GARCH model specifies the residual variance as a function of both past residuals and past residual variance, instead of assuming fixed variance as in a traditional OLS. This further addresses the issue of time-varying residual variance, making our overall results more robust. The GARCH(1,1) model is described as *"the simplest and most robust of the family of volatility models"* (Engle, 2001, p.15), and we use it in order to allow for a well-defined process, as specified in the Appendix. The use of a

GARCH(1,1) model is in line with previous research on calendar anomalies (Wiley & Zumpano, 2009; Doyle & Chen, 2009).

Equation (1) specifies our baseline regression. For the OLS regression, the intercept, α, captures the average return for trading days outside the turn-of-the-month window. The coefficient, β_{TOM}, measures the difference between the average daily return for trading days during the turn-of-the-month and for trading days during the rest of the month. Consequently, average daily returns during the turn-of-the-month are the sum of the turn-of-the-month coefficient and the intercept. If a TOM effect exists, β_{TOM} should be positive and significantly different from zero. We estimate the GARCH(1,1) model using the conditional maximum likelihood procedure, which will result in different values of the coefficients compared with the OLS approach, provided that the index returns are not normally distributed.

$$R_t = \alpha + \beta_{TOM} D_{TOM,t} + \varepsilon_t \qquad (1)$$

4.2. The impact of other anomalies and OMXS30

In order to make sure that any TOM effect we find is not simply a reflection of another calendar anomaly, we add control variables to the baseline regression. In order to control for the potential influence of the January effect, we add dummy variables for January and December, respectively. The interpretation of the Newey-West OLS coefficients in equation (2) is similar as for equation (1), the only difference being that α now represents daily average returns for trading days outside of the turn-of-the-month window for all months but January and December. Similarly, β_{TOM} captures abnormal average daily returns during the turn-of-the-month window, excluding January and December.

$$R_t = \alpha + \beta_{TOM} D_{TOM,t} + \beta_{jan} D_{jan,t} + \beta_{dec} D_{dec,t} + \varepsilon_t \qquad (2)$$

In addition to controlling for the January effect, we examine the impact of OMXS30 on the small firm indexes. Assuming that price movements of OMXS30 influence prices of stocks listed on Mid Cap, Small Cap and Aktietorget, we distinguish between an inherent TOM effect for small firm indexes, and a TOM effect that is simply the result of a spillover effect from OMXS30, as equation (3) shows. In order to allow for different slopes of the turn-of-the-month coefficient, we also control for the interaction variable $D_{TOM,t} * OMXS30_t$. The interpretation of the regression coefficients for Mid Cap, Small Cap and Aktietorget is similar as for equation (2), with the addition that the coefficients also take the price movements of the OMXS30 index into account.

$$R_t = \alpha + \beta_{TOM} D_{TOM,t} + \beta_{jan} D_{jan,t} + \beta_{dec} D_{dec,t} + \beta_{OMXS30} OMXS30_t + \\ + \beta_{TOM\_OMXS30} D_{TOM,t} * OMXS30_t + \varepsilon_t \qquad (3)$$

4.3. Differences in the TOM effect across weekdays

In order to investigate the weekday effect and analyze its connection to the TOM effect, we run regressions using interaction variables for individual weekdays during the turn-of-the-month windows. Consequently, we create interaction variables for Monday through Friday for each turn-of-the-month window, as defined in equation (4), in order to define equation (5).

$$D_{TOM\_Weekday,t} = D_{TOM,t} * D_{Weekday,t} \qquad (4)$$

The coefficients for returns during the turn-of-the-month for different weekdays are interpreted as the difference between the average daily return on a particular weekday during the turn-of-the-month and the average daily return for trading days outside the turn-of-the-month window.

$$R_t = \alpha + \beta_{TOM\_Mon} D_{TOM\_Mon,t} + \beta_{TOM\_Tue} D_{TOM\_Tue,t} + \beta_{TOM\_Wed} D_{TOM\_Wed,t} + \qquad (5)$$

$$+\beta_{TOM\_Thu} D_{TOM\_Thu,t} + \beta_{TOM\_Fri} D_{TOM\_Fri,t} + \varepsilon_t$$

In order to explore the relationship between the TOM effect and the Friday effect, we also regress index returns on interaction dummy variables for Fridays during the turn-of-the-month (6), as well as for Fridays during the rest of the month (7).

$$D_{TOM\_Friday,t} = D_{TOM,t} * D_{Friday,t} \qquad (6)$$

$$D_{ROM\_Friday,t} = D_{ROM,t} * D_{Friday,t} \qquad (7)$$

We use variables (6) and (7) in equation (8) below, where β_{TOM_Fri} measures the difference between the average daily return for Fridays during the turn-of-the-month window and the average daily return for all other trading days, excluding Fridays. Likewise, β_{ROM_Fri} describes the difference between the average daily return for Fridays outside the turn-of-the-month window and the average daily return for all other trading days, excluding Fridays during the turn-of-the-month.

$$R_t = \alpha + \beta_{TOM\_Fri} D_{TOM\_Fri,t} + \beta_{ROM\_Fri} D_{ROM_{Fri},t} + \varepsilon_t \qquad (8)$$

We control for the January effect on all indexes as well as a spillover effect from OMXS30 on Mid Cap, Small Cap and Aktietorget in the same way as discussed in 4.2.

4.4. The TOM effect and long term stock market trends

When analyzing how the TOM effect is related to the long term trend of the stock market, we follow the same procedure as described in 4.1 - 4.3.

5. RESULTS

Analyzing our empirical results provide several insights. First, we find a strong and significant TOM effect for AFGX, OMXS30, Mid Cap and Small Cap, while no effect seems to exist for Aktietorget. Second, we observe the strongest TOM effect for all indexes during the -3 to +2 window, implying that the timing of the effect in Sweden is influenced by the date for salary payments. Third, our results indicate that indexes assigning larger weights to small firms, with a high degree of individual investor ownership, display stronger TOM effects, suggesting that individual investor behavior helps explain the effect. Fourth, we find that the TOM effect is significantly stronger for Fridays than for other weekdays for the small firm indexes. Furthermore, average returns are significantly higher on Fridays during the turn-of-the-month compared to Fridays during the rest of the month, indicating that the Friday effect is driven by the returns on Fridays during the turn-of-the-month. Fifth, the TOM effect displays an inverse relationship with the long term trend of the stock market, supporting our expectation of an effect influenced by constraints on investor liquidity.

5.1. The TOM effect in Sweden

Figures 1 – 5 provide a visual presentation of daily average returns for AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget during 2003 – 2012, while Tables 5 – 7 display the results from the dummy regressions for the three turn-of-the-month windows for the same period. The results support our first hypothesis of a TOM effect for the Swedish market.

Figure 1
Average daily return (%) per trading day for AFGX (value-weighted) during 2003 – 2012
Any trading days outside the -9 to +9 window are not included in the figure

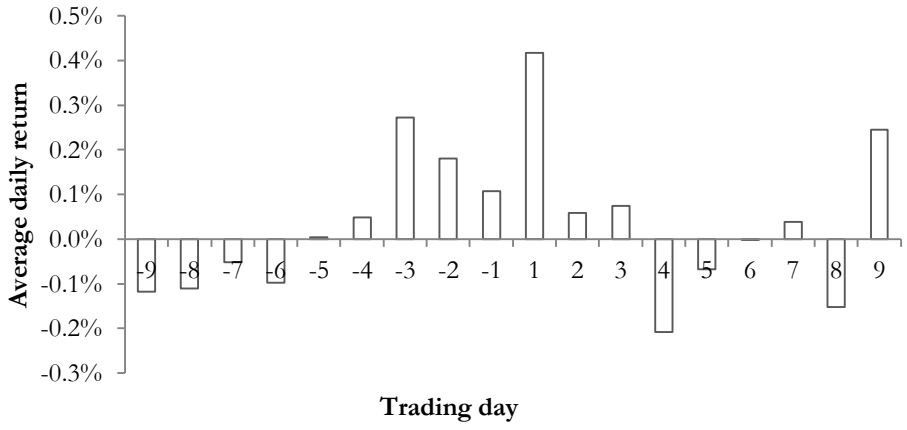


Figure 2
Average daily return (%) per trading day for OMXS30 (value-weighted) during 2003 –2012
Any trading days outside the -9 to +9 window are not included in the figure

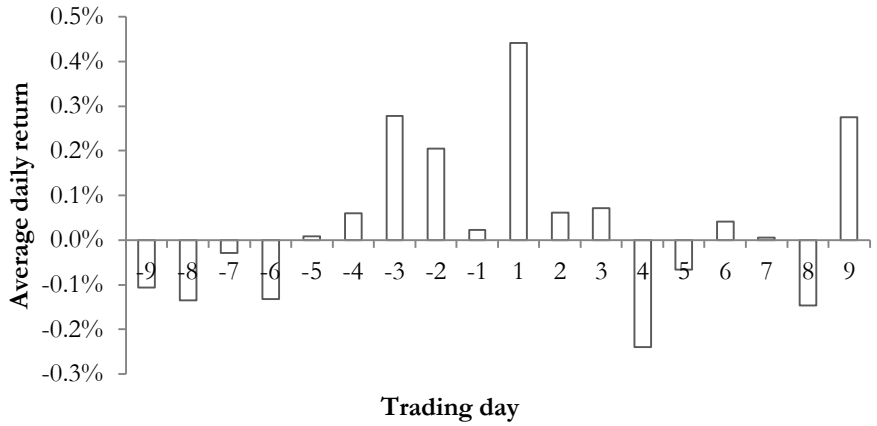


Figure 3
Average daily return (%) per trading day for Mid Cap (value-weighted) during 2003 – 2012
Any trading days outside the -9 to +9 window are not included in the figure

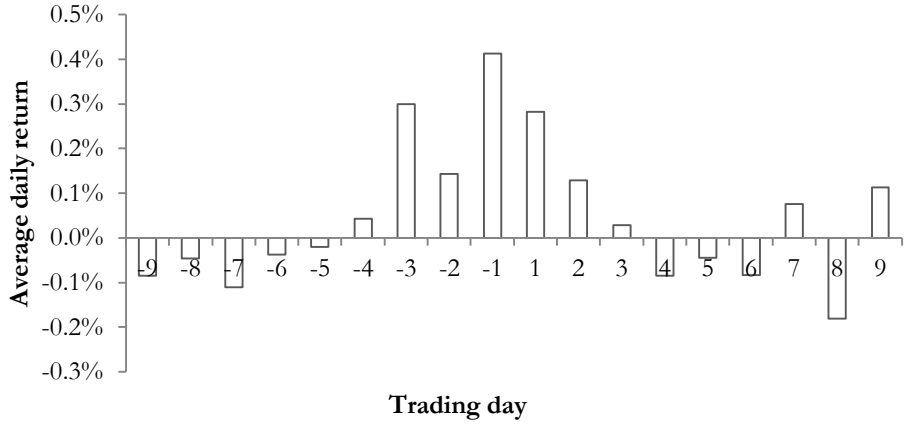


Figure 4
Average daily return (%) per trading day for Small Cap (value-weighted) during 2003 – 2012
Any trading days outside the -9 to +9 window are not included in the figure

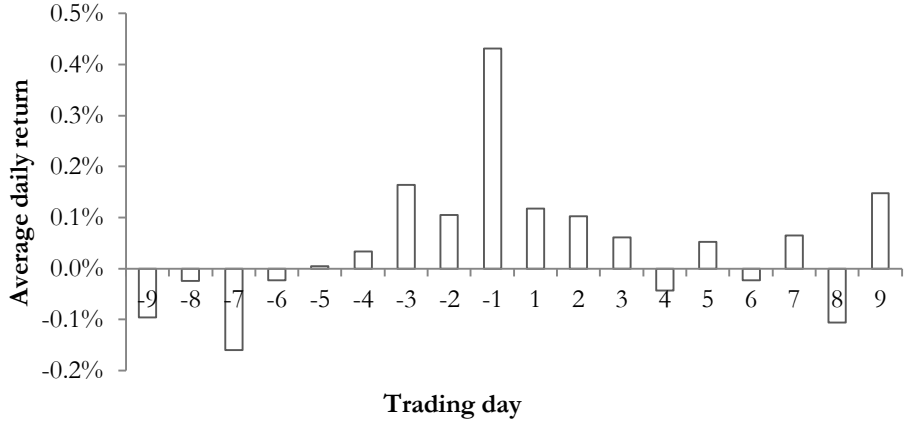


Figure 5
Average daily return (%) per trading day for Aktietorget (value-weighted) during 2003 – 2012

Any trading days outside the -9 to +9 window are not included in the figure

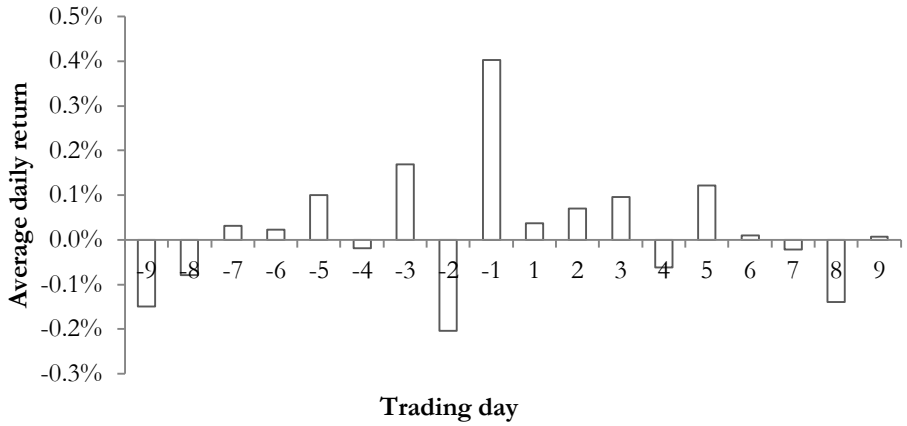


Table 5
Parameter estimates and summary statistics for value-weighted index returns during 2003 – 2012 for the -1 to +4 window

TOM is a binary variable that takes on the value 1 for trading days during the -1 to +4 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	2515	0.01513	0.07462	0.00052
			(0.00028)	(0.00060)	
	OMXS30	2515	0.01961	0.05220	0.00022
			(0.00029)	(0.00063)	
	Mid Cap	2515	0.00611	0.14731***	0.00311
			(0.00026)	(0.00053)	
	Small Cap	2515	0.01004	0.12411***	0.00341
			(0.00023)	(0.00045)	
	Aktietorget	2511	-0.00233	0.10962**	0.00130
			(0.00028)	(0.00053)	
GARCH	AFGX	2515	0.07502***	0.12567***	NA
			(0.00022)	(0.00045)	
	OMXS30	2515	0.06433***	0.10676**	NA
			(0.00025)	(0.00050)	
	Mid Cap	2515	0.10449***	0.17735***	NA
			(0.00017)	(0.00033)	
	Small Cap	2515	0.09874***	0.12346***	NA
			(0.00014)	(0.00029)	
	Aktietorget	2511	0.01015	0.09816**	NA
			(0.00025)	(0.00049)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 6

Parameter estimates and summary statistics for value-weighted index returns during 2003 – 2012 for the -4 to +1 window

