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Congressional Insider Trading: An Analysis of the Personal Common Stock Transactions of U.S. Senators

Scott T. Yingling
Claremont McKenna College

CLAREMONT McKENNA COLLEGE

CONGRESSIONAL INSIDER TRADING: AN ANALYSIS OF THE PERSONAL COMMON STOCK TRANSACTIONS OF U.S. SENATORS

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PROFESSOR ERIC HUGHSON

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SCOTT YINGLING

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Abstract

I have examined the common stock investments made by members of the U.S. Senate between 2006 and 2009. I find that the average stock portfolio in the Senate exhibits one and two year cumulative abnormal returns (CARs) of -0.15 % and 0.43%, respectively. This suggests that members of the Senate are not trading on insider knowledge as indicated by one previous researcher who calculated a one year CAR of 25%. However, my findings are in line with another previous researcher who found a one year CAR of about -2% and concluded that Congressmen are not trading on inside information. I also examine election-year trades made by senators who lose a reelection bid. This cashing out effect amounts to a CAR of 0.43% during the first year post loss, but after two years these trades exhibit a CAR of -0.03%. The cashing out group performs no better than the group as a whole, indicating that this group did not use their informational advantage to profit during the lame duck session.

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I. Introduction

During the financial crisis of 2008-2009, Americans saw the magnitude of the impact that the federal government can have on the financial markets. On September 29, 2008, the House rejected the $700 billion bailout package, which sent the Dow Jones Industrial Average 778 points, or 7%, downward. Four days later, when the House finally passed the bailout package, the Dow recorded a 485 point gain. All Americans saw the profound effect that the actions of a legislative body can have on stock prices.

As members of the legislature, U.S. Senators play an important role in the decision-making process of the federal government. This inside role might afford them access to material, non-public information. Despite this insider role in the government, their common stock transactions are not subjected to any unusual conflict-of-interest restrictions[1]. The behavior of US Senators is governed by Senate Ethics rules. In the instance where a particular Senator's personal stock holdings or other financial assets benefit as a result of his or her legislative actions, the *U.S Senate Ethics Manual* presumes that the Senator acted in the public interest and that his or her own financial interest was only tangentially related[2]. While one hopes that public servants would act solely in the public interest, the notion that people act to maximize personal utility in their public roles as well their

[1] Ziobrowski, Alan J. "Abnormal Returns from the Common Stock Investments of the US Senate," Journal of Financial and Quantitative Analysis, Vol.39, No 4, December 2004., p. 661

[2] Ziobrowski et al., 661

private roles is fundamental to public choice theory (Buchanan and Tollison (1984))[3]. The recent examples of former Illinois Governor Rod Blagojevich—now facing up to five years in prison—and Charlie Rangel—who was convicted by a House Ethics panel on 11 counts of ethics violations—give clear evidence that public officials will act to maximize their personal financial interest.

Although neither Blagojevich nor Rangel were members of the US Senate, one can easily imagine the following scenario unfolding in the Senate: imagine that a publicly traded defense contractor was due to win a no-bid contract from the government. A Senator, or someone close to the Senator, was a smart investor, could purchase this company's stock before the no-bid contract was publicly awarded. As soon as the announcement is made to the public, the stock will likely surge upward, befalling a huge capital gain to the senator and his or her staff, and depriving the investors who sold their shares to them of a profit[4].

Anecdotal evidence exists that scenarios like the one described have occurred. For example, it is rumored that Dick Durbin sold stocks in September 2008 after attending a closed door meeting with senior Treasury and Federal Reserve officials and learning that the financial crisis was much worse than expected[5]. It is well documented that Hillary Clinton turned $1,000 into $100,000 in ten months by short-selling cattle futures even though she had no prior experience with futures, short-

[3] Ziobrowski et al, 661 – This statement was made in Ziobrowski's paper, however, he gave original credit to: Buchanan, J.M., and R. Tollison. "Theory of Public Choice II" *Univ of Michigan Press* (1984)

[4] Similar to example given by Barbarella et al. "Insider Trading in Congress". *Journal of Business and Securities Law.* Vol 9, 2009. Page 1

