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Roger M. White   Date

Insider Trading: What Really Protects U.S. Investors?

By

Roger McNeill White
Doctor of Philosophy

Business

Ilia D. Dichev, Ph.D.
Advisor

T. Clifton Green, Ph.D.
Committee Member

Edward L. Owens, Ph.D.
Committee Member

Accepted:

Lisa A. Tedesco, Ph.D.
Dean of the James T. Laney School of Graduate Studies

Date

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Roger M. White

B.S., The Citadel, The Military College of South Carolina, 2009

Advisor: Ilia D. Dichev, Ph.D.

An abstract of a dissertation submitted to the faculty of the James T. Laney School of Graduate Studies of Emory University in partial fulfillment of the requirements for the degree of:

Doctor of Philosophy in Business, 2016

Abstract

Insider Trading: What Really Protects U.S. Investors?

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I examine the ability of the U.S. investor protection regime to limit insider trading returns in a setting absent Section 16(b) of the Securities Exchange Act of 1934 (the short swing rule). I find that U.S. insiders in this setting execute short swing trades that (1) beat the market by about 15 basis points per day and (2) occur with remarkably high frequency around earnings surprises. These results indicate that the bright-line rule restricting short horizon roundtrip insider trading plays a substantial role in protecting outside investors from privately informed insiders in the United States.

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Acknowledgements

CONTENTS

1. Introduction

Insiders of publically traded corporations typically have information advantages over outside investors when it comes to trading in their corporations' stocks. This is widely understood, and a large literature has evolved that examines the frequency, profitability, and regulations involved in insider trading. The consensus in this stream of research is that U.S. insiders tend to beat the market by a small but significant margin (e.g. 3% to 4% per year), and are curbed from reaping more substantial (information based) profits by the threat of regulatory enforcement and class-action lawsuits, which can result in fines, prison sentences, and civil penalties for insiders who are proven to have traded on private, material information.

However, an overlooked part of the investor protection framework in the United States is the prohibition against insiders profiting from short swing trades (Section 16(b) of the Securities Exchange Act of 1934). Short swing insider trading is defined as an insider buying and then selling (or vice-versa) their firm's stock within the same six month period. Insider profits earned (or losses avoided) from this type of trading must be returned to the firm, and enforcement takes place in civil courts under a strict liability statute (i.e. only requirement for insider/firm liability to be established is proof that profitable insider trading occurred, no need for proof that insider trading occurred on private information).

In this study, I exploit an exception to Section 16(b) to examine two related questions about how U.S. securities markets function in the absence of short swing insider trading prohibitions, (1) how well does the remainder of the insider trading regulatory framework protect outside investors from insider trading, and (2) how large are the information advantages of U.S. corporate insiders?

My empirical strategy involves a loophole in the judicial interpretation of Section 16(b). Specifically, U.S. judges have ruled, since the 1940s, that 16(b) only applies to single classes of securities. If a firm has multiple classes of traded securities, then it is perfectly permissible (under 16(b)) for an insider to profit from buying class A shares today and selling class B shares in 2 months. I build a sample of such trades made by U.S. insiders, and I refer to these trades as *pseudo short swing insider trades*. To caveat, this setting limits my sample to a few dozen firms and few hundred trades (i.e. firms that have more than one liquid class of stock regularly trading). While this sample is economically insignificant in its own right (even if all the trades were based on private insider information), the setting is important in that it allows some understanding of how effective the (remaining) U.S. investor protection scheme is in safeguarding outside investors from privately informed short swing insider trading absent a bright-line rule.

That is, while not a perfect counterfactual, this line of analysis does offer some insight into (1) a world in which the SEC, Rule 10b5, state regulators, and the class-action system stand to protect outside investors *absent* a blanket prohibition on short swing insider trading and (2) the ability of insiders to profit from trading in such a regime.

I find that when the short swing restriction fails to bind, U.S. insiders earn considerable profits when trading in their own firms' stocks. On average, buy-sell pseudo short swing insider trades earn abnormal returns of 21 basis points per day between the two trades, and sell-buy trades avoid (abnormal) losses of about 14 basis points per day. On an annualized basis, these abnormal returns are in excess of 30% on both the buy and sell side. These magnitudes are about 10 times that observed in typical insider trading settings in the United States.

Broadly, these results indicate that without support from a bright-line rule prohibiting insiders from profiting from short swing trades (i.e. Section 16(b)), the remainder of the insider trading regulatory framework is unable to curb U.S. insiders from reaping large profits by trading with outside investors via short horizon trading. These results also demonstrate that the information advantages of U.S. insiders are considerably greater than prior research would suggest (i.e. typical annual abnormal returns to insider trading around 4%).

I expect these results to directly inform three streams of literature. First, these findings demonstrate that it is not a well-funded securities regulator, common law origin, or class-action system that (alone or together) protects U.S. outside investors from the predatory trades of insiders. While these are likely necessary institutions in the investor protection regulatory regime, they are not sufficient in the absence of a bright-line rule prohibiting short horizon investing by insiders. Rather, these components are part of a framework that, in conjunction with the short swing insider trading prohibition, *combine* to provide such protection.[1] My results illustrate that unwinding a single (overlooked, unappreciated) strand from that regulatory framework can radically alter the ability of U.S. insiders to extract wealth from uninformed outside investors. Securities regulators abroad should note that this finding suggests that a short swing prohibition is an important factor in the success of U.S. markets, at least in terms of protecting and encouraging outside investment by curbing highly lucrative insider trading. Many foreign countries do not prohibit short swing insider trading (e.g. Germany, UK, Canada, Australia, Singapore, Hong Kong), and my findings indicate that this omission may prevent the foreign development of securities markets as trusted and liquid as those in the United States.

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[1] In a similar vein, Black (2001) provides an excellent discussion of the combination of different regulatory elements necessary for efficient and protective securities markets.

Second, my results illustrate that the informational advantages of U.S. insiders are much higher than asserted by prior research. Specifically, the past literature has been largely restricted to examining information advantages in long term trading by insiders (i.e. trades not forbidden by 16(b)), whereas my results provide a view of the potential profits insiders could earn if permitted to trade both ways in their firms' stock over short periods. If anything, my results are indicative of a lower bound to such profitability, in that short swing trading in a single class of security would likely be considerably easier than the cross-class swing trading I exploit.

Third and finally, Section 16(b) has been the topic of considerable debate in the securities law literature. Opponents brand it as irrational, inefficient, and insignificant (given the supposed strength of the rest of the U.S. investor protection regime, see O'Connor (1989), Manne (2008)), whereas supporters have named it one of the most important protections in place in U.S. capital markets (Macchiarola (2014)). This debate has gone so far as to culminate in three advanced campaigns to repeal Section 16(b), the last and most serious of which occurred in 1995, and was undone only by a lukewarm endorsement of the law by the SEC (O'Connor (1989), Romeo and Dye (2000)). My findings provide a glimpse of what short swing insider trades could look like if Section 16(b) were to be repealed, and this counterfactual is unlikely to be attractive to U.S. outside investors.

I review the applicable literatures on insider trading and securities regulation in the next section. Section 3 describes my empirical approach. Section 4 reports my results, and I check these results for robustness in Section 5. Section 6 offers a brief conclusion.

2. Background and Literature Review

Why do outside investors willingly participate in securities markets, like those in the U.S., where informed insiders are also able to buy and sell? A long literature in insider trading

and securities regulation suggests that the answer lies in the ability of securities regulators and courts to protect outside investors from predatory trading by insiders. Specifically, the recurring theme in this literature is that the credit goes to a prohibition on insider trading on private, price-relevant information, enforced by a strong regulator and securities class-action framework, all in a common law based legal environment.

This conclusion is certainly believable, given the relatively modest abnormal returns earned by U.S. insiders. While trading by U.S. corporate insiders is typically profitable, existing research finds that insiders beat the market by only about 4% per year when trading in their firms' stock (e.g. Wang, Shin, and Francis (2012), Jeng, Metrick, and Zeckhauser (2003)). Recent research has also identified types of insider trades that tend to be more profitable, such as unplanned trades (Cohen, Malloy, and Pomorski (2012))[2], but even these transactions only see abnormal returns of about 18% per year, which is high, but perhaps not extravagantly so.

Results of this type give the appearance of a well-constructed regulatory framework achieving the goal of protecting outside investors. While the securities law literature has long argued whether insider trading should be regulated at all (e.g. Manne (1966)), it has been the approach of most regulatory agencies to prohibit insider trading on private, price-relevant information in an effort to encourage outside investors to participate in financial markets (and lessen the risk of adverse selection, improve liquidity and market efficiency, etc., see Chung and Charoenwong (1998), Fishman and Hagerty (1992), Seyhun (1986), Fishe and Robe (2004), Ausubel (1990), DeMarzo, Fishman, and Hagerty (1998), Fernandes and Ferreira (2009)).[3] The

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[2]Trading following regular calendar patterns is indicative of a pre-established 10b5-1 plan, in which insiders commit to buying or selling firm stock according to a preset schedule.

