Capitol Losses: The Mediocre Performance of Congressional Stock Portfolios

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First version: April 9, 2009
This version: July 3, 2012

Given the effects of policy on financial markets, political insiders should be capable of enriching themselves through savvy investing. Consistent with this, two widely-cited studies claim that members of both the House and Senate show uncanny timing in trading stocks, fueling the public perception that corrupt "insider trading" is widespread in Congress. We call this consensus into question. First, we reinterpret existing studies of congressional stock trading between 1985 and 2001 and conduct our own analysis of trades in the 2004-2008 period, concluding that in neither period do members of Congress trade with an information advantage. Second, we conduct the first analysis of members' portfolio holdings, showing that between 2004 and 2008 the average member of Congress would have earned higher returns in a passive index fund. Our research suggests that, if there is unethical investing behavior in Congress, it is far more limited than previous research implies.

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We thank Alberto Abadie, Adam Berinsky, Ryan Bubb, Justin Grimmer, Michael Hiscox, Gary King, Gabe Lenz, Ken Shepsle, Alberto Tomba, Jim Snyder, and seminar participants at Harvard, MIT, Princeton, Stanford, Yale, and the London School of Economics for helpful comments. For excellent research assistance we thank Thi Theu Dinh and Seth Dickinson. We would especially like to thank the Center for Responsive Politics for sharing data. The usual disclaimer applies.

I. Introduction

Do members of Congress enrich themselves by picking stocks based on privileged political information? There is substantial anecdotal evidence that they do. A recently-published and widely-discussed book (Schweizer; 2011) recounts dozens of examples of members of Congress making profitable stock trades while in possession of non-public information about policies affecting companies in their portfolios.[1] Senator John Kerry, for example, reportedly profited from well-timed investments in health care companies during periods when his subcommittee in the Senate was weighing health care legislation. Similarly, House Speaker John Boehner reportedly bought stock in health insurance companies just before the "public option" for health insurance was defeated in Congress, driving up the value of those stocks.[2] Consistent with such anecdotes, the two existing academic studies on congressional investing (Ziobrowski et al. (2004) and Ziobrowski et al. (2011)) claim that members of Congress show uncanny timing in their stock trades, with synthetic portfolios built from transactions beating a passive market index by 12% per year in the Senate (1993–1998) and 6% in the House (1985–2001). This purported ability to systematically beat market indices puts members of Congress in a class of their own as investors, outperforming hedge fund managers (Fung et al.; 2008) and even corporate insiders (Jeng et al.; 2003).

The idea that members of Congress get rich trading stocks resonates with a substantial body of research in political science, economics, and finance that shows that political insiders affect financial markets (Roberts; 1990; Jayachandran; 2006; Goldman et al.; 2009) and in some cases financially benefit from political power (Eggers and Hainmueller; 2009;

[1]Schweizer's book and subsequent appearance on *60 Minutes* (Nov. 13, 2011) were cited by many major media outlets including, for example, Peter J. Boyer, *The Daily Beast* , "The Wonk Who Slays Washington," Nov. 13, 2011; Anna Fifield, "Support grows for Congress insider trading ban," *Financial Times*, Nov. 20, 2011; "Should Insider Trading Laws Apply to Congress?" *Fox News's The O'Reilly Factor*, Nov. 21, 2011; Tamara Keith "Congressional Stock Trades Get Scrutiny" *National Public Radio*, All Things Considered, November 17, 2011; Brian Tumulty "Measure to ban Congressional insider trading gains steam" *USA Today*, November 16, 2011; Tom Hamburger "Reports revive debate over congressional stock deals" *Los Angeles Times* November 14, 2011.

[2]Other anecdotal evidence of "insider trading" in Congress appears in Joy Ward, "Taking Stock in Congress," *Mother Jones*, Sept./Oct. 1995; James Rowley, "Durbin Invests With Buffett After Funds Sale Amid Market Plunge," *Bloomberg*, June 13, 2009; and Brody Mullins, Tom McGinty, and Jason Zweig, "Congressional Staffers Gain From Trading in Stocks," *Wall Street Journal*, October 11, 2010.

Querubin and Snyder Jr; 2011; Bhavnani; 2011). It also fits with a widespread public perception of members of Congress as savvy and self-serving. Anecdotal exposés and previous academic research on congressional investments appear to have convinced policymakers and much of the public that unethical congressional "insider trading" is widespread, resulting in legislation and calls for additional reform in Congress.[3]

In this paper we revisit this consensus by reinterpreting existing research and carrying out our own analysis of a new dataset of congressional investments in a more recent period. Our empirical analysis makes two main points. First, we argue that, contrary to claims made based on existing published research, there is very little evidence that more than a handful of members of Congress trade stocks at an information advantage, either in the period covered by Ziobrowski et al. (2004) and Ziobrowski et al. (2011) or in the more recent period we examine. To be clear, we do not question in this paper the quality of the data analysis in earlier research. Rather, we highlight the fact that the published findings in these papers do not, as apparently widely believed, demonstrate widespread insider trading in Congress: on close inspection there is in fact no evidence of informed trading in the House study (Ziobrowski et al.; 2011), and the finding of excess returns in the Senate study (Ziobrowski et al.; 2004) suggests that any unusually good trading performance is limited to a few members. Consistent with this reinterpretation of previous research, we fail to find any evidence of informed trading in our own analysis of congressional stock transactions in the 2004–2008 period, based on applying the same methods to a newly collected dataset. We conclude from this that, while isolated members of Congress may unethically or even illegally trade stocks based on political information, there is no evidence in any period of widespread "insider trading" in Congress.

Second, we argue that not only do members of Congress not systematically trade stocks

[3]Articles and broadcasts citing Ziobrowski et al. (2004) include James Surowiecki, "Capitol Gains," *The New Yorker*, Oct. 31, 2005; 'R. Foster Winans, "Let Everyone Use What Wall Street Knows," *The New York Times*, March 13, 2007; NPR's *Marketplace* on Sept. 17, 2009 (`http://marketplace.publicradio.org/display/web/2009/09/17/pm-inside-dope/`); Brody Mullins and Jason Zweig, "For Bill on Lawmaker Trading, Delay Is Long and Short of It", *The Wall Street Journal*, May 5, 2010; "Policy, portfolios and the investor lawmaker", *The Washington Post*, November 23, 2009, and the references in footnote 8. The STOCK (Stop Trading on Congressional Knowledge) Act, clarifying restrictions on investing by members of Congress and requiring additional disclosure, was signed into law April 4, 2012.

at an information advantage, they also fail to choose portfolios that outperform the market benchmark. Previous work did not analyze members' actual portfolios, but focused only on synthetic portfolios built solely from members' stock transactions in order to test for unusually good trading acumen. However, since members do not actually hold these synthetic portfolios, the return on them may be quite different from the return that members earned with their actual portfolios. Having carried out that analysis in our dataset of transactions in the 2004–2008 period, we go further by reconstructing members' stock portfolios from holdings and transactions reported on financial disclosure forms. We thus carry out the first analysis of members' actual portfolio returns – the best measure of their overall investing gains. We find that, again consistent with the idea that few if any members invest on the basis of information advantages, members' portfolios generally *underperform* market indices. The average congressional portfolio underperformed a passive index fund by 2-3% per year (before expenses) during the period we examine; in dollar terms, $100 invested like the average investor in Congress would have yielded $70 by the end of 2008, compared to $80 if the same amount had been invested in a passive index fund. We find underperformance using a variety of specifications and weighting approaches, and not just for Congress as a whole but separately for both the House and the Senate, Democrats and Republicans, members of power committees, members with party and committee leadership positions, and groups of members stratified by wealth, portfolio size, and turnover.

In providing a comprehensive view of one kind of possible legislative corruption, our research speaks to a large literature on political agency and electoral accountability (e.g. Ferejohn; 1986; Fearon; 1999; Besley; 2006). Our main findings – that members of Congress neither trade stocks at an information advantage nor choose portfolios that outperform market indices – may seem surprising given extensive research indicating that politicians can affect financial markets and in some cases earn financial returns from serving in office. Of course, the fact that politicians have opportunities to earn unethical profits does not mean that they will choose to do so. We suggest that few if any members of Congress derive investing gains from their political knowledge because the financial benefits of doing

so are outweighed by possible costs – including not just congressional ethics sanctions and criminal prosecution but also electoral and reputation losses. We therefore view our findings as suggestive evidence of the success of accountability mechanisms at disciplining incumbent politicians and selecting those who place a relatively high value on public office.

Our research also has implications for public policy debates about corruption and reform in Congress. The recent outcry and push for reform was based largely on the perception that unethical and lucrative investing behavior is widespread in Congress – a perception on which we cast doubt in this paper. Even if members of Congress do not generally perform well as investors, it may still be the case that some members of Congress unethically or even illegally invest on the basis of political information; if so, recently passed regulations on congressional "insider trading" may be warranted as a way of restricting opportunities for corrupt behavior. In light of our findings, however, the primary reason to pursue these and other regulations may be to restore the reputation of Congress rather than to limit corruption – a point to which we return in the conclusion.

II. Congressional investing: opportunities and constraints

Recent research in political economy provides ample reason to suspect that members of Congress could be extraordinarily good investors. A growing list of studies show that firm values are very sensitive to political factors. Roberts (1990) finds that the death of the ranking Democrat on the Senate Armed Service Committee resulted in lower stock valuations for firms located in the senator's state and higher stock valuations for firms located in the state of his successor. Similarly, Jayachandran (2006) finds that the market value of Republican-connected firms dropped when Senator Jeffords unexpectedly departed the Republican Party in 2001, shifting the Senate majority to the Democrats. Goldman et al. (2009) and Goldman et al. (2008) show that companies that announce the appointment of a politically-connected director experience a positive abnormal return and that politically connected firms are more likely to secure procurement contracts. Comparable evidence abounds for other countries as well (Fisman; 2001; Johnson and Mitton; 2003; Khwaja and Mian; 2005; Faccio; 2006; Ferguson and Voth; 2008). The picture presented by these studies

is that financial markets are highly responsive to political events. If politicians know about political events before others do, and if these studies do not greatly overstate the impact of political events on stock prices, then an investment-minded member of Congress may be able to handsomely profit from information arbitrage – buying and selling stocks based on not-yet-public political information. Members of Congress with considerable legislative power may also be able to profit as investors by taking actions that advance the interests of their portfolio companies.

Politicians may also enjoy informational advantages simply by being in close contact with corporate executives and industry lobbyists as part of their legislating and fundraising routines. Recent research in empirical finance suggests that mutual fund managers do better when they invest in companies to which they are connected through personal ties to executives (Cohen et al.; 2008). Members of Congress necessarily have large personal networks and frequent contact with corporate executives and lobbyists. Even a member of Congress who does not have or use advance knowledge of legislative events may be able to profit as an investor simply by taking advantage of information gathered through

While members of Congress likely enjoy considerable information advantages because of their political power, it does not follow that they would invariably choose to capitalize on those advantages. The costs of doing so could be considerable. Despite persistent and popularly influential claims to the contrary,[4] the SEC's insider trading regulations do apply to Congress, meaning that members of Congress who traded on the basis of stock tips or knowledge of a government contract could face criminal charges.[5] Ethics rules in the

[4]The *60 Minutes* broadcast on Nov. 13, 2011, states that members of Congress "have long been considered exempt from insider trading laws"; on the same program, Peter Schweizer is quoted saying that "If you are a member of Congress, [insider trading] laws are deemed not to apply ... [T]he people who make the rules are the political class in Washington. And they've conveniently written them in such a way that they don't apply to themselves."

