

# Profitability of Trades from Tax Havens: Stock Picking Ability or Insider Information?

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April, 2015

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**Keywords:** Tax haven; Insider trading; Stock picking; Korea

**JEL classification:** G10; G14; G18

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## 1. Introduction

Tax havens are allegedly used by corporations and individuals who wish to avoid taxes. According to OECD (1998), there are four factors that characterize a tax haven; nil or nominal taxes, protection of personal financial information, lack of transparency, and no substantial activities. Despite huge interests from regulators around the world on various implications of tax havens, there are relatively very few academic studies in this area primarily because the data are simply not available.

Discussions on tax havens are mostly focused on how these jurisdictions promote tax avoidance, the very first defining characteristic of a tax haven.<sup>1</sup> The second and third characteristic, protection of personal information and lack of transparency, are generally considered technical tools or auxiliary conditions to effectively secure the first characteristic.

From an investor's perspective, however, protection of personal information and lack of transparency may provide additional benefits above and beyond avoidance of taxes on existing income or wealth. Specifically, since the identity of the ultimate account holder is effectively concealed, investors with material insider information may freely engage in potentially illegal insider trading through accounts in tax havens. The following provides anecdotal piece of evidence on how corporate insiders may utilize tax havens to materialize their private information.

In July 2013, Mr. Jae Hyun Lee, the controlling shareholder of CJ Group, 14<sup>th</sup> largest *chaebol* or family-controlled business group in Korea, was indicted for illegal tax evasion of the profits he made by trading stocks of member firms within CJ Group through anonymous accounts he opened up Virgin Island. For example, foreign investors intensely bought CJ stocks, just before the company announced share repurchase on

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<sup>1</sup> Strictly speaking, tax avoidance generally refers to legal reduction of taxes while tax evasion refers to illegal reduction. In this paper, we use the term interchangeably to refer to any reduction in taxes and thus an increase in after-tax income.

March 3, 2008. The prosecutors' office raised suspicion that ultimate beneficiary of at least a part of these purchases could be Mr. Lee himself who allegedly directed the trades using accounts in Hong Kong.

Korean media often refers to these accounts as 'black-haired foreigners'. Specifically, local investors may set up paper companies in tax havens and camouflage themselves as foreign investors by trading local securities through these paper companies. According to a press release by the Korea Financial Supervisory Service in June 2014, there are many motivations for local investors, especially company insiders such as controlling families, to camouflage themselves as foreign investors through tax havens.

First, they may avoid certain regulatory restrictions. For example, investors who are company insiders may effectively skip mandatory filing of changes in their shareholdings.<sup>2</sup> Second, they may utilize insider information to trade their own stocks and benefit themselves at the expense of other uninformed minority investors. Third, they may avoid taxes on income generated through trading stocks or other activities. Fourth, they may create off-shore slush funds by tunneling corporate resources into tax havens. From the regulators' perspective, it is extremely difficult to identify the ultimate beneficiary of these accounts because one of the key characteristics of tax haven is to protect personal information.<sup>3</sup>

In this paper, we examine whether trades originating from tax havens contain information for future stock returns. There are two broad reasons to believe that these trades are informed trades. First, they may be based on substantial private information which may easily constitute illegal insider trading if traded through local accounts and

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<sup>2</sup> According to U.S. SEC regulations, corporate insiders must file with the SEC a statement of ownership regarding their shares through forms 3, 4, and 5. Similar reporting requirements also exist in Korea.

<sup>3</sup> In May 2013, Newstapa, an independent non-profit local media, in collaboration with International Consortium of Investigative Journalists (ICIJ), obtained a list of 245 Korean individuals who set up paper companies in tax havens. They sequentially released the names and affiliations of these individuals, some of whom are current and former executives of prominent large business groups or chaebols, which subsequently incurred intense social and political controversy.

identified by regulators. Although this is certainly a possibility, not all trades from tax havens are made by ‘black-haired’ foreigners, obviously. Some of these trades may well be made by ‘genuine’ foreign investors who simply possess better stock picking abilities. Since it is costly to move capital to tax haven in the first place and then to set up trading schemes there, we believe that traders from tax havens could well be more sophisticated than an average local investor.

To disentangle these possible explanations, we utilize a unique proprietary dataset provided by the Korea Exchange (KRX) that contains the detailed record of all transactions in Korea with buyer and seller identifiers and their country of origin between January 2006 and August 2009. Based on this account-level data, we are able to create various net purchase measures based on the characteristics of each account, and test which type of accounts provide better return predictability.

We first document that trades from tax havens in general provide significant information for future stock returns. For example, hedged portfolio return formed by simultaneously buying and selling top and bottom quintile stocks based on net buys from tax havens amounts up to 25 basis points per day. The magnitude of this return is much larger than corresponding numbers based on net buys from the remaining foreign countries or net buys from local institutions. These findings suggest that traders from tax havens are more informed than other types of traders, either due to better access to private information or greater ability to pick stocks.

We next form double-sort portfolios based on net purchases from tax havens as well as certain stock characteristics. Specifically, stocks are grouped into two based on size, governance level, or degree of foreign ownership, before being assigned to net purchase quintiles. We find that the return predictability of tax haven trades is more pronounced in small stocks or stocks with weak governance or low foreign ownership.

These findings are difficult to reconcile with stock picking abilities of genuine foreign investors since they prefer to hold in general large, well-known stocks.

To test which factor better explains the observed superior performance of trades from tax haven, we create net buy measures based on characteristics of each tax haven account. First, we classify accounts based on number of stocks traded during the whole sample period. Surprisingly, 30% of all accounts from tax havens traded only one stock during the whole sample period. One possibility of such concentrated trading is that Korean stocks may simply be a part of a diversified global portfolio that the tax haven account holder is running. Another possibility, more important from our context, is that they may reflect disguised foreign investors who are actually corporate insiders in Korean firms. It is more likely that insiders would have information about one firm, rather than multiple firms simultaneously (Berkman, Koch, and Westerholm (2014)).

Based on this logic, we separately group all accounts that traded only one stock, and all accounts that traded more than 10 (at least 11) stocks. Our conjecture is that accounts with more than 10 stocks traded is relatively well diversified even within Korean stocks, and as such less likely to be utilizing firm-specific insider information to trade. When we form quintile portfolios based on net buys of these two groups, we find that daily hedged portfolio returns based on net buys of single-stock trading accounts are twice as large as those based on multiple stocks.

In our next analysis, we refine the characterization of account types by additionally considering firm-level size, business group membership, and industry similarity. For example, even if an account trades a single stock, it is more likely to be part of a larger global portfolio if it is one of the largest market cap stocks which are generally favored by foreign investors. On the other hand, even if an account trades multiple stocks, as long as they belong to the same business group, it may reflect informed trading by insiders who

have access to group-level private information. For accounts that trade stocks within the same industry, their advantage is more likely to be from industry-specific expertise rather than firm specific information.

Based on this logic, we create three different sets of net buy measures. One is based on accounts that traded only one stock, excluding top 10 market cap stocks, plus those that traded multiple stocks that belong to the same business group. These are referred to as potential insider accounts. Another is based on accounts that traded only one stock, including top 10 market cap stocks, plus those that traded multiple stocks within the same industry. We refer to these stocks as potential stock picker accounts. The remaining accounts are classified as neither potential insider nor potential stock picker. When we form portfolios based on these three sets of net buys, we find that potential insiders exhibit the largest return predictability. Hedged portfolio return based on potential stock picker accounts amounts up to only 60% of those based on potential insider accounts.

Our final set of analysis directly tests whether potential insider accounts actually trade prior to important corporate announcements. For this analysis, we focus on two types of potential good news; earnings disclosures with positive shocks and disclosures of monopoly supply contract establishments. We find that accounts from tax havens as a whole do not predict the upcoming disclosure of the good news. However, once we restrict our attention to potential insider accounts, we find a statistically significant abnormal net buys occurring 4 to 6 days prior to the disclosure. In a strict contrast, we do not observe a similar pattern across the remaining accounts.

Overall, the findings in this paper clearly suggest that one important source of return predictability of trades from tax havens is access to firm-specific private information in advance of the public disclosure. If insiders try to exploit this information using local accounts, they could well be identified and prosecuted for illegal insider

trading. But, if they can hide their true identity by directing their trades through paper companies set up at tax havens, they can effectively circumvent such legal risk and pursue their incentives to increase their *before-tax* profits.

Our study adds to the literature in the following important ways. First, we are the first to formally document that investors from tax havens are informed traders. While there is a lot of regulatory discussion on how these regions may promote various forms of tax evasion, there is virtually no academic research on whether investors from tax havens are indeed informed traders. Second, more importantly, we find that return predictability of tax haven accounts is largely driven by access to private information before it becomes public. These findings suggest that one important motivation behind setting up paper companies in tax havens is not simply to hide *existing* income or wealth to avoid taxes, but to actively utilize insider information to *increase* their income or wealth that would otherwise have been illegal. To the best of our knowledge, our study is the first to raise the point that tax havens may be an important channel through which insider trading is materialized.<sup>4</sup>

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on tax haven and informed trading. Section 3 describes our data and sample. Section 4 provides empirical results, and section 5 concludes.

## **2. Literature Review**

Our study builds on two streams of literature which are somewhat unbalanced in terms of the breadths and depths of existing research; those on tax haven, and those on informed trading. Although regulators around the world have been seriously concerned about off-shore tax evasion through tax havens for years, there is very little empirical

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<sup>4</sup> Yang (2014) uses similar dataset to analyze the predictability of trades from tax havens, but he does not compare them against those from other foreign countries or local institutions, nor does he distinguish between the possibility of potential insider trading and potential stock picking.



evidence precisely due to the unavailability of data. A prominent exception is a recent study by Hanlon, Maydew, and Thornock (2015) who examine ‘round-trip’ investment by U.S. investors who disguise themselves as true foreign investors. According to their study, this allows U.S. investors to effectively reduce taxes since U.S. tax authorities impose much less taxes on foreign investors investing in U.S. securities compared to domestic investors. Their major finding is that foreign portfolio investment into U.S. from tax havens, especially from those without bilateral tax information exchange agreements, increases when U.S. tax rates increase.

To the extent that we also examine potential ‘round-trip’ investments by ‘black-haired’ foreigners, our approach is similar to theirs. However, our study is fundamentally different in at least the following two respects. First, although their identification strategy is clever, it only provides circumstantial evidence that is consistent with round tripping, since their analysis is based on economy-level tax rate changes and aggregate capital flows at monthly frequency. In contrast, our trade-level analysis provides a more direct test of the existence of ‘round-tripping’ by showing that trades from tax havens contain substantial information for future stock returns. Second, and more importantly, their focus is solely on potential tax evasion. That is, they argue that such round trip investments may be driven by incentives to reduce taxes on *existing* income or wealth. In a strict contrast, we argue that one important motivation to use round trip investments through tax havens is not only to reduce taxes and maximize *after-tax* income, but also to actively increase *before-tax* income by utilizing insider information.

Another study that is related to ours is Mironov (2013) who studies tax avoiding behavior of Russian firms by setting paper companies. His study does not directly focus on tax havens, but he shows that managerial diversion of corporate resources rather than tax evasion *per se* may be more important motivation for setting up paper companies. Our

implications share his in the sense there could be motivations for setting up paper companies in tax havens other than traditional tax evasion purposes.