[3] While the policymakers in Western-style stock markets have clearly decided to enact strong restrictions on insider trading for the purposes of investor protection, economists still debate the efficacy of doing so. For example, suggested benefits of allowing insider trading include more efficient prices (Kyle (1985)) and subsequently better liquidity (e.g. Cornell and Sirri (1992), Cao, Field, and Hanka (2004)).

enforcement of such provisions has been shown to benefit markets by subsequently lowering costs of capital and increasing participation by investors and analysts (e.g. Bhattacharya and Daouk (2002), Christensen, Hail, and Leuz (2013), Maug, Van Halteren, and Ackerman (2008), Bushman, Piotroski, and Smith (2005)).[4]

In the United States, this regulation was introduced as Rule 10b5 of the Securities Exchange Act of 1934. Enforcement is instigated by either SEC Enforcement staff or damaged investors serving as plaintiffs in civil cases, generally in class-action suits (Carangelo et al. (2012)). Two important factors must be established for insiders to be held liable under 10b5. The first is guilt/fraudulent intent (*scienter* in legal parlance), which maintains that the plaintiff/prosecutor must prove that the insider knowingly used private, material information to profit from trades with outsiders. The second factor is that the information must be private and material. These requirements can make for difficult legal work on behalf of the plaintiffs and prosecutors, particularly proving fraudulent intent.

This has been widely recognized as a weakness in the current regulatory framework (e.g. Swanson (2003), Lowenfels (1978), Talesnick (1972), Bucklo (1977)), but not as a fatal flaw. Rather, Rule 10b5 is widely credited with curbing high insider trading profits on its own, without any substantive support from Section 16(b) (e.g. Dessent (1999), O'Connor (1989), Easterbrook and Fischel (1991)).

What is credited with supporting the success of the current regulatory regime, specifically Rule 10b5, is a strong enforcement system. This primarily consists of criminal enforcement via the SEC (and DOJ) and civil enforcement via the plaintiffs' bar in the securities class-action

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[4] Typically the SEC brings Rule 10b5 enforcement actions about 50 times per year (Sokenuai et al. (2015)). Civil litigants file Rule 10b5 class-action lawsuits about 150 times per year (close to half of which are dismissed) (Comolli and Starykh (2015)).

system. The protection provided by the SEC is attributed to the (relatively) high levels of funding and staffing the agency receives.[5] This literature intuitively ascribes the efficacy of regulatory policing to the staffing and resources available to the regulators, with more staff and more funding generally leading to better protection of outside investors (see Christensen, Hail, and Leuz (2013) and Jackson and Roe (2009)).

In addition to SEC enforcement, the plaintiffs' bar can litigate potential Rule 10b5 violations in securities class-action lawsuits. The U.S. securities class-action system is well developed and widely viewed as acting as a strong check to insider trading and other corporate malfeasance (e.g. Field, Lowry, and Shu (2005), Cheng et al. (2010)).

Underlying the importance of legal and regulatory restraints on insider trading is the common law legal system in place in the United States. La Porta et al. (1998), and the substantial line of research that followed, indicate that common law countries consistently do a better job of regulating securities markets and protecting investors (relative to countries with civil law legal origins). This is normally attributed to common law systems being more flexible, which permits common law judges extra latitude to protect investors against managerial malfeasance that is perhaps not directly prohibited by existing statues or case law (La Porta et al. (2000), Black (2001), Seyhun (1992)).

The above literatures tend to credit single pieces of the securities regulation framework for restraining insider trading, or some combination of strong (civil and criminal) enforcement of Rule 10b5 (and similar laws prohibiting trading on private, valuable information), well-funded regulators, and a common law origin. Rarely is the short swing prohibition (Section 16(b))

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[5] While some observers may feel that the SEC is underfunded relative to its mission, there is little debating the fact that compared to securities regulators abroad, the SEC is both staffed and funded at very high levels, see Jackson and Roe (2009).

ascribed as helpful, and most discussions of the rule are either critical or dismissive (or both) (e.g. Dessent (1999), O'Connor (1989), Manne (2008), Kahn and Winton (1998), Lenkey (2015)). However, the short swing prohibition does provide a clear rules-based restriction that is easy to observe and enforce (the advantages of a bright-line rule, see Glaeser and Shleifer (2002)). Unfortunately, it is impossible to ascertain the number of legal actions taken in conjunction with Section 16(b), as most are never filed in court (but quickly settled before a filing, as liability is very easy to establish). Further, it is impossible to detect how much the existence of Section 16(b) outright deters short swing insider trading, as potential trades so affected simply do not exist.[6]

In this study, I examine the performance of the insider trading regulatory framework absent Section 16(b). As discussed, almost the entirety of the literatures in securities law and insider trading suggests that removing this element will have little to no effect on the ability of insiders to profit from insider trading. Rather, the components of the regulatory framework that prior research has deemed vital, namely Rule 10b5, generous SEC funding and staffing, securities class-action lawsuits, and the common law origin of the U.S. legal system, are all still in place and unchanged. The main contribution of this study is in examining insider trading profits in a setting devoid of Section 16(b), which allows me to identify the effect of the remaining regulatory framework (SEC, 10b5, class-action lawsuits, common law origin, etc.) to protect outside investors.

If this remainder of the regulatory framework provides the vast bulk of protection for outside investors (as predicted by prior literature), the insider trading profits in my setting should be similar to those in conventional settings. Additionally, my setting could also allow for an

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[6] See appendix

improved identification of the profitability of insider information, as it permits insiders to trade in both directions over a short horizon. Insider information is less valuable as time passes (and it is incorporated into prices, e.g. Kyle (1985)), which could mean that the information advantages of U.S. insiders are much stronger than prior literature has detected, as this prior research has been unable to examine short swing trading (i.e. a setting with fewer restrictions on trading quickly).

Chen, Guan, and Ke (2014) provide the closest study to my own, in that they examine the returns to short swing insider trading in Hong Kong. They find that short swing trades (within a single class of stock) constitute 12% of insider trades, and that they earn about 16% abnormal return annually, relative to about 8% for conventional insider trades (in Hong Kong). While this result is certainly informative, its applicability to the U.S. is limited by the differences between the U.S. and Hong Kong in terms of regulator strength (Jackson and Roe (2009), Levin (2014)) and the efficacy of securities class-action lawsuits, both of which provide stronger checks on insider trading in the United States. However, this result is indicative of insiders being willing to trade in both directions over a short horizon in an effort to reap atypically high trading profits.

3. Empirical Approach

Clearly, I cannot follow the Chen, Guan, and Ke (2014) approach in the U.S., as profitable short swing insider trades are restricted by Section 16(b) of the Securities Exchange Act of 1934. However, a legal quirk has created an opportunity to evaluate a counterfactual sample of short swing insider trades within the United States. Specifically, the judicial interpretation of Section 16(b) is that the short swing insider trading prohibition applies to individual securities, but not across securities for the same firm. Accordingly, it is perfectly legal for an insider to retain the profits derived from purchasing class A stock today and selling

class B stock next week. This judicial interpretation has been upheld consistently since 1943

(Smolowe v. Delendo Corporation) and confirmed as recently as 2013 (Gibbons v. Malone).[7] In

effect, this allows for short swing insider trading across different classes of stock, the returns of

which are usually almost perfectly correlated (even when the shares have different ownership

requirements and voting rights, e.g. Bhattacharya et al. (2000)).

I exploit this judicial interpretation and examine short swing insider trading in firms that

have multiple classes of publicly traded stocks. For insiders in multi class firms that trade in

both share classes, I am able to construct pseudo short swing insider trades, as described

previously (e.g. buy class A stock today, sell class B stock within six months, or vice-versa).

I analyze the profitability of such trades to determine the degree to which the remainder

of the insider trading regulatory framework (SEC, 10b5, class-action lawsuits, common law

origin, etc.) protects outside investors from informed insiders. Prior research suggests that, in the

U.S., nearly all the insider trading protections derive from these remaining elements, which

should lead to these pseudo short swing insider trades yielding returns that approximate

conventional insider trading returns (e.g., beat the market by about 4% annually, see Jeng,

Metrick, and Zeckhauser (2003), Wang, Shin, and Francis (2012)). However, if these pseudo

short swing insider trades substantially outperform conventional insider trades, then it would

provide some evidence that the traditionally lauded elements of the insider trading regulatory

framework are not as protective as previously thought. Rather, such a finding would indicate

that despite unchanging SEC oversight, Rule 10b5 applicability, ease of class-action lawsuits,

and common law origin, U.S. insiders were using their private information to engage in pump

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[7] See Liman (2013), Goldmark (2013), and Finn and Markus (2013) for thorough discussions of the Gibbons v. Malone ruling.

and dump trading or to quickly change directions in a stock in an effort to capture unexpected future gains or avoid unexpected future losses.[8]

I first build a sample of pseudo short swing insider trades by matching every insider transaction in the Thompson Reuters Insider Filings Data Feed to other transactions by the same insider in securities with the same six digit CUSIP (which denotes issuer/firm identity), but with different seventh and eighth digits (which denote specific issues/classes of stock). If these transactions are within six months of each other, and in opposite directions (buy/sell), then they qualify as pseudo short swing insider trades. According to Section 16(b), it would be illegal for insiders to profit from these trades if they occurred in the same class of security.