[5]In testimony before the House Committee on Financial Services in December, 2011, the Director of the SEC's Division of Enforcement, Robert Khuzami, stated that, "There is no reason why trading by Members of Congress or their staff members would be considered 'exempt' from the federal securities laws, including the insider trading prohibitions"; he also mentioned some "unique issues" in applying the law to legislators, likely a reference to problems raised in debates among legal scholars about fiduciary duties owed by members of Congress (George; 2008; Nagy; 2011; Bainbridge; 2010). The STOCK Act (Section 4) resolved any remaining uncertainty by clearly stating that members of Congress are not exempt from securities laws and owe fiduciary duties to Congress, the government, and citizens that extend to information gained

House and Senate also prohibited members from "improperly using their official positions for personal gain" (*Code of Conduct*, 2005).[6] Based on the reaction to journalistic exposés of Congressional insider trading (particularly Schweizer (2011)), a public allegation of unethical investing behavior clearly damages the target's reputation and gives ammunition to political opponents. In short, investing on the basis of political "insider information" could damage one's political career and possibly lead to criminal charges. For a politician who values serving in office and maintaining a reputation as an ethical public servant, the financial gains available from cashing in on any market-relevant information they happen to acquire may simply not be worth the cost.

III. Are Members Informed Traders?

If members of Congress use their political positions to profit as investors, one way in which they would be expected to do so is through well-timed trades – buying and selling stocks at opportune times. Previous research on congressional investing has focused entirely on this possibility. In this section, we review and reinterpret existing evidence on the trading acumen of members of Congress between 1985 and 2001 and extend that evidence base by carrying out our own analysis of congressional trading in a more recent period. In the next section we go further by examining overall portfolio returns, which provides a more comprehensive measure of members' financial advantages as investors.

A. Review and reinterpretation of existing research

The only published studies systematically examining congressional stock trading are Ziobrowski et al. (2004), which considered stock trades by Senators during the 1993-1998 period, and Ziobrowski et al. (2011), which examined trades by House members for the odd numbered years between 1985 and 2001. The main finding in Ziobrowski et al. (2004) is that a trade-weighted hedged portfolio that holds stocks senators buy and sells short

through their political positions.

[6]Senate ethics rules similarly state that a "member or employee should never use the prestige or influence of a position in the Senate for personal gain." See Jerke (2010) for a critical view of congressional ethics rules as they apply to investing.

the stocks they sell (both for fixed 12-month holding periods) beats the market by 12% annually – a return that greatly exceeds the returns of any other investor group including corporate insiders, hedge fund managers, or mutual fund managers. Such high returns suggest the systematic use of non-public material information, leading the authors to conclude that Senators took advantage of a "definite informational advantage" over other investors. Ziobrowski et al. (2011) comes to similar conclusion when looking at members of the House. The main finding in this study is that a portfolio of stocks purchased by House members (held for a fixed 12 months after the transaction) beats the market by approximately 6% annually.

In this paper, we take the reported results of these papers at face value.[7] In assessing the degree to which members of Congress are informed traders, however, we seek first to point out the disconnect between the published findings of these studies and the interpretation that the authors and, especially, the public appear to have drawn from them. The interpretation of these papers given by the authors in congressional testimony and repeated in voluminous subsequent media coverage is that the stock investments of members of the Senate beat the market by 12% per year and those of members of the House of Representatives beat the market by 6% per year.[8] One issue with this interpretation, to which we return in the next section, is that the analysis in these studies is based not on members' actual portfolios but rather on synthetic portfolios built solely from their transactions;

[7]The authors of these studies have refused to share their data with other researchers, making a replication of their analysis a daunting task requiring transcribing and processing thousands of financial disclosure forms.

[8]In testimony before the House Financial Services Committee in July of 2009, Alan Ziobrowski summarized the findings of the two studies as follows: "The results of our studies were conclusive. Common stock investments made by Senators beat the market by approximately 1% per month or 12% per year from 1993 to 1998. Common stock investments made by members of the House of Representatives earned a lower abnormal return of approximately 1/2% per month or 6% per year from 1985 to 2001." (Available at `http://www.house.gov/apps/list/hearing/financialsvcs_dem/ziobrowski_testimony.pdf`, accessed Sept. 8, 2010.) Media reports echoing these claims include Megan McArdle, "Capitol Gains: Are members of Congress guilty of insider trading - and does it matter?", *The Atlantic Magazine*, Nov. 2011; Jim Galloway, "Insider trading is an old issue," *Atlanta Journal-Constitution*, Nov. 17, 2011, pg . 1B; Isabel Vincent and Melissa Klein, "Gillibrand's stock crock," *New York Post*, Nov. 20, 2011; Peter Schweitzer, *Throw Them All Out*, Houghton Mifflin Harcourt, 2011, pg. xviii; Dan Keating et al, "Members of Congress trade in companies while making laws that affect those same firms," *The Washington Post*, June 24, 2012.

since no one actually held the portfolios being analyzed, members' financial gain may be quite different from that implied by the widely-cited 12% and 6% figures. But even when properly considered as a measure of trading acumen, these headline figures give an incomplete and in some respects fundamentally misleading picture of what the published results actually suggest about congressional investing. In this section we attempt to remedy this misconception.

We begin by considering the Senate study (Ziobrowski et al.; 2004). The findings in the Senate study are based on a standard methodology for measuring trading acumen, known as calendar-time transaction-based analysis (Odean; 1999; Barber et al.; 2009; Seasholes and Zhu; 2010). The approach analyzes two synthetic portfolios built from members' stock purchases and sales: a "buy" portfolio that mimics members' stock purchases, buying each stock on the day when the member buys it and selling it 12 months later, and a "sell" portfolio that mirrors members' stock sales, buying each stock on the day when the member sells it and selling it 12 months later. If an investor has good timing in her transactions, her "buy" portfolio should outperform market indices, indicating that she purchased stocks that subsequently did better than average, and her "sell" portfolio should underperform market indices, indicating that she sold stocks that subsequently did worse than average. The standard quantity of interest in calendar-time transaction-based analysis of this kind is the excess return on the hedged portfolio, which is roughly equivalent to the average monthly difference between the return on the buy portfolio and the return on the sell portfolio. The hedged return captures trading acumen by measuring the degree to which the stocks the investor recently bought outperform the stocks the investor recently sold.

The top panel of Figure 1 depicts the eight point estimates for the return on the Senate hedged portfolio reported in Ziobrowski et al. (2004). The numerous point estimates shown indicate different ways of weighting members and their trades in the construction of the hedged portfolio, as well as variation in the regression specification. The first four estimates (labeled "average" member weighting) weight each member of the Senate equally, effectively asking whether the average member's hedged portfolio outperformed a passive

market index. The first two of these (labeled "equal" transaction weighting) weight each transaction equally within members (i.e. ignoring the size of the transaction), while the second two weight transactions by their approximate dollar value. Finally, the study uses two models, the CAPM model and the Fama-French model, to compute the abnormal portfolio returns that are shown in the figure (the estimates are labeled "CAPM" and "FF" respectively). Both models are based on a regression that compares the members' risk adjusted portfolio return to the risk adjusted market return, with the Fama-French model adding two additional market controls.[9]

The main takeaway from the top panel of Figure 1 is that the widely-reported 12% finding does not convey the degree to which the published findings in Ziobrowski et al. (2004) depend on weighting and modeling choices. The estimated excess returns in the Senate study vary considerably across specifications and are only statistically significant for at most three out of eight possible specifications.[10] The 12% figure, the largest of the reported estimates, is found when members are weighted by portfolio size and transactions are weighted by dollar value; other weighting approaches yield estimated excess returns about half as large and not statistically different from zero. The sensitivity of the main findings to how members are weighted is not surprising because, as noted by the authors, just four senators account for nearly half of the trades, and therefore high performance by

[9]Formally, the Fama-French Three-Factor model (Fama and French; 1993) is given by the following time-series regression: $R_t - R_t^f = \alpha + \beta_1\left(R_t^m - R_t^f\right) + \beta_2 \text{SMB}_t + \beta_3 \text{HML}_t + \epsilon_t$ where R_t is the return on the transaction-based congressional portfolio in month t, R_t^m is the return on a market index, R_t^f is the "risk-free rate" or return on U.S. Treasury Bills, and the other controls are passive portfolios noted in the empirical finance literature for diverging from the overall market. SMB_t is the return on a hedged portfolio that is long in small companies and short in big companies ("small-minus-big"), and HML_t is the return on a hedged portfolio that is long in high book-to-market companies and short in low book-to-market companies ("high-minus-low"). The quantity of interest is the intercept α, which captures the average monthly abnormal portfolio return. The CAPM is the same regression, but omits the *SMB* and *HML* factors.

[10]Point estimates on hedged portfolios are annualized from reported alphas; in the case of the House study, where the hedged analysis is not reported, this is estimated where possible as the difference between the buy and sell portfolio. Standard errors are not reported in either paper. We impute standard errors as follows. For estimates reported as statistically significant, we impute a standard error that would result in a p-value in the middle of the reported range (e.g. a standard error that would result in a p-value of .075, if the estimate is reported as significant at the .1 level). For other estimates, we impute the maximum possible standard error of the most similar statistically significant estimate, e.g. the same model with a different weighting, or the same weighting with a different model.

just a few individuals could explain the aggregate excess returns.[11] Taken together, the findings are consistent with the hypothesis that the average member of the Senate, and the average trade in the Senate, enjoyed no informational advantage in the period being examined. The extraordinarily high excess returns found in the aggregate trade-weighted hedged portfolio may be the result of a narrowly-held trading acumen or sampling variation, but in light of the full set of results it provides only weak evidence of pervasive "insider trading" in the Senate.

The evidence of trading acumen in the House study (Ziobrowski et al.; 2011) is even weaker. Like the Senate study, the House study reports excess return estimates for the "buy" and "sell" portfolios under the aggregate member weighting and conducts CAPM and Fama-French regressions for each. Somewhat surprisingly the House study does not, however, report the return on any hedged portfolio, nor does it report the return on the "sell" portfolio for other weightings. We can, however, approximate the hedged portfolio return by comparing the estimated excess return on the aggregate member weighted "buy" and "sell" portfolios; we plot these estimated results in Figure 1. Clearly, on the basis of hedged portfolio returns (the central quantity of interest in the Senate study and other similar studies in empirical finance), Ziobrowski et al. (2011) provides no evidence of trading acumen in the House. The widely-reported 6% excess return is based on the excess return on the "buy" portfolio, but (as suggested by the imputed hedged portfolio returns in Figure 1) the full reported results indicate that this excess return is matched by the excess return on the "sell" portfolio. In other words, the stocks that members sold subsequently performed just as well as the stocks they bought, which undermines the claim that members of the House traded at an informational advantage.

The two studies of congressional trading in the years from 1985 to 2001 thus provide little evidence of systematic trading acumen. In analysis of hedged transaction-based portfolios, Ziobrowski et al. (2004) finds excess returns under only one of four possible

[11] Accordingly, the subgroup analysis in Ziobrowski et al. (2004) yields strikingly different returns for different subsets of the Senate, again suggesting that the performance of a small number of individuals may drive the headline result.

weightings of members and trades, and not for the average member or the average trade in the Senate; Ziobrowski et al. (2011) provides no evidence of trading acumen at all. These conclusions, which are clear only upon a close reading of the two papers, differ sharply from the apparently widespread interpretation of the findings.

B. An assessment of trading acumen in Congress, 2004–2008

In order to provide evidence on trading acumen in Congress over a longer period, we collected transactions data for the years from 2004 to 2008 based on financial disclosure reports transcribed by the Center for Responsive Politics.[12] Of 650 members of Congress who served in this period and whose reports were available from the Center for Responsive Politics, 422 members reported holding or trading a stock listed on NYSE, NASDAQ, or AMEX at some point, for a total of 48,309 reported transactions of 2,581 different companies. Identifying those stock trades from the financial disclosure reports and matching them to companies required hundreds of hours of pattern matching, checking, and cleaning; we detail the data collection process in Appendix A. In the right panel of Table 1 we present summary statistics describing the stock transactions of members in our dataset; for each member, we calculate the value and number of transactions in each year and then average across years to get member-level yearly averages. As in the period covered by Ziobrowski et al. (2004) and Ziobrowski et al. (2011), the distribution of annual transactions across members is quite right-skewed: the average member buys and sells 18 and 22 stocks per year (respectively), worth about $402,000 and $619,000; the median member buys and sells 2 and 3 stocks worth about $17,000 and $40,000.