TOM is a binary variable that takes on the value 1 for trading days during the -4 to +1 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	2515	-0.02101	0.2261***	0.00473
			(0.00031)	(0.00065)	
	OMXS30	2515	-0.02106	0.2227***	0.00401
			(0.00031)	(0.00068)	
	Mid Cap	2515	-0.01981	0.25599***	0.00939
			(0.00030)	(0.00057)	
	Small Cap	2515	-0.00131	0.1717***	0.00653
			(0.00026)	(0.00044)	
	Aktietorget	2511	0.00761	0.06799	0.00050
			(0.00030)	(0.00053)	
GARCH	AFGX	2515	0.06954***	0.14532***	NA
			(0.00022)	(0.00046)	
	OMXS30	2515	0.05164**	0.15714***	NA
			(0.00025)	(0.00051)	
	Mid Cap	2515	0.1082***	0.15489***	NA
			(0.00017)	(0.00033)	
	Small Cap	2515	0.1007***	0.10971***	NA
			(0.00015)	(0.00029)	
	Aktietorget	2511	0.02244	0.04206	NA
			(0.00025)	(0.00051)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 7

Parameter estimates and summary statistics for value-weighted index returns during 2003 –2012 for the -3 to +2 window

TOM is a binary variable that takes on the value 1 for trading days during the -3 to +2 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	2515	-0.02168	0.22892***	0.00485
			(0.00030)	(0.00071)	
	OMXS30	2515	-0.02116	0.22308***	0.00402
			(0.00031)	(0.00074)	
	Mid Cap	2515	-0.02520	0.27855***	0.01112
			(0.00029)	(0.00061)	
	Small Cap	2515	-0.00568	0.19002***	0.00799
			(0.00026)	(0.00047)	
	Aktietorget	2511	0.00206	0.09124*	0.00090
			(0.00030)	(0.00050)	
GARCH	AFGX	2515	0.06543***	0.16325***	NA
			(0.00022)	(0.00045)	
	OMXS30	2515	0.04836*	0.17198***	NA
			(0.00025)	(0.00050)	
	Mid Cap	2515	0.10063***	0.18934***	NA
			(0.00017)	(0.00033)	
	Small Cap	2515	0.09874***	0.11822***	NA
			(0.00015)	(0.00029)	
	Aktietorget	2511	0.01794	0.06234	NA
			(0.00025)	(0.00050)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Both AFGX and OMXS30 display large and significant (at the 0.01 level) TOM effects for the -4 to +1 and -3 to +2 windows. During the -3 to +2 window, where the TOM effect is slightly stronger, abnormal average daily returns for AFGX and OMXS30 are 0.22892% and 0.22308%, respectively. Among the small firm indexes, both Mid Cap and Small Cap display significant TOM effects for all windows. In terms of magnitude, the effect is once again strongest for the -3 to +2 window, where Mid Cap and Small Cap show abnormal average daily returns of 0.27855% and 0.19002%, respectively. For Aktietorget, a significant (at the 0.05 level) but weak TOM effect is found for the -1 to +4 window. Overall, average daily returns during the turn-of-the-month windows are significantly higher than average daily returns during the rest of the month.

The existence of strong TOM effects for the -4 to +1 and -3 to +2 windows for all indexes except Aktietorget also support our second hypothesis regarding an early TOM effect in Sweden. For all windows, the TOM effect is strongest for Mid Cap, followed by OMXS30 for the -4 to +1 and -3 to +2 windows. The effect of Small Cap and Aktietorget only exceeds the effect of OMXS30 for the -1 to +4 window. These initial findings fail to support our third hypothesis, which predicts an inverse relationship between firm size and the TOM effect.

As seen in Exhibit Tables 1 – 3, the TOM effect remains significant for all indexes when controlling for the January effect and a spillover effect from OMXS30. For the small firm indexes, the effect decreases in magnitude due to the high correlation of these indexes with OMXS30. In line with the January effect, both Small Cap and Aktietorget display abnormally high average daily returns in January, while no such returns can be observed for Mid Cap or OMXS30. Interestingly, average daily returns are abnormally high in December for Mid Cap. We speculate that this could be the result of institutional investors seeking to benefit from the arbitrage opportunity caused by the January effect by buying stock in December and then selling in January.

The existence of a strong and significant TOM effect in Sweden is in line with previous studies, which have found evidence of effects in a range of markets (Ariel, 1987; Pettengill & Jordan, 1988; McGuiness, 2006). Furthermore, since Kunkel et. al. (2003) find that the TOM effect internationally is not simply a spillover from the effect in the US, we assume that this neither is the case for Sweden.

5.2. The timing of the TOM effect

The findings in the previous section support our second hypothesis of an earlier TOM effect in Sweden. As reported in Tables 5 – 7, the turn-of-the-month effect is significant and large for all indexes except Aktietorget for the early -4 to +1 and -3 to +2 windows, while being smaller and partially insignificant for the -1 to +4 window. We therefore note that the TOM effect seems to arrive at least two days earlier than the -1 to +4 window studied internationally by several other researchers. These findings are in line with the notion that constraints on investor liquidity influence the TOM effect, as well as the findings of Ziemba (1991).

5.3. Ownership as a driver of the TOM effect

Although the comparison of the TOM effect for different indexes in 5.1. fails to support our hypothesis of a more pronounced TOM effect for small firm indexes with a larger degree of individual investors, the findings in the following section provide some evidence of the contrary. Tables 8 – 10 report the regression results for equal-weighted and value-weighted variations of AFGX, OMXS30, Mid Cap and Small Cap during 2007 – 2012.

Table 8
Parameter estimates and summary statistics for value- and equal-weighted index returns during 2007 – 2012 for the -1 to +4 window
TOM is a binary variable that takes on the value 1 for trading days during the -1 to +4 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Value-weighted				Equal-weighted			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1509	-0.00076	-0.02316	0.00004	1509	-0.04305	0.11814	0.00193
			(0.00040)	(0.00089)			(0.00033)	(0.00076)	
	OMXS30	1509	0.00774	-0.04320	0.00012	1509	-0.00246	0.01627	0.00001
			(0.00041)	(0.00092)			(0.00044)	(0.00100)	
	Mid Cap	1509	-0.02226	0.05321	0.00030	1509	-0.05318	0.14628*	0.00266
			(0.00037)	(0.00085)			(0.00036)	(0.00083)	
	Small Cap	1509	-0.03002	0.05151	0.00050	1509	-0.05458*	0.12913*	0.00342
			(0.00031)	(0.00071)			(0.00030)	(0.00068)	
GARCH	AFGX	1509	0.04190	0.07774	NA	1509	0.03035	0.18449***	NA
			(0.00036)	(0.00071)			(0.00024)	(0.00047)	
	OMXS30	1509	0.04078	0.04662	NA	1509	0.03303	0.11759	NA
			(0.00038)	(0.00076)			(0.00040)	(0.00079)	
	Mid Cap	1509	0.04277	0.15275***	NA	1509	0.01343	0.20441***	NA
			(0.00028)	(0.00054)			(0.00026)	(0.00051)	
	Small Cap	1509	0.04522**	0.08752**	NA	1509	0.01250	0.13583***	NA
			(0.00020)	(0.00041)			(0.00019)	(0.00038)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 9
Parameter estimates and summary statistics for value- and equal-weighted index returns during 2007 – 2012 for the -4 to +1 window

TOM is a binary variable that takes on the value 1 for trading days during the -4 to +1 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Value-weighted				Equal-weighted			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1509	-0.05258	0.19526**	0.00265	1509	-0.07361*	0.24729***	0.00842
			(0.00045)	(0.00098)			(0.00039)	(0.00073)	
	OMXS30	1509	-0.04301	0.17072*	0.00181	1509	-0.05879	0.25374**	0.00358
			(0.00045)	(0.00101)			(0.00050)	(0.00108)	
	Mid Cap	1509	-0.07693*	0.28365***	0.00852	1509	-0.08682**	0.28848***	0.01032
			(0.00042)	(0.00087)			(0.00042)	(0.00080)	
	Small Cap	1509	-0.06126*	0.18318***	0.00627	1509	-0.06728*	0.18302***	0.00685
			(0.00035)	(0.00061)			(0.00035)	(0.00059)	
GARCH	AFGX	1509	0.03536	0.10022	NA	1509	0.03317	0.15027***	NA
			(0.00036)	(0.00072)			(0.00024)	(0.00049)	
	OMXS30	1509	0.03084	0.08614	NA	1509	0.02232	0.15391*	NA
			(0.00038)	(0.00076)			(0.00040)	(0.00081)	
	Mid Cap	1509	0.03536	0.16488***	NA	1509	0.01477	0.16805***	NA
			(0.00028)	(0.00056)			(0.00026)	(0.00053)	
	Small Cap	1509	0.03508*	0.12194***	NA	1509	0.01325	0.12519***	NA
			(0.00021)	(0.00040)			(0.00020)	(0.00038)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 10
Parameter estimates and summary statistics for value- and equal-weighted index returns during 2007 – 2012 for the -3 to +2 window

TOM is a binary variable that takes on the value 1 for trading days during the -3 to +2 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Value-weighted				Equal-weighted			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1509	-0.04918	0.1809*	0.00228	1509	-0.07545**	0.25434***	0.00893
			(0.00043)	(0.00108)			(0.00038)	(0.00083)	
	OMXS30	1509	-0.04017	0.15877	0.00156	1509	-0.05339	0.23033*	0.00295
			(0.00043)	(0.00111)			(0.00050)	(0.00121)	
	Mid Cap	1509	-0.07006*	0.25469***	0.00687	1509	-0.09037**	0.30258***	0.01138
			(0.00041)	(0.00095)			(0.00041)	(0.00089)	
	Small Cap	1509	-0.06078*	0.18113***	0.00613	1509	-0.07146**	0.20008***	0.00821
			(0.00034)	(0.00069)			(0.00034)	(0.00066)	
GARCH	AFGX	1509	0.02748	0.13732**	NA	1509	0.03504	0.14854***	NA
			(0.00036)	(0.00070)			(0.00024)	(0.00048)	
	OMXS30	1509	0.02477	0.11483	NA	1509	0.02672	0.13925*	NA
			(0.00038)	(0.00074)			(0.00040)	(0.00079)	
	Mid Cap	1509	0.03376	0.17925***	NA	1509	0.01424	0.17595***	NA
			(0.00028)	(0.00055)			(0.00027)	(0.00053)	
	Small Cap	1509	0.03466*	0.12595***	NA	1509	0.01524	0.11788***	NA
			(0.00020)	(0.00040)			(0.00020)	(0.00038)	

*/**/*** Significant at the 0.10/0.05/0.01 level

For OMXS30, the TOM effect is strongest for the -4 to +1 window, where abnormal average daily returns during the turn-of-the-month for the equal- and value-weighted indexes are 0.25374% and 0.17072%, respectively. For Mid Cap, the -3 to +2 window displays the strongest TOM effects; 0.30258% for the equal-weighted index and 0.25469% for the value-weighted index. For Small Cap, the corresponding abnormal returns for the -3 to +2 window are 0.20008% and 0.18113%, respectively. We further observe that the difference in the effect between the equal- and value-weighted indexes is the largest for OMXS30 and the smallest for Small Cap, which arguably reflects the different proportions of individual investors for the indexes. Overall, the results suggest a stronger TOM effect for the equal-weighted indexes, although the strength and significance of the effect varies depending on the index and window.

Exhibit Tables 4 – 9 show that the TOM effect for the equal-weighted indexes remains stronger than for the value-weighted indexes when controlling for the January effect and a spillover effect from OMXS30. We note that Small Cap display higher average daily returns in January for the equal-weighted index than for the value-weighted indexes, which further supports the notion of a stronger January effect for smaller firms. Interestingly, average daily returns in December for Mid Cap are large for the value-weighted indexes, while decreasing in both significance and magnitude for the equal-weighted indexes. We interpret this as further support of our reasoning in 5.1., where we argue that arbitrage-seeking institutional investors give rise to abnormal daily returns in December. Since institutional investors prefer to invest in large firms, and value-weighted indexes assign heavier weights to large firms, the effects of institutional investor trading should be more pronounced for value-weighted than for equal-weighted indexes.

Previous studies have found that institutional investor ownership results in efficient prices, while individual investors behave irrationally, implying that potential mispricing increases with individual investor ownership (Boehmer & Kelley, 2009; Yan & Zhang, 2009). Our findings add to this discussion by suggesting that individual investor behavior is related to a particular case of mispricing, the TOM effect. However, while the proportion of individual investors is larger for the Mid Cap, Small Cap and Aktietorget indexes than for OMXS30, individual investors still only hold a minority of the listed equity for these indexes. Additionally, individual investorsare likely to also have an indirect effect on the stock prices of all indexes through recurring investments in mutual funds; in the fourth quarter of 2012, individual investors held MSEK 354 575 in mutual funds and MSEK 436 477 in listed stocks.

5.4. Differences in the TOM effect across weekdays

Our fourth hypothesis predicts a stronger TOM effect for Fridays than for other weekdays, which is supported by the findings presented in this section. Furthermore, our findings suggest that the Friday effect might be driven by abnormal average daily returns on Fridays during the turn-of-the-month. Tables 11 – 13 present the results for AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget for 2003 – 2007.

Table 11
Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -1 to +4 window for the 2003 – 2012 period

TOM_Mon – *TOM_Fri* are binary variables taking on the value 1 for the corresponding weekdays during the -1 to +4 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	Intercept	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	R^2
OLS	AFGX	2515	0.01513	0.04713	0.00907	0.18776	-0.08388	0.20364*	0.00198
			(0.00028)	(0.00142)	(0.00141)	(0.00133)	(0.00129)	(0.00107)	
	OMXS30	2515	0.01961	0.01359	0.01023	0.17765	-0.10510	0.15572	0.00139
			(0.00029)	(0.00149)	(0.00153)	(0.00145)	(0.00136)	(0.00115)	
	Mid Cap	2515	0.00611	0.08884	0.04920	0.17026*	0.02774	0.38785***	0.00640
			(0.00026)	(0.00119)	(0.00102)	(0.00099)	(0.00108)	(0.00087)	
	Small Cap	2515	0.01004	0.09798	0.00826	0.08083	0.05392	0.36944***	0.00823
			(0.00023)	(0.00095)	(0.00081)	(0.00079)	(0.00078)	(0.00070)	
	Aktietorget	2511	-0.00233	-0.01789	-0.00375	0.06850	0.11321	0.37342***	0.00418
			(0.00028)	(0.00130)	(0.00109)	(0.00099)	(0.00114)	(0.00102)	
GARCH	AFGX	2515	0.07489***	0.27109***	0.07947	0.06488	0.03483	0.18341*	NA
			(0.00022)	(0.00093)	(0.00090)	(0.00085)	(0.00089)	(0.00094)	
	OMXS30	2515	0.06424***	0.27004***	0.07177	0.04973	-0.00400	0.15288	NA
			(0.00025)	(0.00105)	(0.00099)	(0.00092)	(0.00099)	(0.00102)	
	Mid Cap	2515	0.10454***	0.19702***	0.09879	0.11186*	0.15318**	0.31506***	NA
			(0.00017)	(0.00062)	(0.00068)	(0.00061)	(0.00067)	(0.00075)	
	Small Cap	2515	0.09809***	0.12615**	0.02115	0.09231*	0.11644**	0.25003***	NA
			(0.00014)	(0.00052)	(0.00059)	(0.00056)	(0.00058)	(0.00060)	
	Aktietorget	2511	0.01011	0.06223	-0.10076	0.04017	0.13837	0.33758***	NA
			(0.00025)	(0.00094)	(0.00104)	(0.00102)	(0.00095)	(0.00101)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 12

Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -4 to +1 window for the 2003 – 2012 period