I have two dates for each pseudo short swing insider trade, the opening date and the closing date. The opening date is not identifiable ex-ante. For example, consider an insider who has made no transactions in any of the firm's stock in the last year, but buys Class A stock in January 2010. In March 2010, the insider sells some of the firm's Class B stock. At that point, the January 2010 buy (of Class A stock) is identifiable as the opening of a short swing trade, and the March 2010 date is identifiable as the closing date of the short swing trade.

I examine the abnormal returns earned between these opening and closing trades (very similar to Chen, Guan, and Ke (2014)), which I refer to as the pseudo short swing interval. Any abnormal return earned on this interval would be returned to the firm save for the multi-class loophole in Section 16(b). Observing unexpectedly large positive abnormal returns over this interval would indicate that the bright-line prohibition on short swing insider trading (Section

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[8] This activity is exactly the type of trading that Congress foresaw and attempted to ban in the securities acts by creating the short swing prohibition (e.g. Fried (1997), Ausubel (1990), O'Connor (1989), Jacobs (1987)).

16(b)) offers incremental protection for outside investors beyond that of Rule 10b5 and the rest of the current enforcement regime.

I calculate abnormal returns on this interval using the Fama-French four factor model that incorporates a momentum factor (Fama and French (1993), Carhart (1997)).[9] To model normal returns for my sample firms, I estimate betas for the four Fama-French factors over the three quarters ending two trading days prior to the opening trade of the pseudo short swing trade in question.

Finally, I note that in 1991, Section 16(b) was adjusted to remove the complications arising from option compensation (Richardson, Teoh, and Wysocki (2004)). For the entirety of my sample (1995-2013), the only types of transactions I capture are open market stock trades. Insider options, stock grants, and the like are not included in this analysis, but could perhaps be of future interest, as such transactions certainly allow for similar pseudo short swing trading. Additionally, starting my sample in 1995 limits my data to a constant securities class-action regime, as the 1995 Private Securities Litigation Reform Act substantially increased the barriers to such litigation (Coffee (2006)).

4. Results

4.1 Summary Statistics

Table 1 reports the summary statistics relating to the size of the pseudo short swing trades. The results of Table 1 allay any concern that the pseudo short swing insider trades I observe are potentially too small to attract the attention of the SEC or other elements of the

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[9] The SEC is actually much more aggressive in computing short swing profits (Chin (1997)). The SEC formula relies on the highest and lowest prices for any set of transactions. For example, if an insider bought stock on January 1, February 1, and March 1, and then profitably sold stock on April 1, the SEC would assess profits using the lowest buying price from the January 1, February 1, and March 1 purchases (applied to all shares).

securities regulatory regime.[10] Specifically, the mean pseudo short swing trade that starts with a

buy and ends with a sell involves a $600,000 trade, and the corresponding value for sell-first,

buy-second trades is over $6.5 million.[11] Median values for both are an order of magnitude

lower, but still indicative of very large transactions.

While the size of these trades (defined as the size of the opening trade) indicates that

pseudo short swing transactions are economically large enough to conceivably attract SEC

attention (or attention from prosecutors or the civil attorneys of outside investors), the overall

sample size is small. Note that these pseudo short swing trades can only occur in firms that have

at least two classes of stock with requisite liquidity for occasional trading. In later analysis

(Table 10), I find that of the approximately 13,000 different U.S. public companies that enter the

CRSP/Compustat universe during my sample period (1995 to 2013), only about 200 ever report

(for any month) more than one traded security on CRSP. This suggests that at best, insiders at

less than 2% of U.S. firms have the ability to conduct the pseudo short swing trades that I

investigate. This results in only 333 pseudo short swing insider trades entering my sample from

1995 to 2013. Table 1 reports the breakdown by direction, which is reasonably equitable. 190

transactions are of the buy-first, sell-later type, and 143 are of the sell-first, buy-later type.

I tabulate the distribution of these trades across firms in Table 2. Forty-four firms enter

this sample, suggesting that about 20% of firms with multiple (liquid) share classes see insiders

conduct pseudo short swing insider trading (at some point). These firms typically have multiple

classes of stock with disparate voting rights, often originally put in place to allow a founder,

founding family, or senior management to retain control. This sample includes several firms

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[10] Necessary for 10b-5 enforcement.

[11] The sell-first trades are likely larger due to a lack of liquidity constraints in that setting. For example, an insider must actually put about $600,000 cash together for the mean open market purchase.

which are recognizable household names, including Berkshire-Hathaway (13 pseudo short swing insider trades), Public Storage (11), Georgia-Pacific (6), and Benihana (7). Other less well-known firms that contribute substantially to the sample include Heico (35 pseudo short swing insider trades), International Speedway Inc. (46), and Marsh Supermarkets (37).[12]

4.2 Abnormal Returns

While the sample is smaller than ideal, I do observe an interesting pattern of returns in Table 3. Specifically, Panel A reports that the mean and median returns for pseudo short swing insider trades of the buy-first, sell-later type are positive and statistically significant. The mean Fama-French four factor abnormal return over this interval is 9%, and the interval lasts on average about 85 days. That is, there are typically about 85 calendar days between the insider buying class A shares and selling class B shares (of the same firm). This leads to a mean daily abnormal return of about 20 basis points, which corresponds to an annualized abnormal return of about 50%. This return is far above any observed for conventional (non pseudo short swing) insider trades in the United States. For example, Wang, Shin, and Francis (2012) find that the inside purchases of U.S. CEOs and CFOs generate 12 month abnormal returns of about 4%. I find that pseudo short swing insider purchases beat this figure twice over in the typical short swing interval period (typically about 85 days), and eclipse it by an order of magnitude over a comparable one year time horizon (calculated simply by multiplying the daily alpha by 252 trading days).

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[12] See Gompers, Ishii, and Metrick (2010) for a thorough discussion of the characteristics of U.S. firms with multiple share classes.

Next, I turn my attention to the sell-first, buy-later type of pseudo short swing insider trades. The returns in this case are only marginally statistically significant. The mean pseudo short swing interval return (i.e. losses avoided between sale of class A and purchase of class B) is -2.15% (one tailed p-value = 0.12). This is very close to the annual abnormal return following insider sales by CEOs and CFOs (Wang, Shin, and Francis (2012)). The daily alpha (annualized alpha) for these trades is -14 basis points (-35%). These values are indicative of insiders selling high, then turning around within a few months and buying low, avoiding considerable losses in the process. However, marginal statistical significance makes strong statements to this effect tenuous.

This pattern and magnitude of returns paints a clear picture. When insiders can conduct short swing trades in the U.S., they earn substantial abnormal returns, above and beyond (at least on the buy side) those typical of conventional insider trading in the United States. The aspects of the insider trading regulatory framework typically lauded with protecting outside investors, namely the SEC, Rule 10b5, class-action lawsuits, and a common law legal system, appear to offer much less protection than expected to outside investors, and do little to check lucrative insider trading in the absence of a bright-line rule prohibiting short swing insider trading.

4.3 Monte Carlo Randomization Tests

To alleviate any concerns about the statistical significance of the event study findings above, I next conduct a Monte Carlo randomization (similar to Zhang (2007) and Brown, Stice, and White (2015)) to determine if the result is robust to a non-parametric distribution. Specifically, for each pseudo short swing trade, I swap out the start date with a random insider trade made in the same direction, for the same firm, over my sample period (1995 to 2013). For example, consider the case where I observe a pseudo short swing insider trade in which an

insider buys class A stock in firm X on January 3rd and sells class B stock in firm X on January 9th. There are six calendar days between this buy and sell. In my Monte Carlo analysis, I swap the January 3rd buy out with another randomly selected insider buy in firm X during my sample period and examine the abnormal returns from holding this stock for six days. If the returns from the actual trade are not that unusual, then I should observe similar returns in these randomized trades, given that they are insider trades in the same direction, in the same firm, that are held for the same length of time. However, if the pseudo short swing insider trading returns are unusual in nature, then a selection of other random insider trades within the same firm would not produce returns as extreme as those I observe.

In this Monte Carlo randomization, I conduct the above randomization scheme 2,000 times for each trade in my data set. Specifically, I replace (2,000 times) the start date of every pseudo short swing insider trade in my sample with the date of another insider trade in the same direction for the same firm during my sample period (and hold this position for the same length of time as the actual pseudo short swing insider trade). I examine the Fama-French four factor abnormal returns in this analysis, similar to my primary tests in Table 3.

