An Analysis of Flipping Activity in Early Aftermarket Trading

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Abstract

This paper considers the initial trading activities of the Initial Public Offerings (IPOs) issued on the Helsinki Stock Exchange (HEX) during the period of May 1995 - June 2000. Initially, the study examines empirically whether institutional investors are favoured over retail investors in the allocation process. The main focus of the current investigation is, however, to analyze investor's decision to sell ('flip') the initially allocated shares during the first three days of the IPO trading. With regards to the allocation decision, there is very strong evidence for Finnish market that institutional investors are favoured over retail investors in the IPO allocation. In relation to the flipping activity, the following results are documented: (i) The evidence that institutional investors flip more of their shares than retail investors is mainly supported. However, based on issued size, it is evident that institutional investors flip more than retail investors only in large-sized issues, while in small-sized issues, institutional and retail flipping activities are similar; (ii) Both institutional and retail investors flip most aggressively on the first day and less during the next two days; (iii) There is some evidence that shares are flipped more profoundly in "hot" IPO issues, rather than in "cold" IPO issues, more strongly by retail investors than institutional investors; (iv) Flipping activity during the first three trading days does not differ across the main four sector groups; (v) While retail flipping is negatively related to the issue size, institutional flipping is positively associated with the issue size.

JEL Clarification: G14, G24, G38

Keywords: Allocation, Flipping, Initial Public Offering, Trading Volume, Institutional (retail) Investor

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Abstract

This paper considers the initial trading activities of the Initial Public Offerings (IPOs) issued on the Helsinki Stock Exchange (HEX) during the period of May 1995 - June 2000. Initially, the study examines empirically whether institutional investors are favoured over retail investors in the allocation process. The main focus of the current investigation is, however, to analyze investor's decision to sell ('flip') the initially allocated shares during the first three days of the IPO trading. With regards to the allocation decision, there is very strong evidence for Finnish market that institutional investors are favoured over retail investors in the IPO allocation. In relation to the flipping activity, the following results are documented: (i) The evidence that institutional investors flip more of their shares than retail investors is mainly supported. However, based on issued size, it is evident that institutional investors flip more than retail investors only in large-sized issues, while in small-sized issues, institutional and retail flipping activities are similar; (ii) Both institutional and retail investors flip most aggressively on the first day and less during the next two days; (iii) There is some evidence that shares are flipped more profoundly in "hot" IPO issues, rather than in "cold" IPO issues, more strongly by retail investors than institutional investors; (iv) Flipping activity during the first three trading days does not differ across the main four sector groups; (v) While retail flipping is negatively related to the issue size, institutional flipping is positively associated with the issue size.

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1. Introduction

In initial public offerings that follow the bookbuilding process[1], the underwriter and the company have discretion in how they allocate the shares among investors. Earlier studies report that institutional investors are favoured as they are allocated more shares than retail investors in total and in proportion to the number of shares they request (see among others Benveniste & Spindt, 1989; Benveniste & Spindt, 1990; Hanley & Wilhelm, 1995; Aggarwal et al., 2002; and Ljungqvist & Wilhelm, 2002). Do institutional investors sell (flip) their shares during the first days after an initial public offering (IPO) to take advantage of the initial return? We aim to investigate if favoured investors are loyal to the underwriter or if they flip their shares. Using the complete records of trading decisions on investor level, we trace what institutional and retail investors decide to do with their allocated shares. We also aim to extend the IPO literature on initial trading activity by conditioning the flipping of institutional and retail investors on industry (Sector) and issue size (Size).

Krigman, Shaw and Womack (1999) find that flipping accounts for a larger proportion of trading volume in cold IPOs than in hot IPOs during the first day. Institutions flip underperforming IPOs during the first few days while the underwriter is still providing price support. Aggarwal (2003), challenges Krigman et al's study by showing that flipping accounts for only a small proportion of the first day trading volume. Aggarwal also provides evidence that institutional investors flip more than retail investors and both institutional and retail investors flip more in hot IPOs. Boehmer and Fishe (2000) relate flipping activity and underwriter's profits to

[1] A common way to arrange the listing of new companies follows a book building process that typically involves a consortium of investment banks that commit to place the shares in the market as the underwriters of the shares. The leading underwriter builds a book of interested bids from investors, that is used to decide on the initial offering price.

underpricing. They propose that underwriters encourage flipping activity to develop after-market liquidity for IPOs, so that they can gain from an active and liquid secondary market. Fishe (2002) develops a theoretical model showing how stock flippers affect the pricing of an issue. Underwriters, under a firm-commitment contract with the issuer, choose offer price to maximize total syndicate profits. Thus, though the short position underwriters often take in IPOs is justified by price support, Fishe argues that underwriters are stabilizing an IPO to increase their own profits and penalize flippers.

Boehmer, Boehmer and Fishe (2005) find support for that information revelation and short run return are linked. They also find that risk-adjusted return up to a holding period of one year are positively related to the percentage of shares allocated to institutional investors. Ellis, Michaely and O'Hara (2005) document that initial trading volume in IPOs is very high, averaging more than two-thirds the size of the offering on the first two days of trading. For the cold IPOs, they find that the high trading volume is due to that investors sell allocated shares to unaffiliated market makers who then sell their inventory to the lead underwriter market maker. In hot IPOs investors are on both the buy and the sell side. Ellis et al. suggest that flippers provide the tradeable shares in the IPO aftermarket and a small number of shares can generate an active market through short selling.

More recently, Bayley, Lee and Walter (2005) argue that due to differences in the institutional features specific to the US IPO market, the consequences and implications of flipping activity differ from that of the Australian market.[2] They find

[2] Fixed price is the predominant issue of IPOs in Australia.

that flipping accounts only for a small proportion of aftermarket trading volume and that institutional investors flip both underpriced and overpriced IPOs more aggressively than retail investors. In conclusion, the process of shares pricing and allocation in the pre-issue period and share trading in the aftermarket is very much inter-dependent. Hence, investigating all of these aspects of the process concurrently provides a better and more complete picture of the stylised facts of IPOs.

The current paper contributes to the IPO literature of initial flipping activity as follows. First, the flipping activity, particularly of institutional versus retail investors, is analyzed day by day for the first three trading days. While Krigman et al. (1999) look at the flipping on the first day, Aggarwal (2003) and Ellis, Michaely and O'Hara (2005) investigates the dynamics of flipping during the first two days and Bayley, Lee and Walter (2005) consider flipping on the first three trading days. Our purpose of following Bayley, Lee and Walter (2005) to analyze the trading activities up to three days post IPO is to provide a closer look at the dynamics of the flipping activity in Finland. Second, in the current literature, flipping activity has only been examined according to whether the IPO is hot or cold issue, based on filling range and initial return frameworks. We propose two more dimensions to analyse the flipping activity. The first dimension is on the basis of industry (Sector) to which the IPO belongs and the second dimension is on the basis on issued size (Size) of the IPOs. The reason to condition the initial trading activities on Sector and Size, besides the traditional initial return and filing range, is to further understand the dynamics of flipping, particularly of institutional versus retail investors during the initial trading activities.

