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Table of Contents

INDIVIDUAL INVESTORS, ELECTRONIC TRADING AND TURNOVER

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ABSTRACT

We examine how changes in individual investors' cost for information and trading costs affect stock turnover, i.e., the portion of outstanding stock that trades during a specific period of time. We find that even as individual investors' equity ownership reduces turnover, electronic trading by individuals increases it. This confirms the theory that investors trade relatively more when their costs of trading decline. It also provides further evidence supporting the idea that differences in investment objectives for investors with the information and trading costs leads to differences in turnover.

INTRODUCTION

Turnover measures the portion of a company's stock that trades during a period of time. It depends on the ease of trading and the rate at which the firm or market generates new information, both of which determine how frequently investors alter their expectations regarding the firm and adjust their holdings in response to changed expectations. In the last twenty years, equity markets in the United States have experienced increased turnover. Table 1 presents turnover rates (in shares and dollars) for the New York Stock Exchange and for NASDAQ from 1985 through 2002. New York Stock Exchange turnover increased from 0.54 in 1985 to 1.04 in 2002. NASDAQ turnover increased from 0.72 to 2.80 during the same period, reaching a high of 3.05 in 2000. NYSE dollar turnover in the NYSE increased from 0.53 to 0.98 and NASDAQ dollar turnover from 0.93 to 3.18 over the same period. The inverse of turnover is the average holding period for a stock. The increase in turnover indicates that average holding period has declined from 22 months to 11½ months on the NYSE and from 13 months to 4 months on NASDAQ.

The turnover literature identifies three factors that affect turnover: information, transactions costs, and investment objectives. The first suggests that intensity of trading reflects the revision of investor valuation in response to new information. Turnover increases when the market generates more information or investors' access to information improves. Interpretation of available information also affects turnover. The more homogeneous investors' expectations are, the lower turnover will be. Roewenhorst (1999) finds that information affects turnover in emerging markets. It is positively correlated with the standard deviation of returns and with firm beta, and negatively correlated with firm size. Domowitz, Glen and Madhavan (2001) find a negative correlation between turnover and firm size in developed markets but a positive correlation in emerging markets.

They suggest that in developed markets valuation of large firms is less heterogeneous because analysts follow these firms more intensely. Lee and Swaminathan (2000) find that turnover depends on the type of stock, with "value" stocks having relative lower turnover than "growth" stocks.

The second factor affecting turnover is transactions costs, which are inversely related to turnover. Atkins and Dyl (1997) show that wider bid ask spreads are associated with lower turnover and vice versa. Badrinath, Kale and Noe (1995) find that turnover is positively correlated with institutional ownership (which have lower trading costs). Domowitz, Glen and Madhavan (2001) find that in emerging markets the relationship between transactions costs and turnover is less pronounced than in developed markets. This result may reflect the cost of information which comprises a greater portion of transactions costs in developing markets than in established markets.

Finally, recent evidence suggests a relationship between investor objectives and turnover. The larger portion of a stock held by investors with a relatively long investment horizon, the less frequently those shares trade. Armstrong and Gardner (2004) demonstrate that greater equity ownership by households reduces turnover and that turnover is positively correlated with the equity ownership of some financial institutions and negatively correlated with that of other institutions.

We examine how changes in individual investors' transactions costs affects turnover. Advances in technology in the 1990's provided individual investors with enhanced information availability and reduced their actual costs of trading. We use average number of electronic trades executed daily from 1997 through 2002 as a measure of the trading induced by lower transactions costs. After controlling for other factors that affect turnover, we find a positive correlation between electronic trading and both share and dollar turnover, consistent with expectations. Our results also indicate that while individual investors' holdings of stock generally reduces turnover, those individual investors utilizing electronic trading mechanisms cause it to increase. We also find some evidence that the affect of lower transactions costs for individuals differs may differ depending on the type of stock. This suggests that individual investors relying on lower trading costs may tend to concentrate their trades in certain types of securities.

Table 1. Regression of total turnover on electronic trading

OLS regression in which turnover, the dependent variable (share turnover in Panel A, dollar turnover is Panel B) is shares traded on NYSE or NASDAQ during the quarter divided by total shares outstanding multiplied by the ratio of the number of trading days in the year to the number of trading days in the quarter. (Dollar turnover is the dollar value of shares traded on NYSE or NASDAQ during the quarter divided by aggregate value of shares outstanding, annualized as described for share turnover.) Independent variables are: annual broker/dealer commissions; average value of the Dow Jones Industrial Average for the quarter; average of the standard deviation of daily Dow Jones Industrial Average for the three months in the quarter, average federal funds interest rate for the quarter; the change in household holdings of corporate equity during the quarter; and average number of daily electronic trades during the quarter.