Notably, the highest mean interval return I observe in my 2,000 randomizations for the buy-first, sell-later (Panel A, Table 4) pseudo short swing insider returns is 8.35%. This is lower than the return I observe in the set of actual pseudo short swing insider trades (9.05%). This indicates that the buy-first, sell-later results I observe are *very* unlikely to result from a random collection of insider trades in my sample firms (odds are less than 1 out of 2,000). Rather, the actual returns I observe are almost certainly the result of insiders taking advantage of private information involving swings in prices to buy and then quickly sell shares in their firm for substantial profit, above and beyond that typically earned from insider trading. The mean and

median returns for the daily alpha and annualized alpha are also very different from the profits

typical of other insider trades in these firms, as all of the Fisher p-values are less than 0.05.[13]

Panel B (Table 4) reports the results of the Monte Carlo tests for the sell-first, buy-later

pseudo short swing insider trades. Of the 2,000 sets of randomized, matched trades, only about

11% had mean returns lower than that observed in the actual data (Fisher p-value = 0.11).

Results for daily and annualized alpha are consistent and statistically stronger (Fisher p-values =

0.01). This adds more evidence to suggest that pseudo short swing insider trades are

substantially more profitable than typical insider trades (i.e. pseudo short swing insider sells

avoid losses to a greater extent than conventional insider sells), indicative of insiders exploiting

the multi-class loophole to profitably trade both ways (earn abnormal profits and avoid abnormal

losses).

4.4 Predicting Cross-sectional Abnormal Returns

In Table 5 I model the abnormal returns to these short swing insider trades via OLS. This

analysis is largely an exploratory effort to identify trading strategies or covariates underlying the

large returns observed in Tables 3 and 4. Panel A (B) reports summary statistics of the buy-first,

sell-later (sell-first, buy-later) pseudo short swing insider trades.[14] Consistent with Gompers,

Ishii, and Metrick (2010), the multi class firms in my sample are considerably larger than the

typical Compustat firm in the given year. In both samples (buy-first, sell later and sell-first, buy-

later), the mean firm is in the seventh decile of firm size for the given year. Likewise, the multi

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[13] Fisher p-values indicate the percent of randomized results more extreme than that identified in the actual data. These p-values therefore approximate a one-tailed p-value for a distribution derived directly from the sample data, as opposed to a hypothesized distribution (e.g. the normal distribution).
[14] Both samples lose three trades from the Table 3 results due to data availability in Compustat.

class firms in my sample have valuations analogous to the broader sample of Compustat firms (both samples in the fifth decile of Tobin's Q).

In conjunction with the list of firms included in my sample (Table 2), this evidence indicates that the multi class firms in which I observe pseudo short swing insider trading are relatively large and successful. Furthermore, these firms have multiple classes of liquid securities, as the mean trade in both samples involves two classes of securities both at or above the fifth decile of dollar volume on CRSP (for the given month).

Panel C of Table 5 reports models estimating the abnormal return to pseudo short swing insider trades as a function of insider, firm, and security characteristics. Model 1 suggests that for the buy-first, sell-later trades, transactions in more liquid securities earn higher abnormal returns. Model 2 suggests that officers are less likely than directors and outside owners to avoid losses via sell-first, buy-later pseudo short swing insider trades (positive coefficients indicate "higher" returns, where "lower" returns indicate avoiding more losses in Model 2), and insiders in large firms are more likely to avoid losses via such trades. These results, while potentially informative, do not reveal an innocent explanation to the general finding of insiders earning large profits from informed short swing trades.

4.5 Trading Around Earnings Surprises

In Table 6, I examine whether insiders use pseudo short swing insider trading to profit from earnings surprises. Trading before such announcements is widely understood to be both a legal and fiduciary impropriety that class-action lawsuits and regulatory enforcement should police (see Ke, Huddart, and Petroni (2003)). To determine whether this is the case, or instead whether these enforcement provisions fail to curb such a blatant example of malfeasance (absent a bright-line prohibition on short swing trading), I examine how frequently large, beneficial

earnings surprises occur within the pseudo short swing intervals in my sample. I define large

earnings surprises as earnings announcements in the highest and lowest deciles of percent

difference from consensus analyst expectation scaled by price, per year, as in Hirshleifer, Lim,

and Teoh (2009) and Dellavigna and Pollet (2009).[15] I define beneficial surprises as positive

surprises that occur between an opening buy and closing sell, in a buy-first, sell-later pseudo

short swing insider trade, and negative surprises that occur between an opening sell and closing

buy in a sell-first, buy-later pseudo short swing insider trade. Note that in addition to the

conventional enforcement regime in place to prohibit informed trading on such information,

most firms impose their own blackout restrictions on trading around earnings announcements

that typically forbid transactions within a month around earnings releases (e.g. Jagolinzer,

Larcker, and Taylor (2011), Bettis, Coles, and Lemmon (2000), Roulstone (2003)).[16]

Panel A of Table 6 reports that 9.1% of the buy-first, sell-later pseudo short swing insider

trades in my sample bracket a big positive earnings surprise. These trades involve an insider

ramping up their exposure to the firm, on the open market, prior to a big, positive earnings

surprise, and then unwinding their position after the (typically profitable) announcement. I

determine whether or not this ratio (9.1%) is statistically unusual via a Monte Carlo

randomization method. As in my previous Monte Carlo simulation, I replace (2,000 times) the

start date of every pseudo short swing insider trade in my sample with the date of another insider

trade in the same direction for the same firm during my sample period (and hold this position for

the same length of time as the actual pseudo short swing insider trade). I then record the percent

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[15] I draw quarterly earnings and analyst forecast data from IBES.
[16] SOX mandates that the blackout period extend at least three days before and three days after the earnings announcement (Banks (2010)).

of these randomized sets of pseudo short swing insider trades that bracket as many or more beneficial earnings surprises as observed in the actual data.

For example, in Panel A the Fisher p-value indicates the proportion of these 2,000 randomized samples in which 9.1% or more of the buy-first, sell-later pseudo short swing insider trades bracket a big, positive earnings surprise. The observed Fisher p-value in Panel A is <0.001, as none of the 2,000 randomizations saw more than about 8.5% of buy-first, sell-later type trades bracket big, positive earnings surprises. This is indicative of frequent, deliberate trading on private, unexpected earnings information by insiders in my sample (i.e. it is highly unlikely that pure chance can explain the insiders in my sample buying prior to, and selling after, so many large positive earnings surprises). To highlight, it appears that the conventional investor protection framework fails, even in these egregious instances, to properly restrain insiders from reaping high, information-based profits via short swing transactions with outside investors.

Panel B reports the results of a similar test for negative earnings surprises and sell-first, buy-later pseudo short swing insider trades. About 3.5% of these short swing trades involve an insider unwinding their position prior to a negative, unexpected disclosure, followed by an open market buy transaction. This proportion is statistically insignificant and typical of the ratios observed in my Monte Carlo randomizations (Fisher p-value = 0.52).

In Panel C of Table 6, I add these earnings surprise indicators to the cross-sectional models predicting the abnormal returns to pseudo short swing insider trades. Specifically, Model 1 (2) includes a covariate for *Big Positive (Negative) Earnings Surprise* for the buy-first, sell-later (sell-first, buy-later) trades. In both Model 1 and Model 2, the coefficient on these indicators is statistically significant in the expected direction with a magnitude of about 0.35.

This suggests that front-running surprising earnings news allows insiders to earn abnormal returns (or avoid abnormal losses) more so than in typical pseudo short swing insider trades.

This pattern of returns, and its frequency, indicates that at least some portion of the pseudo short swing insider trades I observe are driven by insiders' foreknowledge of unexpected firm performance.[17] This is further evidence that the existing investor protection framework, relying on principles-based prohibitions (Rule 10b5) and enforcement via private litigation and criminal prosecution by regulators, is unable to adequately protect investors from even very blatant violations of information-based insider trading (absent a bright-line restriction on short swing insider trading).

5. Robustness Tests

In this section I conduct a series of robustness tests to address concerns relating to my primary estimation in Table 3. First, I conduct a series of tests to remove uncertainty about whether my model of abnormal returns is leading to a spurious result. This is particularly worrisome when dealing with abnormal return periods longer than a few weeks, as my tests do (Kothari and Warner (2007) and Fama (1998) discuss these concerns thoroughly). In such cases, market models incorporating risk factors can potentially return biased results. To guard against this issue, I estimate a much simpler market adjusted model in Table 7.

5.1 Market Adjusted Returns

Briefly, instead of predicting expected returns as a function of risk factors and correlation with the market return in the estimation period, the market adjusted model simply differences the market return (equal-weighted) from a stock's return over an interval. In my case, the interval is

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[17] This is exactly the type of insider trading that the U.S. Congress sought to forbid when framing Section 16(b) (e.g. O'Connor (1989), Fried (1997), Jacobs (1987)).

the time between the opening and closing trades in different classes of stock for the same firm (a pseudo short swing insider trade).