Our results suggest that with regards to the allocation decision, there is strong evidence that institutional investors are more favoured than retail investors in the IPO allocation process on the Helsinki Stock Exchange (HEX). Our main findings with respect to flipping activity are as follows: (i) institutional investors flip more of their initially allocated shares than retail investors; However there is strong evidence that institutional investors flip more than retail investors only in large-sized issues, while in small-sized issues, institutional and retail flipping activities are similar; (ii) Both institutional and retail investors flip most aggressively on the first day and less during the next two days; (iii) There is some evidence that shares are flipped more profoundly in "hot" issues, rather than in "cold" issues, more strongly by retail investors than institutional investors; (iv) Flipping activity during the first three trading days does not differ across the main four sector groups; (v) While retail flipping is negatively related to issue size, institutional flipping is positively associated with issue size.

The rest of the paper is organized as follows. Section 2 introduces the data and methodology used in the study. Section 3 presents the results and discussions while Section 4 concludes the study.

2. Data and methodology

2.1 Data

The current study uses Securities Data Company (SDC) Platinum New Issues to identify all IPOs that took place during 1 May 1995 to 1 June 2000 in Finland. The SDC database provides information on the issue classification, offer price, offer date, offer size, number of shares issued and bookrunner. There are in total 50 offerings for

this period, there are 19 IPOs from the computer software and media sector, 12 IPOs from the resources and heavy industry sector, 9 IPOs from the manufacturing sector, and 10 IPOs from other sector including finance, consulting companies. The diversification of the issues assists the test of flipping activity on the basis of Sector. Every offering in SDC database is checked for eligibility from the daily trading reports from the Exchange.

In addition, this study utilizes a unique Finnish data set on all ownership changes in the investigated IPOs. The dataset is obtained from the Nordic Central Securities Depository (NCSD) and combined with all trade and quote data during 1995 to 2000. The Nordic Central Securities Depository (NCSD) is the official centralized register of most shareholdings in Finnish stocks and maintains daily comprehensive official records of shareownership and trades in electronic form. The NCSD database is combined with transaction data, provided by HEX and Reuters, to produce a detailed record of all trades on HEX. The final data covers all investors, about 1.1 million in the complete market and over 25 million transactions, which is unprecedented in studies of IPO allocation. Attributes reported in NCSD include investor's type (individual, institutions or nominee), all changes in their holdings including date, volume and price, as well as detailed demographic information about individual investors. This dataset allows us to investigate and analyse the changes in shareholdings, whether institutions receive preferential allocations, and whether they flip their allocated shares in the early trading.

The basic description of the data is summarized in Table 1. The 50 Finnish offerings have an average underpricing of 18.38% and median of 8.57% with maximum value

of 241% and minimum value of -74%. These figures indicate that the sample is representative, covering both issues with very high degree of underpricing and issues with very low negative degree of underpricing, which are relevant to the test of flipping activity on the basis of Initial return. The offer prices range from 3.5 Euros to 84 Euros with an average of 10 Euros. The average number of shares offered is 9.91 million and the median of 3.43 million. The average issued size is 82.94 million Euro and the median of 25.94 million Euro with the maximum of 1,040 million Euro and the minimum of 0.34 million Euro. These figures imply that the sample covers both large and small issues, which serves the test of flipping activity based on Size segmentation.

[INSERT TABLE 1 HERE]

In terms of flipping activity, the shares flipped on the first three trading days on average equal 22% of the number of total shares offered, with the median of 16%. The shares flipped on the first three trading days on average equal 21% of the number of total trading volume, with the median of 19%, which are almost the same as the results from the measure shares flipped as percentage of total shares offered. Thus, indirectly, the number of total trading volume equals to the number of shares offered. This implies that many of these offerings are very liquid as the number of shares offered are almost fully turned over during the first three trading days. Shares traded as percentage of total shares offered is on average 136% with the mean of 103%.

2.2 Methodology

Flipping activity is measured in three different ways. The first measure is shares flipped as percentage of shares allocated, which is calculated as the number of shares flipped by institutional investors (retail investors) during the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO. The second measure is shares flipped as percentage of total shares offered, which is calculated as the number of shares flipped by institutional investors (retail investors) during the first three trading days divided by the total number of shares offered in the IPO. The third measure is shares flipped as percentage of total trading volume, which is calculated as the number of shares flipped by institutional investors (retail investors) during the first three trading days divided by the total number of shares traded during the first three trading days.

In a comparison of the flipping activity of institutional versus retail investors, the tests for equality are conducted as a t-test for two groups and ANOVA for more than two groups, the non-parametric Mann-Whitney test for two groups and the Kruskal-Wallis test for more than two groups. In addition, OLS regressions are performed.

2.3 Institutional flipping

We expect institutional investors flip more than retail investors during the initial three trading days. The percentage shares flipped by institutional and retail investors are calculated in all three ways. The tests for equality between institutional and retail investors, using both parametric t-test (of means), and non-parametric Mann-Whitney test (of medians), are performed for to examine if investors flip more than retail investors. Under the parametric test, the null hypothesis is that institutional flipping is

equal to retail flipping, while the alternative is: institutional flipping is significantly greater than retail flipping. To reinforce the result from the parametric test, the non-parametric test is performed. The null hypothesis is that institutional flipping is equal to retail flipping, while the alternative is: institutional flipping is significantly different from retail flipping.

To investigate the impact of institutional flipping, we regress shares flipped by institutions as percentage of shares allocated to them (INSTFLIP) and shares flipped by retails as percentage of shares allocated to them (RETAFLIP) to initial return, size and business sector.

The equation for institutional investors is:

$$INSTFLIP_i = \alpha + \delta_1 INITIAL\_RETURN_i + \delta_2 SIZE_i + \delta_3 SECTOR_i + \varepsilon_i$$

And the equation for retail investors is:

$$RETAFLIP_i = \alpha + \lambda_1 INITIAL\_RETURN_i + \lambda_2 SIZE_i + \lambda_3 SECTOR_i + \varepsilon_i$$

2.4 Flipping and market activity

We propose that shares are flipped more in hot issues than in cold issues. The sample is partitioned into four groups: very cold, cold, hot and very hot. The degree of hot and cold is measured by initial return of the IPOs. Initial return is defined as the percentage difference between the closing price on the first day and the offer price. The IPOs are categorized "very cold" if the initial return are below or equal to 0%; "cold" if the initial return are between 0% and 10%; "hot" if the initial return are between 10% and 60%; and "very hot" if the initial return are above 60%. However, due to the small sample size of IPOs in group "very hot", the sample will be split into four groups only for description purpose. In order to test if shares are flipped more in

hot issues than in cold issues, the sample will be split into only two groups: Group 1, comprising of 28 IPOs with initial return less than or equal to 10% and Group 2, comprising of 22 IPOs with initial return greater than 10%.

The percentage shares flipped by institutional and retail investors are calculated in all three ways for each group. The tests for equality "between" two groups including both parametric t-test (of means) and non-parametric Mann-Whitney test (of medians) are performed to examine in which group, Group 1 or Group 2, shares are flipped more. Under the parametric test, the null hypothesis is that flipping in Group 1 is equal to that in Group 2, while the alternative is: flipping in Group 2 is significantly greater than flipping in Group 1. Non-parametric test is also performed with the same null hypothesis, however, the alternative is: flipping in Group 2 is significantly different from flipping in Group 1. We also use the same two regression models for further analysis.