To ensure comparability with previous work, we carry out calendar-time transaction-based portfolio analysis by applying as closely as possible the method described in Ziobrowski et al. (2004). In particular, we construct a "buy" portfolio, which holds all stocks purchased by members of Congress for 255 trading days following the purchase date, a "sell" portfolio, which holds all stocks sold by members of Congress for 255 trading days following the sell date, and a hedged portfolio that holds the purchased stocks and sells

[12] `www.opensecrets.org`.

short the sold stocks (buy less sell portfolio). Like Ziobrowski et al. (2004) and Ziobrowski et al. (2011), we assign precise dollar values to trades using the midpoint of the value band specified on the disclosure report, with a top-code at $250,000 (see Appendix A for details). We estimate the return on each portfolio using the same set of weighting approaches and models.

The full results for the estimated excess returns on the buy sample, the sell sample, and the hedged portfolio under the CAPM and Fama-French model for all members, Senate, and House are provided in Table 2. The alpha estimates for the hedged portfolios that combine members' buys and sells are also depicted in the bottom two panels of Figure 1 for easy comparison with the results of the previous studies. The results provide no evidence of informed trading. In particular, none of the alpha estimates on the hedged portfolios is significant at conventional levels and the magnitudes are close to zero. Our findings are similar across various weightings and specification. Examining the "buy" and "sell" portfolios separately, the only cluster of significant alpha estimates are for senators' "buy" portfolios, but these perform significantly *worse* than the market and roughly as poorly as the corresponding "sell" portfolios.

Having produced estimates that replicate the approach used in Ziobrowski et al. (2004) and Ziobrowski et al. (2011) for a more recent time period, we now extend that approach in order to check robustness and shed further light on trading performance in Congress. First, rather than converting value bands specified on the disclosure reports to precise dollar values using midpoints as in Ziobrowski et al. (2004) and Ziobrowski et al. (2011), we attempt to more precisely record transaction values by adopting an imputation method that takes advantage of the fact that many members report exact dollar values (see Appendix A for a description of the imputation methodology). Second, we construct synthetic transaction-based portfolios based on not just 255-day holding periods but also 1-day, 10-day, 25-day, and 140-day holding periods, allowing us to detect more short-term trading gains. Third, we estimate the alpha excess returns using the CAPM but also the Four-Factor Carhart model, an extension of the Fama-French Three-Factor model that adds a momentum factor

to the Three-Factor Fama-French model used above.[13]

The results of this extended analysis are reported in Table 3. Regardless of the approach used, we find that the trades of members of Congress are not particularly well-timed. With some combinations of holding period, model, and weights we find evidence of good or bad trading acumen, but the overall results are again consistent with the null hypothesis of zero excess returns.

Overall, our results are consistent with the hypothesis that members of Congress enjoy no information advantage as investors. These findings run counter to the apparently widely-held view that members of Congress systematically trade on information advantages, but are consistent with our reinterpretation of the results from Ziobrowski et al. (2004) and Ziobrowski et al. (2011). In short, previous research fails to find evidence of systematic trading acumen in Congress between 1985 and 2001; our research arrives at the same conclusion for the more recent 2004–2008 period.

IV. Do Members Beat the Market?

As noted in the previous section, previous research on congressional investing has assessed trading acumen by analyzing the return on synthetic portfolios built from members' transactions. We have reinterpreted that work and extended the evidence base by producing comparable analysis of members' trades in a more recent period. In this section we go a step further and provide the first analysis of the actual stock portfolios of members of Congress. This analysis provides the most direct measure of whether members of Congress reap financial gains from their investments.

The fact that we fail to find evidence of trading acumen in Congress suggests that the excess returns on their actual portfolios may be unremarkable as well. But the results of calendar-time transaction-based portfolio analysis may bear little relationship to the results of *actual* portfolio analysis because the synthetic hedged portfolio on which the former analysis focuses is likely to bear little relationship to actual portfolios. In particular, to the

[13]The momentum factor, MOM_t, is the return on a hedged portfolio that is long in companies with the best performance in the previous year and short in the companies with the worst performance in the previous year (Carhart; 1997).

extent that members of Congress hold stocks for more or less time than the holding period assumed in constructing the synthetic portfolios, the return on the actual portfolio will diverge from that on the synthetic "buy" portfolio.[14] Additionally, the hedged portfolio analysis in the previous section effectively assumes a pattern of short selling coinciding with stock sales, which provides a reasonable way to measure good timing but does not correspond to actual investing activity. In order to measure the degree to which members of Congress financially benefit from their investments, then, it is necessary to reproduce and analyze the return on their actual stock portfolios.

A. Data

As above, our analysis is based on financial disclosure data transcribed by the Center for Responsive Politics. As part of annual financial disclosure, members of Congress are required to report not just their stock purchases and sales (used above to assess trading acumen) but also their end-of-year stock holdings. We reconstruct members' actual portfolios by starting with these year-end holdings, which represent the member's full portfolio at the end of the year, and using the transactions data to work backward day by day, adjusting the portfolio each day to reflect purchases and sales as well as fluctuations in value due to security price changes.[15] We assign dollar values with each value band using the imputation method introduced above and described in detail in Appendix A.

The left panel of Table 1 displays the summary statistics for the annual averages of member portfolios for the 2004–2008 period. Member portfolio sizes range from $501 (for a member who reported a single stock in the lowest value band) to $140 million, the average reported by Jane Harman.[16] Just as with the stock transactions, the distribution

[14] In fact, we calculate that the median annual turnover in congressional portfolios, calculated as buys plus sells divided by average holdings, in 2004-2008 is about 23% per year, which suggests that most of members' holdings do not appear in their transactions in a given year, and that members generally hold stocks for a much longer period than the holding periods used in constructing synthetic portfolios for calendar-time transaction-based portfolio analysis.

[15] In other words, each portfolio is rebalanced on a daily basis.

[16] The performance of Jane Harman's portfolio was unusually poor, largely due to a $50+ million position in Harman Industries that dropped about 1/3 in value in January of 2008 after the release of negative news (see "Harman Shares Tumble After Forecast," *Reuters*, Jan 14, 2008). Because of the large size of her portfolio and the consequent large downward influence of her performance on aggregate excess returns, we

of stock holdings is strongly skewed: the median member on average holds stocks worth about $93,000 in 5 companies, while the average member holds about $1.7 million in 19 companies. The presence of a number of very large portfolios in the data suggests that conclusions about the performance of Congress as a whole may be sensitive to whether individual-level performances are weighted equally across members or by portfolio size. As described below, our analysis focuses on the average member-month, but we also provide estimates that weight by value and number of holdings; in the appendix, we also provide estimates of the return on aggregate portfolios that are either weighted equally across members or weighted by portfolio value.

B. Methodology

We compare the stock portfolios to the market benchmark using the standard calendar-time approach of regressing risk-adjusted member returns on a set of controls including the return on a market index. In contrast to the transaction-based analysis above, which focused on the return on a single portfolio aggregated in different ways from members' investments, here we follow a more recent approach by Hoechle et al. (2009) and Seasholes and Zhu (2010) and carry out our main analysis via a panel regression that estimates the average monthly excess return across members and time, conditional on the standard controls. In particular, we aggregate each member's daily portfolio returns to the monthly level and then fit the widely-used Carhart Four-Factor model:

$$R_{i,t} - R_t^f = \alpha + \beta_1\big(R_t^m - R_t^f\big) + \beta_2 \text{SMB}_t + \beta_3 \text{HML}_t + \beta_4 \text{MOM}_t + \epsilon_{i,t}$$

where $R_{i,t}$ is the return on the portfolio of member i in month t. As before, R_t^m is the return on a market index, R_t^f is the "risk-free rate," and SMB_t, HML_t, and MOM_t are the "small-minus-big," "high-minus-low," and momentum factor respectively. The key quantity of interest in this panel regression is the intercept α, which identifies that monthly average abnormal portfolio return across members. In order to account for the cross-sectional

exclude her from subsequent analyses unless otherwise noted. Including Harman not surprisingly has little effect on estimates of the performance of the average member but yields lower estimated performance when we weight by portfolio size.

correlation in portfolio returns we compute Rogers standard errors clustered by month (see Seasholes and Zhu (2010)).

This approach is our preferred specification, but for the sake of robustness and comparability with previous studies we carry out a variety of specifications and weighting schemes and, because the findings from the various specifications are quite similar, we report the full results in the appendix.[17] The key point is that the findings from the various specifications we employ produce the same conclusions about the investing performance of members of Congress, which means that the reader can focus on the smaller set of main results we report.

C. Results: Overall Performance

Before looking at abnormal returns estimated by market models, we display in Figure 2 the cumulative raw returns for the average congressional portfolio over our period of study. The figure depicts the value over time of $100 invested in the CRSP market index (a passive, value-weighted portfolio of stocks on the NYSE, NASDAQ, and AMEX exchanges) and the average (i.e. equal-weighted aggregate) congressional portfolio.[18] The average Congressional portfolio clearly does considerably worse than the market index: $100 invested in a market index (solid line) in January of 2004 would be worth about $80 by the end of 2008, whereas invested in the average congressional portfolio (dotted line) it would be worth only around $69. The underperformance is not limited to the period of decline and

[17] We run the panel analysis using the CAPM model, which includes the market index as a single control. We also carry out all analyses with the approach employed by Barber and Odean (2000), Ziobrowski et al. (2004), and Ziobrowski et al. (2011), among others, which involves aggregating all individual portfolio returns up to a single time series and then running the Carhart Four-Factor or CAPM regression. In these aggregate analyses, we report results employing two approaches for aggregating member portfolio returns - one that weights each member equally and another that weights each member by her portfolio size. As shown in Hoechle et al. (2009) the panel approach on which we focus is numerically identical to the equal-weighted aggregate portfolio approach as long as the panel is balanced; when it is not, the weighting implied by the panel regression is more natural in our view. (The panel regression weights every investor-month equally, while the aggregated approach weights every month equally regardless of how many investors are present in each month. Standard errors also differ between the panel and aggregated approach depending on the intra-cluster correlation in the panel regression. See Hoechle et al. (2009) for a discussion.)

[18] For each month, we compute each member's monthly raw portfolio return and average across members; the figure depicts the compound return on this series of monthly returns.

crash in 2007 and 2008; at the market peak in 2007 the congressional portfolio was already about 10% below the market on a cumulative basis since the start of 2004. Based on this cumulative return and the size of the aggregate congressional portfolio in 2004, we estimate that members of Congress collectively could have avoided about $68 million in losses by exchanging their stock holdings for a passive index fund.

Model 1 of Table 4 provides our main estimate of the abnormal returns for the sample of all members. The result is consistent with the graphical analysis. Model 1 shows that over our study period, members on average underperformed the market by about .23 percentage points per month ($p \leq .02$), which annualizes to a yearly abnormal return of about -2.8% with a .95 confidence interval of $[-4.9\%; -.5\%]$. This result is robust across various specifications. For example, the poor performance is very similar when we use a random effects model with varying intercepts, weight the regression by the number of stock holdings per member-month, or weight the regression by the average value of the stock holdings per member-month. To further check the robustness of this result, model 1 in Table B.1 in the appendix replicates the same analysis using the CAPM model instead of the Carhart Four-Factor model and the results are very similar. Table B.2 in the appendix replicates the overall portfolio analysis using the aggregated data regression approach used in Barber and Odean (2000) and Ziobrowski et al. (2004), among others. The results are very similar both in terms of magnitude and significance; both the value-weighted and the equal-weighted aggregate congressional portfolio underperform the market in the Carhart and the CAPM model.