While there are very few studies that examine tax haven, extant literature exists on informed trading. Important theoretical works that formally distinguish between informed traders and non-informed traders include Grossman and Stiglitz (1980), Kyle(1985), Glosten and Milgrom(1985), Easley and O'Hara(1987, 2004), and Admati and Pfleiderer(1989) among many others. Subsequent empirical studies document that certain subset or type of investors may be informed traders. For example, short sellers are in general reported to possess information for future stock returns (Asquith and Meulbroek(1995), Aitken, Frino, McCorry, and Swan (1998), Desai, Ramesh, Thiagarajan, and Balachandran (2002), Diether, Lee, and Werner(2009)). Similarly, certain institutional investors, e.g. hedge funds, are found to be informed traders (Stulz (2007)).

Investors with better intelligence (Grinblatt, Keloharju, and Linnainma (2011, 2012)), more experience (Seru, Shumway, and Stoffman (2010)) , better social networks (Cohen, Frazzini, and Malloy (2008, 2010) and Cohen, Malloy, and Pomorski (2012)), and local familiarity (Ivkovic and Weisbenner (2005)) are also found to be informed traders. Some studies examine whether local investors or foreign investors are better informed, but the results are somewhat inconclusive (Grinblatt and Keloharju (2000), Choe, Kho, and Stulz (2005), Dvorak (2005)). An obvious class of informed traders is corporate insiders (Cohen, Frazzini, and Malloy (2008, 2010), Cohen, Malloy, and Pomorski (2012), and Lakonishok and Lee (2001)), whose active exploitation of private information before public disclosure may constitute a criminal offense. Our study is related with this literature in the sense that we propose investors from tax havens, who are likely to be round-tripping insiders, as another class of potential informed traders.

A few studies note that informed traders may want to hide their identity to maximize their trading profits. For example, Barclay and Werner (1993) and Chakravarty (2001) argue that informed traders may split their orders into medium-size trades to maintain anonymity, which they referred to as ‘stealth trading’. Grammig, Schiereck, and Theissen (2001) show that there is more informed trading in a market where the trader’s identity is kept anonymous than where it is revealed. Our study extends this literature by noting that tax havens could be an important channel through which informed traders may effectively hide their identities.

An interesting recent study by Berkman, Koch, and Westerholm (2014) shows that investors may hide their trades through their children’s accounts. Based on Finnish trading data that has age information for each account holder, they find that guardians behind underaged accounts are successful at picking stocks. They conclude that both inside information and stock-picking ability may be driving the superior performance of children’s accounts. Our study is related with theirs to the extent that we also examine ‘camouflaged’ trading. But since guardians behind these children’s accounts are easily identifiable, they would have less incentive to utilize illegal private information than investors in tax haven.

### **3. Data and Sample Construction**

Our primary data source is a proprietary dataset provided by the Korea Exchange (KRX) that includes the full history of all trades made in the KOSPI market, the main bourse in Korea, between January 2006 and August 2009. Each trade record contains the

price, quantity, time-stamp, investor class, and most importantly, masked account identifiers of both buyers and sellers and their country of origin.<sup>5</sup>

Investors are classified into four broad categories; local individuals, local institutions, foreign investors, and Korean citizens with permanent overseas residency. Table 1 provides a brief summary of our dataset. There are a total of 6.4 million accounts with a valid trade during our sample period. 97% of these accounts are held by local individual investors. These individual investors account for slightly more than half of all dollar amount trading volume, while the remaining half are roughly evenly split between local institutions and foreign investors. Per account trading volume for local individual investors is KRW 389 million on average, roughly USD 350,000 during the 32 months, which is less than 4% (3%) of those for institutional (foreign) accounts.

In terms of the number of stocks traded, individuals trade about 13 stocks while institutions and foreigners trade 30 and 9 stocks on average, respectively. These numbers are somewhat larger than those reported in Barber and Odean (2000), who report that U.S. households hold 4.3 stocks on average.<sup>6</sup> Relatively smaller number of stocks held by foreign investor accounts may reflect that Korean stocks constitute only a part of their globally diversified portfolio.

There are a total of 246 country codes provided in the KRX dataset. We first identify a list of tax havens following Hanlon et al. (2015).<sup>7</sup> We then match these tax havens with the country codes in our dataset which yields an intersection of 22 countries, including Cayman Islands and Bermuda among many others. We also classify Labuan, Malaysia, as

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<sup>5</sup> Identifiers are available for each account, implying that multiple accounts that belong to a single investor are treated as multiple investors.

<sup>6</sup> These figures are not directly comparable since our numbers are based on trades while theirs are based on position statements or holdings.

<sup>7</sup> Hanlon et al. (2015)'s classification is based on Dharmapala (2009) who define a country as a tax haven if it was listed on the 1998 OECD report on tax havens or if it was included in the list provided by Hines and Rice (1994). Appendix 1 provides a detailed list of tax havens as identified in Hanlon et al. (2015).

a tax haven, although it is not included in Hanlon et al. (2015) list, since it is widely recognized as a tax haven in the local media.

In Appendix Table 1, we provide a list of all foreign countries investing in KOSPI market, sorted by aggregate dollar amount trading volume. All countries that are identified as tax havens are represented in bold letters. The summary statistics indicate that accounts based in U.K. constitute a quarter of total trading activity of all foreign investors in Korea. U.S. investors account for roughly 16% of all trades from foreign countries. Although U.S. is the second in terms of the dollar amount, the number of U.S.-based accounts constitutes 35% of all foreign accounts, implying that U.S. investors are much smaller than U.K. investors on average.

The third largest foreign country investing in Korean stocks, accounting for 8% of all foreign trading, is Cayman Islands which is a tax haven. In fact, out of the top 10 foreign countries that invest in Korean stocks, 6 of them are tax havens. These numbers suggest that trades from tax haven takes up a non-trivial portion of all foreign trading. In figure 1, we provide the dollar trading volume from each foreign country scaled by respective population in a descending order as in Hanlon et al. (2015). The results indicate that once scaled by the population, aggregate trading activity from tax havens is even more conspicuous. For example, top 10 countries in terms of scaled trading volume are all tax havens. In fact, the first and second largest countries, Cayman Islands and Bermuda, are also the first and second largest portfolio investors in U.S., as reported in Hanlon et al. (2015).

In subsequent analysis, we treat U.K. as a separate category for two reasons. First, it is the largest source of foreign investment accounting for a quarter of all foreign trading activity. Second, some researchers argue that trades from U.K. may be based on some insider information. For example, Kim and Jung (2014) show that institutions from U.K.

actively short sell Korean Index shortly before North Korean aggressions. Similarly, Kang, Kim, and Lee (2014) find that the tone of British media has significant predictive power of North Korea's forthcoming actions. A recent CNN report also argues that U.S. companies are increasingly viewing the U.K. as a place to relocate to pare their tax bills.<sup>8</sup> In fact, U.K. is also included as one of the 62 tax havens in a list maintained by the Korea Customs Service.

In Table 2, we provide a more detailed breakdown of foreign investors and their trading activities. Panels A, B, and C report those from 23 tax havens, U.K, and the remaining foreign countries, respectively. For an easier comparison, we also provide the corresponding numbers for local institutions and local individuals in Panels D and E, respectively.<sup>9</sup>

The results from Panels A, B, and C indicate that trading behavior of accounts from foreign countries is not particularly different between tax havens or non-tax havens. For example, average number of stocks traded is roughly 10 for tax haven accounts and 8 for non-tax haven accounts. Similarly, the number of trading days is 16 days for tax haven accounts and 14 days for non-tax haven accounts. Median number of stocks traded and number of trading days are also largely similar across the two groups. In addition, accounts from U.K. also exhibit similar trading behavior as accounts from other foreign countries, on average. Overall trading volume per account is also similar between tax havens and non-tax havens, although those from U.K. are in general larger. These results suggest that if there is any difference in the performance of trading strategies based on net buys from respective countries, it is less likely to be related with any systematic differences in trading patterns.

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<sup>8</sup> Petroff, A., May 29, 2014, Has the U.K. become a tax haven? CNN Money (<http://money.cnn.com/2014/05/29/news/companies/london-corporate-taxes/>)

<sup>9</sup> Since there are more than 6 million individual investor accounts, we randomly select 1% (62,253 accounts) and calculate their summary statistics.

The results from Panels D and E indicate, however, that trading patterns of local institutions and individual investors are substantially different from foreign accounts. First, average local investor's trading activity, both institutions and individuals, is much more intense compared to foreign accounts. For example, local institutions trade 30 stocks on average, which is roughly three times as large as those of foreign accounts. The number of trading days for local institutions is 49 days, which is again more than three times as large as those of foreign accounts. Part of this trading is obviously related with diversification efforts, since vast majority of local institutions do not diversify globally for various institutional restrictions. Even so, considering that their mean and median trading volumes are somewhat smaller than those of foreign accounts, local institutions seem to trade more than foreign investors.

The results from Panel E indicate that local individual investors also engage in active stock trading compared to foreign accounts. They trade on average 13 stocks during 39 trading days. Since local investors exhibit more intense trading behavior, differences in performance between foreign and local accounts may be related with differences in these trading patterns.

Other than the transaction level data, we resort to the following additional sources. Daily individual stock returns and market index returns (KOSPI returns) are obtained from the Korea Capital Market Institute (KCMI). Firm characteristics such as size and foreign ownership are obtained from FnDataGuide database provided by the FnGuide. Firm-level corporate governance index is provided by the Korea Corporate Governance Service (KCGS), a non-profit organization under Korea Exchange.

## **4. Empirical Results**

### **4.1. Portfolio Returns based on Net Buys: Tax Haven Accounts vs. Others**

Table 3 reports portfolio returns based on net purchases of different investor types. We consider five investor classes in this analysis; those from tax haven, U.K., other foreign countries, those of local institutions and local individuals. For each trading day, we sort all stocks in KOSPI market according to aggregated net purchases of each investor class scaled by the total dollar trading volume of the stock during the same day and group them into quintiles.<sup>10</sup>  $HPR_{t+1}$  represents one day return where the portfolio is formed just before the market close after observing the net purchase during the whole trading day. To gauge the extent of potential information contained in trading activities, we also calculate  $HPR_t$ , which is a hypothetical one day return where the portfolio is formed before observing the net purchase. Each column presents average one-day return for daily rebalanced quintile portfolios. The last column presents the returns from a hedged portfolio where proceeds from short selling the lowest quintile stocks are assumed to be invested in highest quintile stocks (i.e. highest net buy stocks).

The results from Table 3 indicate that hedged portfolio based on individual investors' trading activity yields significant negative returns. Selling those that are sold by individuals and buying those that are bought by individuals yields a daily return of negative 29 basis points. While buying highest quintile portfolios does not generate statistically significant returns, selling the lower quintiles provides statistically significant positive returns. These results suggest that individuals sell sub-optimally before (further) run-ups in prices, which is largely consistent with disposition effect.