[5] James Rowley. "Durbin Invests With Buffett After Funds Sale Amid Market Plunge." *Bloomberg.* June 13, 2009. (I originally saw this anecdote and citation in the Eggers and Hainmueller paper that I have cited throughout this paper.)

selling, or commodities. At the time of the trades, Bill Clinton was the Governor of Arkansas. Hillary Clinton claims that a close friend of hers, James B. Blair, advised her on the trades. At that time, Blair was outside counsel to Tyson Foods, which was also Arkansas' largest employer[6]. Even if Hillary Clinton were in the U.S. Senate at the time of her trades, her actions would not have violated Senate Ethics rules.

While some would argue that Senate ethics rules which prohibit Senators from engaging in an abuse of the public trust would also cover trading on inside information, it is legal to use Congressional insider knowledge to trade stocks[7]. The scenarios discussed above are legal. The double standard that exists between corporate and legislative insider trading is astounding. A few members of Congress aimed to close this gaping loophole with the STOCK (Stop Trading on Congressional Knowledge) Act. First introduced in March of 2006[8], the STOCK Act never advanced very far. It was reintroduced in 2007 and again in 2009. Both times it was referred to Committee. It currently resides with the House Committee on Standards of Official Conduct[9]. Since 2006, the country placed an increased emphasis first on the Iraq War, then the presidential election, and now our economic woes. Thus, it appears the political will to pass this act has subsided.

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[6] Charles Babcock. "Hillary Clinton Futures Trades Detailed." *Washington Post.* May 27th, 1994.

[7] One could argue that the SEC's rule 10(b)-5, which prohibits corporate insider trading, could also be applied to public servants, as they have access to insider information, but no Senator has ever been charged with violating this rule in regards to his or her own common stock investments while in office.

[8] Barbabella et al., 3

[9] Barbabella et al., 4

The goal of this research is to determine whether or not Senators' investments earn an abnormal return on their common stock investments. Like Ziobrowski (2004), I hypothesize that US Senators should not earn statistically significant positive abnormal returns on their common stock transactions (the null). Given the limitations of the data, which will be described in detail later, I find that the common stock investments of US Senators exhibit one and two year CARs between -0.15% and 0.43% depending on which transaction date is used for each portfolio of buys and sells. This is a small CAR, and not nearly large enough to indicate that Senators are trading stock base on non-public information to increase their personal wealth. I used an event-study method to measure abnormal returns for common stock buys and sells during the 2006-2009 timeframe. I used calendar-time portfolio approach with the Fama-French three-factor model. Due to data limitations, I assume an equally weighted portfolio. Using monthly return data and assuming that all transactions occurred on the last day of the year, the Senate purchase transaction portfolio earns one and two year CARs of -0.1% and -0.23%, respectively[10]. According to these same specifications, a portfolio that mimics the sale transactions exhibits slightly negative one and two year CARs of -0.4% and -0.5%, respectively, in the two years following the transaction. Precise transaction dates were not available in the data, thus separate buy and sell transaction portfolios were created for each year assuming uniform transaction dates on the first, middle, and last day of the year.

[10] This method is almost identical to the one outlined on pages 662-663 of Ziobrowski et al.

Additionally, I check for a "cashing out" effect. The cashing out effect refers to the idea that Senators may be more inclined to trade on insider information during the lame-duck session following an election loss. Two election years occur during the timeframe covered in my dataset. Using the same metrics listed above, but only testing the investments of the lame-duck Senators, I find that the Senate buy transaction portfolio earns one and two year CARs of 0.29% and -0.13%, respectively. Additionally, in the two years following the transaction date, the sell portfolio of lame duck senators exhibits one and two year CARs of 0.14% and -0.10%. This result is not different from the rest of the Senate, and I conclude that lame-duck Senators do not exhibit a cashing out effect.