D. Performance in Subgroups

How widespread is this pattern of underperformance? Models 2-26 in Table 4 report the abnormal return estimates for relevant subsets of Congress. The monthly alpha estimates along with their 95% confidence intervals are also visualized in Figure 3. The results indicate that the overall underperformance is very consistent across subgroups. Republicans do slightly better than Democrats (although the difference in intercepts is not quite significant

at conventional levels ($p \leq .22$)).[19] House members do slightly worse than Senators, but again we do not reject the null of no difference. Members on power committees in the House or Senate[20] do slightly better than other members, but the differences are small and statistically insignificant. Members with party or committee leadership positions[21] in the House perform slightly worse than members with leadership positions in the Senate or without leadership positions, but the differences are not significant at conventional levels since the leader samples are fairly small.[22] The estimated excess returns are also similar for the 2004-2006 period, when the market was rising, and the 2007-2008 period, when the market fell and the government began to intervene more heavily in the economy. There are also no consistent differences across the group of members when we stratify the sample by seniority, net worth, portfolio size (using three equal sized bins for low, medium, and high), or pre-congressional careers.[23] The best-performing subgroup appears to be members who owned businesses before entering Congress (who we estimate beat the market by about .5% per year), but even this group does not outperform either the market or other investors at conventional levels.[24] The comparable subgroup analyses using the CAPM model (presented in Table B.1 in the appendix) and the aggregated data approach (Table B.2) similarly show consistent underperformance across subgroups.

The consistently negative results across subgroups indicates that our overall findings

[19]To test for the differences in intercepts we fit a pooled model with a group indicator (Democrat/Republican) and its interactions with all the controls. The main effect of the group indicator then identifies the differences in alpha returns (see Hoechle et al. (2009)).

[20]We define "power committees" in the House as Rules, Appropriations, Ways and Means, and Commerce; in the Senate they are Appropriations, Finance, and Commerce.

[21]We define party and committee leaders as follows: Party leaders include leader and whip of the majority and minority in the House and Senate, plus the Speaker of the House and the President Pro Tempore in the Senate. Committee leaders include committee chairmen and ranking members, along with vice-chairs. A member is included if he or she held the position at any time during our sample period.

[22]The somewhat lower return for House leaders is mostly driven by driven by Representative Steny Hoyer who served as the Democratic whip and leader during our sample period. He owned only one common stock in our sample, Telkonet Inc, which lost almost all of its value during our sample period. Accordingly, his portfolio earned the lowest returns of all members in our data (see Figure 4).

[23]We are grateful to Nick Carnes for providing us with the data on pre-congressional careers. A member is coded as belonging to a career category if she spent more than 60% of her pre-congressional career in that category. The results are very similar if other cut-points are used. See Carnes (2010) for details on the career data.

[24]We can reject the null that former business owners earn the same returns as other members ($p \leq .07$).

are not the artifact of a few exceptionally poor investors in Congress but rather reflects a broader underperformance across members. Notably, none of the 88 alpha returns we estimate (22 subgroups, each estimated four ways) is positive and significant, and only a handful of point estimates are above zero.

E. Member-Level Performance

In Figure 4 we display estimated excess returns for each member in our dataset: estimates of alpha from a separate Carhart four-factor regression for each member. (Names are plotted only for members with relatively high or low returns or portfolio values.) A box and whiskers plot on the axis depicts the marginal distributions of members' alpha returns and portfolio values respectively (the line indicates the median, the edges of the box denote the interquartile range, and the whiskers indicate the 5th and 95th percentiles). The results confirm that poor performance is a very robust feature of this data and not driven by a few outlying members. The mean monthly excess return across members (-.24) is very close to the estimated excess return from Model 1 of Table 4 (-.23). Moreover, the marginal distribution of returns is fairly symmetric and clearly centered below zero (the median is at -.17). Last but not least, it is worth emphasizing that some of the members who have been accused of improperly trading on congressional information do not earn unusually high returns. For example, the sizable portfolio reported by Senator John Kerry earns returns that are just about as good as a passive index fund. The portfolios from Nancy Pelosi, James Oberstar, Jeb Bradley, Tom Carter, Richard Durbin and several other members implicated in Schweizer (2011) perform even worse than a passive index fund.

Taken together our results from analyzing members' portfolios suggest that, consistent with the transaction-based analysis above, members of Congress earn relatively poor investment returns. This result is robust across different weighting approaches and subsets of members.

V. Interpretation

In light of previous research on congressional investing and the popular perception of that research as having proven widespread "insider trading" in Congress, our claim that members of Congress do not in fact show superior trading acumen or enjoy above-market investment returns may seem surprising. As noted above, however, a reexamination of previous findings indicates that the evidence for informed trading in Congress was never very strong, which indicates that our own analysis of congressional investing in a more recent period is in fact consistent with earlier studies, properly interpreted: members of Congress do not appear to benefit from information advantages as investors.

We explain the failure of members of Congress to profit as investors in two principal ways: first, by emphasizing the demonstrated difficulty of systematically beating the market even for financial professionals, and second, by suggesting that, for elected politicians, refraining from unethical "insider trading" is reasonable given the high political risk.

The poor investing performance of members of Congress is entirely consistent with a long line of empirical work documenting that even supposed investment experts do not reliably outperform market indices. In the 1930s, Cowles (1933) found that stock market forecasts and recommendations made by financial service firms, fire insurance companies, and the editor of the *Wall Street Journal* tended to perform no better than what would result from random chance. In subsequent decades, similar findings have emerged for mutual fund managers and other financial professionals (Gruber; 1996; Carhart; 1997; Andersson; 2004; Fung et al.; 2008). Some groups of money managers appear to outperform the market sufficiently to earn their fees (Stulz; 2007), but on the whole there is little evidence of substantial and persistent excess returns. A particularly robust finding in empirical finance is that individuals tend to perform below market indices; underperformance among individual investors has been found not just in the United States (see, for example, Odean (1999); Barber and Odean (2000, 2008); Goetzmann and Kumar (2008)) but also in Japan (Kim and Nofsinger; 2007), Finland (Grinblatt and Keloharju; 2000), Switzerland (Hoechle et al.; 2009), Norway (Døskeland and Hvide; 2011), Germany (Baltzer et al.; 2011), Taiwan

(Barber et al.; 2009), and the Netherlands (Bauer et al.; 2009). This underperformance has been linked to overconfidence, naive heuristics like trend-chasing, and a variety of related biases in judgment, and has provided the basis for the widely-accepted opinion that individual investors should invest in passive index funds rather than try to pick stocks to outsmart the market (for reviews see e.g. Barberis and Thaler (2003); Campbell (2006); Benartzi and Thaler (2007); Kim and Nofsinger (2007)). Viewed in light of the voluminous research on investment performance by individual investors and money managers, then, the poor performance of members of Congress does not seem out of place.

What separates members of Congress from other individual investors and even professional money managers, of course, is their political position. As we emphasized in Section II, these political positions entail both opportunities and constraints. Some members of Congress may have access to market-relevant non-public political information, and corporate insiders with similar information advantages have been shown to have impressive trading acumen (Jeng et al.; 2003). On the other hand, unlike money managers or corporate insiders, members of Congress operate under ethical restrictions that forbid them from financially gaining from their positions. Perhaps more importantly, their chances for political advancement, financial opportunities outside of politics, and "legacy" may all be heavily dependent on maintaining a reputation for probity and selflessness, which could be irreparably damaged by accusations of "insider trading" based on their publicly-disclosed investments. In short, members of Congress who find themselves in possession of potentially lucrative information can choose to invest based on that information or refrain from doing so; the fact that they do not appear to perform well as investors suggests that few of them choose to pursue the profits. This may be because public scrutiny and electoral sanctions are effective deterrents against this type of unethical behavior, or because elections are effective at selecting politicians who place a relatively high value on public service compared to financial rents (Fearon; 1999; Besley; 2006).[25]

[25]If in fact members of Congress refrain from pursuing investment profits in order to limit their political risks, it is somewhat puzzling why so many of them choose to hold individual stocks rather than qualified blind trusts or broad mutual funds.

Another possibility we have considered is that members of Congress perform poorly as investors because they actively use their investments to pursue political ends. Perhaps politicians invest in local companies in order to demonstrate their commitment to the district, for example, or in companies from which they seek campaign contributions in order to make their policy promises more credible. To the extent that members make these investments to achieve political (rather than financial) aims, it might help to explain the underperformance of their portfolios. Consistent with this idea, in a companion paper we show that members of Congress disproportionately invest in both local companies and campaign contributors; *not* consistent with this idea, however, we find that these connected investments do not underperform their other investments, and in the case of their local investments they tend to do *better* (see Authors (2011) for details).

Our interpretation of the mediocrity of congressional investment performance is thus that political constraints discourage them from aggressively investing on the basis of privileged information they may possess; without the use of insider information, it is not surprising that members of Congress perform no better than other individual investors, who have been shown to fall short of market indices.

VI. Conclusion

Our study indicates that members of Congress enjoy no special advantage as investors. Neither in the 2004–2008 period on which we focus nor in the earlier period covered by prior studies do we see evidence of systematic trading acumen. Further, our analysis of the performance of members' actual portfolios (the first of its kind) indicates that members of Congress would in recent years have fared better if they had liquidated their common stock holdings and put the money into a passive index fund.

Given voluminous research showing that neither individual investors nor financial professionals systematically outperform the market, the finding that members of Congress are mediocre investors is only surprising because, first, previous research appears to have convinced much of the public otherwise, and second, some members of Congress presumably have access to information (about upcoming legislation, for example, or the economy) that

they could use to reap investing profits. As we have shown in this paper, existing research makes a weaker case for trading acumen in Congress than has been previously appreciated, and on closer examination that research is quite consistent with our own empirical findings indicating that members of Congress do not on average profit from information advantages. The mediocre performance of congressional investment portfolios, despite the opportunities many members presumably face to cash in on political "inside information," suggests that elections and other accountability mechanisms in Congress have been generally effective in constraining unethical financial behavior.

In light of political agency models (e.g. Fearon; 1999; Besley; 2006), our findings suggest a rethinking of recently-passed and proposed reforms in Congress. Restrictions on congressional investing can be seen as attempts to decrease the illegitimate financial rewards of serving in Congress; in a model of political agency with moral hazard and adverse selection like the one found in Besley (2006), reducing opportunities for graft tends to both discipline incumbent politicians and discourage "bad" politicians from seeking office. Given our evidence that illegitimate investing gains in Congress are already low, it seems unlikely that additional restrictions will improve the quality of policymaking in Congress by reducing those gains further. Reforms may be justified on other grounds, though. The public perception that members of Congress enjoy illegitimate financial gains may be unfounded, but the persistence of this perception has reduced the *legitimate non-financial* rewards of serving in Congress, i.e. the reputational benefits or ego rents. In most political agency models, reducing the legitimate gains of office diminishes the quality of policy by undermining electoral incentives and attracting less able politicians (Ferejohn; 1986; Besley; 2004; Caselli and Morelli; 2004). The main benefit of additional restrictions on congressional insider trading may therefore be to marginally increase the legitimate rewards to serving in office by reducing the public perception that politicians are corrupt. Further reforms that increase the transparency of congressional investments or require members to divest themselves of common stocks may not be necessary to curb insider trading in Congress, but these reforms may still benefit the public by making service in Congress more rewarding

for honest politicians.