On the other hand, portfolios based on net buys of local institutions or foreign investors generate significantly positive hedged returns. For example, hedged returns

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<sup>10</sup> For this analysis, we only need aggregated net buy information for each stock and for each investor class. This information is publicly available. For foreign account net buys, those aggregated across all foreign countries is publicly available, while country by country results are not publicly available.



based on both local institutions and ‘other’ foreign country accounts that are neither from tax haven nor U.K. amount up to 14 basis points per day.

Once we focus on returns based on trades from tax havens, the magnitude is much larger than those based on non-tax haven accounts. For example, hedged return based on tax haven net buys is 25 basis points per day, 75% larger than those based on non-tax havens. The source of the profit is mostly from the long position rather than short position. That is, tax haven accounts are better at predicting good news rather than bad news. If we relax the restriction of next-day portfolio formation and allow the portfolio to be formed on the day of the net buy rankings as reported in the third and fourth row of Table 3, the return is much higher. Under this stronger assumption, even the sell trade contains significant negative information, and the hedged return amounts up to 1% per day.

Portfolio returns based on net buys of U.K. accounts yield interesting results. Both buys and sells from U.K. accounts predict returns, generating a one-day hedged return of 40 basis points. Since classification of U.K. as a potential tax haven is controversial, we continue to treat U.K. as a separate category.

The results so far suggest that there may be some heterogeneity with respect to the quality and quantity of information contained in trades from different countries. While the predictability of non-tax haven accounts is largely similar to those from local institutions, those from tax havens and U.K. exhibit significantly higher predictability.

Since this trading strategy involves daily rebalancing, hedged return of 24.5 basis points per day (5.39% per month) may be substantially reduced once appropriate trading costs are taken into account. We provide an estimate of the economic magnitude after explicitly considering the transaction costs as follows. Explicit round-trip transaction costs including brokerage commission and securities transaction tax is 0.33% in Korea on

average.<sup>11</sup> Implicit transaction costs reflected in percentage bid-ask spread is about 0.97% on average.<sup>12</sup> This implies that total round-trip transaction cost is roughly 1.30%. Assuming 10% of hedged portfolios stocks are replaced each day, transaction cost amounts up to 2.86% per month.<sup>13</sup> Subtracting this from raw monthly return, we obtain 2.53% monthly hedged return after transaction cost, which still seems economically significant.

One potential reason behind the superior performance may be inadequate adjustment for various risks. To address this issue, we report two types of alphas in Table 4. One is based on market model, and the other is based on Fama and French (1993) three factors. The alphas are obtained by regressing daily portfolio returns on daily factor returns. The results from Table 4 indicate that reported alphas, both market-model-adjusted and 3 factors-adjusted, are almost identical to the raw portfolio returns reported in Table 3. These results suggest that observed superior performance of tax haven and U.K. accounts holds even after appropriately controlling for risk.

Another possibility is that return predictability of tax haven (and U.K.) accounts is not really persistent, but only short-lived. To check for this possibility, we extend the holding period of each of our portfolios using the overlapping holding period methodology of Jagadeesh and Titman (1993). We also calculate hedged returns up to 5 days after the formation date, the results of which are reported in Figure 2. The returns for the first event day, denoted as  $t+1$ , replicates those reported in the last column of Table 3.

Once we extend the holding period beyond one day, however, we observe some interesting patterns. Specifically, the return predictability of trades from tax havens as well

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<sup>11</sup> Round-trip brokerage commission, 0.03% is based on typical home trading system (HTS). A 0.3% securities transaction tax is charged whenever there is a sale.

<sup>12</sup> This value is based on average annual spreads after 2006 reported by Korea Exchange (KRX).

<sup>13</sup> We assume that there are 22 trading days in a month. In each of the Low and High portfolio, about 70 stocks are included per day and total number of stocks included in the portfolio during the sample period is roughly 700.

as those from U.K. are quite persistent up to 5 days after the portfolio formation date. In strict contrast, those from the other investor categories, namely other foreign investors, local institutions, and local individuals, are substantially short-lived. In fact, hedged portfolio return reverses its signs within 5 days for the remaining three investor categories. These findings suggest that information contained in trading from tax haven is not transitory but persistent.

#### 4.2. Cross-Sectional Differences in Predictability.

In this subsection, we examine whether there is any difference in hedged portfolio returns that varies with cross-sectional characteristics of the constituent stocks. Previous literature suggests that return predictability may be more conspicuous in stocks with certain characteristics. For example, both Diether, Lee, and Warner (2009) and Boehmer, Jones, and Zhang (2008) document that return predictability of short sellers is stronger among small stocks than among large stocks.

We consider three stock-level dimensions; size, governance, and foreign ownership. Each of these variables are broad proxies for the degree of information asymmetry or transparency. We measure size by market capitalization during the year. Firm-level corporate governance index is obtained from the Korea Corporate Governance Service (KCGS), a non-profit organization under Korea Exchange, which provides information for all listed Korean companies at annual frequency.<sup>14</sup>

We first categorize all stocks in our sample into two disjoint groups based on the above three dimensions; small vs. large, low governance vs. high governance, and low foreign ownership vs. high foreign ownership. Then, for each group of stocks, we repeat the procedure in Table 4. Specifically, we sort all stocks in each group according to

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<sup>14</sup> As of 2006, they had a total of 130 assessment items with a total score of 300 points. 60% of items are evaluated by various disclosures while the remaining 40% are filled in through questionnaires. Byun, Kwak, and Hwang (2008) and Byun, Lee, and Park (2012) provide a detailed description of the index.

aggregated net purchases from tax havens scaled by the total dollar trading volume, and assign them into quintiles.

Table 5 reports the results of this double-sort analysis. Panels A, B, and C report results based on size, governance, and foreign ownership, respectively. The results indicate that the hedged returns from mimicking trading patterns of accounts from tax havens is much higher when portfolios are composed of small stocks or stocks that exhibit low governance or low foreign ownership. For example, one day hedged return for small stocks traded by tax haven accounts amounts up to more than 35 basis points per day, which is three times as large as those for large stocks. Similar differences are observed between portfolios composed of low versus high governance stocks and low versus high foreign ownership stocks.

In Table 6, we run a panel regression where the dependent variable is the firm-level daily return and the main independent variable is the net purchase information from tax havens, denoted as  $\text{TaxHaven}_{t-1}$ . This analysis allows us to control for other potential stock characteristics that may affect returns other than net buys from tax havens.

The results, reported in columns (1) and (2) of Table 6, indicate that net purchases from tax havens are indeed informative for future returns even after controlling for previous day's return, previous day's volatility measure by the absolute return, size, and book to market. Since standard deviation of  $\text{TaxHaven}_{t-1}$  is 8.97%, a one standard deviation increase in tax haven net buys implies a 4.1 basis points increase in daily return. The economic magnitude may seem a bit small, but this precisely reflects the fact that tax haven account holders rarely trade, so that the value of  $\text{TaxHaven}_{t-1}$  is zero for most trading days.

The results from columns (3) to (5) indicate that net purchases for small firms and firms with weak governance explain the next day's return significantly more than those for

large firms and firms with better governance. This suggests that net purchases are more informative in small stocks and low governance stocks even after controlling for other stock characteristics.

Overall, the results from this subsection suggest that information contained in trades from tax haven is more pronounced in stocks with potentially more information asymmetry or less transparency. One possible interpretation is that these stocks are more difficult to value so that stock picking ability, if it exists at all, is more effective among these stocks. Although this explanation seems plausible, it is difficult to reconcile with the fact that genuine foreign investors in general prefer large cap, well-known, blue-chip stocks, e.g. Samsung Electronics (Kang and Stulz, 1997). A more plausible explanation is that insiders of these relatively murkier firms may engage in round-trip transactions through accounts set up in tax havens. In the next subsection, we provide a more direct test that compares these two alternative explanations using account-level trade information.

#### 4.3. Portfolio Returns based on Tax Haven Accounts: Insider Information vs. Stock Picking

There are two potential reasons that could explain the superior performance of tax haven accounts (Berkman, Koch, and Westerholm (2014)). One is that investors based in tax haven are more sophisticated in terms of stock picking abilities. Since one of the most important motivations for setting up accounts in tax haven is to reduce taxes, which is typically a concern for high net-worth investors, they may possess better overall ability in picking stocks. On the other hand, some investors investing through tax haven may trade on illegal insider information. Since a key characteristic of tax haven accounts is guaranteed secrecy, local regulators cannot effectively identify who the ultimate holder is. Thus, for any trader who has access to material non-public information, it is in their

interest to camouflage their identity through tax haven accounts and trade based on insider information.

There are potentially two types of insiders. One is the controlling shareholders, their family members, or other executives, who are actually running the company. Since these individuals have access to important good or bad news prior to their release, they may well trade based on these information. Another potential insider category is large outside shareholders. Although regulation Fair Disclosure (FD) is also in place in Korea, there is still a controversy as to whether certain investors, potentially large institutions or foreign investors, are favorably treated and provided with early tipping of certain information.

To test these possible explanations, we utilize the account-level information from tax havens. Key variable of interest is the number of stocks that each account trades during the sample period. Our approach is based on the idea that it is more likely that insiders would have information about one firm, rather than multiple firms simultaneously. Specifically, we first classify tax haven accounts into those that traded only one stock, and those that traded at least 11 stocks. Figure 3 presents the detailed distribution of number of stocks traded by each tax haven account. We first note that the mode of distribution is one. That is, the largest number of accounts trade only one stock during the whole sample period. According to Panel B in Figure 3, the proportion of accounts that only trade one stock amounts up to 30%. The basic idea is that those that trade only one stock is more likely to be ultimately owned by some insider who has access to firm-specific private non-public information. On the other hand, those that trade multiple (unrelated) stocks are more likely to be based on stock picking abilities.

Next, we refine above classification and classify accounts from tax havens into three types. First, those which trade only one stock or multiple stocks that belong to the same

business group are classified as potential insider accounts.<sup>15</sup> These accounts are more likely to be ultimately owned by someone who has access to group-level private information. Second, those which trade only one stock or multiple stocks that belong to the same industry are classified as potential stock picker accounts.<sup>16</sup> These accounts are more likely to be held by industry specialists who possess better stock picking abilities at the industry level. Alternatively, investors who specialize in specific sectors may be provided with information advantage as large outside investors. Those that do not fall into either of the two categories are classified as remaining tax haven accounts.

Finally, we aggregate net buys across each account type, sort portfolios based on these account-type-level net buys, and calculate daily rebalanced portfolio returns. The results are reported in Table 7. Panel A presents results based on number of stocks traded per account while panel B presents those for potential insider accounts and potential stock picker accounts. In Panel A, we do not have enough valid trading days to form quintile portfolios, so we resort to tercile portfolios.

The results from Panel A indicate that hedged portfolio returns are larger for those based on net buys of one-stock accounts than multiple-stock (at least 11) accounts. Specifically, daily hedged return is on average 40 basis points for one-stock account net buys while the corresponding number for multiple-stock accounts is only 22 basis points. These results suggest that superior performance of tax haven accounts may reflect insider information.

Panel B presents a more refined analysis where accounts are further classified into potential insiders and potential stock pickers based on business group concentration or industry concentration as well as number of stocks. The results indicate hedged portfolio

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<sup>15</sup> We exclude those accounts that traded one of the top 10 market cap stocks from this category since these may be a part of globally diversified portfolio.