TOM_Mon – *TOM_Fri* are binary variables taking on the value 1 for the corresponding weekdays during the -4 to +1 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	Intercept	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	R^2
OLS	AFGX	2515	-0.02101	0.17812	-0.11105	0.44286***	0.30204**	0.31969***	0.00905
			(0.00031)	(0.00142)	(0.00123)	(0.00125)	(0.00134)	(0.00107)	
	OMXS30	2515	-0.02106	0.15799	-0.11239	0.45146***	0.3319**	0.2856**	0.00793
			(0.00031)	(0.00151)	(0.00134)	(0.00133)	(0.00146)	(0.00116)	
	Mid Cap	2515	-0.01981	0.20845*	-0.03762	0.42061***	0.20135**	0.48948***	0.01589
			(0.00030)	(0.00108)	(0.00100)	(0.00107)	(0.00097)	(0.00089)	
	Small Cap	2515	-0.00131	0.16437**	-0.10294	0.27316***	0.15008**	0.37557***	0.01394
			(0.00026)	(0.00081)	(0.00082)	(0.00071)	(0.00075)	(0.00071)	
	Aktietorget	2511	0.00761	-0.11458	-0.03915	0.04893	-0.00388	0.45409***	0.00612
			(0.00030)	(0.00130)	(0.00111)	(0.00107)	(0.00102)	(0.00119)	
GARCH	AFGX	2515	0.06928***	0.24949***	-0.11888	0.24883***	0.20115**	0.16155*	NA
			(0.00022)	(0.00090)	(0.00099)	(0.00089)	(0.00089)	(0.00098)	
	OMXS30	2515	0.0517**	0.27745***	-0.12720	0.28838***	0.21193**	0.14615	NA
			(0.00025)	(0.00101)	(0.00107)	(0.00098)	(0.00099)	(0.00104)	
	Mid Cap	2515	0.10803***	0.15902***	-0.04833	0.17507***	0.16886***	0.31337***	NA
			(0.00017)	(0.00061)	(0.00066)	(0.00067)	(0.00065)	(0.00074)	
	Small Cap	2515	0.09971***	0.1015*	-0.0947*	0.16678***	0.12222**	0.25015***	NA
			(0.00014)	(0.00052)	(0.00057)	(0.00061)	(0.00057)	(0.00062)	
	Aktietorget	2511	0.02209	-0.08443	-0.03330	0.01986	-0.09089	0.39439***	NA
			(0.00025)	(0.00090)	(0.00111)	(0.00102)	(0.00107)	(0.00102)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 13

Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -3 to +2 window for the 2003 – 2012 period

TOM_Mon – *TOM_Fri* are binary variables taking on the value 1 for the corresponding weekdays during the -3 to +2 window and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	Intercept	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	R^2
OLS	AFGX	2515	-0.02168	0.25163*	-0.06461	0.4415***	0.29078**	0.2367**	0.00822
			(0.00030)	(0.00141)	(0.00138)	(0.00129)	(0.00135)	(0.00105)	
	OMXS30	2515	-0.02116	0.22728	-0.06444	0.45736***	0.30967**	0.19707*	0.00717
			(0.00031)	(0.00149)	(0.00151)	(0.00137)	(0.00147)	(0.00112)	
	Mid Cap	2515	-0.02520	0.28347***	0.05547	0.38968***	0.23982**	0.43207***	0.01445
			(0.00029)	(0.00108)	(0.00101)	(0.00108)	(0.00098)	(0.00091)	
	Small Cap	2515	-0.00568	0.23164***	-0.06102	0.27691***	0.18091**	0.33098***	0.01347
			(0.00026)	(0.00080)	(0.00085)	(0.00071)	(0.00072)	(0.00072)	
	Aktietorget	2511	0.00206	-0.03614	-0.00144	0.05056	0.09047	0.35909***	0.00368
			(0.00030)	(0.00127)	(0.00116)	(0.00106)	(0.00102)	(0.00109)	
GARCH	AFGX	2515	0.06491***	0.32654***	-0.02391	0.24384***	0.12187	0.16788*	NA
			(0.00022)	(0.00092)	(0.00093)	(0.00087)	(0.00092)	(0.00097)	
	OMXS30	2515	0.04799*	0.35277***	-0.02868	0.27862***	0.11651	0.15788	NA
			(0.00025)	(0.00104)	(0.00100)	(0.00097)	(0.00102)	(0.00104)	
	Mid Cap	2515	0.10089***	0.24155***	0.06036	0.20216***	0.15278**	0.29688***	NA
			(0.00017)	(0.00063)	(0.00067)	(0.00064)	(0.00068)	(0.00070)	
	Small Cap	2515	0.0986***	0.13816***	-0.04414	0.18877***	0.10758*	0.2138***	NA
			(0.00015)	(0.00052)	(0.00060)	(0.00060)	(0.00058)	(0.00060)	
	Aktietorget	2511	0.01807	-0.00067	-0.04959	0.01051	0.00595	0.3422***	NA
			(0.00025)	(0.00091)	(0.00103)	(0.00101)	(0.00103)	(0.00101)	

*/**/*** Significant at the 0.10/0.05/0.01 level

For the three small firm indexes, average daily returns for Fridays during the turn-of-the-month are higher than for other weekdays during the turn-of-the-month. The effect is significant for all windows. Mid Cap displays the strongest TOM effect for Fridays, with abnormal average daily returns of 0.48948% for the -4 to +1 window. The corresponding abnormal average daily returns for Small Cap and Aktietorget for the same window are 0.37557% and 0.45409%, respectively. We note that abnormal average daily returns for Aktietorget, which does not display neither a strong nor significant TOM effect in general, are significantly higher (at the 0.01 level) for Fridays during the turn-of-the-month. This is likely a reflection of the Friday effect. For OMXS30, we find that the TOM effect is significantly stronger on Wednesdays than for other weekdays for the -4 to +1 and -3 to +2 windows, where abnormal average daily returns are 0.45146% and 0.45736%, respectively. Furthermore, we observe no indication of a Monday effect during the turn-of-the-month for any of the indexes.

As seen in Exhibit Tables 10 – 12, the findings for Mid Cap, Small Cap and Aktietorget remain robust when controlling for the January effect and a spillover effect from OMXS30.

In order to further investigate how the TOM effect interacts with the Friday effect, we also compare abnormal average daily returns for Fridays during the turn-of-the-month and Fridays during the rest of the month, as presented in Tables 14 – 16.

Table 14

Parameter estimates and summary statistics for Fridays during the -1 to +4 window for the 2003 – 2012 period

TOM_Fri takes on the value 1 for Fridays during the -1 to +4 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	R^2
OLS	AFGX	2515	0.02624	0.19253*	-0.01924	0.00094
			(0.000301)	(0.001078)	(0.000775)	
	OMXS30	2515	0.02944	0.1459	-0.03138	0.00053
			(0.000311)	(0.001157)	(0.000851)	
	Mid Cap	2515	0.02064	0.37332***	0.0152	0.00511
			(0.000274)	(0.000861)	(0.000553)	
	Small Cap	2515	0.00318	0.37631***	0.12314***	0.00958
			(0.000243)	(0.000689)	(0.000474)	
	Aktietorget	2511	-0.04254	0.41362***	0.31541***	0.01099
			(0.000292)	(0.001027)	(0.000758)	
GARCH	AFGX	2515	0.09737***	0.16147*	-0.00565	NA
			(0.000216)	(0.000944)	(0.000561)	
	OMXS30	2515	0.08389***	0.13444	-0.00802	NA
			(0.000239)	(0.001021)	(0.000616)	
	Mid Cap	2515	0.12764***	0.2891***	0.02124	NA
			(0.000159)	(0.000753)	(0.000426)	
	Small Cap	2515	0.09711***	0.25169***	0.11462***	NA
			(0.000140)	(0.000607)	(0.000344)	
	Aktietorget	2511	-0.02877	0.38209***	0.28411***	NA
			(0.000241)	(0.000997)	(0.000623)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 15

Parameter estimates and summary statistics for Fridays during the -4 to +1 window for the 2003 – 2012 period

TOM_Fri takes on the value 1 for Fridays during the -4 to +1 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	R^2
OLS	AFGX	2515	0.02624	0.27244**	-0.04202	0.00190
			(0.000301)	(0.001077)	(0.000783)	
	OMXS30	2515	0.02944	0.2351**	-0.0576	0.00138
			(0.000311)	(0.001178)	(0.000854)	
	Mid Cap	2515	0.02064	0.44903***	-0.00425	0.00719
			(0.000274)	(0.000874)	(0.000557)	
	Small Cap	2515	0.00318	0.37108***	0.12822***	0.00928
			(0.000243)	(0.000699)	(0.000475)	
	Aktietorget	2511	-0.04254	0.50425***	0.28767***	0.01178
			(0.000292)	(0.001203)	(0.000731)	
GARCH	AFGX	2515	0.09737***	0.13234	0.00558	NA
			(0.000216)	(0.000979)	(0.000555)	
	OMXS30	2515	0.08393***	0.11466	-0.000294	NA
			(0.000239)	(0.001044)	(0.000612)	
	Mid Cap	2515	0.12697***	0.29241***	0.02437	NA
			(0.000160)	(0.000741)	(0.000423)	
	Small Cap	2515	0.09717***	0.25158***	0.11644***	NA
			(0.000140)	(0.000618)	(0.000342)	
	Aktietorget	2511	-0.02887	0.44754***	0.264***	NA
			(0.000240)	(0.001015)	(0.000619)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 16
Parameter estimates and summary statistics for Fridays during the -3 to +2 window for the 2003 – 2012 period

TOM_Fri takes on the value 1 for Fridays during the -3 to +2 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	R^2
OLS	AFGX	2515	0.02624	0.18878*	-0.01519	0.00085
			(0.000301)	(0.001045)	(0.000785)	
	OMXS30	2515	0.02944	0.14648	-0.02918	0.00050
			(0.000311)	(0.001120)	(0.000860)	
	Mid Cap	2515	0.02064	0.38623***	0.01589	0.00526
			(0.000274)	(0.000887)	(0.000556)	
	Small Cap	2515	0.00318	0.32212***	0.14393***	0.00809
			(0.000243)	(0.000700)	(0.000480)	
	Aktietorget	2511	-0.04254	0.40369***	0.31992***	0.01093
			(0.000292)	(0.001110)	(0.000743)	
GARCH	AFGX	2515	0.09752***	0.13331	0.00616	NA
			(0.000216)	(0.000968)	(0.000555)	
	OMXS30	2515	0.084***	0.11973	-0.00123	NA
			(0.000239)	(0.001042)	(0.000611)	
	Mid Cap	2515	0.12748***	0.26641***	0.03449	NA
			(0.000160)	(0.000709)	(0.000429)	
	Small Cap	2515	0.09735***	0.21324***	0.12986***	NA
			(0.000140)	(0.000601)	(0.000344)	
	Aktietorget	2511	-0.02879	0.39315***	0.28218***	NA
			(0.000240)	(0.000997)	(0.000622)	

*/**/*** Significant at the 0.10/0.05/0.01 level

The results show that abnormal average daily returns are higher for Fridays during the turn-of-the-month for all indexes and windows. Our results show that the difference between abnormal average daily returns for Fridays during the turn-of-the-month and for Fridays during the rest of the month decrease with firm size, which is in line with the findings of Keim and Stambaugh (1984). Interestingly, Mid Cap displays a significant TOM effect for Fridays for all windows but no abnormal daily average returns for Fridays during the rest of the month. Our interpretation of this is that the Friday effect found for medium-sized firms may simply be a reflection of the TOM effect, since returns on Fridays during the turn-of-the-month seem to drive average daily returns observed for Fridays in general. As presented in Exhibit Tables 13 – 15, these findings remain robust when controlling for the January effect and spillover effects from OMXS30.

One issue that could affect our analysis in this section is the frequency of each weekday during the turn-of-the-month windows. According to Pettengill and Jordan (1988), the last trading day of a month is more likely to occur on a Friday while the first trading day is more likely to occur on a Monday. The reasoning behind this is that if the last calendar day of the month is a

Friday, Saturday, or Sunday, then the last possible trading day will be a Friday, while Monday is the first possible trading day if the first calendar day is a Saturday, Sunday or Monday.

5.5. The TOM effect and long term stock market trends

Following our fifth hypothesis, we expect the TOM effect to be inversely related with the long term trend of the stock market. In aggregate, our results are consistent with this prediction. Combined with our findings in 5.2., this suggests that constraints on individual investor liquidity help explain the TOM effect. Tables 17 – 19 present the results from our regressions.

Table 17

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -1 to +4 window

TOM takes on the value 1 for trading days in the -1 to +4 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Positive trends				Negative trends			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1669	0.07913** (0.00032)	0.12155* (0.00066)	0.00184	846	-0.11029* (0.00056)	-0.02349 (0.00122)	0.00003
	OMXS30	1669	0.07778** (0.00034)	0.10208 (0.00070)	0.00108	846	-0.09438* (0.00057)	-0.05152 (0.00125)	0.00015
	Mid Cap	1646	0.08034*** (0.00027)	0.1868*** (0.00055)	0.00755	869	-0.1334** (0.00053)	0.06610 (0.00112)	0.00039
	Small Cap	1686	0.09209*** (0.00025)	0.14635*** (0.00047)	0.00635	829	-0.15534*** (0.00044)	0.07125 (0.00091)	0.00077
	Aktietorget	1757	0.09551*** (0.00031)	0.10139* (0.00060)	0.00114	754	-0.22854*** (0.00054)	0.12647 (0.00105)	0.00168
GARCH	AFGX	1669	0.10469*** (0.00025)	0.14193*** (0.00049)	NA	846	-0.03247 (0.00050)	0.07853 (0.00105)	NA
	OMXS30	1669	0.09082*** (0.00028)	0.12941** (0.00055)	NA	846	-0.02366 (0.00053)	0.04539 (0.00112)	NA
	Mid Cap	1646	0.14538*** (0.00018)	0.17502*** (0.00036)	NA	869	-0.04580 (0.00038)	0.17286** (0.00075)	NA
	Small Cap	1686	0.15732*** (0.00016)	0.11569*** (0.00033)	NA	829	-0.06361** (0.00028)	0.14855*** (0.00056)	NA
	Aktietorget	1757	0.08526*** (0.00030)	0.07971 (0.00058)	NA	754	-0.17064*** (0.00046)	0.15528* (0.00094)	NA

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 18

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -4 to +1 window

TOM takes on the value 1 for trading days in the -4 to +1 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Positive trends				Negative trends			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1669	0.08636**	0.09147	0.00104	846	-0.23142***	0.49145***	0.01498
			(0.00034)	(0.00069)			(0.00061)	(0.00135)	
	OMXS30	1669	0.0788**	0.09783	0.00100	846	-0.21678***	0.4688***	0.01238
			(0.00036)	(0.00074)			(0.00061)	(0.00138)	
	Mid Cap	1646	0.10023***	0.10414*	0.00235	869	-0.24544***	0.54336***	0.02612
			(0.00029)	(0.00055)			(0.00061)	(0.00123)	
	Small Cap	1686	0.1082***	0.08001*	0.00189	829	-0.22364***	0.35755***	0.01951
			(0.00026)	(0.00049)			(0.00051)	(0.00086)	
	Aktietorget	1757	0.10636***	0.05714	0.00036	754	-0.22411***	0.10408	0.00116
			(0.00033)	(0.00062)			(0.00060)	(0.00102)	
GARCH	AFGX	1669	0.11274***	0.10637**	NA	846	-0.0926*	0.31289***	NA
			(0.00025)	(0.00050)			(0.00050)	(0.00109)	
	OMXS30	1669	0.09205***	0.12221**	NA	846	-0.08695*	0.2974***	NA
			(0.00028)	(0.00056)			(0.00053)	(0.00114)	
	Mid Cap	1646	0.15989***	0.11404***	NA	869	-0.09093**	0.32206***	NA
			(0.00018)	(0.00036)			(0.00037)	(0.00080)	
	Small Cap	1686	0.16508***	0.07831**	NA	829	-0.08176***	0.19996***	NA
			(0.00016)	(0.00033)			(0.00030)	(0.00056)	
	Aktietorget	1757	0.09687***	0.02760	NA	754	-0.1547***	0.08416	NA
			(0.00029)	(0.00060)			(0.00047)	(0.00091)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Table 19