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Tables and Figures

Table 1: The common stock holdings and transactions of members of Congress - annual averages 2004-2008

	Holdings		Annual Transactions			
			Buys		Sells	
	$ Value	Number	$ Value	Number	$ Value	Number
Min	501	1	0	0	0	0
25th Percentile	26,424	2	0	0	11,010	1
Median	93,827	5	17,656	2	39,636	3
75th Percentile	451,169	21	105,960	9	186,068	11
Max	140,767,979	331	32,253,189	424	47,615,848	479
Mean	1,718,091	19	401,744	18	618,942	22

Note: Summary statistics are annual (aggregated) averages across the 2004-2008 period based on end-of-year financial disclosure reports for 422 members of Congress that report holding common stocks between 2004 to 2008. Values are reported in bands and imputed based on a log-normal model that was fitted to each value band for the group of members that report exact amounts within each band (see text for details).

Table 2: Annualized excess returns (%) on synthetic (transaction-based) portfolios of members of the Senate and House (2004-2008), 12-month holding period

		Buys		**Sells**		**Hedged Portfolio**	
		Equal-	Trade-	Equal-	Trade-	Equal-	Trade-
Sample	Model	Weighted	Weighted	Weighted	Weighted	Weighted	Weighted
Congress (2004-2008)							
Aggregated	CAPM	-0.16	-1.52	-0.42	-2.24**	0.28	0.72
		(0.72)	(1.08)	(0.84)	(0.60)	(0.96)	(1.32)
Aggregated	Fama French	0.05	-1.37	-0.60	-2.53**	0.65	1.16
		(0.48)	(0.96)	(0.84)	(0.60)	(0.84)	(0.96)
Average Member	CAPM	0.36	0.13	-0.79	-1.31	1.15	1.44
		(2.16)	(2.16)	(1.56)	(1.44)	(1.44)	(1.68)
Average Member	Fama French	0.02	-0.16	-1.62	-2.05	1.66	1.90
		(2.16)	(2.28)	(1.56)	(1.44)	(1.20)	(1.44)
Senate (2004-2008)							
Aggregated	CAPM	-2.38**	-2.81*	-1.19	-3.01**	-1.19	0.19
		(0.84)	(1.32)	(1.08)	(1.08)	(1.44)	(1.68)
Aggregated	Fama French	-2.23*	-2.98*	-1.51	-3.41**	-0.72	0.43
		(0.96)	(1.44)	(0.96)	(0.84)	(1.44)	(1.68)
Average Member	CAPM	-2.92†	-3.29†	0.79	-0.29	-3.71	-3.00
		(1.56)	(1.80)	(3.00)	(2.64)	(2.76)	(2.52)
Average Member	Fama French	-3.00†	-3.29†	-0.29	-1.19	-2.71	-2.10
		(1.68)	(1.8)	(2.64)	(2.4)	(2.4)	(2.04)
House (2004-2008)							
Aggregated	CAPM	0.26	-1.00	-0.16	-1.25	0.41	0.25
		(0.84)	(1.44)	(0.96)	(1.2)	(1.08)	(1.68)
Aggregated	Fama French	0.44	-0.60	-0.25	-1.42	0.71	0.82
		(0.60)	(0.96)	(0.84)	(1.2)	(1.08)	(1.20)
Average Member	CAPM	1.45	1.37	-1.72	-1.78	3.17	3.14
		(2.76)	(2.76)	(1.32)	(1.32)	(2.28)	(2.40)
Average Member	Fama French	0.97	0.95	-2.45†	-2.46†	3.42	3.41
		(2.88)	(3.00)	(1.32)	(1.32)	(2.16)	(2.28)

Note: Table shows results from analysis using the monthly returns (in %) of the transaction-based calendar-time portfolios formed by mimicking the trades of members of Congress that report holding common stocks during the 2004-2008 period. Following (Ziobrowski et al.; 2004) and (Ziobrowski et al.; 2011) stocks are held held in a calendar-time portfolio for a fixed holding period of 255 days and dollar values are imputed using band midpoints or a maximum value of $250,000 in the highest band. Calendar-time portfolio are formed based on stocks bought ("Buys"), and another portfolio based on stocks sold ("Sells"), and a third zero-cost portfolio that holds the portfolio of bought stocks and sells short the portfolio of sold stocks ("Long/Short"). For the trade-weighted portfolios the trades are weighted by dollar value, for the equal-weighted portfolios the trades are weighted equally. The aggregate portfolio mimics the aggregate investments of all members (value-weighted), the average members portfolio mimics the investments of the average member (equal member weighted). CAPM alpha is the result from a time-series regression of the portfolio excess return (i.e. raw return minus risk-free rate) on the market excess return. Fama-French alpha is the result from a time-series regression of the portfolio excess return on the three Fama and French (1993) mimicking portfolios.
†, ⋆, and ⋆⋆ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.

Table 3: Monthly Excess Returns (%) on synthetic (transaction-based) portfolios for members of Congress (2004-2008), various holding periods.

	Holding	Aggregate Portfolio			Average Portfolio		
	Period	Buys	Sells	Long/Short	Buys	Sells	Long/Short
CAPM	1 Day	0.431	1.344†	-0.913	0.805	1.215	-0.411
		(0.742)	(0.806)	(1.047)	(0.570)	(0.837)	(0.992)
Carhart 4 Factor		0.531	1.279†	-0.749	0.849	1.195†	-0.346
		(0.770)	(0.657)	(0.905)	(0.562)	(0.699)	(0.843)
CAPM	10 Days	-0.727	0.312	-1.039†	-0.113	0.270	-0.383†
		(0.540)	(0.263)	(0.603)	(0.201)	(0.183)	(0.208)
Carhart 4 Factor		-0.691	0.314	-1.005	-0.036⋆	0.312	-0.348
		(0.535)	(0.253)	(0.629)	(0.235)	(0.160)	(0.213)
CAPM	25 Days	-0.352	0.134	-0.486	0.228	0.184	0.044
		(0.488)	(0.277)	(0.358)	(0.223)	(0.154)	(0.189)
Carhart 4 Factor		-0.320	0.161	-0.481	0.251	0.181	0.070
		(0.458)	(0.270)	(0.344)	(0.213)	(0.144)	(0.184)
CAPM	140 Days	-0.055	-0.220†	0.165	-0.170	-0.163	-0.006
		(0.190)	(0.114)	(0.187)	(0.185)	(0.122)	(0.163)
Carhart 4 Factor		-0.025	-0.249⋆	0.224	-0.169	-0.190†	0.020
		(0.193)	(0.107)	(0.189)	(0.164)	(0.115)	(0.129)
CAPM	255 Days	-0.190	-0.098	-0.092	0.005	-0.111	0.116
		(0.144)	(0.085)	(0.169)	(0.184)	(0.122)	(0.139)
Carhart 4 Factor		-0.149	-0.141⋆	-0.008	-0.017	-0.172	0.155
		(0.131)	(0.075)	(0.138)	(0.191)	(0.120)	(0.117)

Note: Monthly alpha returns in % (with robust standard errors in parenthesis) for calendar time portfolios that mimics the value-weighted and equal member weighted investments in stocks bought or sold by members over the 2004-2008 period. Results are reported for fixed holding periods of 1 day, 10 days, 25 days, 140 days, and 255 days. Within reported value bands, dollar values are imputed using the lognormal model as described in the main text. Long-short is the monthly average return of a zero cost portfolio that holds the portfolio of bought stocks and sells short the portfolio of sold stocks. CAPM alpha is the result from a time-series regression of the portfolio excess return (i.e. raw return minus risk-free rate) on the market excess return. Carhart 4 Factor alpha is the result from a time-series regression of the portfolio excess return on the three Fama and French (1993) mimicking portfolios and the Carhart momentum factor.

†, ⋆, and ⋆⋆ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.

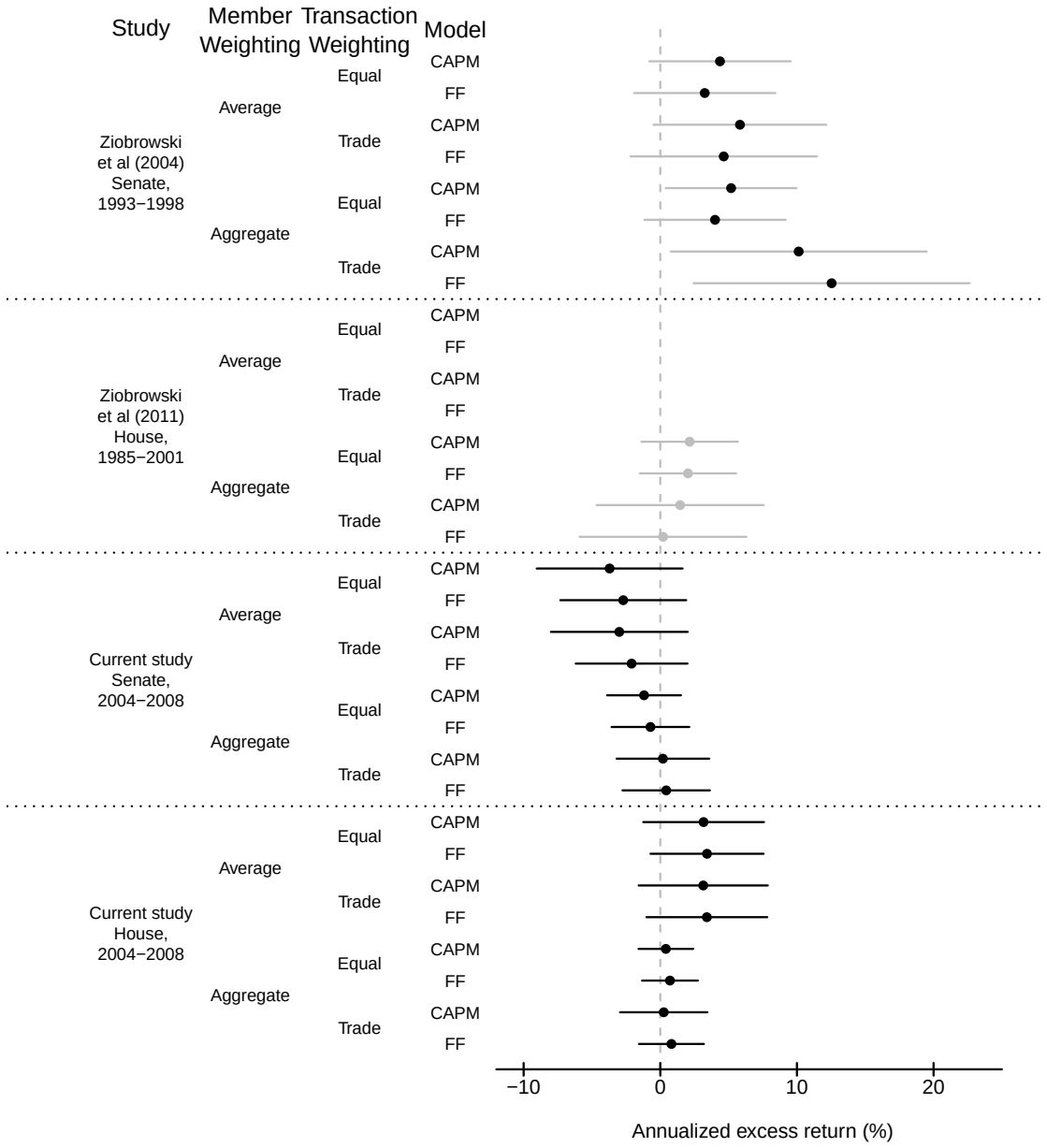
Table 4: Monthly excess returns (%) on stock portfolios of members of Congress 2004-2008