II. Literature Review

Much of the political will for the STOCK Act stems from a 2004 study by Georgia State University professor Alan Ziobrowski. Ziobrowski, using data from 1993-1998, finds that a portfolio of the Senators' buys exhibits a one year CAR of 25%[11]. He also documents that a portfolio of sells exhibits a slightly positive CAR during the year following the sell, however, in the twelve months prior to the sell the CAR is also 25% and peaks close to the time of the sale.[12] He also found that the trade-weighted portfolio of purchased stocks outperforms the equal-weighted portfolio, which suggests that the Senators made much heavier investments the stocks that performed best[13]. Additionally, Ziobrowski documents that the combined portfolio of buys and sells outperforms the market by 12% per year. Ziobrowski tested the returns of Republicans versus the returns of Democrats for significance and found that party affiliation did not matter.

My results likely differ from Ziobrowski for a number of reasons. First, we are using different time periods for our data. As suggested by Eggers and Hainmueller (2010)[14], it is possible that Senators were able to trade on inside information during the 1990s and that the intense scrutiny in the wake of the corporate scandals in the early 2000s dissuading them from continuing this

[11] Ziobrowski et al. 675
[12] Ziobrowski et al. 663
[13] Ziobrowski et al. 675
[14] Andrew Eggers and Jens Hainmueller. "The Mediocre Performance of Congressional Stock Portfolios". *MIT Political Science Department Research.* Paper No. 2011-15. Page 15.

behavior. Also at issue is the transaction date used. Ziobrowski reports using the Financial Disclosure Reports (FDRs) issued at the end of each year to collect his data, and claims to have precise dates reported for each transaction. While I also used the FDRs, transaction dates were not available during the years in my dataset. More importantly, FDRs from 1995-1998, four of the six years used by Ziobrowski, are available online through the Center for Responsive Politics.[15] Like my dataset, these FDRs do not report precise transaction dates[16]. Additionally, the precise dollar value of each transaction is not reported. Instead, members must only report which broad value band the investment falls between[17]. Ziobrowski used the mid-point of each value band to solve the value problem.

In contrast to Ziobrowski, Eggers and Hainmueller's 2010 study titled "Political Investing: The Common Stock Investments of Members of Congress 2004-2008" found that personal portfolio's of the 422 members of the House and Senate actually underperformed the market index by 2-3% per year. Eggers and Hainmueller report a negative and statistically significant one year CAR of -2% with a 95% confidence interval of [-4.9; -.5]. The author's acknowledge their differing result from Ziobrowski's and conclude that they cannot explain why their study yielded such different results. Even when they reconstruct Ziobrowski's study using only members of the U. S.

[15] (www.opensecrets.org)

[16] To clarify, a handful of senators will sporadically report some precise transaction dates and some precise dollar amounts. However, I calculate that more than 95% of the transactions reported lack both a precise transaction date and a precise dollar amount.

[17] These bands are listed in Part IV of this paper

Senate, but keep their 2004-2008 timeframe, they cannot replicate his results. Their best explanation is that members of the Senate achieved staggering results in Ziobrowski's 1993-1998 timeframe due to luck rather than skill, although they cannot rule out the change in the composition of the Senate, changes in market conditions, changes in the amount of scrutiny applied to members of Congress, or simply computational error[18].

I find the claims made by both authors that they obtained precise transaction dates to be puzzling. My data was hand-collected from the same source as both prior researchers, and neither research paper directly addresses the lack of transaction date reporting. My attempts to contact the authors of both studies with questions regarding the issue of transaction date reporting were ignored[19]. Eggers and Hainmueller solved the "value band" problem by using the fact that about 25% of the investments reported a precise value. They used these investments to fit a distribution of precise values and, for each investment in which only the band is known, they imputed the expected value of the precise-value distribution within that band[20].

If Ziobrowski (2004) is correct and Eggers and Hainmueller (2010) are incorrect about whether or not Senators are trading on inside information, the question remains: does a positive CAR indicate insider trading? Moreover, do excess returns on the market indicate insider trading?

[18] Eggers and Hainmueller, 15

[19] To be fair, I'm an undergraduate student performing much less intensive research on the same topic. I do not wish to imply that they have been negligent in their research; however, the issue cannot be ignored.