<sup>16</sup> Accounts that trade only one stock are included in both potential insider accounts and potential stock picker accounts by construction.

returns are the largest when the portfolio formation is based on net buys of potential insider accounts, i.e. those that traded only one stock or multiple stocks from the same business group.

To summarize, account-level analysis suggests that accounts that trade a relatively smaller market cap single stock or stocks that belong to the same business group exhibit the strongest return predictability. Such superior performance seems more consistent with trading based on insider information than stock picking abilities.

#### 4.4. Trading Activity Prior to Disclosure of Good News

In this subsection, we provide more direct piece of evidence consistent with insider trading by examining abnormal net purchases of each account type prior to disclosures of specific good information. We consider two sets of events; earnings disclosures with positive shocks and disclosures of monopoly supply contract establishments.

Positive earnings shocks are identified as follows. We first hand collect the earnings announcement dates of each firm from KIND (Korea Investor's Network for Disclosure System) provided by the KRX and DART(Data Analysis, Retrieval and Transfer System) maintained by the Financial Supervisory Service. For annual announcements, we select the earliest date among disclosures of tentative earnings, changes in earnings structure (of more than 30%), audit report filings, AGM (annual general meeting) notifications, and actual AGM dates. For quarter announcements date, we choose the earlier date between disclosures of tentative earnings and filings or quarterly (or semi-annual) reports. To remove any potential confounding events, we next filter out dates where another operation-related disclosure is made on the same day, or other types of earnings announcements are made within five days, or a Fair Disclosure is made within ten days. Finally, we require 3-day cumulative market-adjusted abnormal return (CAR) following



the announcement to be at least 3% to proxy for substantial information. This procedure yields a sample of 2,469 announcement dates with positive earnings shocks.

We also obtain the disclosure dates for closing of monopoly supply contracts from DART. Similar to earnings announcements, we only keep the first announcement if there is another announcement within the next 5 trading days. We again restrict the events to those dates where 3-day CAR is at least 3%. This process results in 503 disclosures of monopoly supply contracts.

We define abnormal net purchase of tax haven accounts for stock  $i$  on day  $t$  following Kaniel, Saar, and Titman (2012) as

$$\text{Abnormal Net Purchase}_{i,t} = \text{Net Purchase}_{i,t} - \frac{1}{T} \sum_{\text{All Days In 2006.1.-2009.8.}} \text{Net Purchase}_{i,t} \quad (1)$$

where

$$\text{Net Purchase}_{i,t} = \frac{\text{Tax Haven Buy Dollar Volume}_{i,t} - \text{Tax Haven Sell Dollar Volume}_{i,t}}{\text{Average Daily Dollar Volume in the Calendar Year}_{i,t}}$$

In Table 8, we report the averages of abnormal net purchases of different types of tax haven accounts immediately prior to the disclosure. Panel A reports the results for positive earnings shocks while panel B reports those for monopoly supply contracts. We report the results for all tax haven accounts as well as potential insider accounts and the remaining accounts.

The results from Panels A and B of Table 8 first indicate that potential insider accounts only account for a very small portion, roughly 10% or less, of all tax haven accounts that trade immediately prior to the disclosure of potential good news. Nevertheless, these accounts engage in significantly active buying 4 to 6 days prior to the disclosure. For example, cumulative abnormal net buy from potential insider accounts during the 6 days prior to the disclosure is 0.026 in Panel A and 0.029 in Panel B,

respectively, both of which are statistically significant. In a strict contrast, we do not find any significant net buying activity from the remaining accounts prior to the disclosure in both Panels A and B.

In figure 4, we plot cumulative abnormal net purchases of tax haven accounts around the disclosures of the previous two types of potential good news. Panel A reports those for positive earnings shocks and Panel B presents those for monopoly supply contracts. Consistent with Table 8, we observe a conspicuous increase in net purchase leading up to the disclosure date for potential insider accounts. Moreover, we also observe that this trend reverses once the good news is made public. This reversal may well reflect insiders' efforts to lock-in a quick profit around disclosures of good news. In strict contrast, we do not observe such a pattern for other types of accounts, including those from U.K. Overall, the findings in Table 8 and Figure 3 strongly suggest that insiders may be actively utilizing non-public information and trade through tax haven accounts.

#### 4.5. Alternative Definition of Potential Insiders and Stock Pickers

In this subsection, we consider an alternative criterion to classify tax haven accounts into potential insiders and potential stock pickers. Following Berkman et al. (2014), we assign accounts who trade before more than one event for a specific firm as potential insiders. These accounts do not necessarily trade a single stock. They can trade multiple stocks as long as they trade prior to multiple information events for given stock. As in Table 8, we consider both positive earnings shocks and monopoly supply contracts. Potential stock pickers are defined as accounts that trade before a single event for a specific given firm, but do so for two or more different firms. These accounts by definition trades multiple stocks. But for a given stock among these multiple stocks, there must be only one information event prior to which trades are made. The intuition behind this

classification is largely similar to the classification based on number of stocks traded. That is, insiders are more likely to possess information about multiple events for a given firm, while stock pickers are more likely to possess information across multiple firms with similar events.

We first identify these two subsets of tax haven accounts by investigating the trading activity of each account during 10 days before each information event. Next, we calculate the average signed CAR(0,2) and frequency of correct traders for each subset around the event date. Signed CAR(0,2) is defined as CAR(0,2) multiplied by 1 if an account is net buyer of a stock during t-10 and t-1 or multiplied by -1 if an account is net seller. Frequency is the proportion of net buyer of a stock during t-10 and t-1. For both groups, we calculate the averages across all events and test the differences in group means.

Table 9 reports the performance of these two subsets of tax haven accounts before good news. The results for all events in Panel A indicate that average CAR(0,2) of potential insiders is 1.10% and statistically significant while that of potential stock pickers is 0.003% and insignificant. The difference of 1.10% is also statistically significant with a t-value of 3.95. The frequency of net buyers for potential insiders (54.62%) also exceeds that of potential stock pickers (50.62%) and the difference is statistically significant. This pattern strictly contrasts with those reported in Berkman et al. (2014) where potential stock pickers also exhibit similar results as potential insiders and as such there is no significant difference between the two groups.

Panels B and C presents the results for positive earnings shocks and monopoly supply contracts respectively. In both panels, potential insiders also outperform potential stock pickers. These results provide additional piece of evidence that insiders may be actively buying stocks before good news through tax haven accounts.

## 5. Conclusion

Tax havens are a subject of immense interest among regulators around the world. Despite such regulatory interests, systematic evidence on the implications of tax havens has been very scant precisely due to the lack of data. In this paper, we provide first piece of evidence that trades originating from tax havens contain significant information for future stock returns.

The superior performance of tax haven accounts may be due to either inherent stock picking ability or preferential access to certain private, potentially illegal, firm-specific information. We are especially interested in the latter possibility since it is very difficult to identify the ultimate beneficiary of accounts in tax havens, and as such they have incentives to utilize insider information.

Based on a unique proprietary dataset that includes all trades in KOSPI market, the main bourse in Korea, between January 2006 to August 2009 with buyer and seller identifiers and their country of origin, we document that hedged portfolio return based on net buys from tax havens amounts up to 25 basis points per day, which is statistically and economically substantial. Cross-sectionally, such superior performance is more pronounced in small, low governance, or low foreign ownership stocks. More importantly, hedged returns are larger if net buys are constructed from accounts that only trade one stock with relatively smaller market cap or multiple stocks that belong to the same business group. We also document that these accounts engage in active buying just prior to the disclosure of good news, namely positive earnings shocks and establishments of monopoly supply contracts.

Overall, the findings in this paper suggest that tax haven account holders may indeed be ‘black-haired’ foreign investors who camouflage themselves as genuine foreign investors and engage in ‘round-trip’ investments. Our paper is the first to suggest that

exploitation of illegal insider information may be one important reason behind setting up paper companies in tax havens. An important policy implication is that tax havens are not just a way of reducing taxes on the existing *after-tax* income but may be actively utilized to increase *before-tax* income.

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## Appendix 1. List of Tax Havens

The following is the list of tax havens as identified in Hanlon et al. (2015). It is based on Dharmapala (2009) who define a country as a tax haven if it was listed on the 1998 OECD report on tax havens or if it was included in the list provided by Hines and Rice (1994).

Andorra  
Anguilla  
Antigua and Barbuda  
Aruba  
Bahamas  
Bahrain  
Barbados  
Belize  
Bermuda  
British Virgin Islands  
Cayman Islands  
Cook Islands  
Cyprus  
Dominica  
Gibraltar  
Grenada  
Guernsey  
Hong Kong  
Ireland  
Isle of Man  
Jersey  
Jordan  
Lebanon  
Liberia  
Liechtenstein  
Luxembourg  
Macao  
Maldives  
Malta  
Marshall Islands  
Mauritius  
Monaco  
Montserrat  
Nauru  
Netherlands Antilles  
Niue  
Panama  
Saint Kitts and Nevis  
Saint Lucia  
Saint Vincent and the Grenadines  
Samoa  
San Marino  
Seychelles  
Singapore  
Switzerland  
Tonga

Turks and Caicos Islands  
Vanuatu  
Virgin Islands (US)

Table 1  
Summary of Trading Activity by Investor Class

This table reports the summary of trading activities of each account in our dataset. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009. Each account is classified into four types based on the identity of the account holder; local individuals, local institutions, foreign investors, and Korean citizens with overseas permanent residency.

Investor Class	Number of Accounts		Average number of stocks traded per account	Trading Volume				
				Aggregate (KRW trillion)			Per Account (KRW million)	
	N	(%)		Buys	Sells	Total (%)	Buys	Sells
Local individuals	6,225,337	97.3	12.8	2,423.7	2,421.7	53.62	389.3	389.0
Local institutions	101,989	1.6	30.2	1,078.1	1,032.1	23.35	10,570.3	10,119.2
Foreigners	64,761	1.0	9.0	1,013.4	1,061.5	22.96	15,649.0	16,390.4
Overseas Permanent Residents	9,008	0.1	13.1	3.4	3.3	0.07	376.1	363.1
Total	6,401,095	100.0	13.1	4,519	4,518	100.00	705.9	705.9

Table 2

## Distribution of Trading Activity at the Account-Level: Tax Haven Accounts vs. Others

This table reports the distribution of trading activities at the account level. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009. Panels A, B, C, D, and E presents those from tax havens, U.K., the remainder of foreign countries, those of local institutions and local individuals, respectively.