Dependent Variable	Risk-Adjusted Monthly Portfolio Return ($R_{i,t} - R_{f,t}$)												
Mean	-.39												
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	All	Party		Chamber		Power Committee			Party & Committee Leaders			Period	
	Members	Dems	Reps	House	Senate	House	Senate	None	House	Senate	None	2004-06	2007-08
$R_{m,t} - R_{f,t}$	0.90	0.89	0.91	0.89	0.94	0.85	0.92	0.93	0.87	0.97	0.90	0.97	0.87
	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)	(0.06)	(0.04)	(0.03)	(0.06)	(0.03)
SMB_t	0.10	0.15	0.07	0.10	0.14	0.19	0.04	0.06	0.33	0.14	0.06	0.03	-0.14
	(0.05)	(0.07)	(0.05)	(0.06)	(0.06)	(0.07)	(0.08)	(0.04)	(0.09)	(0.06)	(0.05)	(0.06)	(0.08)
HML_t	0.21	0.15	0.26	0.23	0.13	0.24	0.12	0.21	0.41	0.03	0.20	0.07	0.29
	(0.05)	(0.06)	(0.06)	(0.05)	(0.07)	(0.07)	(0.08)	(0.05)	(0.11)	(0.07)	(0.05)	(0.06)	(0.08)
MOM_t	-0.18	-0.18	-0.19	-0.20	-0.11	-0.26	-0.08	-0.15	-0.31	-0.11	-0.17	-0.05	-0.25
	(0.04)	(0.05)	(0.04)	(0.05)	(0.03)	(0.06)	(0.03)	(0.04)	(0.07)	(0.04)	(0.04)	(0.04)	(0.04)
Alpha	-0.23*	-0.30*	-0.17†	-0.26**	-0.12	-0.26*	-0.10	-0.24**	-0.51**	-0.19	-0.19*	-0.12	-0.28*
	(0.09)	(0.12)	(0.10)	(0.10)	(0.11)	(0.13)	(0.13)	(0.09)	(0.17)	(0.12)	(0.09)	(0.11)	(0.14)
Obs	18,388	8,621	9,754	14,475	3,808	6,847	2,637	8,904	2,266	2,062	14,060	11,818	6,570
Annualized Alpha	-2.76*	-3.6*	-2.04†	-3.12**	-1.44	-3.12**	-1.2	-2.88**	-6.12**	-2.28	-2.28*	-1.44	-3.36*

Model	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
	Seniority			Portfolio Size			Net Worth			Pre-Congressional Career			
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Business	Lawyer	Politician	Other
$R_{m,t} - R_{f,t}$	0.89	0.87	0.94	0.89	0.89	0.92	0.87	0.94	0.88	0.93	0.89	0.96	0.88
	(0.06)	(0.04)	(0.02)	(0.07)	(0.04)	(0.02)	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
SMB_t	0.08	0.16	0.05	0.13	0.17	0.02	0.17	0.07	0.09	0.09	0.28	0.04	0.08
	(0.07)	(0.05)	(0.05)	(0.07)	(0.07)	(0.03)	(0.08)	(0.05)	(0.05)	(0.08)	(0.08)	(0.09)	(0.05)
HML_t	0.09	0.23	0.28	0.28	0.20	0.16	0.20	0.19	0.23	0.19	0.36	0.17	0.18
	(0.07)	(0.06)	(0.05)	(0.08)	(0.07)	(0.04)	(0.08)	(0.05)	(0.05)	(0.08)	(0.09)	(0.09)	(0.05)
MOM_t	-0.16	-0.14	-0.24	-0.21	-0.23	-0.11	-0.28	-0.10	-0.18	-0.23	-0.11	-0.23	-0.18
	(0.05)	(0.04)	(0.03)	(0.06)	(0.05)	(0.02)	(0.06)	(0.04)	(0.02)	(0.05)	(0.05)	(0.06)	(0.04)
Alpha	-0.27*	-0.22*	-0.19*	-0.15	-0.29*	-0.24**	-0.32*	-0.13	-0.26**	0.04	-0.34*	-0.21	-0.23*
	(0.12)	(0.11)	(0.09)	(0.15)	(0.12)	(0.05)	(0.15)	(0.10)	(0.08)	(0.16)	(0.15)	(0.17)	(0.09)
Obs	5,602	7,171	5,615	5,422	6,388	6,578	5,422	6,483	6,470	1,131	2,650	3,407	11,200
Annualized Alpha	-3.24*	-2.64*	-2.28*	-1.8	-3.48*	-2.88**	-3.84*	-1.56	-3.12**	0.48	-4.08*	-2.52	-2.76*

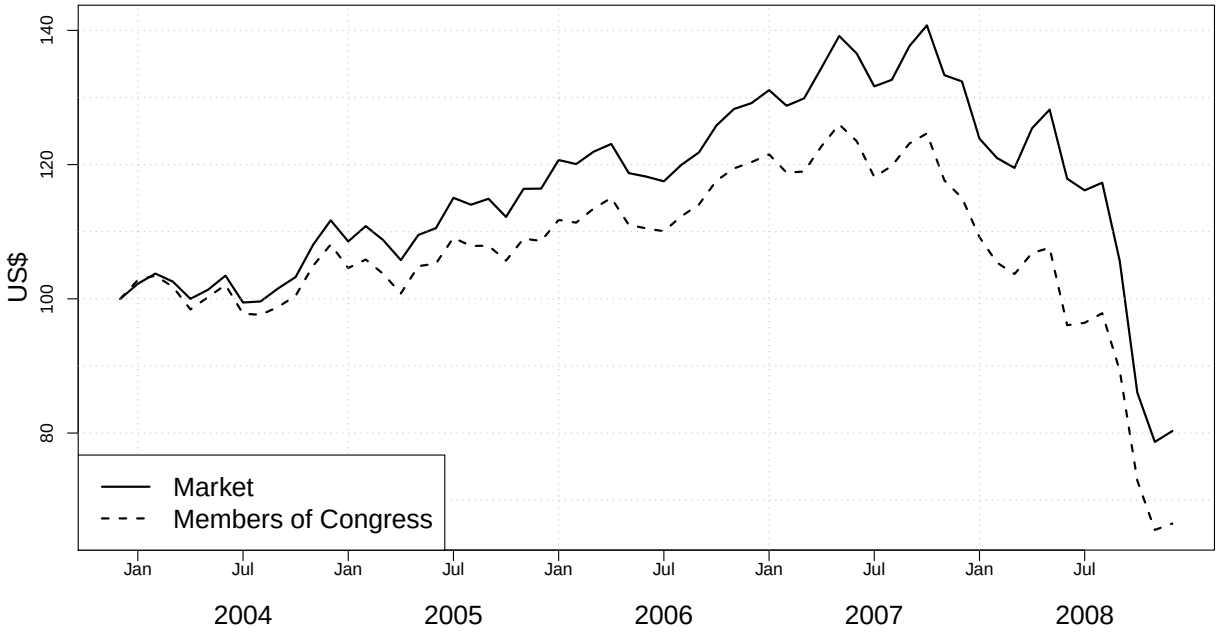
Note: Table shows results from analysis using the monthly returns (in %) of the holdings-based calendar-time portfolios of all members of Congress that report holding common stocks during the 2004-2008 period. The dependent variable is monthly risk adjusted return of a member's holdings $R_{i,t} - R_{f,t}$ (where $R_{f,t}$ is the risk-free return from Ken French's website). Portfolios are based on information reported in end-of-year financial disclosure reports (see text for details). Controls are the Fama and French (1993) mimicking portfolios (the market excess return ($R_{m,t} - R_{f,t}$), a zero-investment size portfolio (SMB_t), a zero-investment book-to-market portfolio (HML_t)) and the Carhart (1997) momentum factor (MOM_t). Rogers standard errors (clustered by month) are provided in parenthesis. Models 1 present the regression for the sample of all members. Models 2-26 report regression results for selected subgroups of members. Power committees in the House are defined as Rules, Appropriations, Ways and Means, and Commerce; in the Senate as Appropriations, Finance, and Commerce. Party leaders include leader and whip of the majority and minority in the House and Senate, plus the Speaker of the House and the President Pro Tempore in the Senate. Committee leaders include committee chairmen and ranking members, along with vice-chair. A member is included if he or she held the position at any time during our sample period. Stratifications for seniority, portfolio size, and net worth are based on equally sized bins. Pre-congressional careers are classified based on Carnes (2010) into Business Owners, Lawyers, State or Local Politicians, and Other careers. A member is classified as belonging to an occupational category if he spent more then 60 % of his pre-congressional career in that category.
†, $\star$, and $\star\star$ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.

Figure 1: Performance of synthetic (transaction-based) hedged portfolios in Congress: Ziobrowski et al. (2004), Ziobrowski et al. (2011), and current study



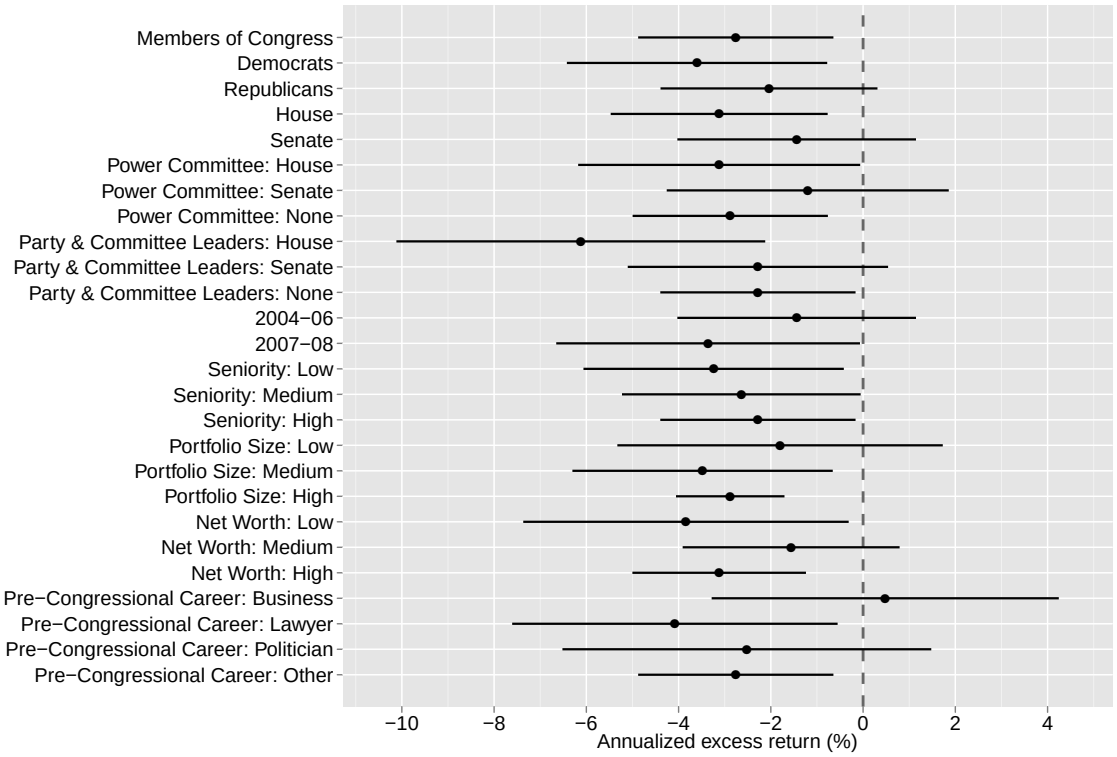
Note: Figure depicts point estimates for annualized alpha returns in % (with .95 confidence intervals) on transaction-based portfolios in Congress (12-month holding period) in different time periods using various weighting schemes and models. "Aggregate" weighting of members weighs members by their portfolio size, whereas "Average" weighting of members weighs members equally. "Trade" weighting of transactions weighs trades by their dollar amount whereas "Equal" weighting weighs them equally. The top two panels depict reported results from Ziobrowski et al. (2004) and Ziobrowski et al. (2011) (also summarized in Table **??**), with point estimates and standard errors imputed as needed. In particular, because the Ziobrowski studies do not report standard errors, we impute standard errors to create confidence intervals as follows: for results that are reported to be statistically significant, we impute a standard error that corresponds to a p-value in the center of the implied band (e.g. a p-value of .075 if the p-value is reported to be between .05 and .1); for results not reported to be statistically significant, we use the imputed standard error of the most similar statistically significant model. Unlike in Ziobrowski et al. (2004), where the hedged results provide the headline finding, Ziobrowski et al. (2011) also does not report hedged estimates; we impute the point estimates when possible by subtracting the excess return on the buy portfolio from the excess return on the sell portfolio, and impute the standard errors by slightly inflating the imputed standard errors on the buy portfolios (which would yield approximately the correct standard errors based on our own transaction-based portfolio analyses). It is not possible to impute hedged returns for the equal-member weighted analysis because Ziobrowski et al. (2011) does not report the return on the sell portfolio for that weighting. The bottom two panels depict the point estimates and standard errors from our own transaction-based portfolio analysis, reported in Table 2.