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -3 to +2 window

TOM takes on the value 1 for trading days in the -3 to +2 window and 0 for all other trading days. (Standard errors are shown in parentheses)

		Positive trends				Negative trends			
	Index	Obs.	*Intercept*	*TOM*	R^2	Obs.	*Intercept*	*TOM*	R^2
OLS	AFGX	1669	0.0719**	0.15164**	0.00286	846	-0.20508***	0.37947**	0.00893
			(0.00033)	(0.00066)			(0.00062)	(0.00164)	
	OMXS30	1669	0.06443*	0.15763**	0.00259	846	-0.18889***	0.35024**	0.00691
			(0.00035)	(0.00071)			(0.00063)	(0.00168)	
	Mid Cap	1646	0.08301***	0.1757***	0.00668	869	-0.22859***	0.47156***	0.01967
			(0.00028)	(0.00055)			(0.00060)	(0.00138)	
	Small Cap	1686	0.10374***	0.09845**	0.00286	829	-0.22729***	0.37483***	0.02136
			(0.00026)	(0.00048)			(0.00050)	(0.00100)	
	Aktietorget	1757	0.10812***	0.04948	0.00027	754	-0.24559***	0.19473*	0.00404
			(0.00032)	(0.00057)			(0.00057)	(0.00101)	
GARCH	AFGX	1669	0.10175***	0.15326***	NA	846	-0.07369	0.23845**	NA
			(0.00025)	(0.00050)			(0.00050)	(0.00107)	
	OMXS30	1669	0.08026***	0.17271***	NA	846	-0.06485	0.20904*	NA
			(0.00028)	(0.00055)			(0.00053)	(0.00112)	
	Mid Cap	1646	0.1477***	0.16781***	NA	869	-0.0824**	0.29639***	NA
			(0.00018)	(0.00036)			(0.00038)	(0.00080)	
	Small Cap	1686	0.16527***	0.07928**	NA	829	-0.08798***	0.23503***	NA
			(0.00016)	(0.00033)			(0.00029)	(0.00057)	
	Aktietorget	1757	0.09314***	0.04403	NA	754	-0.16326***	0.12032	NA
			(0.00030)	(0.00059)			(0.00046)	(0.00091)	

*/**/*** Significant at the 0.10/0.05/0.01 level

For both the -4 to +1 and -3 to +2 windows AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget, display more pronounced TOM effects during long term negative trends than during long term positive trends. For Mid Cap, which displays the largest difference in the TOM effect for the two different market conditions, abnormal average daily returns are 0.54336% during negative trends and 0.10414% during positive trends. In contrast, for the -1 to +4 window, the TOM effect is stronger during long term positive trends for AFGX, OMXS30, Mid Cap and Small Cap. During this window, the TOM effect for Mid Cap is 0.06610% during negative trends and 0.18680% during positive trends. The finding that the TOM effect is stronger for the -1 to +4 window during positive trends is in line with our observations of Figures 6 – 7 that present the daily return distributions for all indexes during different stock market conditions.

Figure 6
Average daily return (%) per trading day per index (value-weighted) during periods of upwards trending stock markets
Any trading days outside the -9 to +9 window are not included in the figure

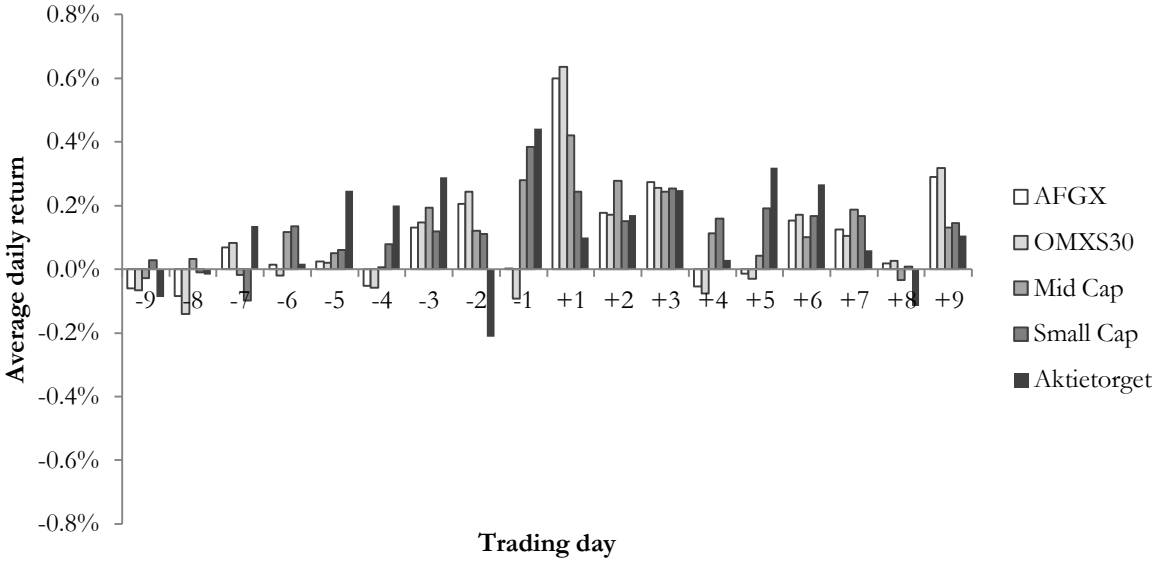
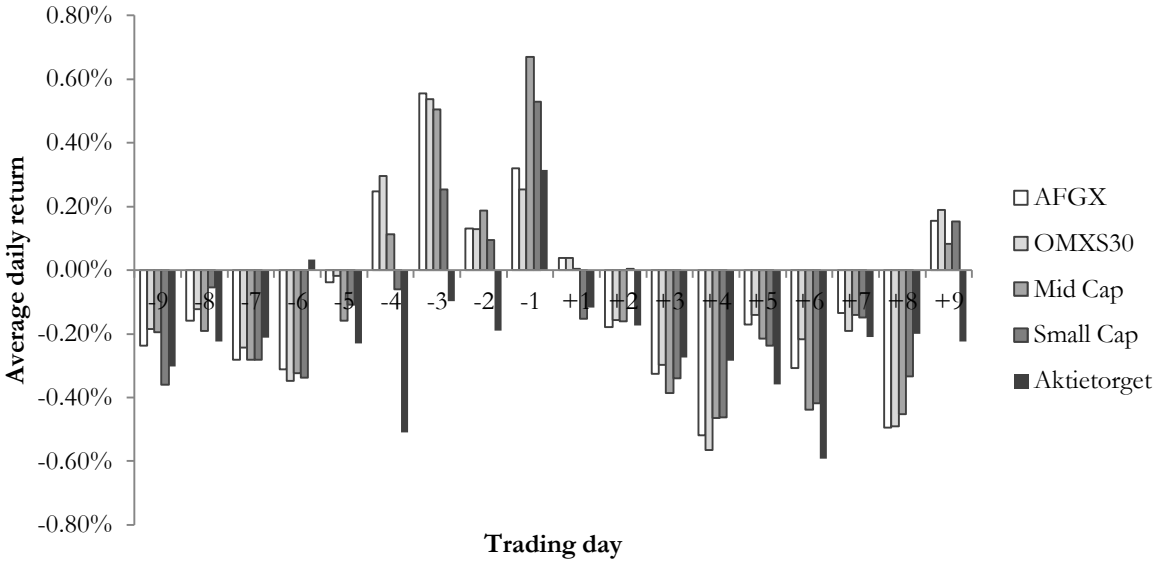


Figure 7
Average daily return (%) per trading day per index (value-weighted) during periods of downwards trending stock markets
Any trading days outside the -9 to +9 window are not included in the figure



During negative trends, average daily returns are only notably positive for trading days -4, -3, -2, -1 and +9, whereupon the -1 to +4 window only includes one trading day with considerable positive returns. We also notice that Aktietorget only displays positive average daily returns for the -6 and -1 trading days during negative trends, supporting our previous finding that no strong TOM effect can be discerned for Aktietorget.

Exhibit Tables 16 – 18 present the regression results when controlling for the January effect and the potential spillover effect from OMXS30. Overall, the significance of our findings does not decrease when controlling for other variables, while the magnitude of the coefficients decrease, particularly for the smaller indexes following their correlation with OMXS30. Across all windows, the correlation of returns for Mid Cap and Aktietorget with returns of OMXS30 outside the turn-of-the-month window increases during negative trends. Furthermore, the January effect is stronger for Small Cap during negative trends. Similarly, abnormal average daily returns outside the turn-of-the-month window for December returns increase for Mid Cap during negative trends. Taken together, these observations provide further support to the notion that the efficiency of the market decreases in times of reduced liquidity following negative stock market trends.

According to the preferred habitat theory put forward by Ogden (1990), the TOM effect is a result of liquidity constrained investors. Considering that individual investors invest more of their capital in small firm indexes and are assumed to face stronger liquidity constraints than

institutional investors, we expect a stronger TOM effect for the small firm indexes when investor liquidity decreases during negative trends. This notion is not supported by our results, however, since we find the strongest TOM effect during negative trends for Mid Cap rather than for Small Cap and Aktietorget. These results suggest that the behavior of both individual and institutional investors influence the TOM effect. Lakonishok, Shleifer, Thaler, and Vishny (1991) argue that fund managers are evaluated based on their individual stock selection in addition to aggregate portfolio performance. Consequently, we hypothesize that institutional investors are more prone to engage in window dressing activities during negative trends, since fund managers may face increased pressure from both existing and potential investors when their portfolios display negative returns. Following this pressure, fund managers seek to oversell stocks that have performed poorly in an attempt to impress sponsors, resulting in downwards pressure on stock prices.

6. CONCLUSION

This paper supports the hypothesis of a turn-of-the month effect for the Swedish stock market. Analyzing three different five-day windows during 2003-2012, we find significantly higher daily average returns around the TOM compared to the rest of the month for AFGX, OMXS30, Mid Cap and Small Cap. Furthermore, we find that the TOM effect is strongest for the -3 to +2 window, earlier than the -1 to +4 window generally used in similar studies. This finding supports the preferred habitat theory, since improved liquidity following the payment of salaries, interest and dividends on the 25th seems to drive the TOM effect. Our results also suggest that individual investor behavior could be a potential explanation to the TOM effect, since the effect is stronger for equal-weighted variations of the indexes, where smaller stocks with higher proportion of retail ownership are assigned heavier weights. However, this indication is contradicted by the comparison of the TOM effect between indexes, where we don't observe an inverse relationship between index size and the effect. The Friday effect seems to be related to the TOM effect. We find that not only is the TOM effect significantly stronger for Fridays, particularly for the small firm indexes, but Fridays during the TOM also display significantly higher daily average returns than Fridays during the rest of the month. Finally, our findings show that the TOM effect is more pronounced in periods of negative stock market trends in the stock market, providing further support to the preferred habitat theory.

The results of this paper are subject to some limitations. First, as mentioned in Section 3, using price indexes does not account for dividend payments when constructing the return time series. Although this is unlikely to affect the smaller-firm indexes where firms are reinvesting their profits, it might cause a bias for the blue-chip OMXS30 index. Furthermore, it would be interesting to explore the effect for indexes representing high- and low individual ownership respectively. This could be done by using information from Aktieboken, a public source of detailed stock ownership data for Swedish companies. Such an approach could shed further light on the relationship between stock ownership composition and the TOM effect.

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EXHIBIT

Exhibit Figure 1
Developments of the AFGX index, household sentiment and the Riksbanken repo rate during 2006-2012

Both AFGX and household sentiment are indexed to 100 in 2003-01-02. Household sentiment is based on monthly interviews with 1500 households forecasting their economical situation 12 months (Konjunkturinstitutet). Repo rate expressed in basis points as provided by the Swedish Central Bank (Riksbanken)

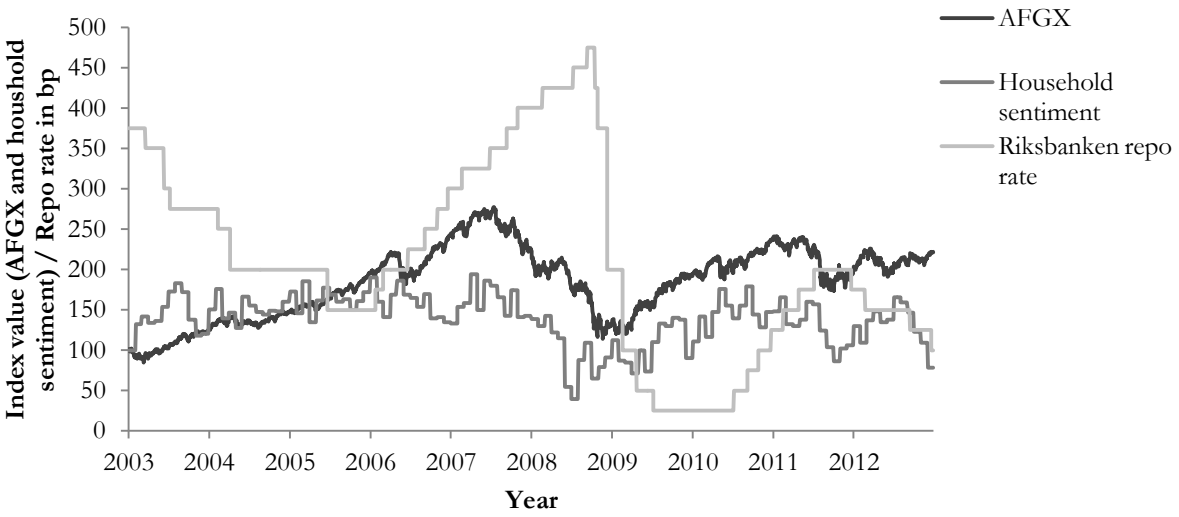

Exhibit Figure 2
Index Prices for AFGX, OMXS30, Mid Cap, Small Cap and Aktietorget (value-weighted) during 2003 – 2012

Index price data for AFGX, OMXS30, Mid Cap and Small Cap collected from Thomson Reuters Datastream. Index price data for Aktietorget collected directly from OMX Nasdaq

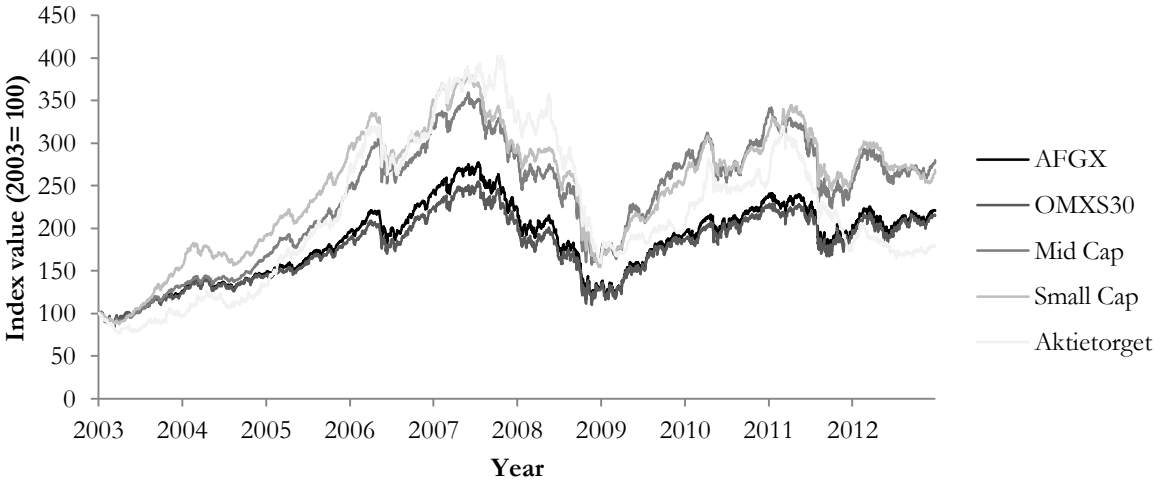

Exhibit Figure 3
Index Prices for AFGX, OMXS30, Mid Cap and Small Cap (equal-weighted) during 2007 – 2012

Equal-weighted price ndexes constructed using constituent data and daily stock prices from Thomson Reuters Datastream. Indexes are rebalanced on a quarterly basis.