## Panel A : Accounts from Tax Havens (17,745 accounts)

	Mean	Std. Dev.	Q1	Median	Q3
Number of stocks traded	9.7	19.5	1	3	10
Number of trading days	15.8	42.6	1	4	12
Trading Volume (KRW mil)	29,160	521,254	356	1,812	9,053
Net Buy (KRW mil)	-926	34,439	-1,048	-25	634

## Panel B : Accounts from U.K. (6,429 accounts)

	Mean	Std. Dev.	Q1	Median	Q3
Number of stocks traded	11.1	31.6	1	3	9
Number of trading days	14.6	50.6	1	3	10
Trading Volume (KRW mil)	81,018	1,301,039	378	1,858	8,326
Net Buy (KRW mil)	-1,894	50,909	-1,287	-56	522

## Panel C : Accounts from Other Foreign Countries (40,587 accounts)

	Mean	Std. Dev.	Q1	Median	Q3
Number of stocks traded	8.3	18.2	1	3	8
Number of trading days	13.9	38.6	1	3	11
Trading Volume (KRW mil)	25,540	480,513	159	852	4,547
Net Buy (KRW mil)	-478	40,465	-542	-4	300

## Panel D : Accounts of Local Institutions (101,989 accounts)

	Mean	Std. Dev.	Q1	Median	Q3
Number of stocks traded	30.2	47.3	5	9	32
Number of trading days	48.5	76.9	5	22	57
Trading Volume (KRW mil)	20,690	312,044	42	183	3,746
Net Buy (KRW mil)	451	70,694	-35	-2	21

## Panel E : Accounts of Local Individuals (randomly selected 62,253 accounts: 1% of total)

	Mean	Std. Dev.	Q1	Median	Q3
Number of stocks traded	13.0	22.4	2	5	15
Number of trading days	38.9	72.6	3	12	41
Trading Volume (KRW mil)	768	5,048	8	51	296
Net Buy (KRW mil)	2	369	-2	0	6

Table 3

## Portfolio Returns Sorted by Net Purchase: Tax Haven Accounts vs. Others

This table reports portfolio returns (in percentages) based on net purchases. For each trading day, we sort all stocks according to aggregated net purchases of each investor class scaled by the total dollar trading volume of the stock during the same day and group them into quintiles. We consider five investor classes; those from tax haven, U.K., other foreign countries, those of local institutions and local individuals.  $HPR_{t+1}$  represents one day return where the portfolio is formed just before the market close after observing the net purchase during the whole trading day.  $HPR_t$  represents a hypothetical one day return where the portfolio is formed before observing the net purchase. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

		Low	Q2	Q3	Q4	High	High-Low
Tax Haven	$HPR_{t+1}$	-0.040	-0.045	0.073	0.169	0.205	0.245
	t-stat	-0.701	-0.674	1.057	2.458	3.388	12.612
	$HPR_t$	-0.391	-0.162	0.097	0.481	0.574	0.966
	t-stat	-7.075	-2.436	1.339	6.760	9.578	45.069
U.K.	$HPR_{t+1}$	-0.111	-0.108	0.034	0.225	0.291	0.401
	t-stat	-1.856	-1.646	0.493	3.176	4.613	17.642
Other Foreign Countries	$HPR_{t+1}$	0.027	0.025	0.040	0.113	0.166	0.140
	t-stat	0.462	0.358	0.548	1.642	3.044	6.529
Local Institutions	$HPR_{t+1}$	0.020	-0.031	0.023	0.153	0.161	0.141
	t-stat	0.337	-0.486	0.348	2.558	3.548	5.940
Local Individuals	$HPR_{t+1}$	0.223	0.219	0.060	-0.112	-0.065	-0.288
	t-stat	4.666	3.548	1.126	-1.775	-1.081	-13.078

Table 4

## Risk-Adjusted Portfolio Returns Sorted by Net Purchase: Tax Haven Accounts vs. Others

This table reports risk-adjusted portfolio returns (in percentages) based on net purchases. For each trading day, we sort all stocks according to aggregated net purchases of each investor class scaled by the total dollar trading volume of the stock during the same day and group them into quintiles. We consider five investor classes; those from tax haven, U.K., other foreign countries, those of local institutions and local individuals. We report two risk-adjusted return measures; alphas from daily market model regressions, and alphas from Fama-French 3 factor model. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

			Low	Q2	Q3	Q4	High	High-Low
Tax Haven	Alpha <sub>CAPM</sub>	coef.	-0.058	-0.065	0.052	0.148	0.186	0.243
		t-stat	-2.740	-2.272	1.572	4.578	8.273	12.784
	Alpha <sub>3factor</sub>	coef.	-0.064	-0.069	0.050	0.147	0.183	0.247
		t-stat	-4.018	-3.482	2.316	6.204	10.408	12.962
U.K.	Alpha <sub>CAPM</sub>	coef.	-0.130	-0.129	0.013	0.203	0.271	0.400
		t-stat	-5.614	-4.274	0.392	6.153	10.682	17.717
	Alpha <sub>3factor</sub>	coef.	-0.136	-0.133	0.011	0.197	0.265	0.401
		t-stat	-8.216	-6.933	0.526	9.208	14.078	17.678
Other Foreign Countries	Alpha <sub>CAPM</sub>	coef.	0.091	0.035	0.086	0.130	0.053	0.141
		t-stat	4.821	1.344	3.042	5.026	2.687	6.659
	Alpha <sub>3factor</sub>	coef.	-0.002	-0.002	0.019	0.089	0.146	0.147
		t-stat	-0.104	-0.083	0.712	4.058	8.300	7.004
Local Institutions	Alpha <sub>CAPM</sub>	coef.	0.001	-0.051	0.004	0.134	0.147	0.146
		t-stat	0.058	-1.710	0.106	5.420	7.239	7.052
	Alpha <sub>3factor</sub>	coef.	-0.007	-0.058	-0.002	0.125	0.133	0.140
		t-stat	-0.386	-3.270	-0.078	7.763	9.010	6.952
Local Individuals	Alpha <sub>CAPM</sub>	coef.	0.208	0.200	0.045	-0.131	-0.084	-0.292
		t-stat	10.287	7.116	1.418	-4.122	-3.181	-15.277
	Alpha <sub>3factor</sub>	coef.	0.196	0.196	0.031	-0.140	-0.094	-0.290
		t-stat	13.704	11.876	1.967	-8.077	-6.086	-16.396

Table 5

## Portfolio Returns Sorted by Net Purchase from Tax Haven Accounts: Cross-Sectional Analysis

This table reports portfolio returns (in percentages) based on net purchases from tax haven accounts. We categorize all stocks into two disjoint groups based on the following three different dimensions; size measured by market capitalization, governance proxied by firm-year level index provided by Korea Corporate Governance Service, and foreign ownership. Panels A, B, and C report results based on size, governance, and foreign ownership, respectively. For each trading day, we sort all stocks in each group – small vs. large, low governance vs. high governance, and low foreign ownership vs. high foreign ownership, according to aggregated net purchases from tax havens scaled by the total dollar trading volume of the stock during the same day and group them into quintiles.  $HPR_{t+1}$  represents one day return where the portfolio is formed just before the market close after observing the net purchase during the whole trading day. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

## Panel A: Small vs. Large Stocks

		Low	Q2	Q3	Q4	High	High-Low
Small	$HPR_{t+1}$	-0.112	-0.106	0.059	0.155	0.240	0.352
	t-stat	-1.923	-1.525	0.825	2.227	3.657	12.009
Large	$HPR_{t+1}$	0.013	0.033	0.114	0.187	0.130	0.117
	t-stat	0.231	0.487	1.582	2.693	2.132	4.811

## Panel B: Low Governance vs. High Governance Stocks

		Low	Q2	Q3	Q4	High	High-Low
Low Governance	$HPR_{t+1}$	-0.079	-0.079	0.047	0.173	0.258	0.337
	t-stat	-1.393	-1.143	0.664	2.492	4.089	12.172
High Governance	$HPR_{t+1}$	-0.001	-0.005	0.109	0.157	0.134	0.136
	t-stat	-0.023	-0.076	1.507	2.237	2.169	5.614

## Panel C: Low Foreign Ownership vs. High Foreign Ownership Stocks

		Low	Q2	Q3	Q4	High	High-Low
Low	$HPR_{t+1}$	-0.069	-0.066	0.097	0.173	0.252	0.322
	t-stat	-1.068	-0.905	1.291	2.321	3.646	11.344
High	$HPR_{t+1}$	-0.040	0.004	0.059	0.148	0.165	0.205
	t-stat	-0.736	0.072	0.902	2.332	2.851	8.347

Table 6  
Panel Regression Analysis

This table presents panel regression results where the dependent variables are daily returns of firms that have ever been traded by a tax haven account during the sample period.  $TaxHaven_{t-1}$  is the aggregated net purchases from tax havens a day before scaled by the total dollar trading volume of the stock on that day. We create three dummy variables based on size, governance, and foreign ownership, which are interacted with  $TaxHaven_{t-1}$ . Dummy(Small Size) equals one if market capitalization is below the sample median during a given year. Dummy(Low Governance) equals one if the governance index compiled by Korea Corporate Governance Service is below the sample median during a given year. Dummy(Low Foreign Ownership) equals one if the foreign ownership is below the sample median during a given year.  $Return_{t-1}$  is the previous day's return, and  $Vol_{t-1}$  is the previous day's absolute return. The table reports the coefficient of each dependent variable and its t-statistics below the coefficient. All specifications include stock fixed effects and day fixed effects. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

	(1)	(2)	(3)	(4)	(5)
$TaxHaven_{t-1}$	0.0046 9.35	0.0039 8.27	0.0034 6.4	0.0031 5.42	0.0038 7.71
$TaxHaven_{t-1} * Dummy(Small Size)$			0.0023 2.01		
$TaxHaven_{t-1} * Dummy(Low Governance)$				0.0025 2.56	
$TaxHaven_{t-1} * Dummy(Low Foreign Ownership)$					0.0018 1.02
$Return_{t-1}$		0.0331 24.87	0.0331 24.87	0.0321 24.1	0.0320 24.03
$Vol_{t-1}$		0.0330 18.85	0.0330 18.85	0.0330 18.79	0.0328 18.7
$Log(Size)$		0.2570 18.91	0.2568 18.9	0.2650 18.77	0.2642 18.69
Book to Market		0.0135 2.47	0.0136 2.49	0.0195 3.17	0.0196 3.18
Stock-fixed effects	Yes	Yes	Yes	Yes	Yes
Day-fixed effects	Yes	Yes	Yes	Yes	Yes
N (stocks)			736		
N (trading days)			908		
$R^2$	0.1967	0.2161	0.2161	0.2167	0.2169



Table 7

Portfolio Returns Sorted by Net Purchase within Tax Haven Accounts:  
Insider Information vs. Stock Picking

This table reports portfolio returns (in percentages) based on net purchases of specific tax haven accounts. For each trading day, we sort all stocks according to aggregated net purchases of each account types within tax haven category scaled by the total dollar trading volume of the stock during the same day and group them into quintiles. In panel A, we classify tax haven accounts into those that traded only one stock, and those that traded at least 11 stocks. In panel B, we consider three account types from tax havens. Those which trade only one stock (excluding top 10 market cap stocks) or multiple stocks that belong to the same business group are classified as potential insider accounts. Those which trade only one stock or multiple stocks that belong to the same industry are classified as potential stock picker accounts. Those that do not fall into either of the two categories are classified as remaining tax haven accounts.  $HPR_{t+1}$  represents one day return where the portfolio is formed just before the market close after observing the net purchase during the whole trading day. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

**Panel A: 1 Stock Accounts vs. Accounts with Multiple Stocks**

		Low	Q2	High	High-Low
1 stock	$HPR_{t+1}$	-0.141	0.126	0.233	0.404
accounts	t-stat	-1.548	1.628	2.703	4.156
accounts	$HPR_{t+1}$	-0.040	0.076	0.179	0.219
$\geq 11$ stocks	t-stat	-0.660	1.113	2.857	13.571