[20] Eggers and Hainmueller, 8. They impute the unknown values using an approach inspired by Milyo & Groseclose (1999)

Senators have many ways to profit off of their public position. Eggers and Hainmueller (2010) showed excess returns on the market when members of Congress invest in companies in which a relationship has been established, and that these investments outperform the rest of their investments[21]. They showed that members invest disproportionately in these relationship companies[22]. A relationship included the following: the company was headquartered in the home state or home district of the member, the company's PAC or executive board had donated to the Congressman's campaign, or the company had lobbied the member's committee[23]. Eggers and Hainmueller report no differences across the members when the group is sorted by seniority, net worth, portfolio size, or pre-congressional careers[24].

It appears that Congressmen invest in companies, and presumably industries, in which they have more knowledge than the lay investor. This would be evidenced by the committee bias. Senators are appointed to committee positions according to expertise—or perceived expertise—and therefore it would make sense that the investments in companies which operate in their committee's industry sector would perform better. Favoring companies that donate to one's campaign or are headquartered in one's home state or district is not an indication of insider trading. While these investments outperform the market, Eggers and Hainmueller did not report a positive or statistically significant CAR. Members likely make these investments to establish political relationships. Any

[21] Eggers and Hainmueller, 13
[22] Eggers and Hainmueller, 13
[23] Eggers and Hainmueller, 13
[24] Eggers and Hainmueller, 13

excess returns on the market are merely a reflection of that company's risk profile during the time period studied. The discrepancy in results between Ziobrowski (2004) and Eggers and Hainmueller (2010) creates a need for more research to be done to clarify the issue.

III. Theoretical Framework

Modern financial theory has studied the merits of illegal insider trading at some length. The research is focused on corporate insider trading. The Securities Exchange Act of 1934 established, among other things, that corporate insiders were not allowed to fraudulently sell securities[25]. Later amended by rule 10b-5, illegal insider trading was recognized to include the fraudulent purchase of securities. [26] The central premise of opponents of insider trading is that insider trading decreases market liquidity, gives the wrong incentives to managers, and is unfair to the investors on the other side of the trade[27]. Proponents of insider trading tout the increased efficiency of capital markets through insider trading. The insider's trades are seen as a signaling effect by the broader market, and other investors will not waste as much time attempting to collect the same information.[28]

It is important to the financial industry and the broader public to focus on the merits of insider trading. This research assumes that the conclusions reached by Lisa Meulbroek's Smith Breeden Prize winning research "An Empirical Analysis of Insider Trading" (1992) would also apply when U.S. Senators take on the role of the insider and trade using non-public information. Specifically, her conclusions that insider trading incorporates private information into stock prices to

[25] *Securities Exchange Act of 1934,* page 88. Located online: http://www.sec.gov/about/laws/sea34.pdf

[26] Meulbroek, Lisa K. "An Empirical Analysis of Insider Trading". *The Journal of Finance.* Vol. 47, No. 5 (Dec., 1992). Page 1664

[27] Meulbroek, 1661

[28] Meulbroek, 1661

more accurately reflect the true market value of that company—and that any regulation that impedes trading may result in less informative prices—are assumed to be true if a Senator is the insider.

IV. Data and Methodology

My study analyzes the common stock transactions reported by members of the U.S. Senate between January 2006 and December 2009. Members of Congress are required to disclose several measures of their personal wealth, including common stock transactions at the end of each year. These reports are not independently audited and do not have a specified format. For example, an asset may be listed by its common name, ticker, or by some abbreviation. I used Yahoo! Finance and the WRDS CRSP Stock Return File to look up the company names and CUSIP numbers of the common stock transactions. I hand-checked each of the approximately 13,000 assets and transactions listed to determine which transactions consisted of common stock. After eliminating all non-common stock assets, about 3,700 transactions remained. A total of 751 companies are represented in the dataset.

Some Senators wrote whether or not the transaction was a purchase or sale of stock, and some did not. No uniformity exists, except that they must report a capital gain (or loss) on each transaction. If the member reported neither a capital gain nor loss, I tagged it as a buy. The remaining transactions all reported a gain or loss of income and were tagged as sell transactions.