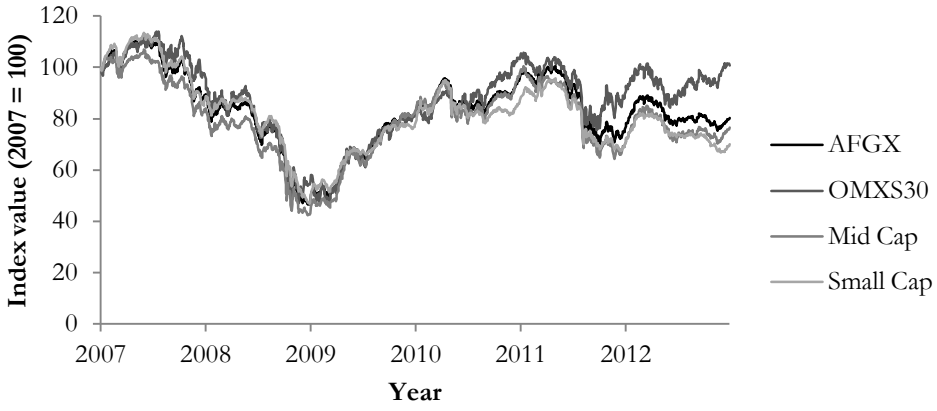

Exhibit Figure 4
Index Prices for AFGX, OMXS30, Mid Cap and Small Cap (value-weighted) during 2007 – 2012

Value-weighted index price data for AFGX, OMXS30, Mid Cap and Small Cap collected from Thomson Reuters Datastream

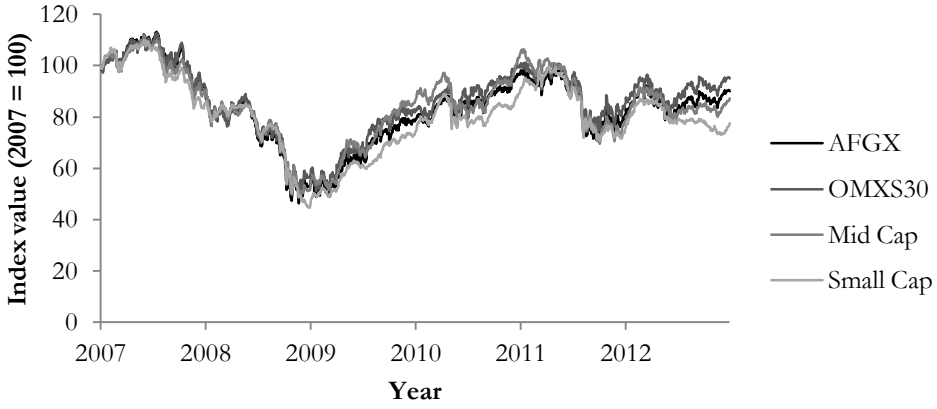

Exhibit Figure 5
Split between upwards- and downwards-trending stock markets for AFGX during 2003-2012

Index price data collected from Thomson Reuters Datastream

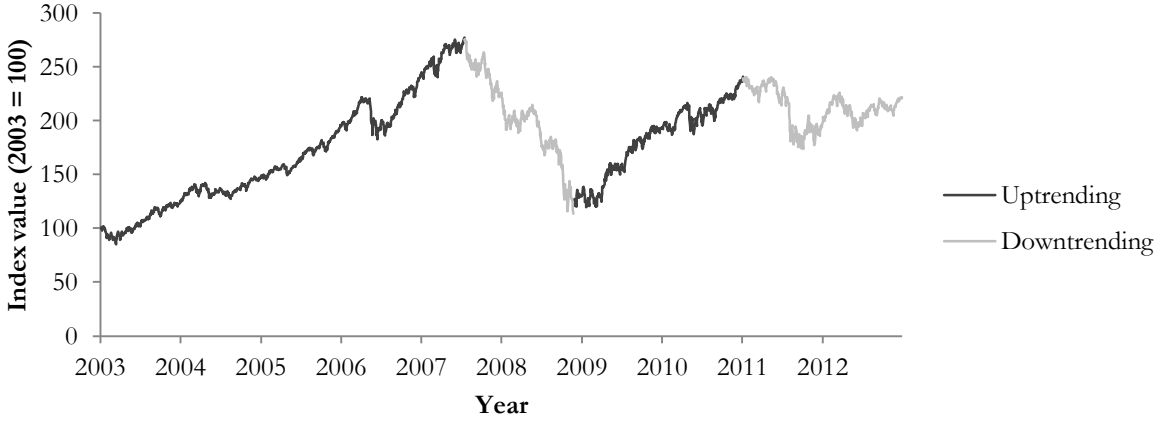

Exhibit Figure 6
Split between upwards- and downwards-trending stock markets for OMXS30 during 2003-2012
Index price data collected from Thomson Reuters Datastream

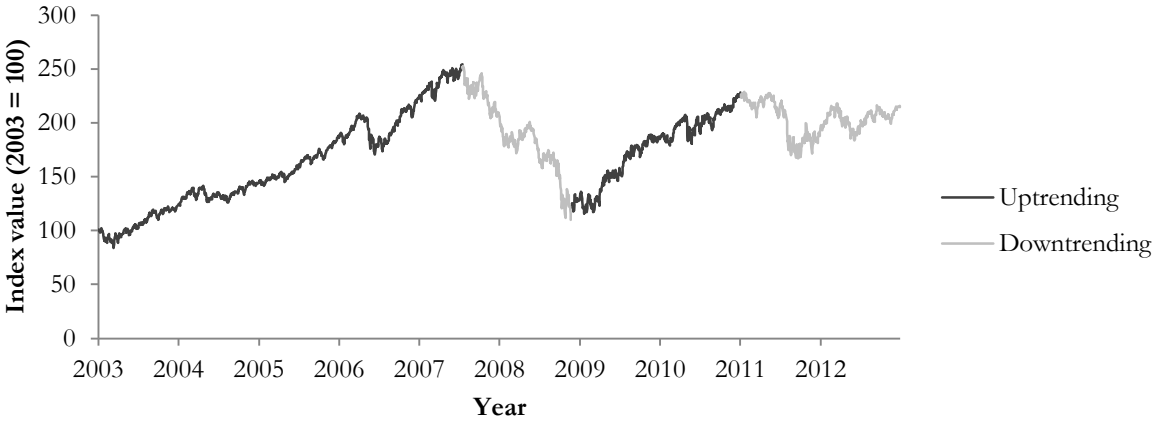

Exhibit Figure 7
Split between upwards- and downwards-trending stock markets for Mid Cap during 2003-2012
Index price data collected from Thomson Reuters Datastream

Exhibit Figure 8
Split between upwards- and downwards-trending stock markets for Small Cap during 2003-2012
Index price data collected from Thomson Reuters Datastream

Exhibit Figure 9
Split between upwards- and downwards-trending stock markets for Aktietorget during 2003-2012

Index price data collected directly from OMX Nasdaq

Exhibit Table 1
Parameter estimates and summary statistics for value-weighted index returns during 2003-2012 for the -1 to +4 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -1 to +4 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -1 to +4 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	2515	0.01106	0.07384	-0.05916	0.11743*	NA	NA	0.00120
			(0.00030)	(0.00060)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	0.01872	0.05161	-0.07867	0.09641	NA	NA	0.00077
			(0.00031)	(0.00063)	(0.00098)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.02060	0.11565***	0.04669	0.14265***	-2.44324	61.7672***	0.66878
			(0.00017)	(0.00031)	(0.00065)	(0.00044)	(0.03610)	(0.02696)	
	Small Cap	2515	-0.02495	0.10193***	0.21946***	0.11039	-3.30518	44.64637***	0.53491
			(0.00018)	(0.00032)	(0.00066)	(0.00068)	(0.03277)	(0.02702)	
	Aktietorget	2511	-0.03869	0.09928**	0.3881***	-0.02443	-11.69863***	34.17283***	0.14129
			(0.00028)	(0.00048)	(0.00101)	(0.00102)	(0.04326)	(0.03047)	
GARCH	AFGX	2515	0.06733***	0.12616***	-0.01612	0.08203	NA	NA	NA
			(0.00024)	(0.00045)	(0.00063)	(0.00074)	NA	NA	
	OMXS30	2515	0.05978**	0.10731**	-0.02915	0.06464	NA	NA	NA
			(0.00026)	(0.00050)	(0.00070)	(0.00083)	NA	NA	
	Mid Cap	2515	0.02321*	0.12141***	0.03521	0.1232***	-2.11836	54.84495***	NA
			(0.00012)	(0.00023)	(0.00038)	(0.00036)	(0.01634)	(0.00862)	
	Small Cap	2515	0.02604**	0.08806***	0.15621***	0.10589***	-1.23546	37.23885***	NA
			(0.00012)	(0.00022)	(0.00039)	(0.00035)	(0.01424)	(0.00799)	
	Aktietorget	2511	-0.0506**	0.10836**	0.41012***	0.01542	-9.60653***	30.04706***	NA
			(0.00025)	(0.00047)	(0.00078)	(0.00077)	(0.03088)	(0.01637)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 2

Parameter estimates and summary statistics for value-weighted index returns during 2003-2012 for the -4 to +1 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -4 to +1 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	2515	-0.02477	0.22534***	-0.06010	0.11442*	NA	NA	0.00539
			(0.00033)	(0.00065)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	-0.02161	0.22214***	-0.07972	0.09301	NA	NA	0.00454
			(0.00033)	(0.00068)	(0.00098)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.02124	0.12361***	0.04642	0.14056***	-3.04870	61.68163***	0.66902
			(0.00018)	(0.00032)	(0.00066)	(0.00042)	(0.03669)	(0.02731)	
	Small Cap	2515	-0.01790	0.08132***	0.22009***	0.10743	-5.43849	44.95554***	0.53471
			(0.00019)	(0.00028)	(0.00067)	(0.00066)	(0.03480)	(0.02934)	
	Aktietorget	2511	-0.01441	0.01639	0.38666***	-0.03177	-12.07714**	34.04758***	0.14035
			(0.00028)	(0.00049)	(0.00102)	(0.00103)	(0.05137)	(0.03180)	
GARCH	AFGX	2515	0.06255***	0.14455***	-0.01569	0.07820	NA	NA	NA
			(0.00024)	(0.00046)	(0.00062)	(0.00073)	NA	NA	
	OMXS30	2515	0.04785*	0.15672***	-0.02971	0.06044	NA	NA	NA
			(0.00026)	(0.00051)	(0.00070)	(0.00082)	NA	NA	
	Mid Cap	2515	0.03032**	0.08546***	0.03274	0.12576***	-2.16873	54.99286***	NA
			(0.00012)	(0.00023)	(0.00038)	(0.00036)	(0.01685)	(0.00863)	
	Small Cap	2515	0.03691***	0.0468**	0.14819***	0.11107***	-3.07143**	37.73527***	NA
			(0.00012)	(0.00022)	(0.00039)	(0.00034)	(0.01543)	(0.00786)	
	Aktietorget	2511	-0.02947	0.02081	0.40759***	0.01412	-6.68973**	29.39015***	NA
			(0.00025)	(0.00049)	(0.00079)	(0.00077)	(0.03299)	(0.01615)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 3

Parameter estimates and summary statistics for value-weighted index returns during 2003-2012 for the -3 to +2 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -3 to +2 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	2515	-0.02544	0.22816***	-0.06012	0.11436*	NA	NA	0.00551
			(0.00032)	(0.00071)	(0.00095)	(0.00069)	NA	NA	
	OMXS30	2515	-0.02170	0.22252***	-0.07972	0.09301	NA	NA	0.00455
			(0.00033)	(0.00074)	(0.00097)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.02669	0.14996***	0.04846	0.14167***	-5.73446	62.31025***	0.67061
			(0.00018)	(0.00031)	(0.00065)	(0.00042)	(0.03524)	(0.02685)	
	Small Cap	2515	-0.02247	0.10299***	0.22233***	0.10981*	-7.85632**	45.56128***	0.53700
			(0.00019)	(0.00029)	(0.00067)	(0.00066)	(0.03382)	(0.02874)	
	Aktietorget	2511	-0.02037	0.03819	0.38787***	-0.02606	-11.57086**	34.04983***	0.14025
			(0.00028)	(0.00046)	(0.00101)	(0.00102)	(0.04725)	(0.03215)	
GARCH	AFGX	2515	0.05826**	0.16285***	-0.01626	0.07910	NA	NA	NA
			(0.00024)	(0.00045)	(0.00062)	(0.00074)	NA	NA	
	OMXS30	2515	0.04435*	0.17186***	-0.02995	0.06185	NA	NA	NA
			(0.00026)	(0.00050)	(0.00070)	(0.00082)	NA	NA	
	Mid Cap	2515	0.02747**	0.10028***	0.03278	0.12481***	-2.51354	54.95712***	NA
			(0.00012)	(0.00023)	(0.00038)	(0.00036)	(0.01631)	(0.00868)	
	Small Cap	2515	0.03314***	0.06356***	0.15004***	0.10997***	-3.75202**	37.90558***	NA
			(0.00012)	(0.00022)	(0.00039)	(0.00034)	(0.01499)	(0.00786)	
	Aktietorget	2511	-0.03733	0.05337	0.40583***	0.01486	-5.96955*	29.21681***	NA
			(0.00025)	(0.00048)	(0.00078)	(0.00077)	(0.03250)	(0.01620)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 4

Parameter estimates and summary statistics for value-weighted index returns during 2007-2012 for the -1 to +4 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -1 to +4 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -1 to +4 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.00329	-0.02419	-0.08158	0.12537	NA	NA	0.00070
			(0.00044)	(0.00090)	(0.00134)	(0.00104)	NA	NA	
	OMXS30	1509	0.00890	-0.04406	-0.10155	0.09784	NA	NA	0.00065
			(0.00044)	(0.00092)	(0.00135)	(0.00105)	NA	NA	
	Mid Cap	1509	-0.05058**	0.08014*	0.12955	0.17212***	1.49833	63.50177***	0.69950
			(0.00023)	(0.00046)	(0.00096)	(0.00064)	(0.04218)	(0.03123)	
	Small Cap	1509	-0.0627***	0.07005	0.29775***	0.06523	0.70410	42.38148***	0.55155
			(0.00024)	(0.00050)	(0.00093)	(0.00089)	(0.03851)	(0.03126)	
GARCH	AFGX	1509	0.03611	0.07792	-0.03629	0.08373	NA	NA	NA
			(0.00038)	(0.00071)	(0.00109)	(0.00134)	NA	NA	
	OMXS30	1509	0.03855	0.04657	-0.04351	0.05612	NA	NA	NA
			(0.00040)	(0.00076)	(0.00117)	(0.00138)	NA	NA	
	Mid Cap	1509	-0.02929	0.09279***	0.11019**	0.16168***	4.06148**	60.10749***	NA
			(0.00018)	(0.00034)	(0.00055)	(0.00056)	(0.02067)	(0.01099)	
	Small Cap	1509	-0.02410	0.06938**	0.24805***	0.09446**	2.21934	34.90706***	NA
			(0.00016)	(0.00029)	(0.00054)	(0.00046)	(0.01697)	(0.00949)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 5