**Panel B: Potential Insider vs. Potential Stock Picker**

		Low	Q2	Q3	Q4	High	High-Low
Potential Insider	$HPR_{t+1}$	-0.136	-0.038	0.134	0.244	0.303	0.460
(3,718 accounts)	t-stat	-0.964	-0.340	1.220	2.126	2.750	2.733
Potential Stock Picker	$HPR_{t+1}$	-0.097	-0.055	0.107	0.333	0.185	0.275
(5,744 accounts)	t-stat	-0.924	-0.621	1.295	3.537	2.027	2.246
Remaining Accounts	$HPR_{t+1}$	-0.040	-0.037	0.073	0.167	0.202	0.242
(11,920 accounts)	t-stat	-0.711	-0.559	1.062	2.440	3.339	12.465

Table 8

## Abnormal Net Purchases before Good News: Insider Information vs. Stock Picking

This table reports averages of abnormal net purchases of specific tax haven accounts immediately prior to disclosures of potential good news. Abnormal net purchases are obtained by scaling the dollar amount net purchase by average dollar amount daily trading volume in that calendar year following Kaniel, Saar, and Titman (2012). ‘N’ is number of events that abnormal net purchases of each type exist. Panel A reports the results for positive earnings shocks while panel B presents those for monopoly supply contracts. Those which trade only one stock or multiple stocks that belong to the same business group are classified as potential insider accounts. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

**Panel A: Positive Earnings Shocks**

Event day	Total Tax Haven Accounts			Potential Insider			Remaining Accounts		
	N	mean	t-value	N	mean	t-value	N	mean	t-value
-12	631	0.002	0.344	20	-0.010	-1.222	630	0.002	0.433
-11	612	-0.012	-1.089	23	-0.009	-1.007	611	-0.012	-1.048
-10	622	0.011	1.000	23	0.010	2.569	622	0.011	0.992
-9	636	0.001	0.123	13	0.008	1.107	636	0.001	0.121
-8	627	-0.001	-0.203	18	-0.007	-0.528	626	-0.001	-0.124
-7	645	-0.013	-1.424	17	0.007	1.510	645	-0.013	-1.420
-6	632	0.003	0.503	18	0.002	0.500	632	0.003	0.523
-5	635	-0.006	-1.114	15	0.000	-0.020	635	-0.006	-1.085
-4	649	0.007	0.580	22	0.039	2.478	649	0.006	0.485
-3	662	-0.012	-1.440	21	0.009	1.185	662	-0.012	-1.453
-2	651	-0.002	-0.193	19	0.037	0.993	649	-0.002	-0.307
-1	642	0.006	0.891	21	0.007	2.021	641	0.006	0.878
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(-12,-1)	747	-0.014	-0.450	105	0.018	1.858	746	-0.015	-0.471
(-12,-7)	720	-0.011	-0.504	62	-0.001	-0.113	719	-0.010	-0.456
(-6,-1)	734	-0.003	-0.169	74	0.026	2.345	734	-0.005	-0.254

**Panel B: Monopoly Supply Contract**

Event day	Total Tax Haven Accounts			Potential Insider			Remaining Accounts		
	N	mean	t-value	N	mean	t-value	N	mean	t-value
-12	360	0.003	0.611	11	0.011	0.732	356	0.001	0.189
-11	356	-0.012	-0.402	8	-1.169	-1.054	353	0.025	1.484
-10	369	0.002	0.454	4	-0.058	-0.801	364	-0.001	-0.126
-9	368	-0.005	-0.671	9	0.006	0.853	363	0.005	0.321
-8	367	-0.014	-2.319	11	-0.014	-1.047	363	-0.008	-1.548
-7	383	-0.006	-0.949	13	0.017	0.513	377	-0.005	-0.859
-6	377	-0.011	-0.962	15	0.012	2.775	372	0.005	0.231
-5	376	-0.010	-1.123	6	0.012	3.695	367	-0.007	-0.868
-4	364	-0.024	-1.720	5	0.010	3.336	356	-0.026	-1.896
-3	373	-0.019	-2.853	6	0.015	1.579	367	-0.010	-1.903
-2	366	0.022	0.755	12	0.026	1.543	358	-0.003	-0.539
-1	376	0.003	0.515	8	0.038	1.007	372	0.015	1.207
<hr/>									
(-12,-1)	434	-0.059	-1.192	64	-0.130	-0.929	429	-0.009	-0.251
(-12,-7)	419	-0.027	-0.976	40	-0.234	-1.045	414	0.013	0.677
(-6,-1)	418	-0.034	-1.015	35	0.029	2.006	413	-0.022	-0.778

Table 9

Performance for Two Subsets of Tax Haven Accounts before Good News:  
Insider Information vs. Stock Picking

This table reports performance for two subsets of tax haven accounts prior to disclosures of good news; potential insider and stock picker. Accounts that trade before multiple events for specific firm is assigned as potential insider. Accounts that trade before a single event for a specific firm, but do so for multiple firms are classified as potential stock pickers. For each event, we calculate the average signed CAR(0,2) and frequency of correct traders for each subset. Signed CAR(0,2) is defined as CAR(0,2) multiplied by 1 if an account is net buyer of a stock during t-10 and t-1 or multiplied by -1 if an account is net seller. Frequency is the proportion of net buyer of a stock during t-10 and t-1. For both groups, we calculate the averages across all events and test the differences in group means. Panel A reports the results for all events while panel B and C presents those for positive earnings shocks and monopoly supply contracts respectively. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

**Panel A. Performance for Two Subset of Tax Haven Accounts before All Events**

	(1) Potential Insider (Multiple Events for Individual Firm)			(2) Potential Stock Picker (Individual Events for Multiple Firms)			Difference: (1)-(2)	
	N	mean	t-value	N	mean	t-value	mean	t-value
CAR(0,2)%	1,665	1.10	5.63	1,005	0.003	0.01	1.10	3.95
Frequency%	1,665	54.62	4.97	1,005	50.63	0.55	3.99	2.68

**Panel B. Performance for Two Subset of Tax Haven Accounts before Good Earning Shocks**

	(1) Potential Insider (Multiple Events for Individual Firm)			(2) Potential Stock Picker (Individual Events for Multiple Firms)			Difference: (1)-(2)	
	N	mean	t-value	N	mean	t-value	mean	t-value
CAR(0,2)%	1,265	1.14	5.13	779	0.04	0.20	1.09	3.52
Frequency%	1,265	55.65	5.19	779	50.53	0.40	5.12	2.97

**Panel C. Performance for Two Subset of Tax Haven Accounts before Monopoly Supply Contracts**

	(1) Potential Insider (Multiple Events for Individual Firm)			(2) Potential Stock Picker (Individual Events for Multiple Firms)			Difference: (1)-(2)	
	N	mean	t-value	N	mean	t-value	mean	t-value
CAR(0,2)%	388	0.98	2.35	226	-0.14	-0.29	1.11	1.77
Frequency%	388	53.81	2.21	226	50.99	0.43	2.82	0.98

Figure 1  
Dollar Trading Volume by Country of Origin Scaled by Population

This figure presents the natural log of total dollar trading volume (in KRW) during the sample period by accounts originating from foreign countries. The dollar trading volume is scaled by the population of each country. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

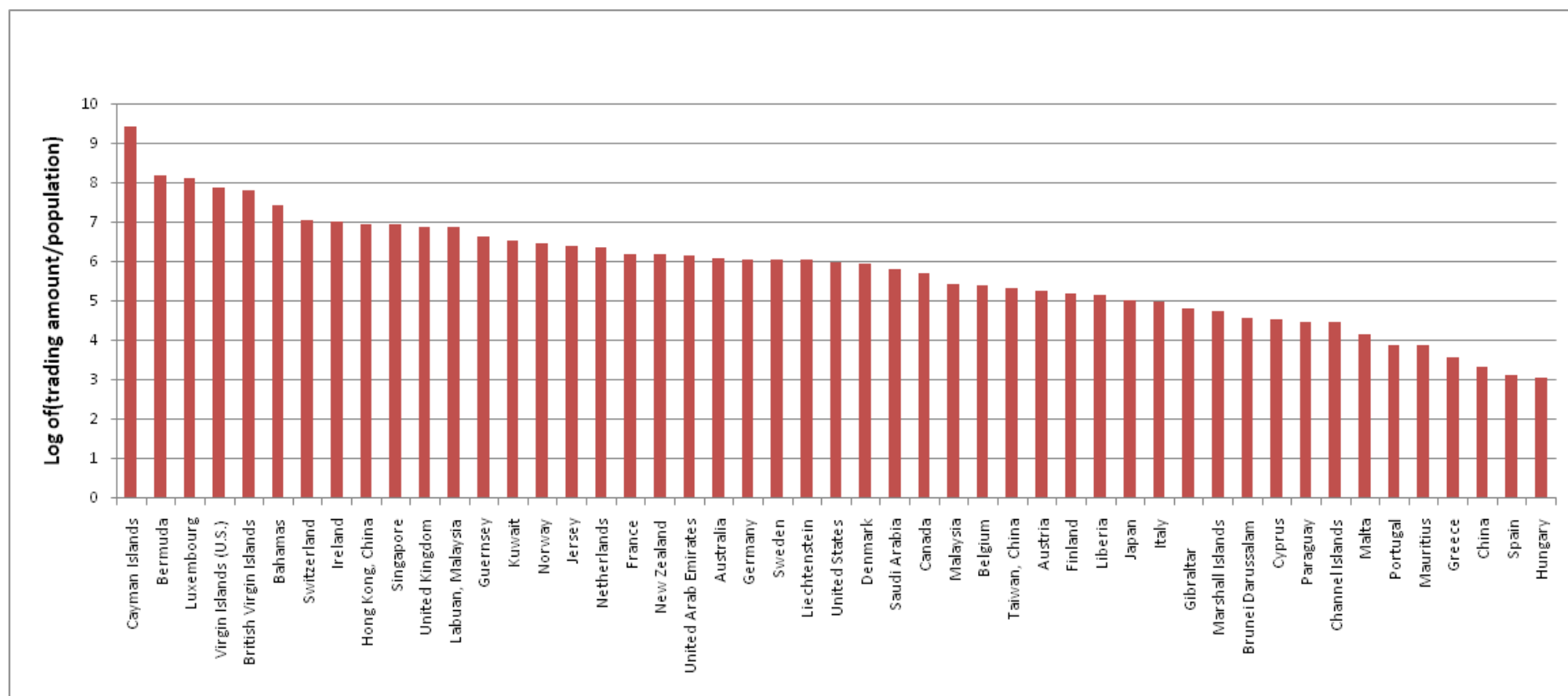


Figure 2. Average Return of Hedged Portfolios: Tax Haven vs. Others

This figure reports portfolio returns (in percentages) based on net purchases. For each trading day, we sort all stocks according to aggregated net purchases of each investor class scaled by the total dollar trading volume of the stock during the same day and group them into quintiles. We consider five investor classes; those from tax haven, U.K., other foreign countries, those of local institutions and local individuals.  $t+1$  represents one day hedged portfolio return from buying the highest net buy quintile and selling the lowest quintile. Portfolio is formed just before the market close after observing the net purchase during the whole trading day. Hedged portfolio returns are calculated up to 5 days since the portfolio formation date. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