Figure 2: Cumulative raw average return of congressional stock portfolios, 2004-2008 compared to market benchmark



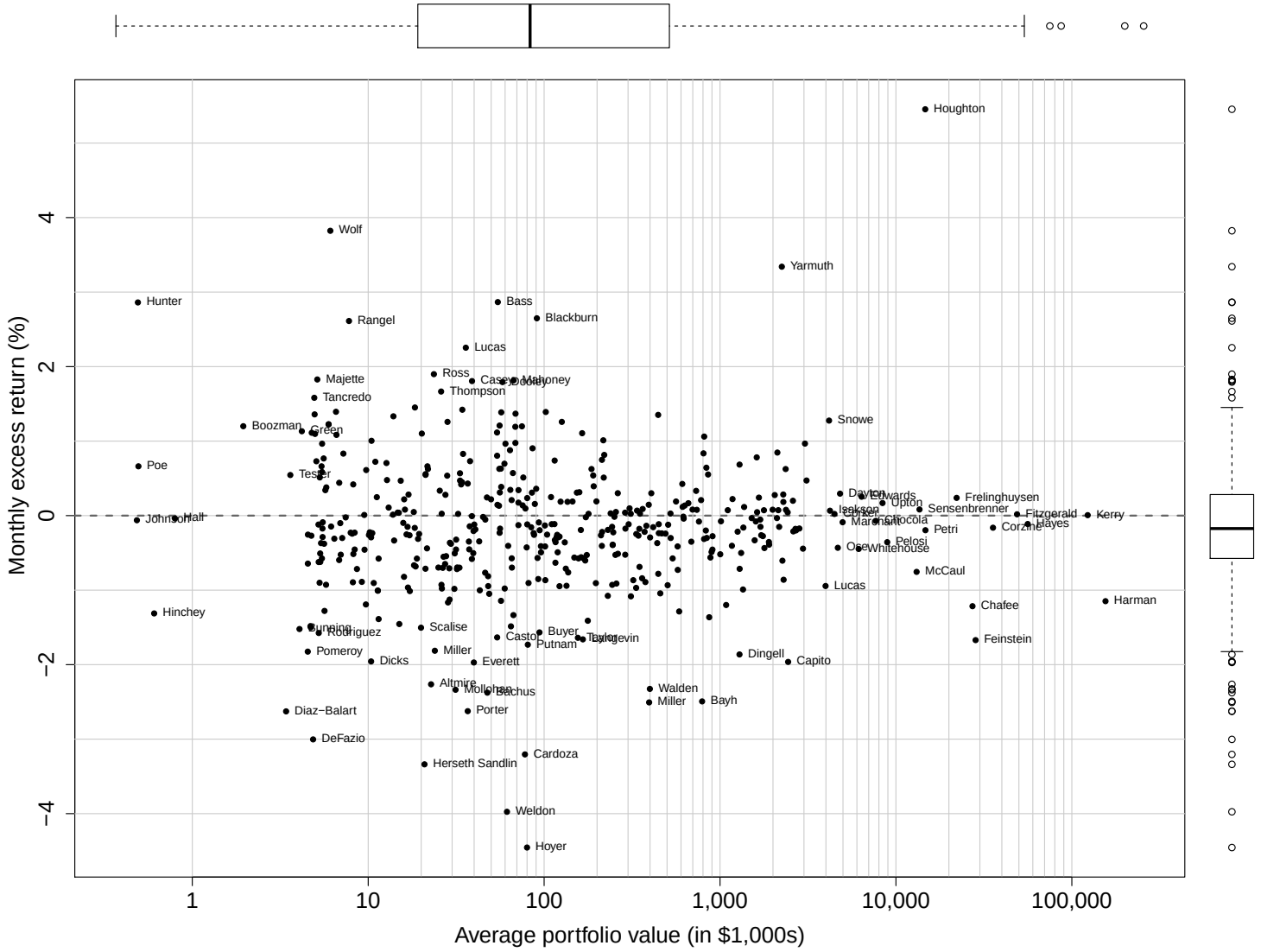
Note: Cumulative monthly return is shown for a $100 dollar position in the CRSP market index (a value-weighted index of stocks listed on the NYSE, AMEX, and NASDAQ) and the average congressional portfolio beginning in January 2004. The average congressional portfolio return is built by averaging monthly raw returns across members for each month (see text for details).

Figure 3: Annualized excess returns (%) of stock portfolios in Congress, 2004-2008



Note: Figure depicts the estimated annualized alpha return (with .95 confidence intervals) of stock portfolios in Congress, 2004-2008. Portfolios are based on information reported in end-of-year financial disclosure reports (see text for details). Alpha returns (%) are from Carhart 4-factor panel model. The dependent variable is monthly risk adjusted return of a member's holdings $R_{i,t} - R_{f,t}$ (where $R_{f,t}$ is the risk-free return from Ken French's website). Controls are the Fama and French (1993) mimicking portfolios (the market excess return ($R_{m,t} - R_{f,t}$), a zero-investment size portfolio (SMB_t), a zero-investment book-to-market portfolio (HML_t)) and the Carhart (1997) momentum factor (MOM_t). Confidence intervals are based on Rogers standard errors (clustered by month). The first estimate is the alpha return for the sample of all members; the other estimates are for selected subgroups of members or time periods. Power committees in the House are defined as Rules, Appropriations, Ways and Means, and Commerce; in the Senate as Appropriations, Finance, and Commerce. Party leaders include leader and whip of the majority and minority in the House and Senate, plus the Speaker of the House and the President Pro Tempore in the Senate. Committee leaders include committee chairmen and ranking members, along with vice-chair. Stratifications for seniority, portfolio size, and net worth are based on equally sized bins. Pre-congressional careers are classified based on Carnes (2010) into Business Owners, Lawyers, State or Local Politicians, and Other careers. A member is classified as belonging to an occupational category if she spent more then 60% of her pre-congressional career in that category.

Figure 4: Members' Monthly Excess Returns (%) and Average Portfolio Size 2004-2008



Note:
Monthly alpha return (in %) is Carhart 4-factor alpha obtained from a calendar time portfolio regression of each member's excess return on the Fama and French (1993) mimicking portfolios and the Carhart (1997) momentum factor. Members with large/small returns or large/small portfolios are highlighted with labels. Box plots on the right and on top show the marginal distribution of alpha returns and portfolio sizes across members: the thick line indicates the median, the edges of the box denote the interquartile range, and the whiskers indicate the 5th and 95th percentiles.

Appendix A: Data Construction

In the appendix we describe how we constructed our data. As a result of the 1978 Ethics in Government Act, members of the U.S. Senate and House of Representatives are required to disclose their stock investments (as well as real estate and other investments, liabilities, and outside income and employment) and those of spouses and dependent children in annual filings known as Financial Disclosure Reports. We use the common stock holdings and transactions reported in the disclosure forms between January 2004 and December 2008 to reconstruct members' portfolios and then evaluate the performance of those portfolios using modern methods from empirical finance.

Our analysis includes all holdings and trades reported by members, including those owned by spouses and dependent children. Members may also choose to create qualified blind trusts, which are managed on their behalf and whose holdings are unknown to the member. In our data 20 members report qualified blind trusts. It is impossible to know from the disclosure forms how much a member personally directs his or her investments, but unless a member uses a blind trust it would be easy to pass on information to a money manager.

The Center for Responsive Politics transcribes these reports, beginning with 2004, and makes the data freely available on its website (`www.opensecrets.org`). We thus received the data as a pair of spreadsheets, one with a row for each of the 111,101 transactions recorded and another with a row for each of the 169,828 year-end holdings recorded. The first task in converting this raw data to stock portfolios was to identify the companies in which members hold stocks. The disclosure reports do not identify holdings in standardized ways (e.g. an investment in Bank of America common stock may be described as "Bank of America," "Bank America Common Stock," "Banc of America," or "BOA"); we used search utilities provided by Google Finance and the Center for Research on Security Prices (CRSP) as well as manual checks to link variously described assets to actual companies. Even more challenging, the descriptions may not precisely distinguish between stock holdings and other types of assets such as corporate bonds, mortgages, auto loans, or bank accounts. To reduce the risk of misclassifying savings accounts and other financial instruments as stock investments, we hand-checked the disclosure report for each apparent financial stock to attempt to distinguish stocks from other types of assets based on other clues in the forms, such as columns reporting dividend or investment income.[26]

The next task was to impute a dollar value for each holding and trade reported. Members are only required to report the value of their investments in broad value bands (e.g. \$15,000 – \$50,000) rather than exact dollar amounts.[27] In order to impute precise values for investments reported in these bands, we took advantage of the fact that we do know

[26] Between these checks and other manual checks, we estimate that we and our research assistants spent well over 250 combined hours cleaning and preparing the data for analysis.

[27] Value band cutpoints are at \$1,000, \$15,000, \$50,000, \$100,000, \$250,000, \$500,000, \$1,000,000, \$5,000,000, \$10,000,000 and \$25,000,000, and a top category captures all investments of \$50,000,000 or more in value.

the precise value of a sizable minority of reported investments — those cases in which a member submitted an annual statement from a bank or investment manager rather than filling out the official forms.[28] We used these investments to fit a distribution of precise values and, for each investment for which we know only the band, we impute the expected value of the precise-value distribution within that band.[29] For the highest band (investments over $50,000,000), of which there are fewer than 100 holdings and 5 trades in our estimation sample, we impute the value of $50,000,000.

Having linked each holding and trade to a company and imputed dollar values, it remained to reconstruct the day-by-day stock portfolio. Our approach in reconstructing a portfolio from the disclosure reports was to start at the last day of each year, for which the reports provide the entire portfolio (i.e. the year-end holdings), and work backward to the beginning of the year, adjusting the portfolio each day to reflect purchases and sales as well as fluctuations in value due to security price changes. (In other words, each portfolio is rebalanced on a daily basis.[30]) For example, suppose a member reported holding $10,000 of stock in Company A at the end of the year and reported purchasing $5,000 of stock in Company A on June 1. This member's portfolio on January 1 of that year is estimated by calculating what $10,000 in Company A stock was worth on June 1 (based on the return between June 1 and the end of the year), subtracting $5,000, and then calculating what that value was worth on January 1. In this way we calculate dollar value holdings for every member of every stock on each day between January 1, 2004 and December 31, 2008.

[28]This information is available for about 25% of the transactions in the dataset and about 8% of the year-end holdings. The members who reported exact values tended to have larger portfolio sizes overall, but there is no reason to think that within value bands the value of their assets and transactions would differ greatly from those of members who did not report exact values. Consistent with this, when we redo the imputation with a subset of members who report exact values and who are matched to members not reporting exact values, the imputed values differ hardly at all from those imputed based on the full sample of members who report exact values.