	Panel A. Share turnover		Panel B. Dollar turnover	
Parameter	Coefficient	t statistic	Coefficient	t statistic
Intercept	2.128	6.052***	2.3012	9.679***
Annual broker/dealer commissions	-4.833	-0.748	-1.4252	-0.326
Average value of the Dow Jones Industrial Average	-0.00006	-3.247**	-0.00011	-7.933***
Standard deviation of the daily Dow Jones Industrial Average	-0.00051	-1.761	-0.00042	-2.130*
Federal funds rate	-0.090	-2.417**	-0.111	-4.406***
Change in household ownership of corporate equities ($x10^{-6}$)	-1.332	-1.877	-0.971	-2.026*
Average daily number of electronic trades	0.00083	5.774***	0.00123	12.600***
	F=65.48	Adj R^2 =.967	F=362.84	Adj R^2 =.994

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

RESTRUCTURING IN THE INTERNET INDUSTRY

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ABSTRACT

The Internet industry has seen major structural changes since its inception in 1995. For the first five years, it was the fastest growing industry in recorded history. The downturn of the industry in 2000 and 2001 was also one of the largest market corrections ever recorded. Recent research (Bartov, et. al., 2002; Schill & Zhou, 2001; and Schwartz & Moon, 2000) has come a long way in documenting the factors that contributed to the overpricing of stocks in the Internet industry. This paper focuses on factors that led to a restructuring of the Internet industry.

This paper identifies 18 separate Internet companies that underwent some type of restructuring during the year 2000. These are divided into three categories: Internet service providers, Internet support businesses (providing products or services necessary to support on-line businesses), or traditional businesses conducted on-line. These 18 firms are tracked pre- and post-restructuring event, with market data analyzed through 2002.

Results from the event study analysis on the announcement date of 18 acquisitions show no significant wealth change in the Internet industry. A brief description of each of the 18 cases is included in the appendix.

E-SHOPPING: WHAT ARE THE PRIVACY RISKS?

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ABSTRACT

Shopping online has become increasingly popular with consumers. By using this convenient channel, however, online shoppers may experience a lack of privacy and security of their personal information depending upon the privacy statement of the Web site visited. This study targets 131 online retailers for analysis of their privacy statements. The five globally accepted core privacy principles were used as the basis for evaluation. Compliance results provide important information for online consumers seeking privacy protection and for the strategic decisions of retailers seeking to attract and retain online customers.

INTRODUCTION

Increasingly consumers around the world are tapping the convenience and time savings of e-shopping to order products online. The retailer is always open, and the consumer can do comparison shopping around the globe from one location. The purchase can be completed in a matter of minutes with no waiting in line for a sales associate to ring up the sale. So not surprisingly, each year more and more consumers are shopping online. In 2003 in the U.S. alone, dot.com retailers, as well as brick and click stores, reaped the benefit of online sales that reached $114 billion, accounting for 5.4% of all retail sales. Additionally, one survey reported that 24% of offline sales were influenced by usage of the Web (Perez 2004). Armed with product information and price comparisons gathered online, these buyers then purchase in their local retail stores.

But, how private is personal information and financial account information when one purchases products online? In the U.S., it depends. In Europe privacy is a legal right that is guaranteed and cannot be traded. In the United States, however, privacy is considered negotiable (McClure, 2000). In some cases, the consumer willingly negotiates, i.e. "opts-in" by giving personal information. A report from Jupiter Research's analyst Rob Leathern stated that eighty-two percent of online customers would exchange their personal information for a $100 sweepstakes entry (Sullivan, 2002).

Currently there is not a U.S. federal law regulating privacy issues for retailers. A Web site is only held to its own posted privacy statement, but there is no requirement to have one. On July 1, 2004, California passed a limited law regarding privacy for California residents visiting online businesses. It requires a Web site to have a posted privacy policy and to notify consumers specifying data collected and how it is used (Vijayan, 2004). This is a first step, albeit with limited protection of privacy and for California residents only. A much more comprehensive privacy statement is needed to cover all online users of every Web site.