Table 7 reports the results of this analysis. The magnitude of these results is somewhat weaker than in my primary test using the Fama-French four factor model, but is still indicative of insiders exploiting the loophole in Section 16(b) to make pseudo short swing trades that prey on uninformed outside investors. Specifically, the mean interval abnormal return for the buy-first, sell-later pseudo short swing inside trades is about 5%, whereas the corresponding mean abnormal return for the sell-first, buy-later interval is -1.5% (over about 85 days). Similar to the primary analysis, the buy-first, sell-later (sell-first, buy-later) pseudo short swing insider trades are strongly (weakly) statistically significant, with a one tailed p-value < 0.001 (p=0.12).

Annualizing these mean rates of return leads to annual abnormal returns of approximately 32% for the buy-first, sell-later trades and -27% for the sell-first, buy-later trades. As in the primary analysis, these rates of return suggest that insiders engaging in pseudo short swing trades earn much higher profits (and avoid much larger losses) than in the general sample of insider trades (Wang, Shin, and Francis (2012)).

5.2 Fama-French Five Factor Results (adding a Liquidity Factor)

Next, I examine whether accounting for liquidity risk affects my estimation of abnormal returns. Sadka (2006), Pastor and Stambaugh (2003), Eckbo and Norli (2005), and Acharya and Pedersen (2005), among others, demonstrate that liquidity risk serves as a priced risk factor in U.S. capital markets. I account for this systematic risk using the liquidity factor of Eckbo and Norli (2005) in Table 8.

Briefly, including a liquidity risk factor only strengthens my results. Buy-first, sell-later pseudo short swing insider trades (Table 8, Panel A) earn positive abnormal returns of about

9.5% over the short swing interval (which averages about 85 days). The corresponding interval return for the sell-first, buy-later trades are, as typical, negative, but not with means statistically different from zero. However, unlike prior tests, the median returns of these trades are less than zero at the $p<0.10$ level.

5.3 On developing a trading rule

While my primary goal in this study is to determine whether the U.S. investor protection regime absent Section 16(b) is sufficient to protect U.S. investors from predatory insider trading, I also investigate whether a profitable trading rule can take advantage of the remarkably well informed insiders conducting trades in my sample. This is problematic, as the pseudo short swing insider trades I examine are not identifiable ex-ante, as discussed above. That is, of my possible sample of opening trades (all insider trades), the only ones that qualify as pseudo short swing insider trades are those in which I observe the same insider trading in a different class in a different direction in the future (within six months). Once this has occurred, the short swing interval is, by definition, already over, as it ended with the latter trade.

However, that latter trade likely occurs because an insider is trying to increase (via a purchase) or decrease (via a sale) their exposure to a firm's upcoming performance. It is possible that this upcoming performance is extreme, as well as unexpected, given that prior to this closing trade, the insider in question was trading in the opposite direction. For example, if the CEO of firm X buys class A stock on January 1st, one likely explanation for a sale of class B stock on March 1st would be that they are in possession of some new information that does not bode well for the position taken in their original trade (in this case, a purchase of class A shares on January 1).

These closing trades (e.g. the March 1 sale of class B shares) are perfectly (and contemporaneously) identifiable as the closing trade in a pseudo short swing insider trade (as one could match the CEO's March 1 sale to his January 1 buy), and I examine whether a portfolio mimicking such transactions earns abnormal returns going forward. This sample is smaller than that of all pseudo short swing insider trades, as sometimes multiple opening pseudo short swing insider trades are matched to a single closing trade, as would occur if an insider bought class A shares on January 1 and February 1, but sold class B shares on March 1.

Note that even if these transactions were in the same class (and subject to Section 16(b)), the forward-looking profits from these closing trades are not returned to the shareholders, as only the profits earned in the interval (between the January 1 buy of class A and the March 1 sell of class B) are subject to the Section 16(b) restrictions. The present analysis only examines the returns to mimicking the closing trade (e.g. the March 1 sell, in my example). The returns to transactions of this type are reported in Table 9.

Panel A reports the abnormal returns to mimicking the insider buys that follow within six months of the same insider's sell in a different class of stock for the same firm. The one quarter, two quarter, and four quarter cumulative abnormal returns (Fama-French four factor) to these buys are about 6%, 11%, and 28%, respectively (all p-values < 0.01). Clearly, the insiders executing these trades are able to capture sizable profits moving forward. Median returns are also profitable and only slightly more modest.

Panel B (Table 9) reports the abnormal returns to mimicking the insider sells that follow within six months of the same insider's buy in a different class of stock for the same firm. The mean returns to these trades over one, two, and four quarter intervals are negative (indicative of insiders selling before bad news hits), but only significantly so in the first quarter (-3.69%, p-

value = 0.06). The one year (four quarter) returns are negative (-9.07%), but only marginally significant (p-value = 0.13).

This exploratory analysis is probably of negligible use to the investing community, given the small sample size (about 240 trades over 18 years), but it does shed some light on the types of returns earned in and around pseudo short swing insider trades. For the typical buy-first, sell-later insider trade, an insider beats the market with his purchase by about 9% over a period of about 85 days (a period which is considerably more likely than random to include a large, positive earnings surprise), after which he sells in another class of stock in the same firm that goes on to underperform (beat) the market by about 9% over the following four quarters. Analogously, the typical sell-first, buy-later pseudo short swing insider trade involves an insider selling one class of stock, which goes on to marginally underperform the market by about 2% over the next quarter (until the closing buy), followed with a buy in another class of stock in the same firm that subsequently outperforms the market by 28% over the next year. In sum, these trades appear to be remarkably well timed.

To benchmark these returns, Cohen, Malloy, and Pomorski (2012) find that the opportunistic (unplanned) buys of insiders earn an annualized alpha of around 18%. By comparison, the buys that close pseudo short swing insider trades beat the market by about 28%. Opportunistic sells in Cohen, Malloy, and Pomorski (2012) underperform the market by about 3% annually, whereas sells that close pseudo short swing insider trades go on to underperform the market by 9% annually. These results are in line with the transactions I observe being unplanned, given that they are reversing a position recently taken by the insider (within the last

six months).[18] Again, I stress that this well-timed roundtrip trading by informed insiders is

exactly the kind of activity the U.S. Congress saw fit to outlaw in Section 16(b) (Fried (1997),

Ausubel (1990)).

5.4 Selection Model

As a final analysis, I examine the type of firms that, in general, have multiple classes of

traded stock. This is important primarily in determining whether my results would generalize to

the broader population of U.S. firms. Panel A of Table 10 reports the univariate differences

between firms with multiple classes of stock and those with a single class of stock. Multi class

firms are larger, more highly levered, and have lower valuations, but the primary difference

seems to be in firm age. Firms that first listed before the 1990s are much more likely to have

multiple listed classes of stock. Paralleling this trend, multi class firms are more likely to be

involved in manufacturing basic goods (non-durable consumer goods) and less likely to operate

in the financial or healthcare sectors.

Panel B reports a logit model estimating whether or not a firm has more than one class of

listed stock at its first appearance on the CRSP and Compustat tapes during my sample period

(1995 to 2013). As in Panel A (and Gompers, Ishii, and Metrick (2010)), firms with lower

Tobin's Q (market/book) are more likely to have multiple classes of traded stock. However, this

effect is very small relative to the effect of age. For example, with other controls set at the

median, shifting Tobin's Q from the first to third quartile (1.3 to 4.1) only decreases the

likelihood of having multiple classes of listed stock from 5.6% to 5%. By comparison, shifting

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[18] I approximate annual alphas from Cohen, Malloy, and Pomorski (2012) by compounding the monthly alphas
found in their Table 8. I use their alphas from the Fama-French four factor model, as that is the model I employ in
my Table 9 results.

the decade of IPO from the 1990s to the 1960s increases the probability that a firm has multiple classes of listed stock (in the 1990s and 2000s) from about 2% to about 9%.

The Table 10 results should help clear up any concerns about whether multi class firms in general are anomalous. While these firms tend to have lower valuation multiples and larger balance sheets than single class firms, the biggest differences (and perhaps what is driving the results in size and Tobin's Q) are in firm age. Firms that underwent IPOs in the 1990s and later did so in markets much more concerned with shareholder rights and corporate governance (Shleifer and Vishny (1997), Holmstrom and Kaplan (2001)), both of which are strengthened by single class ownership structures (e.g. Gompers, Ishii, and Metrick (2010)). This indicates that while the multi class firms I analyze may not be directly comparable to the broader sample of public U.S. firms on all fronts, differences are primarily in age, which is perhaps not a large concern in regards to generalizability (i.e. the types of firms in my sample have lower valuation multiples and larger balance sheets than the typical Compustat firm, but these characteristics are not economically meaningful predictors of having multiple classes of traded stock).