2.5 Flipping and industry

We also suggest that flipping activity differs across industry sectors of the IPO firms. The sample is split into four groups according to Sector type: Sector 1 is the resource and heavy industry IPOs, containing 12 IPOs, Sector 2 includes the manufacturing IPOs, containing 9 IPOs, Sector 3 includes the computer software and computer software and media IPOs, containing 19 IPOs and Sector 4 containing other 10 IPOs (including finance IPOs, consulting IPOs and others).

The percentage shares flipped by institutional and retail investors are calculated in all three ways for each Sector group. The tests for equality "between" Sector groups,

using both parametric ANOVA test (of means) and non-parametric Kruskal-Wallis test (of medians) are carried out to examine in which Sector group(s) shares are flipped more. The null hypothesis under the parametric test is that flipping activity are the same across four Sector groups while the alternative is: flipping activity significantly differs across four Sector groups. Non-parametric test is also performed with the same null and alternative hypothesis as the parametric test. The same two regression models are used for further confirmation.

2.6 Flipping and issue Size

We finally conjecture that shares are flipped in large-sized issues rather than in small-sized issues during the initial three trading days. The sample of 50 IPOs is sorted in ascending order according to issued size and then divided into four groups according to issued size: Group 1 comprise of the smallest 12 IPOs, Group 2 consists of the next 12 medium IPOs, Group 3 includes the next 12 large IPOs and Group 4 consists of 14 largest IPOs.

The percentage shares flipped by institutional and retail investors are calculated in all three ways mentioned above for each group. In order to test in which size group of IPOs, small or large, shares are flipped more, the tests for equality "between" groups include both parametric ANOVA test (of means) and non-parametric test (of medians) to test. Under the parametric test, the null hypothesis is that flipping activity are the same across four size groups while the alternative is: flipping activity significantly differ across four size groups. Non-parametric Kruskal-Wallis test (for medians) is also performed with the same null and alternative hypothesis as the parametric ANOVA test (of means). The same two models regressed above are also used.

3. Results and Discussion

3.1 Results for the allocation decision

The measure of allocation is measured in two ways. The first measure is calculated as the number of shares allocated to institutional investors (retail investors) in an issue divided by the total of shares allocated to all investors in the issue (institutional, retail and other investors). The second measure is calculated as the number of shares allocated to institutional investors (retail investors) in an issue divided by the total of shares allocated to institutional and retail investors only. As the main focus of this study is to investigate the flipping activity of institutional and retail investors, the second measure of initial allocation is more appropriate for such comparison. The descriptive statistics and the test results of equality between institutional versus retail allocation are reported in Table 2.

[INSERT TABLE 2 HERE]

Based on the second measure of initial allocation, the intuitional allocation is 61% on average with a median of 67%, while the retail allocation is 39% on average with a median of 33%. Both the parametric t-test (of means) and the non-parametric test (of medians), reported in Panel B, Table 2, reject the null hypothesis that institutional and retail allocations are equal. These results are also confirmed when the first measure are conducted (See Panel A, Table 2). Thus the results provide strong empirical evidence that institutional investors are favoured over retail investors in the share allocation process, which is consistent with the literature.[3]

[3] See Benveniste and Spindt (1989), Benveniste and Spindt (1990), Hanley and Wilhelm (1995), Aggarwal et al (2002), Ljungqvist and Wilhelm (2002).

3.2 Results for flipping activity

Table 3 provides the basic description and the results of the tests of equality on the flipping activity of institutional versus retail investors. On average, institutional investors flip 32% (median of 24%) of total shares allocated to them, while retail investors flip only 19% (median of 12%) of total shares allocated to them. The parametric t-test (of means) rejects the null hypothesis that institutional flipping is equal to retail flipping, which is reinforced by the non-parametric Mann-Whitney test (of medians). Thus, the results show that institutional investors flip significantly more than retail investors. The consistent results are also found when the measure of shares flipped as a percentage of total shares offered and the measure of shares flipped as a percentage of total trading volume are used. In summary, there is very strong evidence that institutional investors flip more than retail investors, which directly supports Aggarwal (2003).

[INSERT TABLE 3 HERE]

3.3 Flipping activity day by day

The purpose of this section is to provide a closer look at the flipping activity of institutional and retail investors day by day for the initial three trading days. The first few trading days are very crucial as the true value of the offering is revealed, reflected through the level of underpricing, which has an effect on the trading activity of investors. Table 4 provides the information on flipping in aggregation and a comparison between institutional and retail investors during the first three trading days.

[INSERT TABLE 4 HERE]

Panel A, Table 4 demonstrates the flipping activity in aggregation. In terms of shares flipped as a percentage of total shares offered, 14 % of shares are flipped on the first day, 6% on the second day and 3% on the third day. Thus, on average, flipping activity takes place most aggressively on the first day and less during the next two days, significantly supported by both parametric ANOVA test (of means) and non-parametric Kruskal-Wallis test (of medians).[4] On the other hand, in terms of shares flipped as a percentage of total trading volume, 21% shares are flipped on the first day, compared to 19% on the second day and 20% the third day. This result shows no difference in the flipping activity among the initial three trading days, which is statistically supported by the insignificant result from both the parametric ANOVA test and the non-parametric Kruskal-Wallis test. This can be seen clearly from Figure1

[INSERT FIGURE 1 HERE]

One possible explanation is the fact that the trading volumes from the first day to the third day decrease with the same pace as that of the flipping activity. In fact, trading volume on the first day is on average 74% of total shares offered (median 52%), on the second day 44% (median of 20%) and on the third day 19% (median of 11%). Therefore, it results in the same percentage shares flipped for all three trading days when measured as a percentage of trading volume.

Panel B, Table 4 provides a closer look at the flipping activity of institutional versus retail investors during the first three trading days. In terms of shares flipped as a percentage of shares allocated, institutional investors flip 23% of the shares allocated

[4] All results of the tests conducted can be provided upon requests.

to them on the first day, another 8% on the second day and another 4% on the third day. In contrast, retail investors flip only 13% of the shares allocated to them on the first day, another 5% on the second day and another 3% on the first day. Thus, institutional investors flip most aggressively on the first day, about three times more than the second day, around six times more than the third day. The same scenario is observed for retail investors. Both parametric the ANOVA test and the non-parametric Kruskal-Wallis test reject the null hypothesis of equal means (medians), which reinforces the result of aggregation in Panel A. In terms of shares flipped as a percentage of total shares offered, there is a consistent result that flipping activity takes place most aggressively on the first day and less on the next two days. However, in terms of shares flipped as a percentage of total trading volume during the first three days, the above results cannot be confirmed empirically.

There is also evidence that institutional investors flip more than retail investors. However, the result is most significant on the first trading day and become less significant in the in the second day and is insignificant in the third day. The same findings are found based on the other two measures. Hence, it is important to analyse the institutional and retail flipping in more detailed context such as day by day even in longer period, rather than just in aggregation over the three trading days.

In conclusion, by looking at the flipping activity day by day for the first three trading days, it is concluded that flipping activity takes place more aggressively on the first day than during the next two days. In addition, it is empirically confirmed that institutional investors flip more than retail investors, most significantly on the first trading day, and less significantly during the next two days.