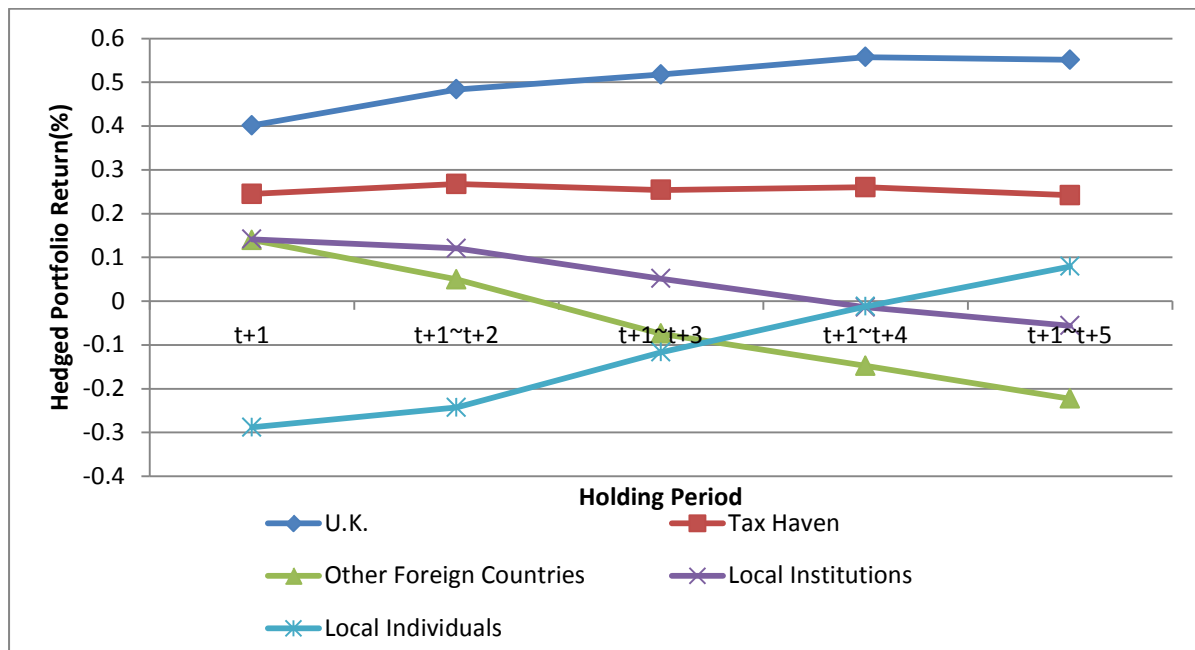
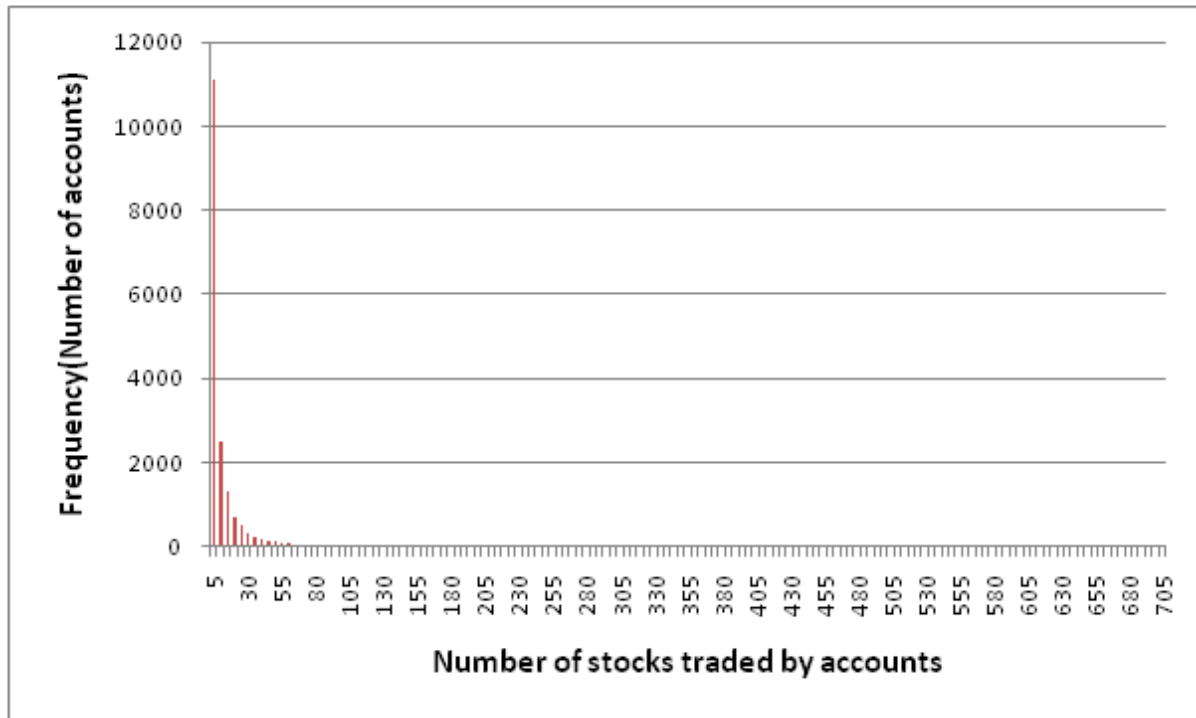


Figure 3  
Number of Stocks Traded by Tax Haven Accounts

This figure presents the distribution of the number of stocks traded by each account originating from tax havens. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

Panel A



Panel B

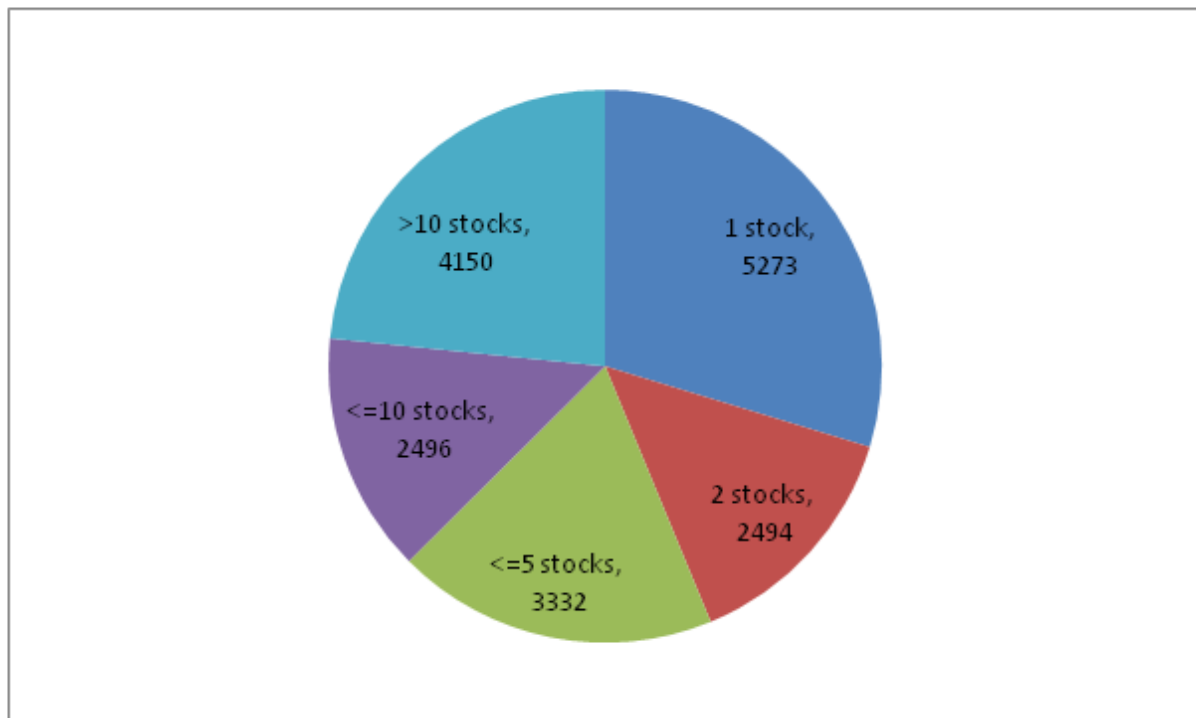
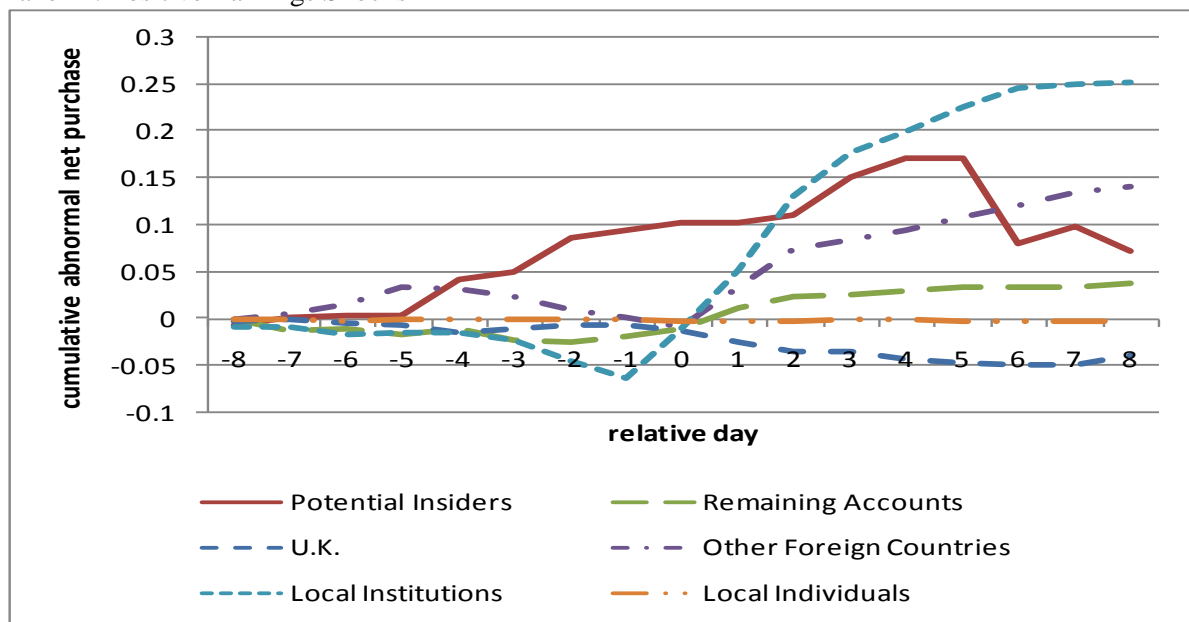