6. Conclusion

What protects outside investors from insider trading in the United States? This is a difficult question, in that the regulatory system in place involves multiple elements working together, and attributing credit to any specific piece or combination is complicated. The consensus of prior research is that the current, effective system of insider trading protections involves a well-provisioned SEC, along with an efficient class-action system, enforcing a principles based prohibition on insiders trading on private information (Rule 10b5), all within a common-law based legal environment. However, an unappreciated factor of this regulatory framework is the bright-line prohibition on short swing insider trading, which perhaps (greatly)

lightens the burden of investor protection borne by the remainder of the regulatory framework. I examine whether this short swing insider trading prohibition is necessary to protect outside investors in the U.S., or whether the remainder of the regulatory regime is sufficient in its absence. My findings suggest that when the short swing insider trading prohibition fails to bind, the remaining investor protection system is unable to provide adequate protection to outside investors, which results in short swing insider trading abnormal returns eclipsing 30% per year. These returns are an order of magnitude higher than those typically earned via insider trading in the United States.

For securities regulators in the U.S. and abroad, this result perhaps generates two insights. First, generously funded, well-staffed regulators and liberal, accessible class-action systems can fail to protect outside investors from exceedingly lucrative insider trading, even in a sound legal system. These elements are likely necessary to protect outside investors from such predatory insider trading, but are not sufficient. Second, the information advantages of U.S. insiders relative to outsider investors are higher than estimated in prior work, and appear most valuable over short windows. The silver lining is that both of these issues can be remedied by a simple, bright-line restriction on insiders trading both ways in their firms' stocks over short horizons. This previously underappreciated element of securities regulation appears to play a substantial role in restraining insider profits and protecting outside investors.

In a broader sense, this result also demonstrates that the regulatory systems in place in Western-style markets are complex and interdependent. Individual elements, such as having a well-funded securities regulator or strong laws, may be very beneficial, but only in a framework incorporating other essential elements. Unravelling a single strand of this framework, even one

widely regarded as insignificant, can potentially weaken the securities regulatory system and place outside investors at risk of great harm.

Finally, this result speaks plainly to the ongoing debate in the securities law literature over whether Section 16(b) offers any benefits to outside investors in securities markets. One does not have to look hard to find vociferous critics who claim that the remaining system would be perfectly capable of protecting outside investors from predatory short swing insider trading in the case of Section 16(b) being repealed (e.g. O'Connor (1989), Dessent (1999), Manne (2008), Taylor (1997), Munter (1966), Lowenfels (1968), Ishizumi (1978), and Jennings, Marsh, and Coffee (1992)). My findings illustrate that this is not the case, and that the bright-line rule, while perhaps a "dumb" catchall, clearly plays a valuable role in protecting outside investors in U.S. securities markets.

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Table 1

Table 1 reports the summary statistics of the pseudo short swing insider trades. These are roundtrip transactions (buy-sell or sell-buy) in different classes of securities for the same firm. The data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed on WRDS.

Variable	n	Mean $ Value	Median $ Value
Short Swing Type: Buy first, sell later	190	602,518	36,370
Short Swing Type: Sell first, buy later	143	6,676,468	691,500

Table 2
Table 2 reports a breakdown of the 333 pseudo short swing insider trades in my sample, by firm.
These firms typically have multiple classes of stock with disparate voting rights, often put in
place to allow a founder, founding family, or senior management to retain control.

Firm Name	# of pseudo short swing insider trades	Firm Name	# of pseudo short swing insider trades
Aaron's Inc	7	Greif Inc	6
Alberto Culver Co	1	Heico Corp	35
American Greetings	1	Intl Speedway Corp	46
Apollo Group Inc	4	Jo-Ann Stores Inc	2
Benihana Inc	7	Kelly Services Inc	2
Berkshire Hathaway	13	Lehman Brothers Holdings Inc	1
Brown-Forman	2	Marsh Supermarkets	37
Central Garden & Pet Co	9	Molex Inc	1
Crawford & Co	2	Monogram Biosciences Inc	14
Discovery Communications Inc	7	Moog Inc	2
Donegal Group Inc	1	News Corp	2
E-Z-Em Inc	1	Orchard Supply Hardware	3
Exx Inc	1	Pacificare Health Systems	1
Fedders Corp	2	Price Legacy Corp	7
First Citizens Bank	11	Public Storage	11
Forest City Entrprise	2	Reckson Assocs Realty Corp	2
Freeport-Mcmoran Cop. & Gold	3	Rush Enterprises Inc	1
Genentech Inc	1	Security Cap Grp Inc	14
Genzyme Corp	7	Seneca Foods Corp	5
Genzyme Tissue Repair	3	Sport Chalet Inc	21
Georgia-Pacific Corp	6	Urstadt Biddle Properties	1
Gray Television Inc	2	Waddell & Reed Finl Inc	26

Table 3
Table 3 reports the abnormal returns to the pseudo short swing insider trades. Abnormal returns are estimated with a Fama-French four factor model, which adds a momentum factor (Carhart (1997)) to the original Fama-French Three Factor model (Fama and French (1993)). These are roundtrip transactions (buy-sell or sell-buy) in different classes of securities for the same firm. The data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed on WRDS. Statistically significant test statistics are denoted with asterisks, with ***, **, and * corresponding to a 2-tailed p-value of < 0.01, < 0.05, and 0.1, respectively. I use a t-test (t-statistic) to test the mean and a sign test (m-statistic) to test the median.

Panel A
Panel A reports the abnormal returns to pseudo short swing insider trades in which the buy comes first, followed by a sell. Positive returns indicate profits to a pseudo short swing insider trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	9.02%	5.14***	3.42%	18**
Daily Interval Abnormal Return	0.21%	2.54***	0.07%	18**
Annualized Daily Abnormal Return	51.72%	2.54***	17.96%	18**
Days in Interval	87.50		79.5	

Panel B
Panel B reports the abnormal returns to pseudo short swing insider trades in which the sell comes first, followed by a buy. Negative returns indicate losses avoided by a pseudo short swing insider trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	-2.15%	-1.19	3.11%	5.5
Daily Interval Abnormal Return	-0.14%	-1.51	0.04%	5.5
Annualized Daily Abnormal Return	-35.13%	-1.51	9.40%	5.5
Days in Interval	84.30		86.0	

Table 4

Table 4 reports the statistical significance of the returns of my pseudo short swing insider trades using a Monte Carlo randomization. Abnormal returns are estimated with a Fama-French four factor model, as described in section 5.3. I replace (2,000 times) the start date of every pseudo short swing insider trade in my sample with the date of another insider trade in the same direction for the same firm during my sample period. The Fisher p-values indicate the percent of these randomized sets of pseudo short swing insider trades that result in portfolio returns (mean or median) more extreme than that observed in the actual data. The data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed on WRDS.

Panel A

Panel A reports the abnormal returns to pseudo short swing insider trades in which the buy comes first, followed by a sell. Positive returns indicate profits to a pseudo short swing insider trade.

Variable	Mean	Fisher p-value	Median	Fisher p-value
Interval Abnormal Return	9.02%	< 0.001	3.42%	0.02
Daily Interval Abnormal Return	0.21%	0.01	0.07%	0.03
Annualized Daily Abnormal Return	51.72%	0.01	17.96%	0.03
Days in Interval	87.50		79.5	

Panel B

Panel B reports the abnormal returns to pseudo short swing insider trades in which the sell comes first, followed by a buy. Negative returns indicate losses avoided by a pseudo short swing insider trade.

Variable	Mean	Fisher p-value	Median	Fisher p-value
Interval Abnormal Return	-2.15%	0.11	3.11%	> 0.50
Daily Interval Abnormal Return	-0.14%	0.01	0.04%	> 0.50
Annualized Daily Abnormal Return	-35.13%	0.01	9.40%	> 0.50
Days in Interval	84.30		86.0	

Table 5
Table 5 reports models estimating the abnormal returns identified in my primary analysis.

Panel A
Panel A reports the summary statistics of the buy-first, sell-later pseudo short swing insider trades.

Variable	Mean	Std. Dev.	1st Quart.	Median	3rd Quart.
Short Swing Interval Abnormal Return	0.093	0.24	-0.07	0.04	0.17
Officer	0.401	0.49	0.0	0.0	1.0
Director	0.251	0.43	0.0	0.0	1.0
Officer and Director	0.080	0.27	0.0	0.0	0.0
Outside Owner	0.428	0.50	0.0	0.0	1.0
Assets (Millions, USD)	5,400	22,000	327	567	1,600
Assets Decile	7.471	1.78	6	8	9
Tobin's Q	3.245	3.58	0.81	1.57	4.53
Tobin's Q Decile	5.738	3.10	3	5	9
Liquidity Decile (Most liquid class)	5.840	2.59	3	6	8
Liquidity Decile (2nd most liquid class)	5.086	2.60	3	5	8
Last month's |return|	0.089	0.10	0.03	0.08	0.11
Last month's return	-0.017	0.13	-0.08	-0.01	0.05

Panel B
Panel B reports the summary statistics of the sell-first, buy-later pseudo short swing insider trades.