This research investigates the existence of privacy statements on retail Web sites and examines their scope and compliance with the primary, globally recognized privacy principles. The

results are intended to help online users understand the components of a comprehensive privacy statement and to assist them in assessing a Web site's declared use of their personal and financial information before purchasing products from that Web site. Results also provide assistance for the strategic decisions of the retailers seeking to compete effectively for online customers.

BACKGROUND

Because standards of conduct for privacy of information concern all online consumers around the globe, well formulated and well written privacy policies should be an integral part of an overall business strategy. Retailers make individualized business decisions about whether or not to have a privacy statement and, if so, what information to include in it when establishing and managing their respective Web sites.

The globally recognized primary fair practice principles are essential components of an effective Internet privacy statement. Specifically these practices are categorized as Notice, Choice, Access, Security, and Enforcement. By definition, "Notice" basically informs the Web site user what data is gathered and how the information is used and/or shared with others. "Choice" considers whether online users have a voice in the volume of information collected and about how that information is used. This is usually addressed in the form of an "opt-in" or "opt-out" option regarding personal information handling. "Access" determines whether online users have a means to review personal data about them and to correct any inaccuracies in that data. "Security," as well as integrity of information, refers to how the personal information is guarded and to the computer-related practices of the Web site. And finally, the issue of "Enforcement" involves providing a means to impose sanctions for violations to the fair practice issues. The Federal Trade Commission recommends adherence to these essential privacy principles in collecting, using, and sharing of personal information in order to provide fair and consistent handling of personal information and to allay the privacy concerns of online users (FTC Report, 1998).

RESEARCH METHOD

Using the portal Yahoo.com, under the Retailer directory heading, one hundred thirty-one Web retailers were identified for this study. This list constituted the population of online retailers that had a working link. It represents typical online retail Web sites from the dot.com only stores to the established traditional retailers that have evolved into brick and click stores. Each retail Web site was investigated for the presence, nature, and extent of its privacy statement. In particular, this investigation evaluated the compliance of a respective retail Web site with the primary fair practice principles of Notice, Choice, Access, Security, and Enforcement.

RESULTS & DISCUSSION

Overall 61.1% of retail Web sites displayed a privacy statement link on their home page. One retailer, however, was eliminated from the study because its privacy statement was written in Dutch although both the Web site and the privacy link were in English. Of the retailers with privacy statement links, 86.1% addressed the "Notice" issue; 69.6% complied with the "Choice" dimension; 30.4% satisfied the "Access" issue; 72.2% ensured the "Security" fair practice; and 20.3% discussed "Enforcement" of the privacy statement. Overall, only four retail Web sites or 5.1% satisfied all five privacy dimensions. Table 1 contains a compilation of the number and percentage of retail Web sites that complied with the primary privacy issues in their own respective privacy statements.

Table 1
Privacy Dimensions Addressed By Privacy Statement of Retailer

Dimension	Number	Percentage
Notice, Choice, Access, Security, & Enforcement	4	5.1
Notice, Choice, Access, & Security	14	17.7
Notice, Choice, Access, & Enforcement	1	1.3
Notice, Choice, Security, & Enforcement	6	7.6
Choice, Access, Security, & Enforcement	1	1.3
Notice, Choice, & Security	17	21.5
Notice, Access, & Security	1	1.3
Choice, Access, & Security	1	1.3
Notice & Choice	8	10.1
Notice & Access	2	2.5
Notice & Security	8	10.1
Notice & Enforcement	1	1.3
Choice & Security	2	2.5
Notice Only	6	7.6
Choice Only	1	1.3
Security Only	3	3.8
Enforcement Only	3	3.8

An equally vital part of "Notice" that was discussed by 44.3% of retailers is the issue of privacy relating to children. Of the sites that mention child privacy, 80% said that they do not knowingly collect information from children. Many retailers defined a child as either one less than 13 years of age or one less than 18 years of age, while others did not stipulate any specific age. It is interesting that less than half of retailers gave "Notice" to safeguard data collection from minors since this inclusion shows active concern for the privacy of children.

While "Choice" was indicated in the privacy statements of 69.6% of retailers, content in this area was extremely inconsistent among the Web sites and often times unclear as to what choice a user really had. For example, the Web sites generally handled this issue with an "opt-in" or "opt-out" feature. However, at best these Web sites provided only partial "Choice" to the user because choices were limited in scope and details were inconsistent from site to site.