Parameter estimates and summary statistics for value-weighted index returns during 2007-2012 for the -4 to +1 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -4 to +1 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.05485	0.19426**	-0.08111	0.12136	NA	NA	0.00329
			(0.00048)	(0.00098)	(0.00131)	(0.00103)	NA	NA	
	OMXS30	1509	-0.04160	0.16989*	-0.10109	0.09391	NA	NA	0.00232
			(0.00048)	(0.00101)	(0.00133)	(0.00104)	NA	NA	
	Mid Cap	1509	-0.07313***	0.17299***	0.13039	0.17222***	1.04657	63.42931***	0.70199
			(0.00025)	(0.00045)	(0.00097)	(0.00062)	(0.04173)	(0.03107)	
	Small Cap	1509	-0.07227***	0.11209***	0.29829***	0.06452	-1.45757	42.72778***	0.55300
			(0.00025)	(0.00037)	(0.00096)	(0.00087)	(0.04053)	(0.03392)	
GARCH	AFGX	1509	0.02995	0.09986	-0.03727	0.08268	NA	NA	NA
			(0.00038)	(0.00072)	(0.00109)	(0.00133)	NA	NA	
	OMXS30	1509	0.02880	0.08591	-0.04410	0.05533	NA	NA	NA
			(0.00040)	(0.00076)	(0.00116)	(0.00137)	NA	NA	
	Mid Cap	1509	-0.03646**	0.11526***	0.10681*	0.16663***	1.04007	60.74897***	NA
			(0.00018)	(0.00035)	(0.00055)	(0.00055)	(0.02126)	(0.01087)	
	Small Cap	1509	-0.02516	0.06977**	0.24526***	0.10307**	0.72083	35.05839***	NA
			(0.00016)	(0.00029)	(0.00054)	(0.00046)	(0.01807)	(0.00931)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 6

Parameter estimates and summary statistics for value-weighted index returns during 2007-2012 for the -3 to +2 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -3 to +2 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.05146	0.17991*	-0.08114	0.12163	NA	NA	0.00291
			(0.00046)	(0.00108)	(0.00132)	(0.00103)	NA	NA	
	OMXS30	1509	-0.03878	0.15794	-0.10111	0.09413	NA	NA	0.00208
			(0.00046)	(0.00111)	(0.00133)	(0.00104)	NA	NA	
	Mid Cap	1509	-0.0679***	0.15363***	0.13104	0.17255***	-1.35378	64.01639***	0.70127
			(0.00024)	(0.00045)	(0.00096)	(0.00063)	(0.03988)	(0.03074)	
	Small Cap	1509	-0.07304***	0.11613***	0.29936***	0.06604	-2.94827	43.13326***	0.55350
			(0.00025)	(0.00040)	(0.00095)	(0.00088)	(0.04031)	(0.03338)	
GARCH	AFGX	1509	0.02183	0.13697*	-0.03515	0.08294	NA	NA	NA
			(0.00038)	(0.00070)	(0.00109)	(0.00133)	NA	NA	
	OMXS30	1509	0.02260	0.11451	-0.04264	0.05562	NA	NA	NA
			(0.00040)	(0.00075)	(0.00116)	(0.00138)	NA	NA	
	Mid Cap	1509	-0.03325*	0.10646***	0.10778**	0.16635***	0.19918	60.92717***	NA
			(0.00018)	(0.00034)	(0.00055)	(0.00056)	(0.02045)	(0.01101)	
	Small Cap	1509	-0.027*	0.07858***	0.24732***	0.10402**	-0.28281	35.35834***	NA
			(0.00016)	(0.00028)	(0.00054)	(0.00046)	(0.01722)	(0.00944)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 7

Parameter estimates and summary statistics for equal-weighted index returns during 2007-2012 for the -1 to +4 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -1 to +4 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -1 to +4 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.06539*	0.11746	0.17730	0.10406	NA	NA	0.00413
			(0.00037)	(0.00076)	(0.00126)	(0.00090)	NA	NA	
	OMXS30	1509	0.00094	0.01501	-0.13496	0.10479	NA	NA	0.00073
			(0.00048)	(0.00100)	(0.00152)	(0.00117)	NA	NA	
	Mid Cap	1509	-0.07781***	0.13635***	0.21999**	0.10589	1.68589	55.74819***	0.70869
			(0.00023)	(0.00045)	(0.00110)	(0.00071)	(0.03507)	(0.02718)	
	Small Cap	1509	-0.08577***	0.12382***	0.40052***	-0.01296	0.03745	37.89416***	0.54216
			(0.00023)	(0.00047)	(0.00114)	(0.00080)	(0.03082)	(0.02502)	
GARCH	AFGX	1509	0.00263	0.18667***	0.15221**	0.14928*	NA	NA	NA
			(0.00025)	(0.00046)	(0.00074)	(0.00085)	NA	NA	
	OMXS30	1509	0.02641	0.11750	-0.03156	0.09154	NA	NA	NA
			(0.00042)	(0.00079)	(0.00120)	(0.00149)	NA	NA	
	Mid Cap	1509	-0.05082***	0.12331***	0.15664***	0.1478***	2.60162	52.94323***	NA
			(0.00017)	(0.00030)	(0.00051)	(0.00050)	(0.01750)	(0.00971)	
	Small Cap	1509	-0.04474***	0.08619***	0.33089***	-0.01106	1.49161	31.50981***	NA
			(0.00015)	(0.00028)	(0.00050)	(0.00043)	(0.01472)	(0.00906)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 8

Parameter estimates and summary statistics for equal-weighted index returns during 2007-2012 for the -4 to +1 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -4 to +1 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.09569**	0.24656***	0.17741	0.10069	NA	NA	0.01060
			(0.00043)	(0.00072)	(0.00128)	(0.00088)	NA	NA	
	OMXS30	1509	-0.05497	0.25255**	-0.13460	0.09873	NA	NA	0.00426
			(0.00054)	(0.00108)	(0.00151)	(0.00118)	NA	NA	
	Mid Cap	1509	-0.07994***	0.14623***	0.22083*	0.10632	-0.36344	56.05548***	0.70888
			(0.00025)	(0.00041)	(0.00114)	(0.00068)	(0.03747)	(0.02808)	
	Small Cap	1509	-0.07682***	0.09127**	0.40095***	-0.01397	-2.40372	38.30383***	0.54095
			(0.00024)	(0.00038)	(0.00119)	(0.00077)	(0.03803)	(0.02745)	
GARCH	AFGX	1509	0.00669	0.14899***	0.14695**	0.1469*	NA	NA	NA
			(0.00025)	(0.00048)	(0.00074)	(0.00087)	NA	NA	
	OMXS30	1509	0.01667	0.1527*	-0.03367	0.08820	NA	NA	NA
			(0.00042)	(0.00081)	(0.00120)	(0.00148)	NA	NA	
	Mid Cap	1509	-0.04542***	0.09341***	0.15329***	0.14818***	0.35303	53.42265***	NA
			(0.00017)	(0.00031)	(0.00051)	(0.00050)	(0.01918)	(0.00962)	
	Small Cap	1509	-0.03898***	0.06202**	0.32417***	-0.00253	-1.05120	32.13282***	NA
			(0.00015)	(0.00028)	(0.00051)	(0.00044)	(0.01706)	(0.00840)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 9

Parameter estimates and summary statistics for equal-weighted index returns during 2007-2012 for the -3 to +2 window, controlling for other variables

TOM is a binary variable that takes on the value 1 for trading days during the -3 to +2 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1509	-0.09757**	0.2537***	0.17762	0.10070	NA	NA	0.01111
			(0.00042)	(0.00082)	(0.00126)	(0.00088)	NA	NA	
	OMXS30	1509	-0.04964	0.22913*	-0.13445	0.09951	NA	NA	0.00364
			(0.00053)	(0.00121)	(0.00151)	(0.00117)	NA	NA	
	Mid Cap	1509	-0.08644***	0.175***	0.22188**	0.10583	-1.58033	56.33644***	0.71006
			(0.00025)	(0.00042)	(0.00113)	(0.00069)	(0.03445)	(0.02793)	
	Small Cap	1509	-0.0831***	0.11864***	0.40275***	-0.01316	-3.83158	38.67731***	0.54265
			(0.00024)	(0.00038)	(0.00118)	(0.00077)	(0.03486)	(0.02735)	
GARCH	AFGX	1509	0.00778	0.14864***	0.14942**	0.14828*	NA	NA	NA
			(0.00026)	(0.00048)	(0.00074)	(0.00087)	NA	NA	
	OMXS30	1509	0.02063	0.13827*	-0.03190	0.08958	NA	NA	NA
			(0.00042)	(0.00079)	(0.00120)	(0.00149)	NA	NA	
	Mid Cap	1509	-0.04914***	0.10876***	0.15335***	0.14809***	1.32603	53.18362***	NA
			(0.00017)	(0.00031)	(0.00051)	(0.00050)	(0.01850)	(0.00957)	
	Small Cap	1509	-0.04137***	0.06973**	0.32756***	-0.00400	-0.73689	32.09047***	NA
			(0.00015)	(0.00028)	(0.00051)	(0.00044)	(0.01582)	(0.00859)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 10

Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -1 to +4 window for the 2003-2012 period, controlling for other variables

TOM_Mon – *TOM_Fri* are binary variables taking on the value 1 for the corresponding weekdays during the -1 to +4 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -1 to +4 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	0.01115	0.04717	0.00769	0.18805	-0.08616	0.20304*	-0.06114	0.11844*	NA	NA	0.00269
			(0.00030)	(0.00142)	(0.00141)	(0.00132)	(0.00129)	(0.00107)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	0.01876	0.01378	0.00893	0.17789	-0.10717	0.15569	-0.08026	0.09756	NA	NA	0.00195
			(0.00031)	(0.00150)	(0.00153)	(0.00144)	(0.00136)	(0.00115)	(0.00098)	(0.00070)	NA	NA	
	Mid Cap	2515	-0.02036	0.08072	0.04262	0.06608	0.08844	0.29374***	0.04466	0.14166***	-2.62686	61.76626***	0.67038
			(0.00017)	(0.00067)	(0.00066)	(0.00057)	(0.00064)	(0.00061)	(0.00065)	(0.00043)	(0.03585)	(0.02698)	
	Small Cap	2515	-0.02465	0.09159	0.00486	0.00859	0.09757*	0.30119***	0.21709***	0.10893	-3.42793	44.64535***	0.53836
			(0.00018)	(0.00065)	(0.00061)	(0.00057)	(0.00053)	(0.00052)	(0.00065)	(0.00067)	(0.03233)	(0.02704)	
	Aktietorget	2511	-0.03843	-0.02239	-0.00157	0.03192	0.14178	0.33531***	0.38616***	-0.02586	-11.85826***	34.17208***	0.14378
			(0.00028)	(0.00119)	(0.00097)	(0.00101)	(0.00111)	(0.00098)	(0.00101)	(0.00101)	(0.04236)	(0.03050)	
GARCH	AFGX	2515	0.06766***	0.27142***	0.08261	0.06629	0.03351	0.18293*	-0.01919	0.08101	NA	NA	NA
			(0.00024)	(0.00093)	(0.00090)	(0.00085)	(0.00089)	(0.00094)	(0.00063)	(0.00074)	NA	NA	
	OMXS30	2515	0.06019**	0.27101***	0.07447	0.05101	-0.00525	0.15254	-0.03278	0.06373	NA	NA	NA
			(0.00026)	(0.00105)	(0.00098)	(0.00093)	(0.00099)	(0.00102)	(0.00071)	(0.00083)	NA	NA	
	Mid Cap	2515	0.02345*	0.05961	0.07120	0.10896**	0.12172**	0.23798***	0.03671	0.12347***	-2.16600	54.81845***	NA
			(0.00012)	(0.00048)	(0.00044)	(0.00044)	(0.00048)	(0.00046)	(0.00038)	(0.00036)	(0.01628)	(0.00859)	
	Small Cap	2515	0.02582**	0.06321	0.00385	0.03066	0.12777***	0.20187***	0.15518***	0.10704***	-1.29665	37.18641***	NA
			(0.00012)	(0.00041)	(0.00043)	(0.00043)	(0.00044)	(0.00045)	(0.00039)	(0.00035)	(0.01437)	(0.00794)	
	Aktietorget	2511	-0.05015**	0.08144	-0.06098	0.02248	0.14783*	0.33901***	0.40736***	0.01254	-9.77271***	29.96999***	NA
			(0.00025)	(0.00090)	(0.00096)	(0.00096)	(0.00089)	(0.00095)	(0.00077)	(0.00077)	(0.03122)	(0.01631)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 11

Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -4 to +1 window for the 2003-2012 period, controlling for other variables

TOM_Mon – TOM_Fri are binary variables taking on the value 1 for the corresponding weekdays during the -4 to +1 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	-0.02482	0.17694	-0.11233	0.44255***	0.30031**	0.32037***	-0.06093	0.11587*	NA	NA	0.00973
			(0.00033)	(0.00142)	(0.00123)	(0.00126)	(0.00135)	(0.00107)	(0.00096)	(0.00070)	NA	NA	
	OMXS30	2515	-0.02167	0.15732	-0.11362	0.45101***	0.33055**	0.28649**	-0.08023	0.09430	NA	NA	0.00847
			(0.00033)	(0.00151)	(0.00134)	(0.00133)	(0.00146)	(0.00117)	(0.00099)	(0.00072)	NA	NA	
	Mid Cap	2515	-0.02128	0.11312**	0.02632	0.15734***	0.00496	0.32193***	0.04528	0.14225***	-3.43680	61.6801***	0.67141
			(0.00018)	(0.00056)	(0.00065)	(0.00060)	(0.00053)	(0.00057)	(0.00066)	(0.00042)	(0.03680)	(0.02733)	
	Small Cap	2515	-0.01786	0.0978*	-0.05978	0.09735*	0.01726	0.26056***	0.21859***	0.1084*	-5.95896*	44.95422***	0.53797
			(0.00019)	(0.00053)	(0.00058)	(0.00050)	(0.00049)	(0.00053)	(0.00067)	(0.00066)	(0.03474)	(0.02936)	
	Aktietorget	2511	-0.01450	-0.15468	-0.01392	-0.05033	-0.07834	0.38516***	0.38517***	-0.02902	-12.25669**	34.04532***	0.14541
			(0.00028)	(0.00120)	(0.00104)	(0.00108)	(0.00096)	(0.00113)	(0.00102)	(0.00102)	(0.04969)	(0.03183)	
GARCH	AFGX	2515	0.06317***	0.24928***	-0.11747	0.24771***	0.19834**	0.16145*	-0.01945	0.07317	NA	NA	NA
			(0.00024)	(0.00089)	(0.00099)	(0.00089)	(0.00089)	(0.00098)	(0.00063)	(0.00073)	NA	NA	
	OMXS30	2515	0.04883*	0.27861***	-0.12638	0.28709***	0.20965**	0.14619	-0.03406	0.05522	NA	NA	NA
			(0.00026)	(0.00101)	(0.00107)	(0.00099)	(0.00099)	(0.00104)	(0.00070)	(0.00082)	NA	NA	
	Mid Cap	2515	0.03104**	0.02821	0.03543	0.04274	0.00580	0.28609***	0.03237	0.1292***	-2.08595	54.96618***	NA
			(0.00012)	(0.00047)	(0.00043)	(0.00046)	(0.00048)	(0.00045)	(0.00038)	(0.00035)	(0.01700)	(0.00856)	
	Small Cap	2515	0.03705***	0.02810	-0.06246	0.04010	0.02581	0.1958***	0.14376***	0.11585***	-3.57034**	37.68448***	NA
			(0.00012)	(0.00041)	(0.00040)	(0.00044)	(0.00044)	(0.00044)	(0.00039)	(0.00035)	(0.01553)	(0.00782)	
	Aktietorget	2511	-0.02971	-0.11840	0.00075	0.10102	-0.10144	0.33622***	0.40902***	0.01413	-7.25274**	29.30639***	NA
			(0.00025)	(0.00089)	(0.00101)	(0.00100)	(0.00104)	(0.00097)	(0.00078)	(0.00077)	(0.03331)	(0.01610)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 12