Variable	Mean	Std. Dev.	1st Quart.	Median	3rd Quart.
Short Swing Interval Abnormal Return	-0.022	0.22	-0.13	0.03	0.09
Officer	0.413	0.49	0.0	0.0	1.0
Director	0.343	0.48	0.0	0.0	1.0
Officer and Director	0.021	0.14	0.0	0.0	0.0
Outside Owner	0.266	0.44	0.0	0.0	1.0
Assets (Millions, USD)	14,000	41,000	631	1,400	2,700
Assets Decile	7.864	1.84	7	9	9
Tobin's Q	2.363	2.26	1.15	1.58	2.85
Tobin's Q Decile	5.586	2.22	4	5	8
Liquidity Decile (Most liquid class)	6.797	2.99	5	7	10
Liquidity Decile (2nd most liquid class)	5.720	3.10	3	7	8
Last month's |return|	0.084	0.08	0.02	0.08	0.10
Last month's return	-0.004	0.12	-0.09	-0.02	0.06

Table 5, continued
Table 5 reports models estimating the abnormal returns identified in my primary analysis.

Panel C
Panel C reports the results of OLS models that estimate the abnormal return of pseudo short swing insider trades as a function of insider status, firm characteristics, and security characteristics. Model 1 (2) estimates abnormal returns to buy-first, sell-later (sell-first, buy-later) pseudo short swing insider trades. Abnormal returns are estimated using the Fama-French four factor model. T-statistics are in brackets beneath coefficients. *, **, and *** correspond to statistical significance at the p<0.1, p<0.05, and p<0.01 levels. Standard errors are clustered at the firm level.

DV: Abnormal return of Pseudo short swing insider trade		
	Model 1	Model 2
Officer	0.0179	0.0939*
	[0.2896]	[1.9393]
Director	-0.0509	-0.0346
	[-0.4964]	[-0.5476]
Officer and Director	-0.0495	0.1596***
	[-0.3626]	[3.1486]
Outside Owner	0.0897	-0.0014
	[0.8025]	[-0.0215]
Firm Size (Assets)	-0.00001	-0.00001***
	[-1.2171]	[-2.7639]
Tobin's Q	-0.0031	-0.0065
	[-0.2487]	[-0.6842]
Liquidity Decile of Most Liquid Class	-0.0274	0.01
	[-1.4312]	[0.9727]
Liquidity Decile of Second Most Liquid Class	0.0535*	0.008
	[1.8885]	[0.8236]
Absolute value of prior month's return	-0.0555	-1.5238***
	[-0.1744]	[-4.3802]
Prior month's return	0.0001	-0.0118
	[0.0006]	[-0.0542]
Type of Pseudo short swing insider trade	Buy-first, sell-later	Sell-first, buy-later
Observations	187	140
R²	0.294	0.401

Table 6
Table 6 reports the proportion and impact of large beneficial (for insiders) earnings surprises being observed in the pseudo short swing insider trades samples. To generate Fisher p-values, I replace (2,000 times) the start date of every pseudo short swing insider trade in my sample with the date of another insider trade in the same direction for the same firm during my sample period. The Fisher p-values indicate the percent of these randomized sets of pseudo short swing insider trades that result in an equal or higher frequency of beneficial earnings surprises than that observed in the actual data. The WRDS data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed and the IBES datasets on earnings and analyst forecasts.

Panel A
Panel A reports the ratio of *Big Positive Earnings Surprises* (highest decile of percent above consensus analyst forecast, by year) between the opening buy and closing sell of the buy-first, sell-later pseudo short swing insider trades.

Proportion of Buy-Sell pseudo short swing insider trade intervals including a *Big Positive Earnings Surprise:*	
Observed ratio	Fisher p-value
0.0909	<0.001

Panel B
Panel A reports the ratio of *Big Negative Earnings Surprises* (lowest decile of percent below consensus analyst forecast, by year) between the opening sell and closing buy of the sell-first, buy-later pseudo short swing insider trades.

Proportion of Sell-Buy pseudo short swing insider trade intervals including a *Big Negative Earnings Surprise:*	
Observed ratio	Fisher p-value
0.0357	0.52

Table 6, continued

Panel C
Panel C reports the results of OLS models that estimate the abnormal return of pseudo short swing insider trades as a function of big earnings surprises, insider status, firm characteristics, and security characteristics. Model 1 (2) estimates abnormal returns to buy-first, sell-later (sell-first, buy-later) pseudo short swing insider trades. Abnormal returns are estimated using the Fama-French four factor model. T-statistics are in brackets beneath coefficients. *, **, and *** correspond to statistical significance at the p<0.1, p<0.05, and p<0.01 levels. Standard errors are clustered at the firm level.

DV: Abnormal return of Pseudo short swing insider trade		
	Model 1	Model 2
Big Positive Earnings Surprise (Dummy)	0.3540***	
	[5.9964]	
Big Negative Earnings Surprise (Dummy)		-0.3550***
		[-3.1699]
Officer	-0.0152	0.0946*
	[-0.3293]	[1.8164]
Director	-0.0883	-0.0773
	[-0.9332]	[-1.1066]
Officer and Director	-0.006	0.1546***
	[-0.0466]	[2.7686]
Outside Owner	0.0073	-0.0402
	[0.1102]	[-0.6442]
Firm Size (Assets)	-0.00001	-0.00001**
	[-1.6573]	[-2.2333]
Tobin's Q	-0.0126*	-0.0033
	[-1.7986]	[-0.3363]
Liquidity Decile of Most Liquid Class	-0.0171	0.0186
	[-0.9914]	[1.5122]
Liquidity Decile of Second Most Liquid Class	0.0555*	0.0007
	[2.0186]	[0.0753]
Absolute value of prior month's return	-0.0924	-1.3578***
	[-0.2928]	[-4.8358]
Prior month's return	-0.0444	-0.1362
	[-0.1916]	[-0.8462]
Type of Pseudo short swing insider trade	Buy-first, sell-later	Sell-first, buy-later
Observations	187	140
R²	0.409	0.477

Table 7

Table 7 reports the abnormal returns to the pseudo short swing insider trades. Abnormal returns are estimated with a market adjustment (raw return less market return over the interval). These are roundtrip transactions (buy-sell or sell-buy) in different classes of securities for the same firm. The data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed on WRDS. Statistically significant test statistics are denoted with asterisks, with ***, **, and * corresponding to a 2-tailed p-value of < 0.01, < 0.05, and 0.1, respectively. I use a t-test (t-statistic) to test the mean and a sign test (m-statistic) to test the median.

Panel A

Panel A reports the abnormal returns to pseudo short swing insider trades in which the buy comes first, followed by a sell. Positive returns indicate profits to a pseudo short swing insider trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	4.78%	3.49***	2.00%	16**
Daily Interval Abnormal Return	0.13%	1.84*	0.04%	16**
Annualized Daily Abnormal Return	31.87%	1.84*	10.08%	16**
Days in Interval	87.50		79.5	

Panel B

Panel B reports the abnormal returns to pseudo short swing insider trades in which the sell comes first, followed by a buy. Negative returns indicate losses avoided by a pseudo short swing insider trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	-1.45%	-1.18	0.27%	1.5
Daily Interval Abnormal Return	-0.11%	-1.21	0.00%	1.5
Annualized Daily Abnormal Return	-26.56%	-1.21	0.86%	1.5
Days in Interval	84.30		86.0	

Table 8
Table 8 reports the abnormal returns to the pseudo short swing insider trades. Abnormal returns
are estimated with a Fama-French Five Factor model, which adds a momentum factor (Carhart
(1997)) and a liquidity factor (Eckbo and Norli (2005)) to the original Fama-French Three Factor
model (Fama and French (1993)). These are roundtrip transactions (buy-sell or sell-buy) in
different classes of securities for the same firm. The data underlying these trades are drawn from
the Thomson Reuters Insider Filings Data Feed on WRDS. Statistically significant test statistics
are denoted with asterisks, with ***, **, and * corresponding to a 2-tailed p-value of < 0.01, <
0.05, and 0.1, respectively. I use a t-test (t-statistic) to test the mean and a sign test (m-statistic)
to test the median.

Panel A
Panel A reports the abnormal returns to pseudo short swing insider trades in which the buy
comes first, followed by a sell. Positive returns indicate profits to a pseudo short swing insider
trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	9.54%	4.88***	4.59%	13*
Daily Interval Abnormal Return	0.16%	1.80*	0.11%	13*
Annualized Daily Abnormal Return	39.51%	1.80*	27.75%	13*
Days in Interval	87.50		79.5	

Panel B
Panel B reports the abnormal returns to pseudo short swing insider trades in which the sell comes
first, followed by a buy. Negative returns indicate losses avoided by a pseudo short swing
insider trade.