Each transaction also contains an approximate value. This reported value falls between pre-determined value bands. As shown on the FDRs and listed in Eggers and Hainmueller (2004), value band cut-points are at $1,000, $15000, $50000, $100,000, $250,000, $500,000, $1,000,000,

$5,000,000, $10,000,000, and $25,000,000, and a top band for investments of $50,000,000 or more. These value band cut-points have changed since Ziobrowski's study. More than 95% of the transactions failed to report a transaction date. Of the few that did report a date, many of these reported the month or the season, for example "Fall 2007", in which the transaction occurred.

Given that I do not know precise transaction dates or their precise values, I organized the transactions into equally weighted portfolios by year according to three possible transaction dates: the first, middle, and last day of the year. Separate buy and sell transaction portfolios were created for each year. Like Ziobrowski (2004), I create transaction based portfolio's and regress average monthly returns during the estimation period on the Fama-French Three Factor Model. Using an estimation window 60 months prior to the transaction date, monthly average portfolio returns were calculated as follows:

$\sum Ri_t \; / \; N_t$

Ri_t is the return from sample transaction *i* in the month t and N_t is the number of transactions during month t. Next, I regress the average monthly portfolio returns on the Fama-French Three Factor Model during the 60 month estimation window according to:

$R\rho_t = \acute{a}\rho_t + \beta rm_t + \gamma smb_t + \delta hml_t + \acute{\epsilon}_t$

$R\rho_t$ is the monthly return on the portfolio at month t. The intercept, $\acute{a}\rho_t$, is the average monthly abnormal return on the portfolio. βrm_t represents the excess return of the market, γsmb_t represents the difference between a portfolio of small stocks and a portfolio of big stocks, and δhml_t represents

the difference between a portfolio of high book-to-market stocks and portfolio of low book-to-market stocks. My null hypothesis is that the portfolios do not exhibit abnormal returns that are different from 0. Next, I compute abnormal returns during the event period according to:

$AR_t = R\rho_t - \acute{a}\rho_t - \beta rm_t - \gamma smb_t - \delta hml_t$

I calculate CARs for *N* months by summing the *abnormal* returns. I test for statistical significance according to:

T-test for 1 month = AR_t / *Std Error*

For *N* months, the T-test is: $\sum AR_t / (\sqrt{(N)} * Std\ Error)$

I repeat these steps using daily stock returns. For daily returns, I assume 252 trading days in a calendar year and use an event window from -100 days to +504 days. Using both daily and monthly returns, I calculate a running CAR in order to view CARs for any timeframe during the event window. A T-test is performed to test for significance of each CAR.

Three buy and three sell portfolios of daily returns—one each per transaction date—are created for each year from 2006-2009. The same is true when calculating CARs according to monthly return data. When isolating the cashing out effect, only the two election years 2006 and 2008 were used. Each of these two years contained three buy and three sell portfolios, and only according to monthly return data. Due to the fact that using daily returns or monthly returns did not change the result of the group as a whole, I decided to only include monthly returns for the cashing out group.

V. Results and Conclusion

Figure 1 shows the one and two year CAR results of the buy and sell portfolio's using daily returns. CARs that failed the T-test are assigned a value of "0" in the CAR summary tables. One year CARs range from -0.38% to 0.42%, while total two year CARs range from -0.02% to 0.23%. Although statistically significant and sometimes slightly positive, the tight range of values around a CAR of 0% allows me to conclude that Senators' are not trading on inside information. Using monthly returns does not change the CAR summaries. As Figure 2 illustrates, one year CARs range from -0.15% to 0.30%, while two year CARs range from -0.01% to 0.25%.

Figure 3 gives the CAR summary for the incumbents who lost in 2006 and 2008. This is the "cashing out" effect variable. The one and two year CARs do not differ from the group as a whole. Three and six month CAR summaries are listed in Figure 4. I have included these shorter timeframes in an effort to isolate any short-term CARs that might better capture any cashing out effect.