In contrast to this approach to "Choice," the European Union has a more consistent requirement, namely that "opt-in" is necessary for any e-mail marketing (Cline, 2003). Marketers in the United States are still favoring the "opt-out" feature because it puts the burden of action upon the online customers. Furthermore, some privacy statements reviewed had a definite statement that "opt-out" would be effective going forward but archival data would remain intact. Additionally some sites declared that the "Choice" would take several weeks to become effective. No indication was given regarding whether by that time personal data would have already been shared.

"Access" had second to the lowest compliance rate among retailers. Only 30.4 % of Web sites gave online users a means to view information collected and stored about them. And even fewer, 21.5%, provided online users access to their information for correcting inaccuracies. Overall, 26.6% of retailers stated that they would make corrections when notified by the online user. "Access" to the online user requires penetration of the company firewall and consequently creates a high risk of exposure to hacking or other sabotage of user or company information. Thus, it is understandable that many may be reticent to provide such entry.

A statement about appropriate practices to ensure reasonable integrity and security of information, the issue of "Security," was addressed by 72.2% of retail Web sites. However, 24.6% of them also specifically declared that there was no guarantee of 100% security. Only one retail site actually stated a 100% security guarantee. In aggregate, 59.5% of retailers with privacy statements declared use of Secure Socket Layers (SSL) to transmit personal information. This entails an encryption of information before transmission so that it cannot be read as it travels over the Internet. Such security has become accepted by online users as the norm for protection of credit card information. A firewall was declared in only 12.7 % of privacy statements. It is incumbent upon a retail Web site to include a comprehensive discussion of this area in the privacy statement for the online shopper to use in assessing whether or not to utilize the site. In short, all Web sites should provide full transmission and storage protection and declare this fact clearly in their respective privacy statements.

"Cookies" are lines of code deposited on the user's hard drive to permit the tracking of the individual's online interaction and usage. They work behind the scenes when an online user enters the Web site. A declaration regarding the positive use of "cookies" was made in 63.3% of the retail privacy statements. Of those using "cookies," 64% informed the online users that their respective browsers could be set to reject the "cookies." However, many sites cautioned that rejecting "cookies" could compromise access to the full features of the Web site.

The majority of retail Web sites, 57%, warned in their respective privacy statements that the site may be updated from time to time and cautioned the user to check for the current policy upon return to the site. A few retailers did promise to post or highlight any changes to make the user aware when returning to the site's privacy statement, not the home page. Regardless, it remains incumbent upon the online user, for whom time and convenience are important, to discover it. Slightly less than half, 48.1%, of Web sites stated that their privacy policy does not cover sites to which they offer links. Again online users must be responsible to read additional privacy statements for each site as shopping takes them from one retail Web site to another.

Lastly, moving to the issue of "Enforcement," 20.3% of retailers addressed this area in their respective privacy statements. Of these, 62.5% indicated that self-regulation was the type of enforcement used. Currently, however, this is a self-regulated environment in the U.S. and therefore

is self-limiting. While all Web sites can technically be held to their respective privacy statements with or without declaring self-regulation, some sites have in the past breached their own privacy statements. Over half, 56.3 %, of retailers who mentioned "Enforcement" were more serious about the issue of privacy by indicating submission to independent bodies for resolution of disputes or breaches regarding this issue. These bodies included the Truste organization, the Direct Marketing Association Committee on Ethical Business Practices, and the laws of the respective state in which the Web site was located. Additionally, one site mentioned using mediation and then arbitration for resolution of its privacy/security disputes or claims.

CONCLUSION

Whether a U.S. consumer shopping online or a global consumer shopping a U.S. Web site or a U.S. retailer selling globally, there are differences among U.S. Web sites in their approach to privacy protection given the self-regulation environment that exists. Some sites protect user privacy more than others do. Only by reading the respective privacy statement to identify the extent of coverage regarding Notice, Choice, Access, Security, and Enforcement can online users assess their privacy protection with a particular Internet retailer. If none of the fair practice issues of privacy are posted, then of course, there is no protection at all. Retailers, seeking to attract and retain satisfied online customers, would be proactive by including an online privacy statement with the five global informational privacy principles in their Web site strategic decisions. Choices abound with so many retailers competing for business online. Informed consumers send a strong message that their privacy is important to them by choosing to shop retail Web sites that best protect their privacy. In aggregate, this can easily translate into dollars for the online retailer.

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Authors' Index