Variable	Mean	t	Median	m
Interval Abnormal Return	-0.43%	-0.22	-1.62%	-11.5*
Daily Interval Abnormal Return	-0.12%	-1.24	-0.03%	-11.5*
Annualized Daily Abnormal Return	-30.50%	-1.24	-6.81%	-11.5*
Days in Interval	84.30		86.0	

Table 9
Table 9 reports the abnormal returns to mimicking the closing (contemporaneously identifiable) pseudo short swing insider trade transactions (the sell that comes after a buy in a different class, and vice versa). Abnormal returns are estimated with a Fama-French four factor model, which adds a momentum factor (Carhart (1997)) to the original Fama-French Three Factor model (Fama and French (1993)). The data underlying these trades are drawn from the Thomson Reuters Insider Filings Data Feed on WRDS. Statistically significant test statistics are denoted with asterisks, with ***, **, and * corresponding to a 2-tailed p-value of < 0.01, < 0.05, and 0.1, respectively. I use a t-test (t-statistic) to test the mean and a sign test (m-statistic) to test the median.

Panel A
Panel A reports the abnormal returns to mimicking the insider buys that follow within six months of the same insider's sell in a different class of stock for the same firm. Positive returns indicate profits obtained by following this strategy, which is tradeable.

Variable	n	Mean	t	Median	m
Mimic insider buys, hold for 1 quarter	97	6.07%	3.72***	4.02%	12.5**
Mimic insider buys, hold for 2 quarters	97	11.57%	3.32***	12.23%	8.5
Mimic insider buys, hold for 4 quarters	97	28.51%	4.31***	19.34%	11.5**

Panel B
Panel B reports the abnormal returns to mimicking the insider sells that follow within six months of the same insider's buy in a different class of stock for the same firm. Negative returns indicate losses avoidable (or profits to short selling) by following this strategy, which is tradeable.

Variable	n	Mean	t	Median	m
Mimic insider sells, hold for 1 quarter	142	-3.69%	-1.91*	-0.19%	-1
Mimic insider sells, hold for 2 quarters	142	-3.73%	-1.06	0.91%	2
Mimic insider sells, hold for 4 quarters	142	-9.07%	-1.53	1.73%	6

Table 10
Table 10 reports the differences in single and multi class firms in my sample period, not just those in my sample.

Panel A
Panel A reports mean values of firm characteristics for firms with one class of listed stock (single class firms) and those with more than one class of listed stock (multi class firms).

| | Mean Values | | |
	Single class firms	Multi class firms	t
Sample Size	12,882	200	
Firm Characteristics			
Assets	1,293.23	3,899.90	-7.4***
Bid-ask spread (%)	1.04	1.04	1.5
Tobin's Q	3.62	2.45	3.2***
Leverage	0.19	0.27	-5.3***
Primary Industry			
Consumer non-durables (food, tobacco, toys, etc.)	0.04	0.09	-4.3***
Consumer durables (cars, appliances, furniture, etc.)	0.02	0.01	0.6
Manufacturing (machinger, trucks, planes, etc.)	0.08	0.11	-1.4
Energy (oil, gas, coal, etc.)	0.04	0.06	-1.3
Chemicals	0.02	0.01	0.8
Business equip. (computers, printers, software, etc.)	0.18	0.12	2.3**
Telecommunications (phones, TV channels, etc.)	0.04	0.16	-8.5***
Utilities	0.02	0.01	0.9
Shopping (retail, wholesale)	0.09	0.11	-0.8
Healthcare, medical equipment, pharmaceuticals	0.1	0.04	2.4**
Finance	0.21	0.11	3.8***
Other industry	0.16	0.17	-0.2
Decade of IPO			
IPO in 1920s	0.01	0.025	-2.7***
IPO in 1930s	0.003	0.005	-0.6
IPO in 1940s	0.004	0.015	-2.2**
IPO in 1950s	0.0055	0.01	-0.8
IPO in 1960s	0.03	0.11	-6.7***
IPO in 1970s	0.07	0.19	-6.1***
IPO in 1980s	0.17	0.2	-1.2
IPO in 1990s	0.47	0.28	5.3***
IPO in 2000s	0.2	0.14	2.1**
IPO in 2010s	0.03	0.01	1.3

Table 10, continued

Panel B
Panel B reports the results of a firm level logistic regression that models whether a firm has more than one class of listed stock at its first appearance on CRSP and Compustat over the 1995 to 2013 window. Z-statistics are in the column to the right of the coefficients. *, **, and *** correspond to statistical significance at the p<0.1, p<0.05, and p<0.01 levels. The excluded industry category is *Consumer non-durables* and the excluded age category is *IPO in 1920s*.

Logit Model: DV =1 if firm has multiple classes of listed stock		
	Coef.	z
Firm Characteristics		
Assets	0.0001	4.38***
Bid-ask spread (%)	-2.560	-1.53
Tobin's Q	-0.043	-2.06**
Leverage	0.744	2.14**
Primary Industry		
Consumer durables (cars, appliances, furniture, etc.)	-1.394	-2.2**
Manufacturing (machinger, trucks, planes, etc.)	-0.773	-2.38**
Energy (oil, gas, coal, etc.)	-0.504	-1.33
Chemicals	-1.603	-2.14**
Business equip. (computers, printers, software, etc.)	-0.961	-2.99***
Telecommunications (phones, TV channels, etc.)	0.632	1.98**
Utilities	-2.279	-2.95***
Shopping (retail, wholesale)	-0.704	-2.11**
Healthcare, medical equipment, pharmaceuticals	-1.177	-2.85***
Finance	-1.762	-5.1***
Other industry	-0.554	-1.87*
Decade of IPO		
IPO in 1930s	-0.532	-0.46
IPO in 1940s	0.898	1.15
IPO in 1950s	-0.175	-0.2
IPO in 1960s	0.659	1.24
IPO in 1970s	0.395	0.77
IPO in 1980s	-0.223	-0.43
IPO in 1990s	-1.061	-2.05**
IPO in 2000s	-1.079	-2.03**
IPO in 2010s	-1.345	-1.76*
Constant	-0.360	-0.2
Observations	13,082	
Pseudo R²	0.103	

Dissertation Appendix

    1. SEC and Private Enforcement of 16(b)- Overview and an Example

In an effort to be concise, I omit from the main text much of the institutional detail about how Section 16(b) is enforced in civil courts. Briefly, an active plaintiffs' bar monitors all insider transactions, which are filed with the SEC and searchable online. When a profitable short swing insider trade is observed (Tamersoy et al. (2014) observe that such trades are not uncommon), a representative of one of the plaintiff attorneys typically buys a small stake in the offending firm (just 1 share is sufficient). The plaintiff attorney then sends a letter to the firm and insider asking that the profits of the trade be returned to the corporate treasury, and that the firm provide adequate compensation to the plaintiff attorney for providing this monitoring on behalf of the outside shareholders (this has been enforced by the courts, and the plaintiff attorney's remuneration tends to fall between 10% and 50% of recovered profits). Only in rare occasions do these actions actually end up being filed and taken before the courts, as there is no viable legal defense in cases where a profitable short swing insider trade has occurred (violation is assessed by strict liability, so no need for the plaintiffs to show fraudulent intent, only the existence of a profitable trade). As a result, the vast majority of enforcement and deterrence brought about by Section 16(b) is completely unobservable to outside parties. For further detail, see Dessent (1999), Agrawal and Jaffe (1995), and O'Connor (1989).

While these lawsuits are rarely brought to court, those that are litigated usually involve one of a handful of firms that specialize in 16(b) enforcement. For example, Shane McMahon (son of wrestling promoter Vince McMahon) in recent years served as a director for a publically traded entertainment company "YOU On Demand" (NASDAQ: YOD). In January of 2014,

McMahon sold a block of convertible preferred shares in YOD. In May 2014, he purchased a block of common stock in YOD. In March 2016, David Lopez (a NYC attorney) brought suit against McMahon under Section 16(b) on behalf of his client Deborah Donoghue (Lopez/Donoghue have filed about 100 short swing lawsuits in recent years). The lawsuit has yet to be decided (as of September 2016), and likely would have been settled prior to filing if not for the cross-class nature (similar to that exploited in the paper). While this type of trading has been identified as allowable under 16(b) (see judicial decisions mentioned above), Lopez and Donoghue may be hopeful that a judge or appeals court will rule in their favor given the convertible nature of the preferred shares (e.g. that they could be converted to common shares if desired).

2. Short-swing trading in the same share class

While I examine short-swing trading across different share classes, interested readers may also be curious as to the distribution of short swing insider trading in the U.S. within the same class. The profit from these trades must be remitted to the firm/shareholders, and this process is largely unobservable. What is observable, however, are the short-swing trades themselves. I plot the distribution of a random sample (of about 75,000) of these trades below (drawn randomly from across my sample period, 1995-2013). The profitability and frequency of these trades spike right at the 6 month point (relative to holding periods of 3-5 months). See the Appendix Figure 1 below.

Again, I am not able to examine the enforcement related to these trades, but it does appear insiders take advantage of the expiration of the 6 month period in 16(b) to execute more

and more profitable swing trades when a bright-line rule does not prevent them from doing so (e.g. in the 6.00 to 6.99 month bin).

Appendix Figure 1