Figure 5 is a condensed example of what each portfolio looks like. This includes abnormal returns, cumulative abnormal returns, daily T-stats, a standard error, and an estimation period. Figure 6 is a sample regression output from the sixty that were run on the estimation periods of each portfolio. In sum, I ran sixty regressions on estimation period data. Of these sixty, twelve contained alpha coefficients that failed the T-test, and all twelve of those were regressions run on daily return estimation periods. The sixty β coefficients ranged from 0.99 – 1.25, but only twelve

had β values over 1.14, reflecting the fact that the Senate holds roughly the market portfolio. All sixty β values passed the T-test.

Although these results indicate no insider trading, further research could be conducted if better data were available. Without transaction dates and precise values, any research on the topic should be viewed with a healthy dose of skepticism. Given the amount of opposition research done by their opponents and the Senators themselves, it would seem that self-reporting stock transactions that exhibit positive CARs would not be in the member's self-interest. Better disclosure requirements are needed before any further meaningful research can be conducted. Determining whether or not U.S. Senators are trading on material, non-public information will go a long way in restoring the public's confidence in America's financial system and in the federal government as a whole. Perhaps more importantly, but less likely, if U.S. Senators were ever conclusively found to be trading on inside information, it might reignite the debate about the SEC's rule 10b (5). If the research says they are not trading on inside information, more credibility will be granted to Congressional hearings targeted on private individuals and corporations accused of doing precisely what Ziobrowski (2004) has concluded about members of the U.S. Senate.

Figure I

CAR Summary using Daily Returns

2 year CAR% for Buys by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.32136775	-0.08048536	0.118907514	-0.02162046	-0.30456605
Middle	0.074775029	0.052329477	0.129514511	-0.71939373	-0.46277471
Last	-0.0992418	0.125432011	0		0.026190214

1 year CAR % for buys by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.30489983	0.131944221	-0.14674743	0.147688421	-0.17201461
Middle	0	0	0.220118706	-0.52468252	-0.30456381
Last	0.113642751	-0.09068669	0.283501181	-0.15598063	0.15047661

2 year CAR % for Sells by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.14435082	-0.11631613	-0.28146964	0	-0.54213659
Middle	0	0	0	-0.44116495	-0.44116495
Last	0.354535186	-0.11262683	-0.31961959		-0.07771123

1 year CAR % for Sells by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.22497941	0.177289632	0.262065178	0	0.214375403
Middle	-0.20413282	-0.04257822	-0.05675674	-0.37796685	-0.68143463
Last	0.094734251	-0.2368117	0	-0.13087473	-0.27295219

2 year COMBINED Buy and Sell CAR % by year and transaction date					
	2006	2007	2008	2009	Total CAR %
First	-0.46571857	-0.19680148	-0.16256213	-0.02162046	0.237570538
Middle	0.074775029	0.052329477	0.129514511	-1.16055868	-0.02160977
Last	0.255293388	0.012805183	-0.31961959		0.103901448

1 year COMBINED Buy and Sell CAR % by year and transaction date					
	2006	2007	2008	2009	Total CAR %
First	-0.52987923	0.309233853	0.115317752	0.147688421	-0.38639001
Middle	-0.20413282	-0.04257822	0.163361963	-0.90264936	0.376870821
Last	0.208377002	-0.3274984	0.283501181	-0.28685536	0.423428796

Figure II

CAR Summary Using Monthly Returns

2 year CAR % for Sells by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	0	0.080203411	-0.22176386	-0.10595873	-0.24751918
Middle	0	0.12099571	-0.35623966	-0.30948615	-0.5447301
Last	-0.10038719	-0.17598001	-0.21089227		-0.48725947

1 year CAR % for Sells by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.11822949	0.191719494	0	0	0.073490002
Middle	0	0.059156069	-0.07176006	-0.2833675	-0.29597149
Last	0.093230114	-0.3013065	0	-0.20822195	-0.41629834

2 year CAR % for Buys by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	0	0	-0.19373756	-0.03796856	-0.23170612
Middle	0	0	-0.1760556	-0.35565295	-0.53170854
Last	-0.09558849	-0.13170705	0		-0.22729554