3.4 Results for flipping activity by Initial Return

The sample is split into four groups: very cold, cold, hot and very hot. The degree of hot and cold is measured by initial return of the IPOs. Initial return is defined as the percentage difference between the closing price on day 1 and the offer price. There are 18 IPOs that are categorized "very cold" with the initial return below or equal to 0%. Ten IPOs are classified "cold" as the initial return are greater than 0% but less than or equal to 10%, 18 IPOs are considered "hot" as the initial return are greater than 10% but less than or equal to 60%. The last 4 IPOs are "very hot" since the initial return are above 60%. The information on flipping activity in the four groups during the first three trading days in aggregation is provided in Table 5.

[INSERT TABLE 5 HERE]

The group "very cold" has the average initial return of -8.45%, compared to group "very hot" has the average initial return of 141.77%. In terms of shares flipped as a percentage of total shares offered, investors in group "hot" and "very hot" flip 22% and 38% of total shares offered respectively, whereas investors in group "very cold" and "cold" flip only 19% and 18% of total shares offered respectively. The tests for equality in flipping activity between two groups, Group 1 including group "cold" and "very cold", and Group 2 including group "very hot" and "hot" using both the parametric t-test (of means) and the non-parametric Mann-Whitney test (of medians) indicate insignificant difference in flipping activity between Group 1 and Group 2. If flipping activity is analysed separately between four groups, group "very hot" flips 38%, compared to others ranging from 18% to 22%, it seems to show some

difference. However, the problem is: group “very hot” contains only 4 IPOs, thus analyzing separately the four groups may lead to small sample bias problems. In addition, the same result is confirmed when flipping activity is measured in terms of shares flipped as a percentage of total trading volume. However, further detailed analysis will be conducted to reinforce this result.

[INSERT TABLE 6 HERE]

The flipping activity of institutional versus retail investors in the four groups during the first three trading days is summarized in table 6. In term of shares flipped as a percentage of shares allocated, institutional investors flip 29% and 24% of the shares allocated to them respectively in group “very cold” and “cold”, while institutional investors flip 33% and 62% of the shares allocated to them respectively in group “hot” and “very hot”. In contrast, retail investors flip 11% and 17% of the shares allocated to them respectively in group “very cold” and “cold”, while retail investors flip 25% and 29% of the shares allocated to them respectively in group “hot” and “very hot”. The tests for equality in flipping activity between two groups, Group 1 including group “cold” and “very cold” and Group 2 including group “very hot” and “hot”, using both the parametric t-test and the non-parametric Mann-Whitney test reject the null hypothesis that flipping in Group 1 is equal to that in Group 2. Thus, there is evidence that flipping in Group 2 is greater than that in Group 1 and the results are more significant for retail investors. In terms of shares flipped as a percentage of total shares offered and shares flipped as a percentage of total trading volume on the first three days are used, consistent results are found for retail investors, but not for institutional investors. This contradicts the analysis of the

flipping activity in aggregation. Hence, it is important to analyse the flipping activity in more detail, rather than just in aggregation. It is concluded that results are very sensitive to the treatment of measures, therefore, the usage of different measures should be considered carefully.

In addition, the evidence that institutional investors flip more than retail investors is also supported. The results from the tests of equality between institutional and retail flipping provides evidence that institutional investors flip more than retail investors, based on both Group 1 including "very cold" and "cold" issues and Group 2 including "hot" and "very hot" issues.

In conclusion, by looking at the flipping activity by initial return for the first three trading days, there is some evidence that shares are flipped more profoundly in hot issues, rather than in cold issues. The results are stronger for retail investors than for institutional investors. In addition, it is confirmed that institutional investors flip more than retail investors.

3.5 Results from flipping activity by Sector

The flipping activities of institutional versus retail investors conditional on sector segmentation are considered in this section. The sample is partitioned into four groups according to Sector type: Sector 1 is the resource and heavy industry IPOs, containing 12 IPOs, Sector 2 includes the manufacturing IPOs, containing 9 IPOs, Sector 3 includes the computer software and media IPOs containing 19 IPOs and Sector 4 contains other 10 IPOs including finance IPOs and consulting IPOs. Table 7 provides information about the flipping activity in aggregation and in comparison between

institutional and retail investors during the first three trading days for the four Sector groups.

[INSERT TABLE 7 HERE]

The flipping activity in aggregation is shown in Panel A, Table7. In terms of shares flipped as percentage of total shares offered, flipping activity takes place most aggressively in Sector 3 with 27%, while investors in Sector 1 flip 18% of shares offered, Sector 2 flip 14%, and Sector 4 flip 22%. The tests of equality in the flipping activity between the four Sector groups, using both the parametric ANOVA test (of means) and the non-parametric Kruskal-Wallis test (of medians) indicate insignificant difference in the flipping activity between the four Sector groups. The result is also supported by the tests based on the measure shares flipped as a percentage of total trading volume. This can also be seen in Figure 3.

[INSERT FIGURE 3 HERE]

Panel B, Table 7 provides a closer look at the flipping activity of institutional versus retail investors across Sectors during the first three trading days. In term of shares flipped as a percentage of shares allocated, institutional investors flip 28% of the shares allocated to them in Sector 1, 22 % in Sector 2, 42% in Sector 3 and 27% in Sector 4. In contrast, retail investors flip only 16% of the shares allocated to them in Sector 1, 21% in Sector 2, 23% in Sector 3 and 14% in Sector 4. At first glance, investors (both institutional and retail) in Sector 3 seem to flip most aggressively. However, the results from the tests of equality using both the parametric ANOVA and

the non-parametric Kruskal-Wallis tests cannot reject the null hypothesis that flipping activity is the same across Sector groups. The same results are found when the measure of shares flipped as a percentage of shares offered and the measure shares flipped as percentage of total trading volume on the first three days are used. This is consistent with the result in Panel A.

Despite the fact that our expectation of a difference in flipping activity across Sector groups is not statistically supported, the evidence that institutional investors flip more than retail investors still holds in Sector 1 and 3 but not in Sector 2 and 4. It is supported by the results from the tests of equality between institutional and retail flipping support. This may be due to the fact that Sector 2 and 4 include very small number of IPOs, which subjects to small sample bias problem.

In summary, by looking at the flipping activity conditional on Sector segmentation for the first three trading days, it is concluded that flipping activity the first three trading days does not differ across Sectors, which rejects our expectation. However, it is again supporting the previous result that institutional investors flip more than retail investors.

3.6 Results from flipping activity by Size

The sample is sorted in ascending order according to issued size and then split into four equal groups according to issued size: Group 1 contains the smallest 12 IPOs, Group 2 contains the next 12 medium IPOs, Group 3 contains the next 12 large IPOs and Group 4 contains 14 largest IPOs. The information on the flipping activity in

aggregation and in comparison between institutional and retail investors for the four groups according to issued size is provided in Table 8.