Figure 4

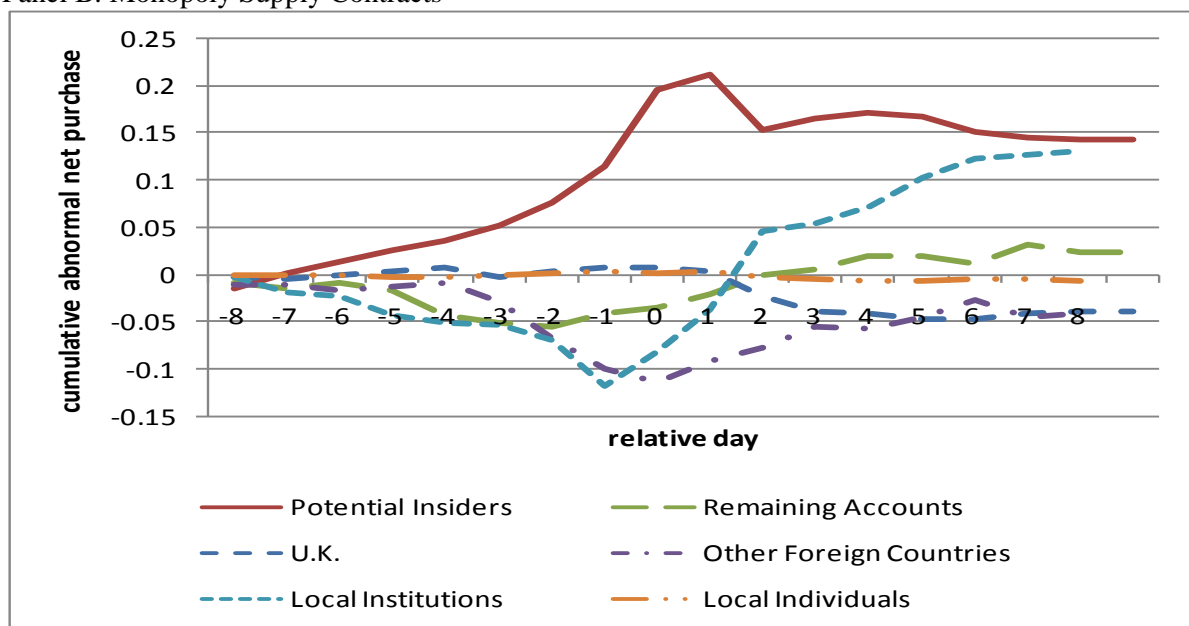
# Cumulative Abnormal Net Purchases around Good News: Insider Information vs. Stock Picking

This figure presents averages of cumulative abnormal net purchases of specific tax haven accounts around disclosures of potential good news. Abnormal net purchases are obtained by scaling the dollar amount net purchase by average dollar amount daily trading volume in that calendar year following Kaniel, Saar, and Titman (2012). Panel A reports the results for positive earnings shocks while panel B presents those for monopoly supply contracts. Those which trade only one stock or multiple stocks that belong to the same business group are classified as potential insider accounts. The dataset covers all accounts in Korea Exchange that traded stocks in KOSPI market from January 2006 to August 2009.

Panel A: Positive Earnings Shocks



Panel B: Monopoly Supply Contracts



Appendix Table 1. Summary of Trading Activity by Origin Country

This table reports the summary of trading activities of each account in our dataset where account holders originate from foreign countries from January 2006 to August 2009. The countries are sorted by the total trading volume. The bold letters indicate tax havens as identified by Hanlon et al. (2015) plus Labuan, Malaysia, a well known tax-haven in Korea.

	Number of		Average number of stocks traded per account	Trading Volume					
	Accounts	N		(%)	Aggregate (KRW billion)			Per Account	
					Buys	Sells	Total (%)	Buys	Sells
United Kingdom	6,429	9.9	11.1	254,344	266,520	25.1	39.6	41.5	
United States	22,405	34.6	7.1	154,810	166,110	15.5	6.9	7.4	
<b>Cayman Islands</b>	6,324	9.8	9.1	76,304	79,831	7.5	12.1	12.6	
France	615	0.9	13.8	58,229	52,592	5.3	94.7	85.5	
Germany	1,050	1.6	11.9	47,258	48,864	4.6	45.0	46.5	
<b>Switzerland</b>	660	1.0	14.8	45,387	45,791	4.4	68.8	69.4	
<b>Luxembourg</b>	3,695	5.7	9.6	33,301	37,027	3.4	9.0	10.0	
<b>Hong Kong, China</b>	1,480	2.3	10.7	31,310	34,205	3.2	21.2	23.1	
<b>Ireland</b>	2,479	3.8	10.0	26,618	25,172	2.5	10.7	10.2	
<b>Singapore</b>	1,289	2.0	10.9	21,956	27,549	2.4	17.0	21.4	
Netherlands	1,098	1.7	11.9	19,137	20,767	1.9	17.4	18.9	
Australia	2,097	3.2	6.4	13,302	14,416	1.3	6.3	6.9	
Canada	3,540	5.5	5.7	9,965	9,012	0.9	2.8	2.5	
Saudi Arabia	205	0.3	9.5	10,680	7,257	0.9	52.1	35.4	
Norway	193	0.3	15.4	8,055	7,101	0.7	41.7	36.8	
Japan	1,663	2.6	7.1	7,416	5,860	0.6	4.5	3.5	
<b>Bermuda</b>	713	1.1	8.1	5,202	6,263	0.6	7.3	8.8	
Sweden	447	0.7	11.8	5,214	6,100	0.5	11.7	13.6	
Kuwait	152	0.2	12.4	4,990	4,421	0.5	32.8	29.1	
<b>Bahamas</b>	259	0.4	12.0	4,361	4,670	0.4	16.8	18.0	
Malaysia	591	0.9	7.7	3,107	5,562	0.4	5.3	9.4	
United Arab Emirates	220	0.3	13.9	4,980	3,616	0.4	22.6	16.4	
<b>Virgin Islands (U.S.)</b>	441	0.7	7.0	3,707	4,629	0.4	8.4	10.5	
New Zealand	153	0.2	16.5	3,761	3,544	0.4	24.6	23.2	
Italy	320	0.5	14.4	2,646	3,338	0.3	8.3	10.4	
Taiwan, China	1,263	2.0	8.8	2,683	2,625	0.3	2.1	2.1	
Denmark	393	0.6	8.7	2,094	3,013	0.2	5.3	7.7	
China	1,493	2.3	11.3	1,746	1,155	0.1	1.2	0.8	
Belgium	109	0.2	10.4	744	1,915	0.1	6.8	17.6	
<b>British Virgin Island</b>	238	0.4	5.0	1,180	1,031	0.1	5.0	4.3	
Austria	283	0.4	7.8	772	756	0.1	2.7	2.7	
Finland	116	0.2	6.0	343	483	0.0	3.0	4.2	
<b>Labuan, Malaysia</b>	23	0.0	5.9	372	318	0.0	16.2	13.8	
<b>Liberia</b>	31	0.0	4.6	381	212	0.0	12.3	6.8	
<b>Guernsey</b>	26	0.0	4.7	213	93	0.0	8.2	3.6	
<b>Jersey</b>	34	0.1	4.0	158	90	0.0	4.6	2.6	
Paraguay	12	0.0	32.7	103	103	0.0	8.6	8.6	
India	35	0.1	4.8	97	57	0.0	2.8	1.6	
Portugal	39	0.1	8.5	50	37	0.0	1.3	1.0	
Int'l Organizations	26	0.0	2.6	23	50	0.0	0.9	1.9	
Spain	12	0.0	6.5	34.36	30.10	0.0	2.9	2.5	
South Africa	33	0.1	1.9	27.66	24.33	0.0	0.8	0.7	
Russia	14	0.0	9.4	35.68	14.40	0.0	2.5	1.0	
<b>Liechtenstein</b>	21	0.0	2.2	15.59	27.60	0.0	0.7	1.3	



Appendix Table 1. - *continued*

	Number of		Average number of stocks traded	Trading Volume				
	Accounts			Aggregate (KRW billion)			Per Account	
	N	(%)	per account	Buys	Sells	Total (%)	Buys	Sells
Greece	27	0.0	11.2	21.65	21.05	0.0	0.8	0.8
<b>Cyprus</b>	5	0.0	2.2	24.43	15.82	0.0	4.9	3.2
Brazil	14	0.0	10.5	14.52	14.29	0.0	1.0	1.0
Thailand	21	0.0	9.3	19.64	8.77	0.0	0.9	0.4
Brunei Darussalam	8	0.0	2.9	10.50	5.34	0.0	1.3	0.7
Philippines	32	0.0	5.3	6.69	8.52	0.0	0.2	0.3
Hungary	3	0.0	1.7	0.04	11.65	0.0	0.0	3.9
<b>Mauritius</b>	7	0.0	7.4	5.81	4.85	0.0	0.8	0.7
<b>Malta</b>	5	0.0	1.0	6.08	0.00	0.0	1.2	0.0
Channel Islands	4	0.0	3.3	2.25	2.68	0.0	0.6	0.7
Israel	4	0.0	6.8	2.11	1.85	0.0	0.5	0.5
<b>Marshall Islands</b>	1	0.0	23.0	1.96	1.99	0.0	2.0	2.0
Vietnam	17	0.0	9.6	1.81	1.44	0.0	0.1	0.1
Mexico	2	0.0	10.0	1.44	1.34	0.0	0.7	0.7
<b>Gibraltar</b>	3	0.0	4.3	1.06	0.98	0.0	0.4	0.3
Poland	1	0.0	19.0	0.98	0.98	0.0	1.0	1.0
Pakistan	6	0.0	3.3	0.44	1.08	0.0	0.1	0.2
Indonesia	6	0.0	3.2	0.44	1.08	0.0	0.1	0.2
Chile	2	0.0	2.0	1.18	0.21	0.0	0.6	0.1
Argentina	4	0.0	4.8	1.00	0.36	0.0	0.2	0.1
<b>Panama</b>	5	0.0	1.4	0.23	0.62	0.0	0.0	0.1
Nigeria	2	0.0	6.0	0.20	0.19	0.0	0.1	0.1
Uzbekistan	6	0.0	4.2	0.17	0.18	0.0	0.0	0.0
Slovenia	2	0.0	6.0	0.10	0.08	0.0	0.0	0.0
Czech Republic	1	0.0	1.0	0.00	0.16	0.0	0.0	0.2
Peru	1	0.0	2.0	0.07	0.06	0.0	0.1	0.1
Sri Lanka	1	0.0	3.0	0.00	0.09	0.0	0.0	0.1
Turkey	2	0.0	1.0	0.00	0.09	0.0	0.0	0.0
<b>Bahrain</b>	1	0.0	1.0	0.00	0.08	0.0	0.0	0.1
Mongolia	4	0.0	3.3	0.03	0.03	0.0	0.0	0.0
Kazakhstan	1	0.0	4.0	0.03	0.03	0.0	0.0	0.0
Egypt	1	0.0	1.0	0.02	0.03	0.0	0.0	0.0
<b>Monaco</b>	1	0.0	1.0	0.01	0.00	0.0	0.0	0.0
Cambodia	1	0.0	1.0	0.00	0.00	0.0	0.0	0.0
Moldova	1	0.0	2.0	0.00	0.00	0.0	0.0	0.0
Unidentified	1,840	2.8	18.3	146,208	159,102	14.7	79.5	86.5
Total	64,761	100.0	8.5	1,013,444	1,061,457	100.0	15.6	16.4