1 year CAR % for buys by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.15210885	0.12343167	-0.30952268	0.113941367	-0.22425849
Middle	0	0	0	-0.28315789	-0.28315789
Last	0.115997016	-0.11526895	0.130530463	-0.23931002	-0.1080515

2 year COMBINED CAR % by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	0	0.080203411	-0.41550141	-0.14392729	0.015813061
Middle	0	0.12099571	-0.53229525	-0.6651391	0.013021556
Last	-0.19597567	-0.30768706	-0.21089227	0	0.259963933

1 year COMBINED CAR % by Year and Transaction Date					
	2006	2007	2008	2009	Total CAR %
First	-0.27033834	0.315151164	-0.30952268	0.113941367	-0.15076849
Middle	0	0.059156069	-0.07176006	-0.56652539	0.012813602
Last	0.20922713	-0.41657546	0.130530463	-0.44753198	0.308246845

Figure III

CAR Summary for "Cashing Out" Effect

2 year CAR % for Sells by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	0	-0.221763858	-0.221763858
Middle	0	-0.335990113	-0.335990113
Last	-0.100387188	0	-0.100387188

1 year CAR % for Sells by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.114810701	-0.159947286	-0.274757987
Middle	0	-0.071760058	-0.071760058
Last	0.140054567	0	0.140054567

2 year CAR % for Buys by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	0	-0.1179441	-0.1179441
Middle	0	-0.136351374	-0.136351374
Last	-0.130135149	0	-0.130135149

1 year CAR % for buys by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.21138851	-0.127312088	-0.338700598
Middle	0	0.075120397	0.075120397
Last	0.17261261	0.120733505	0.293346115

2 year COMBINED CAR % by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	0	-0.339707958	0.103819757
Middle	0	-0.472341487	0.199638738
Last	-0.230522337	0	-0.029747961

1 year COMBINED CAR % by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.326199211	-0.287259374	-0.063942611
Middle	0	0.003360339	0.146880456
Last	0.312667178	0.120733505	0.153291548

Figure IV

Short-Term Cashing Out CAR Summary

3 Month CAR % for Sells by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.063041454	-0.054510158	-0.117551612
Middle	-0.013546011	-0.124219786	-0.137765796
Last	0	0.11211461	0.11211461

6 Month Day CAR % for Sells by Year and Transaction Date			
	2006	***2008***	**Total CAR %**
First	-0.090485508	-0.106267817	-0.196753325
Middle	-0.010668122	-0.180721471	-0.191389593
Last Day	0	0.125201621	0.125201621

3 Month CAR % for Buys by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.062278295	-0.072137413	-0.134415707
Middle	-0.044485023	-0.147476747	-0.19196177
Last	0	0.205182001	0.205182001

6 Month CAR % for buys by Year and Transaction Date			
	2006	***2008***	**Total CAR %**
First	-0.122346289	-0.102821325	-0.225167614
Middle	-0.068152346	-0.152305594	-0.22045794
Last	0	0.218835602	0.218835602

3 Month COMBINED CAR % by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.125319749	-0.126647571	-0.016864095
Middle	-0.058031034	-0.271696532	-0.054195974
Last	0	0.317296611	0.093067391

3 Month COMBINED CAR % by Year and Transaction Date			
	2006	***2008***	**Total CAR%**
First	-0.212831797	-0.209089142	-0.028414289
Middle	-0.078820468	-0.333027065	-0.029068347
Last	0	0.344037223	0.093633981