[INSERT TABLE 8 HERE]

Panel A, Table 8 shows the flipping activity in aggregation. In terms of shares flipped as a percentage of total shares offered, investors flip 30% and 28% of total shares offered in Group 3 and Group 4 respectively, whereas they flip only 11% and 16% of total shares offered in Group 1 and Group 2 respectively. Both the parametric ANOVA test of equal means and the non-parametric Kruskal-Wallis test of medians reject the null hypothesis at 5% level that flipping activity is the same between large and small Size groups. In other words, there is a significant difference in the flipping activity between large and small Size groups. Consistent result is found when measure of shares flipped as a percentage of total trading volume is used. This can also be seen from Figure 4.

[INSERT FIGURE 4 HERE]

The flipping activity of institutional versus retail investors across different groups during the first three trading days is analysed in detail and reported in Panel B, Table 8. In terms of shares flipped as a percentage of shares allocated, institutional investors flip 19% and 25% of the shares allocated to them in Group 1 and Group 2 respectively, which is about half of the amount they flip in the Group 3 and Group 4 of 44% and 40% respectively. On the retail investor's side, retail investors flip 18% and 24% of the shares allocated to them in Group 1 and Group 2 respectively, which

is slightly greater than the amount they flip in Group 3 and Group 4 at 16% and 18% respectively. Thus, it is very interesting to see that, retail investors flip slightly less as the size of offerings increases. On the other hand, institutional investors flip significantly more as size of offerings increases. This conclusion is strongly supported by the tests of equality in flipping activity between the four Size groups, using both the parametric ANOVA test and the non-parametric Kruskal-Wallis test. Moreover, the results are reinforced when the two measures of shares flipped as a percentage of total shares offered and shares flipped as a percentage of total trading volume are used. Hence it illustrates that institutional investors flip more aggressively in large-sized issues than in small-sized issues, while size of the issues does not affect the flipping activity of retail investors.

An important finding is that institutional investors flip more than retail investors, but only in large-sized issues. Institutional investors flip 19% and 25% of the shares allocated to them in the two smallest groups, which is the same as the amount flipped by retail investors (18% and 24% of the shares allocated to them). However, institutional investors flip 44% and 40% of the shares allocated to them, twice the amount flipped by retail investors (16% and 18% of the shares allocated to them) in the two largest groups. This is statistically and significantly supported by the results of the tests of equality between institutional and retail flipping for the four Size groups. The result is consistent across all measures. Hence, it is important to analyse the flipping activity between institutional and retail investors in more detailed context such by size segmentation, rather than just in aggregation as before.

In summary, by looking at the flipping activity across groups according to size for the first three trading days, it is concluded that retail investors flip slightly less as size of offerings increases; on the other hand, institutional investors flip more as size of offerings increases. In addition, it is also concluded that institutional investors flip more than retail investors on all three trading days, but only in large-sized issues.

3.7 Results from regressions of flipping activity

The results of the OSL regression models of the flipping activity of institutional versus retail investors are reported in Table 9. For both - institutional versus retail investors - regression equations, the first regression includes all independent variables; the second excludes Sector variable; the third excludes Sector and Size variables and the last excludes only Size variable. All the expectations are fulfilled and results reinforce the previous findings.

[INSERT TABLE 9 HERE]

The results show a positive and statistically significant relation between institutional flipping and initial return at 1% level and retail flipping and initial return at 5% level in all models. In other words, the higher the initial return, the higher the flipping activity by both institutional and retail investors. This means that both types of investors flip more in hot IPOs rather than in cold IPOs, consistent with Aggarwal (2003). In addition, the coefficient of institutional regression equation is greater than that of retail regression equation, implying that institutional investors flip more than retail investors.

The rejection of the expectation that flipping activity differ across Sector groups during the initial three trading days is also confirmed by the estimated regressions. The variable Sector is not significant in any models for both institutional and retail investors. The results show a significant relation at 10% level between institutional flipping and Size, but negative relation between retail flipping and Size. This is consistent with the previous conclusion that retail investors flip slightly less as the size of offerings increases, while institutional investors flip more as size of offerings increases. In summary, overall the results from OLS regression models are consistent with the results based on parametric (non-parametric) tests.

4. Conclusions

The paper investigates whether institutional investors are more favoured than retail investors at the time of IPO allocation and who (institutional or retail investor) is more loyal to the IPO underwriter. Using the complete records of all trading decisions on investor level in IPOs during 1995 to 2000 from the Helsinki Stock Exchange, we trace what institutional and retail investors decide to do with their allocated shares. We find that institutional investors flip more of their initially allocated shares than retail investors. When we condition on size our results show that institutional investors flip more than retail investors only in large-sized issues. Both institutional and retail investors flip most aggressively on the first day and less during the next two days. There is some evidence that shares are flipped more profoundly in "hot" issues than in "cold" issues. Flipping activity during the first three trading days does not differ across the main four industry sectors. While retail flipping is negatively related to issue size, institutional flipping is positively associated with issue size. The results indicate that IPO underwriters may achieve a more orderly market for new issues by

allocating share more evenly between institutional and retail investors. The question whether institutional investors, who decide to hold on to their initially allocated shares, are able in the long-term to outperform on average retail investors and in what particular type of IPO (hot, cold, large-, small-sized issue) is of further interest. We leave this for future research.

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Table 1: Descriptive Statistics

This table provides the descriptive analysis for 50 IPOs during the period 1 May 1995 to 1 June 2000. Initial return is the percentage difference between the closing price on day 1 and the offer price; Offer price is the initial offer price; Size refers to the dollar proceeds; Shares offered refers to the number of shares issued in all markets. Shares traded as % of total shares offered is the number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares offered in the issue; Shares flipped as % of total shares offered is the number of shares flipped by institutional and retail investors on the first three trading days divided by the number of shares offered in the IPO; Shares flipped as % of trading volume is the number of shares flipped by institutional and retail investors on the first three trading days divided by the number of shares traded on the first three trading days

	Mean	Median	Std Dev	Max	Min	Skew
Initial return (%)	18.38	8.57	45.62	241.42	-74	2.86
Offer price (Euro)	10.12	8.00	11.10	84.09	3.5	6.08
Size (in million Euro)	82.935	25.935	1.62E+08	1,040	0.336	4.588
Shares offered (in million)	9.91	3.43	22.24	138	0.041	4.62
Shares traded as % of total shares offered	136%	103%	135%	808%	8%	2.83
Shares flipped as % of total shares offered	22%	16%	19%	69%	0%	0.98
Shares flipped as % of total trading volume	21%	19%	18%	95%	0%	1.77

Table 2: Descriptive statistics and test results for allocation decision

This table provides the descriptive statistics and the results of the tests of equality of between institutional and retail allocation for 50 IPOs during the period of 1 May 1995 to 1 June 2000. Institutional allocation* (retail allocation*) is the percentage of an issue allocated to institutional investors (retail investors), calculated as the total number of shares allocated to institutional investors (retail investors) divided by the total number of shares allocated to all investors; Institutional allocation** (retail allocation**) is the second measure, which is also the percentage of an issue allocated to institutional investors (retail investors). It is measured as the total number of shares allocated to institutional investors (retail investors) divided by the total number shares allocated to institutional and retail investors only. Panel A reports the results based on the first measure of initial allocation and Panel B reports the results based on the second measure of initial allocation. The first test is the parametric t-test of means and the second test is the non-parametric Mann-Whitney test of medians.