[29]This approach is inspired by the imputation method proposed in Milyo and Groseclose (1999).

[30]Barber and Odean (2000) show that ignoring intra-month timing of trades makes little difference in their overall return calculations, but we see no reason not to calculate daily returns, particularly given the short time-frame in which information arbitrage would likely take place.

Appendix B: Additional Results (Not for Publication)

Excess Returns From CAPM

Table B.1 contains our replication of table 4 using the CAPM model.

Table B.1: Monthly excess Returns (%) for Stock Investments of Members of Congress 2004-2008 estimated with CAPM

Dependent Variable	Risk-Adjusted Monthly Portfolio Return ($R_{i,t} - R_{f,t}$)												
Mean	-.39												
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	All	Party		Chamber		Power Committee			Party & Committee Leaders			Period	
	Members	Dems	Reps	House	Senate	House	Senate	None	House	Senate	None	2004-06	2007-08
$R_{m,t} - R_{f,t}$	0.96	0.96	0.96	0.95	1.00	0.94	0.95	0.98	1.01	1.02	0.94	0.96	0.92
	(0.05)	(0.04)	(0.06)	(0.05)	(0.05)	(0.07)	(0.05)	(0.04)	(0.09)	(0.04)	(0.05)	(0.03)	(0.06)
Alpha	-0.27*	-0.36*	-0.18	-0.30*	-0.14	-0.33*	-0.11	-0.26*	-0.53*	-0.24*	-0.23†	-0.06	-0.70*
	(0.12)	(0.14)	(0.13)	(0.13)	(0.12)	(0.17)	(0.13)	(0.12)	(0.23)	(0.12)	(0.12)	(0.08)	(0.26)
Obs	18,388	8,621	9,754	14,475	3,808	6,847	2,637	8,904	2,266	2,062	14,060	11,818	6,570
Annualized Alpha	-3.24*	-4.32*	-2.16	-3.6*	-1.68	-3.96*	-1.32	-3.12*	-6.36*	-2.88*	-2.76†	-0.72	-8.4*
Model	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
		Seniority			Portfolio Size			Net Worth			Pre-Congressional Career		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Business	Lawyer	Politician	Other
$R_{m,t} - R_{f,t}$	0.94	0.93	1.00	0.96	0.97	0.95	0.96	0.98	0.94	0.99	0.99	1.01	0.93
	(0.05)	(0.06)	(0.06)	(0.07)	(0.06)	(0.03)	(0.08)	(0.04)	(0.05)	(0.04)	(0.07)	(0.06)	(0.05)
Alpha	-0.33*	-0.21	-0.26	-0.18	-0.35*	-0.25**	-0.42*	-0.12	-0.29*	-0.03	-0.26	-0.30†	-0.28*
	(0.13)	(0.13)	(0.16)	(0.18)	(0.15)	(0.08)	(0.19)	(0.11)	(0.12)	(0.19)	(0.19)	(0.17)	(0.12)
Obs	5602	7171	5615	5422	6388	6578	5422	6483	6470	1131	2650	3407	11200
Annualized Alpha	-3.96*	-2.52	-3.12	-2.16	-4.2*	-3.00**	-5.04*	-1.44	-3.48*	-0.36	-3.12	-3.6†	-3.36*

Note: Table shows results from analysis using the monthly returns (in %) of the holdings-based calendar-time portfolios of all members of Congress that report holding common stocks during the 2004-2008 period. The dependent variable is monthly risk adjusted return of a Member's holdings $R_{i,t} - R_{f,t}$ (where $R_{f,t}$ is the risk-free return from Ken French's website). Portfolios are based on information reported in end-of-year financial disclosure reports (see text for details). Controls are the market excess return ($R_{m,t} - R_{f,t}$). Rogers standard errors (clustered by month) are provided in parenthesis. Models 1 present the regression for the sample of all members. Models 2-26 report regression results for selected subgroups of members. Power committees in the House are defined as Rules, Appropriations, Ways and Means, and Commerce; in the Senate as Appropriations, Finance, and Commerce. Party leaders include leader and whip of the majority and minority in the House and Senate, plus the Speaker of the House and the President Pro Tempore in the Senate. Committee leaders include committee chairmen and ranking members, along with vice-chair. Stratifications for seniority, portfolio size, and net worth are based on equally sized bins. Pre-congressional careers are classified based on Carnes (2010) into Business Owners, Lawyers, State or Local Politicians, and Other careers. A member is classified as belonging to an occupational category if he spent more then 60 % of his pre-congressional career in that category.
†, ⋆, and ⋆⋆ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.

Excess Returns With Monthly Aggregated Data

Tables B.2 and B.3 replicate the analysis of Table 4 using aggregated data, as explained in the text. Briefly, in place of our panel regressions, which estimate the average alpha across members-months, we carry out regressions that model the average monthly return on a single portfolio that is created by aggregating member returns. For the Aggregate Congressional Portfolio the average monthly return is computed using a value-weighted average across members; for the Average Congressional Portfolio member returns are equal-weighted across members.

Table A2 provides the results of our estimates of the abnormal return on the Congressional portfolio. Panel A shows that the average monthly excess returns for the aggregate Congressional portfolio is negative and significant at conventional levels in both the CAPM and Carhart 4-Factor specifications. The same is true for the the average Congressional portfolio shown in Panel B. The excess return estimates are very similar. For the CAPM, the magnitudes suggest that the aggregate Congressional portfolio underperforms the market by an average of about .27 percentage points per month, which annualizes to a yearly excess return of about -3.2% with a .95 confidence interval of $-5.5; -.95$; the average Congressional portfolio underperforms the market by an average of about .31 percentage points, which annualizes to a yearly excess return of about -3.8% $[-6.0; -1.5]$. The corresponding annualized figures for the 4-Factor model are -2.8% $[-5.2; -.5]$ and -3.1 % $[-5.1; -1.2]$.

Table B.2: Monthly excess returns (%) for Aggregate/Average Congressional Portfolio

	Excess	Coefficient Estimate on:				Adjusted
	Return	$(R_{m,t} - R_{f,t})$	SMB_t	HML_t	MOM_t	R^2
Panel A: Monthly Alpha Returns for Aggregate Congressional Portfolio						
CAPM	-0.269**	0.925				0.96
	(0.095)	(0.038)				
Carhart 4-Factor	-0.239*	0.920	-0.040	0.076	-0.065	0.96
	(0.099)	(0.037)	(0.053)	(0.055)	(0.037)	
Panel B: Monthly Alpha Returns for the Average Member						
CAPM	-0.319**	0.979				0.96
	(0.093)	(0.032)				
Carhart 4-Factor	-0.263**	0.933	0.081	0.090	-0.125	0.98
	(0.080)	(0.025)	(0.042)	(0.042)	(0.030)	

Note: Table shows results from analysis using the monthly aggregate or average returns (in %) of the holdings-based calendar-time portfolios of all members of Congress that report holding common stocks during the 2004-2008 period. The dependent variable is monthly risk-adjusted return obtained from aggregating the monthly portfolio returns across members. N=60. Panel A presents results for the gross monthly return on a portfolio that mimics the aggregate investments of all members of Congress (value-weighted). Panel B presents results for the gross return on a portfolio that mimics the investment of the average member of Congress (equal member weighted). CAPM is the result from a time-series regression of the member excess return on the market excess return $(R_{m,t} - R_{f,t})$. Carhart 4-factor is the result from a time-series regression of the member excess return on the Fama and French (1993) mimicking portfolios (the market excess return, a zero-investment size portfolio (SMB_t), a zero-investment book-to-market portfolio (HML_t)) and the Carhart (1997) momentum factor (MOM_t). Robust standard errors are presented in parentheses.
†, $\star$, and $\star\star$ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.

Table B.3 reports the estimated excess returns across member subgroups using the aggregated data approach. The results are very similar to the results from the panel regression. The only noticeable exception is that the aggregate portfolio of prior business owners actually beats the market and the estimates are significant at conventional levels. Other than that all subgroups consistently underperform.

Table B.3: Monthly Excess Return (%) for Selected Subgroups

	Aggregate Portfolio Alpha Return		Average Member Portfolio Alpha Return	
	CAPM	4-Factor	CAPM	4-Factor
Democrats	-0.344**	-0.304*	-0.300*	-0.225†
	(0.122)	(0.126)	(0.143)	(0.118)
Republicans	-0.152	-0.163	-0.174	-0.107
	(0.143)	(0.139)	(0.156)	(0.105)
House	-0.212†	-0.170	-0.272†	-0.194†
	(0.128)	(0.134)	(0.155)	(0.114)
Senate	-0.334**	-0.336**	-0.103	-0.081
	(0.122)	(0.129)	(0.128)	(0.121)
Power Committee House	-0.173	-0.088	-0.300	-0.184
	(0.146)	(0.144)	(0.223)	(0.149)
Power Committee Senate	-0.293*	-0.248†	-0.089	-0.069
	(0.139)	(0.134)	(0.095)	(0.105)
No Power Committee	-0.274*	-0.309*	-0.244*	-0.196*
	(0.117)	(0.142)	(0.110)	(0.080)
2004-2006	-0.172†	-0.255*	-0.188**	-0.190*
	(0.098)	(0.110)	(0.067)	(0.096)
2007-2008	-0.296†	-0.216	-0.563**	-0.329*
	(0.178)	(0.222)	(0.196)	(0.161)
Seniority Low	-0.088	0.001	-0.313*	-0.219†
	(0.129)	(0.127)	(0.143)	(0.132)
Seniority Medium	-0.569**	-0.625**	-0.187	-0.159
	(0.150)	(0.167)	(0.150)	(0.115)
Seniority High	-0.273	-0.322*	-0.211	-0.121
	(0.168)	(0.156)	(0.161)	(0.102)
Portfolio Size Low	-0.606**	-0.518*	-0.127	-0.058
	(0.230)	(0.229)	(0.202)	(0.162)
Portfolio Size Medium	-0.395**	-0.405**	-0.307†	-0.219†
	(0.114)	(0.121)	(0.171)	(0.132)
Portfolio Size High	-0.259**	-0.243*	-0.257**	-0.211**
	(0.095)	(0.097)	(0.090)	(0.055)
Net Worth Low	-0.643**	-0.533**	-0.312	-0.210
	(0.185)	(0.168)	(0.222)	(0.166)
Net Worth Medium	-0.270**	-0.325**	-0.100	-0.077
	(0.087)	(0.088)	(0.118)	(0.108)
Net Worth High	-0.272**	-0.261*	-0.277*	-0.220**
	(0.102)	(0.103)	(0.131)	(0.082)
Former Business Owners	0.467	0.532	-0.026	0.071
	(0.332)	(0.362)	(0.198)	(0.167)
Former Lawyers	-0.245	-0.405†	-0.213	-0.286†
	(0.231)	(0.239)	(0.186)	(0.150)
Former Local Politicians	-0.516**	-0.451*	-0.279	-0.142
	(0.173)	(0.203)	(0.176)	(0.167)
Other Pre-Congressional Careers	-0.223*	-0.192†	-0.246†	-0.168
	(0.109)	(0.103)	(0.143)	(0.106)

Note: Alpha returns (in %) for selected subgroups with robust standard errors in parentheses. Aggregate returns/Average member returns are for portfolios that mimics the aggregate investments of all members/investments of the average member in a specific group respectively. Alpha returns from the CAPM are estimated with a time-series regression of the members' monthly excess return on the monthly market excess return. The Carhart 4-factor adds the Fama and French (1993) mimicking portfolios and the Carhart (1997) momentum factor as controls.
†, ⋆, and ⋆⋆ indicate significance at 10%, 5% and 1% level (two-sided tests) for excess returns.