Figure V

Condensed Layout Using the June 28th 2006 Daily Return Buy Portfolio

Est	date	portret	mktrf	smb	hml	Event	Day Count	Daily AR	CAR	T-Stat	Std Err
1	3-Feb-06	-0.004565	-0.005	0.0019	0.0005	28-Jun-06	1	-0.001321	-0.001321	-1.343244	0.0009834
2	6-Feb-06	0.0034834	0.002	0.0022	0.0056	29-Jun-06	2	-0.00655	-0.007871	-5.659175	0.0009834
3	7-Feb-06	-0.011272	-0.0104	-0.0044	-0.0033	30-Jun-06	3	-0.007966	-0.015837	-9.297599	0.0009834
4	8-Feb-06	0.003639	0.0066	-0.002	-0.0031	3-Jul-06	4	0.0013567	-0.01448	-7.362147	0.0009834
5	9-Feb-06	-0.002536	-0.0019	-0.0016	-0.0025	5-Jul-06	5	-0.002069	-0.016549	-7.52587	0.0009834
6	10-Feb-06	-0.000325	0.0008	-0.0035	-0.0006	6-Jul-06	6	-0.001363	-0.017912	-7.436003	0.0009834
7	13-Feb-06	-0.006305	-0.005	-0.0048	0.0007	7-Jul-06	7	-0.001118	-0.01903	-7.314155	0.0009834
8	14-Feb-06	0.0094857	0.0093	0.0025	-0.0017	10-Jul-06	8	-0.005204	-0.024235	-8.712714	0.0009834
9	15-Feb-06	0.0053503	0.0033	0.0033	-0.0037	11-Jul-06	9	-0.003006	-0.02724	-9.233213	0.0009834
10	16-Feb-06	0.0089275	0.0076	0.001	0.0002	12-Jul-06	10	0.0013225	-0.025918	-8.334117	0.0009834
11	17-Feb-06	-0.000143	-0.0007	-0.0003	0.0038	13-Jul-06	11	0.0009669	-0.024951	-7.649809	0.0009834
12	21-Feb-06	-0.001985	-0.0028	-0.0025	0.0037	14-Jul-06	12	-0.001401	-0.026352	-7.735468	0.0009834
13	22-Feb-06	0.0077256	0.0065	0.0005	-0.0019	17-Jul-06	13	0.0036088	-0.022743	-6.414203	0.0009834
14	23-Feb-06	-0.002843	-0.003	0.002	-0.0022	18-Jul-06	14	-0.007062	-0.029805	-8.100186	0.0009834
15	24-Feb-06	0.0031412	0.0022	0.0033	0.0015	19-Jul-06	15	-0.002209	-0.032014	-8.405443	0.0009834
16	27-Feb-06	0.0024409	0.0033	0.0018	-0.0051	20-Jul-06	16	0.0063507	-0.025663	-6.524071	0.0009834
17	28-Feb-06	-0.009503	-0.01	-0.0021	0.0015	21-Jul-06	17	0.0009019	-0.024761	-6.106837	0.0009834
18	1-Mar-06	0.0122349	0.0092	0.0063	-0.0024	24-Jul-06	18	-0.00173	-0.026491	-6.349365	0.0009834
19	2-Mar-06	0.0008159	-0.0006	-0.0008	0.0007	25-Jul-06	19	-0.00055	-0.027041	-6.308223	0.0009834
20	3-Mar-06	-0.002194	-0.0014	-0.0002	0.0014	26-Jul-06	20	-0.002552	-0.029593	-6.728756	0.0009834

Figure VI

Regression Example Using the June 28th 2006 Daily Return Buy Portfolio

SUMMARY OUTPUT

Buy Portfolio
Daily Returns
June 28th 2006

Regression Statistics	
Multiple R	0.99362513
R Square	0.987290899
Adjusted R	0.98689374
Standard Err	0.000983412
Observations	100

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	0.007212285	0.002404095	2485.880757	7.7846E-91
Residual	96	9.28416E-05	9.671E-07		
Total	99	0.007305127			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000216363	0.000101355	2.13469589	0.03533237	1.51741E-05	0.000417552	1.51741E-05	0.000417552
mktrf	1.027570062	0.017604838	58.36861952	8.55256E-77	0.992624737	1.062515388	0.992624737	1.062515388
smb	0.349826467	0.028712569	12.18373971	3.40104E-21	0.292832469	0.406820464	0.292832469	0.406820464
hml	0.051991795	0.039795293	1.306481001	0.194510423	-0.027001236	0.130984826	-0.027001236	0.130984826