	Mean	**Median**	**Std Dev**	**Max**	**Min**	**Skew**
Institutional allocation *	47%	47%	25%	89%	6%	0.03
Retail allocation*	31%	25%	24%	86%	0.3%	0.94
Institutional allocation**	61%	67%	28%	99%	6%	-0.47
Retail allocation**	39%	33%	28%	95%	1%	0.47
Method	**df**	**Value**	**Probability**			
Panel A: Test based on the first measure of initial allocation						
t-test	98	3.3028	0.0007			
Mann-Whitney		3.2435	0.0012			
Panel B: Test based on the second measure of initial allocation						
t-test	98	3.8619	0.0001			
Mann-Whitney		3.5744	0.0004			

Table 3: Flipping activity of institutional versus retail investors

This table provides the descriptive analysis and the results of the tests of equality of the flipping activity between institutional and retail investors for 50 IPOs during the period of 1 May 1995 to 1 June 2000. Shares flipped by institutional investors (retail investors) as % of shares allocated is the number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO; Shares flipped by institutional investors (retail investors) as % of total shares offered is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped by institutional investors (retail investors) as % of total trading volume is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares traded on the first three trading days. Panel A reports the results based on the measure of shares flipped as % of shares allocated. Panel B reports the results based on the measure of shares flipped as % of total shares offered. Panel C reports the results based on the measure of shares flipped as % of total trading volume. The first test is the parametric t-test of means and the second test is the non-parametric Mann-Whitney test of medians.

	Mean	**Median**	**Std Dev**	**Max**	**Min**	**Skew**
Shares flipped by institutional investors as % of shares allocated to institutions	32%	24%	28%	98%	0%	0.82
Shares flipped by retail investors as % of shares allocated to retails	19%	13%	19%	87%	0%	1.68
Shares flipped by institutional investors as % of total shares offered	17%	10%	18%	66%	0%	1.32
Shares flipped by retail investors as % of total shares offered	5%	3%	7.3%	45%	0%	3.86
Shares flipped by institutional investors as % of total trading volume	16%	13%	18%	95%	0%	2.43
Shares flipped by retail investors as % of total trading volume	6%	2%	8%	35%	0%	2.30

Method	**df**	**Value**	**Probability**
Panel A: Test based on the measure of shares flipped as % of shares allocated			
t-test	98	2.7579	0.0035
Mann-Whitney		2.3749	0.0176
Panel B: Test based on the measure of shares flipped as % of total shares offered			
t-test	98	4.2520	0.0000
Mann-Whitney		3.7882	0.0002
Panel C: Test based on the measure of shares flipped as % of total trading volume			
t-test	98	3.6347	0.0002
Mann-Whitney		3.7950	0.0001

Table 4: Flipping activity day by day

This table provides the closer look at the flipping activity between institutional and retail investors day by day for the first three trading days. Mean and median statistics are reported. Trading volume as % of total shares offered is the number of shares traded during the initial three days divided by the total shares in the IPO. In panel A: Shares flipped as % of total shares offered is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares traded on the first three trading days. In Panel B: Shares flipped by institutional investors (retail investors) as % of shares allocated is the number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO; Shares flipped by institutional investors (retail investors) as % of total shares offered is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped by institutional investors (retail investors) as % of total trading volume is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares traded on the first three trading days.

	Day 1		Day 2		Day 3	
	Mean	Median	Mean	Median	Mean	Median
Trading volume as % of total shares offered	77%	52%	44%	20%	19%	11%
Panel A: Flipping activity day by day						
Shares flipped as % of total shares offered	14%	8%	6%	2%	3%	2%
Shares flipped as % of total trading volume	21%	19%	19%	12%	20%	18%
Panel B: Institutional versus retail flipping activity day by day						
Shares flipped by institutional investors as % of shares allocated to institutions	23%	14%	8%	3%	4%	2%
Shares flipped by retail investors as % of total shares allocated to retails	13%	8%	5%	2%	3%	2%
Shares flipped by institutional investors as % of total shares offered	12%	7%	5%	1%	2%	0.7%
Shares flipped by retail investors as % of total shares offered	4%	2%	2%	0.4%	0.7%	0.3%
Shares flipped by institutional investors as % of total trading volume	18%	13%	12%	4%	14%	10%
Shares flipped by retail investors as % of total trading volume	6%	2%	7%	2%	7%	3%

Table 5: Flipping Activity by Initial Return

The sample is grouped into four categories based on initial return: very cold, cold, hot and very hot. Mean and median statistics are reported. Initial return is the percentage difference between the closing price on day 1 and the offer price; Institutional allocation** is the percentage of an issue allocated to institutional investors (the total number of shares allocated to institutions divided by the total shares allocated to institutional and retail investors only); Trading volume as % of total shares offered is the number of shares traded during the initial three days divided by the total shares in the IPO. Shares flipped as % of total shares offered is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares traded on the first three trading days.

	Very Cold Initial return <= 0% (N=18)		Cold 0% < Initial return < = 10% (N=10)		Hot 10% < Initial return <= 60% (N=18)		Very Hot Initial return > 60% (N=4)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Initial return (%)	-8.45	-2.11	5.54	4.38	24.92	18.42	141.77	128.23
Instituional allocation**	53%	64%	84%	89%	52%	53%	74%	77%
Trading volume as % of total shares offered	157%	101%	72%	43%	128%	125%	264%	268%
Shares flipped as % of total shares offered	19%	9%	18%	11%	22%	20%	38%	41%
Shares flipped as % of total shares traded	17%	13%	15%	14%	19%	16%	19%	19%

Table 6: Institutional and retail flipping activity by Initial Return

This table illustrates the flipping activity between institutional and retail investors. The sample is grouped into four categories based on initial return: very cold, cold, hot and very hot. Mean and median statistics are reported. Initial return is the percentage difference between the closing price on day 1 and the offer price; Institutional allocation** is the percentage of an issue allocated to institutional investors (the total number of shares allocated to institutions divided by the total shares allocated to institutional and retail investors only); Shares flipped as % of shares allocated is the number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO; Shares flipped as % of total shares offered is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional investors

	Very Cold Initial return <= 0% (N=18)		Cold 0% < Initial return <= 10% (N=10)		Hot 10% < Initial return <= 60% (N=18)		Very Hot Initial return > 60% (N=4)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Shares flipped by institutional investors as % of total shares allocated to institutions	29%	15%	24%	16%	33%	31%	62%	61%
Shares flipped by retail investors as % of total shares allocated to retail	11%	7%	17%	10%	25%	24%	29%	23%
Shares flipped by institutional investors as % of total shares offered	16%	6%	17%	10%	14%	9%	32%	34%
Shares flipped by retail investors as % of total shares offered	3%	3%	2%	1%	9%	5%	7%	6%
Shares flipped by institutional investors as % of total trading volume	12%	7%	10%	8%	11%	7%	15%	15%
Shares flipped by retail investors as % of total trading volume	5%	2%	3%	1%	8%	4%	4%	4%

Table 7: Flipping activity by Sector

The sample is split into four groups according to Sector type: Sector 1 is resources and heavy industry IPOs, Sector 2 includes manufacturing IPOs, Sector 3 includes computer software and media IPOs and Sector 4 includes other IPOs (including finance and consulting). Mean and median statistics are reported. Institutional allocation** is the percentage of an issue allocated to institutional investors (the total number of shares allocated to institutions divided by the total shares allocated to institutional and retail investors only); Initial return is the percentage difference between the closing price on day 1 and the offer price. Trading volume as % of total shares offered is the number of shares traded during the initial three days divided by the total shares in the IPO. In panel A: Shares flipped as % of total shares offered is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares traded on the first three trading days. In Panel B: Shares flipped as % of shares allocated is the number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO; Shares flipped as % of total shares offered is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares traded on the first three days.