Parameter estimates and summary statistics for value-weighted index returns for weekdays during the -3 to +2 window for the 2003-2012 period, controlling for other variables

TOM_Mon – TOM_Fri are binary variables taking on the value 1 for the corresponding weekdays during the -3 to +2 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Mon*	*TOM_Tue*	*TOM_Wed*	*TOM_Thu*	*TOM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	-0.02590	0.25378*	-0.06715	0.44073***	0.28835**	0.23636**	-0.05814	0.11832*	NA	NA	0.00891
			(0.00032)	(0.00141)	(0.00138)	(0.00129)	(0.00135)	(0.00105)	(0.00097)	(0.00069)	NA	NA	
	OMXS30	2515	-0.02220	0.22958	-0.06654	0.45629***	0.30755**	0.19711*	-0.07704	0.09672	NA	NA	0.00771
			(0.00033)	(0.00150)	(0.00151)	(0.00137)	(0.00147)	(0.00112)	(0.00099)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.02663	0.15413***	0.08773	0.13059**	0.06107	0.31769***	0.04687	0.14259***	-5.75188	62.30901***	0.67212
			(0.00018)	(0.00056)	(0.00068)	(0.00062)	(0.00056)	(0.00058)	(0.00065)	(0.00043)	(0.03536)	(0.02687)	
	Small Cap	2515	-0.02251	0.14188***	-0.04085	0.10761**	0.06241	0.25225***	0.22101***	0.11175*	-8.18906**	45.55984***	0.53970
			(0.00019)	(0.00054)	(0.00060)	(0.00049)	(0.00050)	(0.00052)	(0.00066)	(0.00066)	(0.03390)	(0.02876)	
	Aktietorget	2511	-0.02016	-0.09655	0.01167	-0.04985	0.01936	0.308***	0.38644***	-0.02737	-11.37214**	34.04948***	0.14307
			(0.00028)	(0.00120)	(0.00104)	(0.00108)	(0.00099)	(0.00103)	(0.00102)	(0.00102)	(0.04636)	(0.03217)	
GARCH	AFGX	2515	0.05772**	0.33046***	-0.02334	0.24225***	0.11772	0.16666*	-0.01907	0.08185	NA	NA	NA
			(0.00024)	(0.00092)	(0.00093)	(0.00087)	(0.00092)	(0.00096)	(0.00062)	(0.00074)	NA	NA	
	OMXS30	2515	0.04397*	0.35714***	-0.02774	0.27675***	0.11284	0.15684	-0.03344	0.06490	NA	NA	NA
			(0.00026)	(0.00104)	(0.00100)	(0.00097)	(0.00102)	(0.00104)	(0.00070)	(0.00083)	NA	NA	
	Mid Cap	2515	0.02796**	0.05703	0.07537*	0.06248	0.04773	0.25425***	0.03298	0.12617***	-2.26049	54.93938***	NA
			(0.00012)	(0.00049)	(0.00042)	(0.00044)	(0.00050)	(0.00045)	(0.00038)	(0.00035)	(0.01637)	(0.00865)	
	Small Cap	2515	0.03286***	0.05430	-0.02915	0.06993	0.05723	0.17087***	0.14838***	0.11394***	-4.09433***	37.87077***	NA
			(0.00012)	(0.00042)	(0.00042)	(0.00044)	(0.00043)	(0.00043)	(0.00039)	(0.00035)	(0.01507)	(0.00784)	
	Aktietorget	2511	-0.03697	-0.03332	0.01198	-0.01926	-0.00049	0.30147***	0.40709***	0.01192	-6.04842*	29.1531***	NA
			(0.00025)	(0.00088)	(0.00097)	(0.00098)	(0.00099)	(0.00096)	(0.00078)	(0.00077)	(0.03263)	(0.01618)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 13

Parameter estimates and summary statistics for Fridays during the -1 to +4 window for the 2003-2012 period, controlling for other variables

TOM_Fri takes on the value 1 for Fridays during the -1 to +4 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	0.02212	0.19216*	-0.01894	-0.06083	0.11709*	NA	NA	0.00162
			(0.00032)	(0.00108)	(0.00078)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	0.02853	0.14605	-0.03120	-0.08006	0.09592	NA	NA	0.00108
			(0.00033)	(0.00116)	(0.00085)	(0.00098)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.01199	0.28514***	0.03495	0.04467	0.14284***	-2.54926	61.75913***	0.66987
			(0.00017)	(0.00062)	(0.00033)	(0.00065)	(0.00043)	(0.03548)	(0.02702)	
	Small Cap	2515	-0.03594**	0.31228***	0.13769***	0.21771***	0.11091*	-3.45517	44.65723***	0.54029
			(0.00018)	(0.00052)	(0.00032)	(0.00066)	(0.00066)	(0.03190)	(0.02706)	
	Aktietorget	2511	-0.08104***	0.37762***	0.32565***	0.38662***	-0.02317	-11.88654***	34.21426***	0.15097
			(0.00028)	(0.00099)	(0.00071)	(0.00102)	(0.00101)	(0.04215)	(0.03062)	
GARCH	AFGX	2515	0.0898***	0.16103*	-0.00509	-0.01455	0.08049	NA	NA	NA
			(0.00023)	(0.00094)	(0.00056)	(0.00063)	(0.00074)	NA	NA	
	OMXS30	2515	0.07951***	0.13404	-0.00769	-0.02774	0.06334	NA	NA	NA
			(0.00026)	(0.00102)	(0.00062)	(0.00071)	(0.00083)	NA	NA	
	Mid Cap	2515	0.03455***	0.22353***	0.03489	0.03492	0.12522***	-1.24038	54.77746***	NA
			(0.00012)	(0.00046)	(0.00029)	(0.00037)	(0.00036)	(0.01625)	(0.00862)	
	Small Cap	2515	0.01587	0.21309***	0.13533***	0.14792***	0.10825***	-0.78358	37.08234***	NA
			(0.00011)	(0.00044)	(0.00027)	(0.00039)	(0.00034)	(0.01436)	(0.00791)	
	Aktietorget	2511	-0.08509***	0.37831***	0.27764***	0.40487***	0.01584	-9.53154***	29.9602***	NA
			(0.00024)	(0.00094)	(0.00059)	(0.00077)	(0.00075)	(0.03088)	(0.01632)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 14

Parameter estimates and summary statistics for Fridays during the -4 to +1 window for the 2003-2012 period, controlling for other variables

TOM_Fri takes on the value 1 for Fridays during the -4 to +1 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	0.02194	0.27333**	-0.04214	-0.06058	0.11913*	NA	NA	0.00261
			(0.00032)	(0.00108)	(0.00078)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	0.02839	0.23616**	-0.05771	-0.08001	0.09766	NA	NA	0.00194
			(0.00033)	(0.00118)	(0.00085)	(0.00098)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.01109	0.30981***	0.03001	0.04511	0.14326***	-2.74800	61.69601***	0.67025
			(0.00017)	(0.00057)	(0.00033)	(0.00065)	(0.00042)	(0.03682)	(0.02738)	
	Small Cap	2515	-0.03407*	0.27463***	0.15189***	0.21902***	0.1091*	-5.20854	44.97539***	0.54023
			(0.00018)	(0.00053)	(0.00032)	(0.00066)	(0.00066)	(0.03422)	(0.02932)	
	Aktietorget	2511	-0.07596***	0.44741***	0.30209***	0.38431***	-0.03186	-12.46231**	34.06356***	0.15136
			(0.00027)	(0.00115)	(0.00069)	(0.00102)	(0.00102)	(0.05017)	(0.03180)	
GARCH	AFGX	2515	0.08971***	0.13215	0.00608	-0.01437	0.08112	NA	NA	NA
			(0.00023)	(0.00097)	(0.00056)	(0.00063)	(0.00074)	NA	NA	
	OMXS30	2515	0.07952***	0.11459	-0.00011	-0.02807	0.06365	NA	NA	NA
			(0.00026)	(0.00104)	(0.00061)	(0.00071)	(0.00083)	NA	NA	
	Mid Cap	2515	0.03454***	0.2835***	0.02010	0.03245	0.1289***	-1.51400	54.89412***	NA
			(0.00012)	(0.00045)	(0.00030)	(0.00038)	(0.00035)	(0.01692)	(0.00855)	
	Small Cap	2515	0.01722	0.21494***	0.13606***	0.14547***	0.1105***	-2.7735*	37.62562***	NA
			(0.00011)	(0.00043)	(0.00027)	(0.00039)	(0.00034)	(0.01542)	(0.00777)	
	Aktietorget	2511	-0.08409***	0.39363***	0.27679***	0.40379***	0.01425	-7.52871**	29.46493***	NA
			(0.00024)	(0.00095)	(0.00059)	(0.00077)	(0.00075)	(0.03280)	(0.01612)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 15
Parameter estimates and summary statistics for Fridays during the -3 to +2 window for the 2003-2012 period, controlling for other variables

TOM_Fri takes on the value 1 for Fridays during the -3 to +2 window and 0 for all other trading days. *ROM_Fri* takes on the value 1 for Fridays during the rest of the month and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

	Index	Obs.	*Intercept*	*TOM_Fri*	*ROM_Fri*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R2
OLS	AFGX	2515	0.02200	0.18867*	-0.01498	-0.06007	0.1179*	NA	NA	0.00155
			(0.00032)	(0.00105)	(0.00078)	(0.00096)	(0.00069)	NA	NA	
	OMXS30	2515	0.02842	0.14672	-0.02903	-0.07945	0.09658	NA	NA	0.00106
			(0.00033)	(0.00112)	(0.00086)	(0.00098)	(0.00071)	NA	NA	
	Mid Cap	2515	-0.01015	0.29983***	0.03192	0.04702	0.14312***	-5.01050	62.32435***	0.67062
			(0.00017)	(0.00058)	(0.00033)	(0.00065)	(0.00043)	(0.03522)	(0.02696)	
	Small Cap	2515	-0.03329*	0.26139***	0.15401***	0.22118***	0.11111*	-7.22408**	45.54966***	0.54138
			(0.00018)	(0.00052)	(0.00032)	(0.00066)	(0.00066)	(0.03352)	(0.02877)	
	Aktietorget	2511	-0.07644***	0.36405***	0.32448***	0.3859***	-0.02590	-11.23257**	33.99628***	0.15052
			(0.00028)	(0.00105)	(0.00070)	(0.00101)	(0.00101)	(0.04684)	(0.03222)	
GARCH	AFGX	2515	0.08984***	0.13212	0.00690	-0.01367	0.08047	NA	NA	NA
			(0.00023)	(0.00096)	(0.00056)	(0.00063)	(0.00074)	NA	NA	
	OMXS30	2515	0.0796***	0.11881	-0.00076	-0.02743	0.06289	NA	NA	NA
			(0.00026)	(0.00104)	(0.00061)	(0.00071)	(0.00083)	NA	NA	
	Mid Cap	2515	0.0345***	0.24818***	0.03011	0.03375	0.12687***	-1.28207	54.84903***	NA
			(0.00012)	(0.00045)	(0.00029)	(0.00038)	(0.00036)	(0.01625)	(0.00865)	
	Small Cap	2515	0.01730	0.18486***	0.14478***	0.1464***	0.10882***	-2.99863**	37.7471***	NA
			(0.00011)	(0.00043)	(0.00027)	(0.00039)	(0.00034)	(0.01493)	(0.00779)	
	Aktietorget	2511	-0.08409***	0.35213***	0.28712***	0.40326***	0.01545	-6.05819*	29.17402***	NA
			(0.00024)	(0.00095)	(0.00059)	(0.00077)	(0.00075)	(0.03227)	(0.01618)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 16

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -1 to +4 window

TOM takes on the value 1 for trading days in the -1 to +4 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -1 to +4 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

		Positive trends								Negative trends							
	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1669	0.07828**	0.1215*	-0.07935	0.09187	NA	NA	0.00268819	846	-0.11506*	-0.02549	-0.04754	0.13428	NA	NA	0.00048563
			(0.00034)	(0.00066)	(0.00113)	(0.00075)	NA	NA			(0.00062)	(0.00123)	(0.00175)	(0.00151)	NA	NA	
	OMXS30	1669	0.0803**	0.10221	-0.09856	0.07096	NA	NA	0.00179942	846	-0.0967	-0.05335	-0.06574	0.11628	NA	NA	0.00052127
			(0.00036)	(0.00070)	(0.00120)	(0.00080)	NA	NA			(0.00063)	(0.00125)	(0.00168)	(0.00150)	NA	NA	
	Mid Cap	1646	0.02607	0.13308***	0.02553	0.12729***	-4.00738	54.39592***	0.60457816	869	-0.08673***	0.108**	0.05477	0.15522**	-1.38113	69.20556***	0.7364236
			(0.00020)	(0.00035)	(0.00068)	(0.00050)	(0.04512)	(0.02847)			(0.00029)	(0.00054)	(0.00131)	(0.00076)	(0.05028)	(0.03768)	
	Small Cap	1686	0.03454*	0.10172***	0.1831**	0.18828***	-6.28886	44.0703***	0.47623812	829	-0.14079***	0.11513**	0.25875*	-0.0015	-1.10255	44.68997***	0.5999929
			(0.00021)	(0.00036)	(0.00072)	(0.00065)	(0.04341)	(0.03299)			(0.00031)	(0.00057)	(0.00133)	(0.00112)	(0.04864)	(0.03969)	
	Aktietorget	1757	0.03896	0.0898	0.36709***	0.11338	-13.93008**	29.46333***	0.07778764	754	-0.21067***	0.14965*	0.36237**	-0.18628	-10.14023**	38.40092***	0.28916064
			(0.00032)	(0.00056)	(0.00116)	(0.00118)	(0.07081)	(0.04913)			(0.00051)	(0.00090)	(0.00162)	(0.00124)	(0.04889)	(0.03375)	
GARCH	AFGX	1669	0.09711***	0.14319***	-0.00991	0.0743	NA	NA	NA	846	-0.0452	0.07664	0.0147	0.11431	NA	NA	NA
			(0.00027)	(0.00049)	(0.00068)	(0.00077)	NA	NA			(0.00053)	(0.00105)	(0.00197)	(0.00201)	NA	NA	
	OMXS30	1669	0.08623***	0.13063**	-0.02112	0.05765	NA	NA	NA	846	-0.03363	0.0435	-0.00713	0.09783	NA	NA	NA
			(0.00030)	(0.00055)	(0.00078)	(0.00088)	NA	NA			(0.00055)	(0.00111)	(0.00205)	(0.00203)	NA	NA	
	Mid Cap	1646	0.06704***	0.13542***	-0.00603	0.10404***	-5.46675***	49.10799***	NA	869	-0.07012***	0.12205***	0.17636**	0.13612*	3.38513	62.67972***	NA
			(0.00014)	(0.00026)	(0.00042)	(0.00038)	(0.02031)	(0.00999)			(0.00024)	(0.00044)	(0.00084)	(0.00077)	(0.02622)	(0.01416)	
	Small Cap	1686	0.08353***	0.08009***	0.0834**	0.13048***	-3.61606*	36.83413***	NA	829	-0.09109***	0.10838***	0.32962***	-0.03475	1.89112	37.25747***	NA
			(0.00014)	(0.00026)	(0.00042)	(0.00041)	(0.01961)	(0.01008)			(0.00021)	(0.00037)	(0.00087)	(0.00058)	(0.02087)	(0.01232)	
	Aktietorget	1757	0.02171	0.09072	0.41655***	0.11404	-13.56473***	23.80971***	NA	754	-0.18612***	0.14381*	0.31685**	-0.1928*	-8.07213**	35.23007***	NA
			(0.00031)	(0.00057)	(0.00091)	(0.00100)	(0.04482)	(0.02291)			(0.00044)	(0.00081)	(0.00150)	(0.00116)	(0.03987)	(0.02154)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 17