	Sector 1 (N = 12)		Sector 2 (N = 9)		Sector 3 (N =19)		Sector 4 (N = 10)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Institutional allocation**	71%	81%	58%	58%	58%	68%	57%	60%
Initial return	11%	7%	27%	14%	15%	12%	28%	5%
Trading volume as % of total shares offered	82%	79%	101%	53%	204%	157%	109%	100%
Panel A: Flipping activity by Sector								
Shares flipped as % of total shares offered	18%	16%	14%	12%	27%	22%	22%	18%
Shares flipped as % of total trading volume	34%	29%	18%	17%	15%	16%	19%	19%
Panel B: Institutional versus Retail flipping activity by Sector								
Shares flipped by institutional investors as % of shares allocated to institutions	28%	24%	22%	20%	42%	33%	27%	12%
Shares flipped by retail investors as % of total shares allocated to retail	16%	10%	21%	17%	23%	19%	14%	8%
Shares flipped by institutional investors as % of total shares offered	15%	12%	9%	7%	20%	12%	19%	14%
Shares flipped by retail investors as % of total shares offered	4%	2%	5%	6%	7%	5%	3%	2%
Shares flipped by institutional investors as % of total trading volume	30%	20%	9%	6%	10%	8%	16%	16%
Shares flipped by retail investors as % of total trading volume	5%	2%	10%	6%	6%	2%	3%	2%

Table 8: Flipping activity by Size

The sample is partitioned into four equal quartiles according to issued Size. Mean and median statistics are reported. Institutional allocation** is the percentage of an issue allocated to institutional investors (the total number of shares allocated to institutions divided by the total shares allocated to institutional and retail investors only); Initial return is the percentage difference between the closing price on day 1 and the offer price. In panel A: Shares flipped as % of total shares offered is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional and retail investors on the first three trading days divided by the total number of shares traded on the first three trading days. In Panel B: Shares flipped as % of shares allocated is the number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares allocated to institutions (retails) in the IPO; Shares flipped as % of total shares offered is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares offered in the IPO; Shares flipped as % of total trading volume is the total number of shares flipped by institutional investors (retail investors) on the first three trading days divided by the total number of shares traded on the first three trading days.

	Group 1 (N = 12)		Group 2 (N = 12)		Group 3 (N = 12)		Group 4 (N = 14)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Size (million Euro)	3.18	1.48	16.85	17.93	51.66	49.33	231.18	125.27
Institutional allocation**	52%	52%	47%	50%	61%	73%	79%	87%
Initial return	12%	7%	35%	8%	5%	2%	26%	9%
Trading volume as % of total shares offered	121%	110%	115%	126%	179%	124%	129%	75%
Panel A: Flipping activity by Size								
Shares flipped as % of total shares offered	11%	10%	16%	10%	30%	24%	28%	27%
Shares flipped as % of total trading volume	12%	9%	15%	13%	25%	23%	31%	25%
Panel B: Institutional versus Retail flipping activity by Size								
Shares flipped by institutional investors as % of total shares allocated to institutions	19%	13%	25%	17%	44%	33%	40%	34%
Shares flipped by retail investors as % of total shares allocated to retails	18%	18%	24%	13%	16%	12%	18%	11%
Shares flipped by institutional investors as % of total shares offered	6%	4%	10%	6%	25%	19%	26%	24%
Shares flipped by retail investors as % of total shares offered	6%	5%	7%	3%	6%	3%	3%	2%
Shares flipped by institutional investors as % of total trading volume	4%	4%	9%	7%	19%	18%	28%	19%
Shares flipped by retail investors as % of total trading volume	8%	5%	6%	3%	6%	4%	3%	2%

Table 9: Regression of institutional and retail flipping activity

Two regressions are run. The first one use shares flipped by institutional investors as % of shares allocated to them as dependent variable, the second is shares flipped by retail investors as % of shares allocated to them as dependent variable. The independent variables are initial return (the percentage difference between the closing price on day 1 and the offer price), size (the natural logarithm of the dollar proceeds), and industry sector. The p-value is reported in brackets.

	Dependent variables							
	Institutional flipping as % of shares allocated				**Retail flipping as % of shares allocated**			
Constant	-0.606	-0.393	0.284	0.237	0.297	0.256	0.160	0.171
	(0.173)	(0.263)	(0.000)	(0.005)	(0.197)	(0.134)	(0.000)	(0.035)
Initial return	0.0017*	0.0018*	0.0018*	0.0018*	0.0015*	0.0014**	0.0014**	0.0015**
	(0.001)	(0.0001)	(0.0001)	(0.0003)	(0.011)	(0.016)	(0.015)	(0.011)
Size	0.047***	0.040***			-0.007	-0.006		
	(0.062)	(0.073)			(0.526)	(0.560)		
Sector	0.042			0.019	-0.008			-0.005
	(0.207)			(0.570)	(0.779)			(0.865)
Adjusted R^2	0.187	0.164	0.09	0.095	0.122	0.120	0.117	0.118

* indicates significant at 1% level
** indicates significant at 5% level
*** indicates significant at 10% level

Figure 1: Flipping activity day by day

This figure shows the flipping activity day by day and in total for the first three trading days. The variable plotted is shares flipped as % of total shares offered and shares flipped as % of total trading volume.

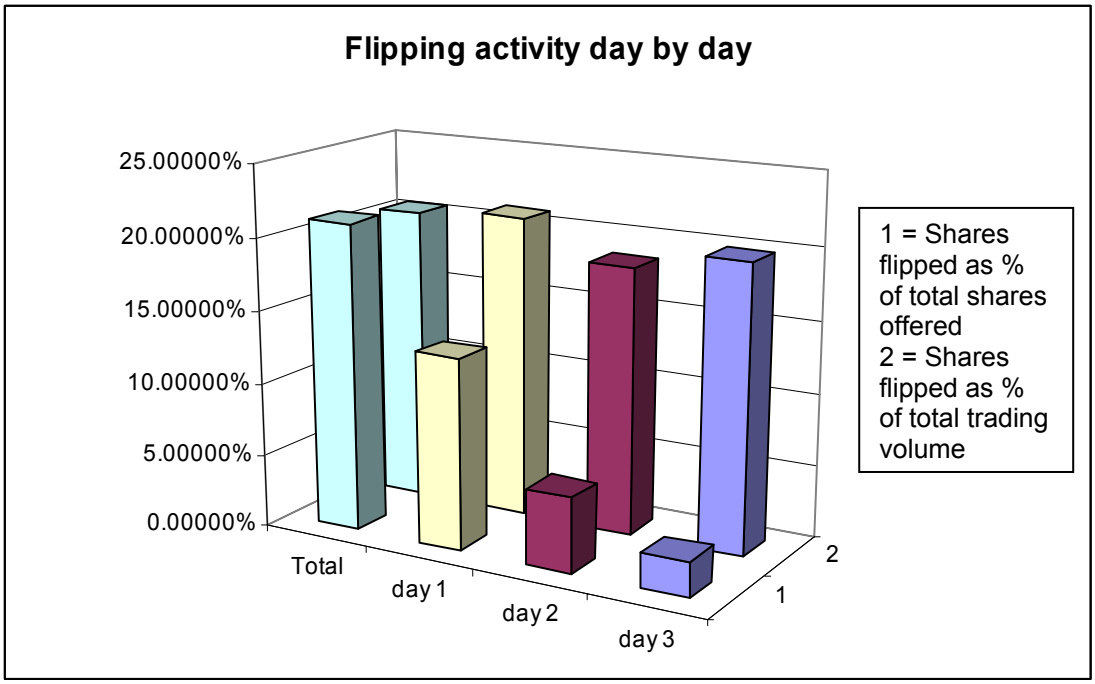

Figure 2: Flipping activity by Initial Return

This figure shows the flipping activity in total between four different groups according to initial return. There are four groups according to the initial return: very cold (initial return <= 0%), cold (0% < initial return <= 10%), hot (10% < initial return <= 60%) and very hot (initial return >= 60%). The two variables plotted are shares flipped as % of total shares offered and shares flipped as % of total trading volume.

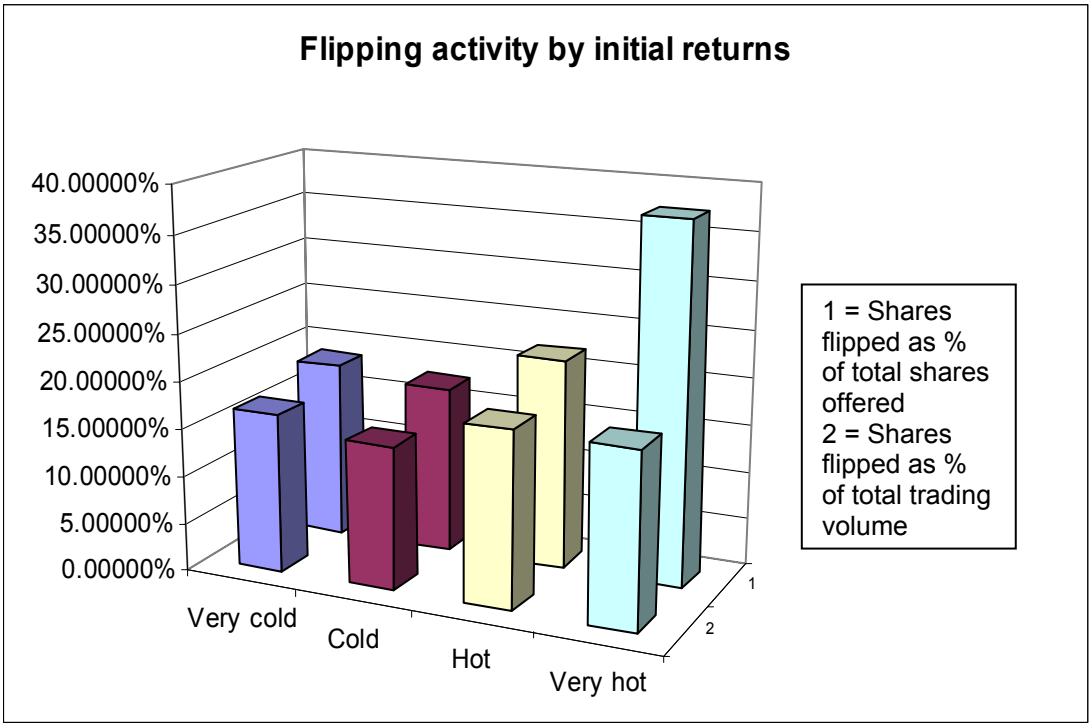

Figure 3: Flipping activity by Sector

This figure shows the flipping activity between different groups of Sector: Sector 1 is resources and heavy industry IPOs, Sector 2 includes manufacturing IPOs, Sector 3 includes computer software and media IPOs and Sector 4 for other IPOs (including finance and consulting). The two variables plotted are shares flipped as % of total shares offered and shares flipped as % of total trading volume.

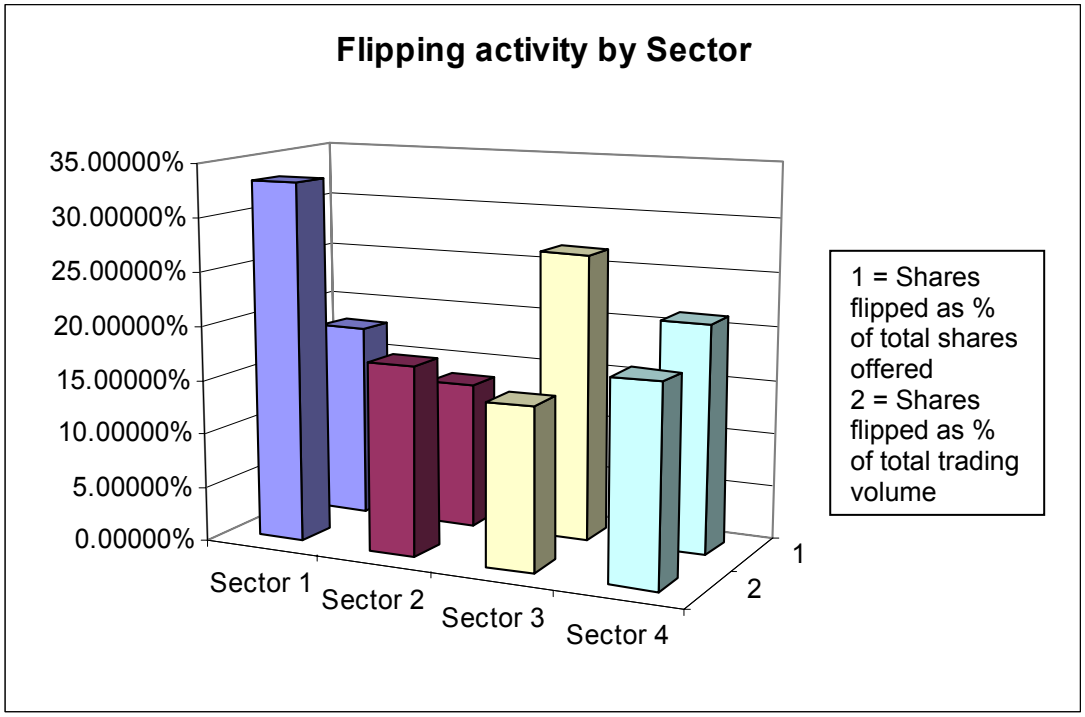

Figure 4: Flipping activity by Size

This figure shows the flipping activity between four equally-partitioned different groups according to issued Size. The two variables plotted are shares flipped as % of total shares offered and shares flipped as % of total trading volume.