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -4 to +1 window

TOM takes on the value 1 for trading days in the -4 to +1 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -4 to +1 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

		Positive trends								Negative trends							
	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1669	0.08545**	0.09142	-0.07899	0.09222	NA	NA	0.00189201	846	-0.23521***	0.48974***	-0.04373	0.11391	NA	NA	0.0153099
			(0.00037)	(0.00069)	(0.00114)	(0.00076)	NA	NA			(0.00065)	(0.00135)	(0.00175)	(0.00145)	NA	NA	
	OMXS30	1669	0.08131**	0.09797	-0.09851	0.07101	NA	NA	0.00171102	846	-0.2181***	0.46727***	-0.06189	0.0957	NA	NA	0.0126498
			(0.00038)	(0.00074)	(0.00121)	(0.00081)	NA	NA			(0.00065)	(0.00138)	(0.00169)	(0.00144)	NA	NA	
	Mid Cap	1646	0.04487**	0.05176	0.02535	0.12748***	-0.81996	53.72706***	0.60108073	869	-0.11331***	0.23446***	0.04355	0.14707**	-3.00471	68.83943***	0.74013687
			(0.00021)	(0.00037)	(0.00069)	(0.00049)	(0.04452)	(0.03149)			(0.00033)	(0.00057)	(0.00127)	(0.00070)	(0.05133)	(0.03559)	
	Small Cap	1686	0.05131**	0.03074	0.183**	0.18912***	-5.15556	43.92252***	0.47329544	829	-0.15351***	0.18438***	0.25559*	-0.01109	-4.68227	44.92146***	0.60366684
			(0.00021)	(0.00036)	(0.00073)	(0.00063)	(0.04674)	(0.03461)			(0.00033)	(0.00046)	(0.00136)	(0.00106)	(0.04566)	(0.04231)	
	Aktietorget	1757	0.05295	0.02936	0.3601***	0.11201	-6.33614	27.73926***	0.07453455	754	-0.15397***	-0.01765	0.3522**	-0.21372*	-16.64783**	39.24886***	0.29186133
			(0.00033)	(0.00058)	(0.00116)	(0.00118)	(0.06606)	(0.04944)			(0.00051)	(0.00091)	(0.00171)	(0.00128)	(0.07287)	(0.03595)	
GARCH	AFGX	1669	0.10586***	0.10612**	-0.00803	0.06987	NA	NA	NA	846	-0.10211**	0.30969***	0.00336	0.09874	NA	NA	NA
			(0.00027)	(0.00050)	(0.00068)	(0.00077)	NA	NA			(0.00052)	(0.00108)	(0.00193)	(0.00187)	NA	NA	
	OMXS30	1669	0.08812***	0.12222**	-0.02001	0.05313	NA	NA	NA	846	-0.09428*	0.29483***	-0.01384	0.08248	NA	NA	NA
			(0.00030)	(0.00056)	(0.00078)	(0.00088)	NA	NA			(0.00055)	(0.00114)	(0.00202)	(0.00193)	NA	NA	
	Mid Cap	1646	0.08516***	0.04958*	-0.00558	0.10584***	-0.319	48.13187***	NA	869	-0.07625***	0.15526***	0.15812*	0.13524*	-2.06091	63.608***	NA
			(0.00014)	(0.00025)	(0.00043)	(0.00038)	(0.02045)	(0.01031)			(0.00023)	(0.00044)	(0.00083)	(0.00072)	(0.02740)	(0.01333)	
	Small Cap	1686	0.09767***	0.02486	0.07563*	0.13336***	-4.11173**	36.93038***	NA	829	-0.08923***	0.08766**	0.32443***	-0.01305	-0.09016	37.51829***	NA
			(0.00014)	(0.00025)	(0.00042)	(0.00041)	(0.01962)	(0.01041)			(0.00021)	(0.00038)	(0.00088)	(0.00057)	(0.02425)	(0.01173)	
	Aktietorget	1757	0.03821	0.01515	0.40645***	0.11503	-2.39618	21.09191***	NA	754	-0.14262***	-0.0217	0.31158**	-0.19992*	-8.05325*	34.66607***	NA
			(0.00031)	(0.00061)	(0.00091)	(0.00101)	(0.04635)	(0.02253)			(0.00045)	(0.00081)	(0.00154)	(0.00118)	(0.04417)	(0.02217)	

*/**/*** Significant at the 0.10/0.05/0.01 level

Exhibit Table 18

Parameter estimates and summary statistics for value-weighted index returns during periods of upwards- and downwards trending stock markets for the -3 to +2 window

TOM takes on the value 1 for trading days in the -3 to +2 window and 0 for all other trading days. *Jan* and *Dec* control for January and December, respectively. *TOM_OMXS* controls for the return of OMXS30 during the -3 to +2 window and *OMXS30* controls for the return of OMXS30 during all trading days. (Standard errors are shown in parentheses)

		Positive trends								Negative trends							
	Index	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2	Obs.	*Intercept*	*TOM*	*Jan*	*Dec*	*TOM_OMXS30*	*OMXS30*	R^2
OLS	AFGX	1669	0.07111**	0.1516**	-0.0797	0.09151	NA	NA	0.00370989	846	-0.20909***	0.3777**	-0.04456	0.11834	NA	NA	0.00928663
			(0.00035)	(0.00066)	(0.00113)	(0.00076)	NA	NA			(0.00066)	(0.00164)	(0.00176)	(0.00146)	NA	NA	
	OMXS30	1669	0.06706*	0.15778**	-0.09921	0.07031	NA	NA	0.00330278	846	-0.19044***	0.34864**	-0.06277	0.10039	NA	NA	0.00720202
			(0.00037)	(0.00071)	(0.00120)	(0.00081)	NA	NA			(0.00067)	(0.00169)	(0.00171)	(0.00145)	NA	NA	
	Mid Cap	1646	0.033	0.10422***	0.03116	0.12921***	-5.7426	54.91912***	0.60371766	869	-0.11294***	0.22856***	0.04844	0.14817**	-2.59216	68.9156***	0.73995978
			(0.00021)	(0.00036)	(0.00069)	(0.00049)	(0.04513)	(0.03115)			(0.00032)	(0.00056)	(0.00128)	(0.00073)	(0.04339)	(0.03519)	
	Small Cap	1686	0.04808**	0.04673	0.18801***	0.19227***	-9.53796**	45.12727***	0.47663586	829	-0.16271***	0.22219***	0.25677*	-0.00806	-5.05805	45.03629***	0.60621465
			(0.00021)	(0.00036)	(0.00073)	(0.00063)	(0.04803)	(0.03535)			(0.00033)	(0.00049)	(0.00132)	(0.00109)	(0.04616)	(0.04121)	
	Aktietorget	1757	0.05797*	0.01239	0.36239***	0.11419	-8.55531	28.37034***	0.07511062	754	-0.19116***	0.10461	0.36264**	-0.19642	-13.62786**	38.70352***	0.2900346
			(0.00033)	(0.00052)	(0.00115)	(0.00118)	(0.06802)	(0.05078)			(0.00051)	(0.00091)	(0.00166)	(0.00123)	(0.06500)	(0.03640)	
GARCH	AFGX	1669	0.09483***	0.15346***	-0.01033	0.07069	NA	NA	NA	846	-0.08503	0.23546**	0.01512	0.1062	NA	NA	NA
			(0.00027)	(0.00050)	(0.00068)	(0.00077)	NA	NA			(0.00052)	(0.00107)	(0.00194)	(0.00194)	NA	NA	
	OMXS30	1669	0.07623***	0.17316***	-0.02213	0.05452	NA	NA	NA	846	-0.07373	0.20644*	-0.00582	0.09016	NA	NA	NA
			(0.00030)	(0.00056)	(0.00078)	(0.00088)	NA	NA			(0.00055)	(0.00112)	(0.00202)	(0.00199)	NA	NA	
	Mid Cap	1646	0.07736***	0.08841***	-0.00411	0.10564***	-3.11863	48.62917***	NA	869	-0.07835***	0.15301***	0.15806*	0.13626*	1.17078	63.04367***	NA
			(0.00014)	(0.00026)	(0.00043)	(0.00038)	(0.01965)	(0.01042)			(0.00023)	(0.00044)	(0.00084)	(0.00072)	(0.02746)	(0.01316)	
	Small Cap	1686	0.09689***	0.02969	0.07801*	0.13437***	-6.216***	37.68309***	NA	829	-0.1004***	0.13759***	0.32862***	-0.01992	1.30153	37.05564***	NA
			(0.00014)	(0.00026)	(0.00042)	(0.00041)	(0.01972)	(0.01042)			(0.00021)	(0.00037)	(0.00086)	(0.00057)	(0.02248)	(0.01169)	
	Aktietorget	1757	0.03436	0.03306	0.40628***	0.1157	-4.38643	21.75814***	NA	754	-0.16525***	0.05773	0.31891**	-0.19587*	-4.62432	34.03615***	NA
			(0.00031)	(0.00059)	(0.00091)	(0.00101)	(0.04592)	(0.02263)			(0.00044)	(0.00082)	(0.00152)	(0.00117)	(0.04384)	(0.02182)	

*/**/*** Significant at the 0.10/0.05/0.01 level

APPENDIX

Summary statistics

Appendix Table 1
Results of statistical testing for the different time series

The Ljung-Box test for white noise using 40 lags is shown in the first column. A p-value below 0.05 reject H0: White noise. The Breusch Godfrey test for AR(1) is performed using 40 lags and shown in the second column. A p-value below 0.05 reject H0: no AR(1) autocorrelation. A limitation of this tests' results is that residuals are assumed normal. Finally, the tests for skewness and kurtosis in the data are shown in the third and fourth column, respectively. A p-value below 0.05 indicates a non-normal distribution.

		Ljung-Box		Breusch-Godfrey		Skewness	Kurtosis
		Test statistic	Pr > Chi2(40)	Test statistic	Pr > Chi2(40)	Pr(Skewness)	Pr(Kurtosis)
2003-12, VW	AFGX	110.6301	0	102.56	0	0.261	0
	OMXS30	117.6231	0	109.044	0	0.3487	0
	Mid Cap	139.8207	0	128.862	0	0	0
	Small Cap	211.9541	0	147.436	0	0	0
	Aktietorget	50.1242	0.131	47.194	0.2021	0.0005	0
2007-12, VW	AFGX	92.2925	0	81.942	0.0001	0.6179	0
	OMXS30	100.6687	0	88.515	0	0.0809	0
	Mid Cap	102.3594	0	96.831	0	0.0002	0
	Small Cap	128.7835	0	105.94	0	0	0
2007-12, EW	AFGX	109.0349	0	99.114	0	0	0
	OMXS30	102.8532	0	89.365	0	0.3024	0
	Mid Cap	128.7443	0	114.737	0	0	0
	Small Cap	149.1512	0	112.241	0	0	0
Uptrending	AFGX	100.9271	0	92.104	0	0.0004	0
	OMXS30	101.2114	0	96.961	0	0	0
	Mid Cap	106.5579	0	91.03	0	0	0
	Small Cap	118.8065	0	102.425	0	0	0
	Aktietorget	49.6939	0.14	49.913	0.1354	0	0
Downtrending	AFGX	54.451	0.0634	49.418	0.1461	0.191	0
	OMXS30	59.0474	0.0265	50.789	0.118	0.4257	0
	Mid Cap	74.8586	0.0007	69.764	0.0025	0.0123	0
	Small Cap	71.0514	0.0018	69.993	0.0023	0	0
	Aktietorget	61.525	0.0159	56.013	0.0477	0	0

GARCH

The GARCH(1,1) model used in our regression analysis is specified in equation (9-10) where X is a vector of dummies and control variables, ε_t is the residual term, and σ_t^2 is the residual variance.

$$R_t = \alpha + \beta X + \varepsilon_t \qquad (9)$$

$$Var(\varepsilon_t) = \sigma_t^2 = \alpha + \beta_1 \varepsilon_{t-1}^2 + \beta_2 \sigma_{t-1}^2 \qquad (10)$$

The model will estimate future residual variance as a function of past variance and past residuals using conditional maximum likelihood. Considering the high excess kurtosis but limited skewness in our index return samples, see Table 4, we will fit the GARCH(1,1) model assuming a t-distribution. The t-distribution has fatter tails than the Gaussian distribution but remains symmetrically distributed. Considering the non-normally distributed residuals, GARCH(1,1) results will differ from those of the OLS.

Newey-West

In order to obtain Newey-West standard errors, a standard multiple linear regression model is first estimated, yielding OLS standard errors, denoted "$se(\hat{\beta}_k)$", and residuals, denoted $\{\hat{u}_t : t = 1, \dots, n\}$. Second, the independent variables are regressed on each other; $x_{t1} on\, x_{t2}, x_{t3}, \dots, x_{tk}$ and the residuals $\{\hat{r}_t : t = 1, \dots, n\}$ are collected. We then construct $\hat{a}_t \equiv \hat{r}_t \hat{u}_t$ for each $t = 1, \dots, n$ and compute a new estimate of variance according to equation (2).

$$\hat{v} = \sum_{t=1}^{n} \hat{a}_t^2 + 2 \sum_{h=1}^{g} \left[1 - \frac{h}{g+1}\right] \left(\sum_{t=h+1}^{n} \hat{a}_t \hat{a}_{t-h} \right) \qquad (2)$$

Finally, the Newey-West serial correlation-robust standard error, $se(\hat{\beta}_k)$, is computed using equation (3).

$$se(\hat{\beta}_k) = \left["se(\hat{\beta}_k)"/\hat{\sigma}\right]^2 \sqrt{v^2} \qquad (3)$$

Newey-West propose that the number of lags are calculated as the closest integer to $g = 4(n/100)^{2/9}$. Naturally, the The Newey-West approach does not affect the estimated OLS coefficients, since it only computes new standard errors that are robust to general forms of serial correlation. The Newey-West standard errors are typically larger than the initial OLS standard

errors when the errors are serially correlated. We use Newey-West standard errors throughout all regressions in this report.