Phantom of the Opera: ETFs and Shareholder Voting*

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Abstract

The short-selling of exchange-traded funds (ETFs) creates "phantom" ETF shares with cash flows rights but no associated voting rights. Both regular and phantom ETF shares trade at ETF market prices. However, while regular shares are backed by the underlying securities of the ETF and voted as directed by the sponsor, phantom shares are backed by collateral that is not voted. Introducing a novel measure of phantom shares both of the ETF and corresponding underlying securities, we find that increases in phantom shares are associated with (i) decreases in number of proxy votes cast (for and against), (ii) increases in broker non-votes, and (iii) increases in the vote premium over the voting record date for important votes for the underlying stocks of the ETF. Consistent with poor governance, firms with the highest proportion of phantom shares underperform.

Keywords: Exchange-Traded Funds, Proxy Voting, Vote Premium, Short Interest, Operational Shorting, Authorized Participants

JEL Codes: G11, G12, G14, G23, G34

Introduction

With the dramatic increase in passively invested assets across the globe,[1] index funds and ETFs play an increasingly important role in corporate governance. In contrast to active managers, for whom exit is a governance strategy, passive investors must rely on voice – voting and engagement – to take an active role in governance.[2] To this end, there is a small but growing academic literature on the governance role of passive investors. On one hand, the inability of passive investors to 'exit' a given security may naturally increase their use of the 'voice' channel (e.g., Edmans, Levit and Reilly (2018)) and the institutional attention associated with passive ownership may enhance governance in the firm (e.g., Appel, Gormley and Keim (2016)). On the other hand, the implicit trust of the market's price for a given security and the inherent cost minimization approach may result in a one-size-fits all, management supporting approach to governance (e.g., Bubb and Catan (2018), Bebchuk, Cohen and Hirst (2017), Lund (2018), and Strampelli (2018)).

While the debate regarding the efficacy of active versus passive voting decisions is in its early stages, our paper addresses a more foundational issue: whether or not exchange traded funds (ETFs) vote their shares at all. We find that one unintended consequence of ETF security design is the decoupling of cash flow and voting rights.[3]

To help clarify how this dissociation of cash flow and voting rights occurs, consider the example of a single ETF share (e.g., a share of the SPY ETF tracking the S&P 500). This ETF share is backed by the shares of the underlying basket of securities (e.g., the S&P 500 portfolio),

[1] As of June 30th, 2018, passive assets have risen to over $13 trillion - Trilbe, Wynne, Pensions & Investments, "Passive investing continues to captivate global audience", 10/15/2018.
[2] See Hirschman (1970) for a detailed discussion of the 'exit' and 'voice' responses.
[3] See Hu and Black (2006) for a discussion of decoupling the economic ownership of shares from voting rights through derivatives revolution and other capital market developments.

which are held by a third-party custodian and voted by the ETF sponsor on behalf of the investor. In the case of this single share, the investor has access to both cash flow and voting rights. When that same ETF share is borrowed from the account of the original investor and then sold short to another investor, it creates two shares with cash flow rights corresponding to the underlying securities. The original share is still backed by the underlying securities held by a third-party custodian and voted by the ETF sponsor. The short-sold ETF share, however, is backed by collateral held by the securities lender. If this collateral does not correspond to the ETF's underlying securities (e.g., cash plus a S&P 500 futures overlay), there would be no corresponding voting rights. For ETFs, however, this collateral may actually consist of the underlying securities (e.g. the portfolio of S&P500 securities) but these are held by the broker, and may not be voted except for 'routine' matters due to the limitations on broker voting. In this scenario, both the original share and the short-sold share have associated cash flow rights, but only the original share is associated with voting on the underlying, the short-sold share does not have associated voting rights.[4] In this paper, we refer to the ETF shares with cash flow but no voting rights as "phantom ETF shares" and the associated underlying securities as "phantom underlying shares."

As investors increasingly invest in equities through ETFs, this disassociation of cash flow and voting rights has the potential to distort the voting process in public firms. To examine whether

[4] While the example used here focuses on directional short-selling, an important component of overall short interest in ETFs is operational shorting by authorized participants (APs). While ETF shares are bought and sold by investors at bid-ask spreads posted by market makers, the supply of ETF shares adjusts due to the actions of APs. APs are authorized to arbitrage the difference in prices between the basket of underlying securities (e.g., the 500 stocks in the S&P 500) and the ETF (e.g., SPY, an ETF tracking the S&P 500). Through this mechanism, the supply of ETF shares is adjusted according to investor demand. To enhance ETF liquidity, however, Evans et al. (2018) document that APs sell ETF shares that have not yet been created (operational shorting) and therefore are not backed by shares of the underlying securities. Similar to the short-selling case, these shares can be bought and sold at ETF prices, granting investors economic ownership, but because the AP has not purchased and delivered the basket of underlying securities to the sponsor, these ETF shares do not have corresponding voting rights exercised by the ETF sponsor. Similar to the shorting selling setting, the AP may hold cash, derivative hedges or the underlying securities in inventory to hedge the AP's exposure to the sold ETF share. If the underlying securities are held, they are less likely to be voted due to restrictions on broker voting.

or not this is the case, we first develop two novel measures of phantom ETF and corresponding underlying shares using ETF short interest and institutional ownership. To get a sense of how prevalent phantom shares are, we measure the average ETF ownership of an underlying firm and find that over our sample period, the average (median) ETF ownership in a firm is just 2.61% (2.16%). In comparison, the average (median) ETF phantom share ownership of the same firm is 0.63% (0.43%). Because phantom share ownership is not associated with voting rights, this suggests that for the average dollar invested in an ETF, only $0.81 has both cash flow and the associated voting rights and $0.19 has cash flow rights only.[5]

With this measure of phantom ownership of the underlying securities in hand, we examine the impact on proxy voting outcomes on a sample of 5,928,246 voting records on 5,128 different US public companies from 1,451 ETFs over 2004-2016. Consistent with our notion that ETF phantom shares translate to phantom shares of the underlying that are not voted, we find that increases in ETF phantom shares around the voting record date are associated with a decrease in voting, both for and against, and an increase in broker non-votes for the underlying securities. Effectively, an increase in ETF phantom shares is associated with an increase in sidelined votes of the underlying.

To ensure this is not simply picking up a dual trend in ETF voting and voting patterns over time, we repeat the exercise with just director election votes. Before 2010, the SEC allowed brokers to vote share even "without voting instructions from the beneficial owner". This rule changed formally on January 1st, 2010, so that brokers would not be able to vote without instructions from the investors. We therefore repeat our analysis on director elections accounting for the change in

[5] These estimates are derived from the means of "ETF shares – Per Outstanding" and "Phantom Shares – Per Outstanding" in Table 3. Specifically, 81% is the percentage of total underlying share ownership in actual ETF shares, 2.61/(2.61+0.63), and 19% is the percentage of underlying share ownership in phantom shares, (0.63)/(2.16+0.63).

policy and find a strong positive relationship between phantom shares and broker non-votes once brokers were no longer allowed discretion in voting such shares. However, before 2010 we find a strong negative relationship between phantom shares and broker non-votes, suggesting that brokers widely voted such shares in director elections.

If phantom shares increase the percentage of sidelined votes, they have the potential to affect the probability of a given proposal passing or failing. To assess the impact of phantom shares from this perspective, we model the probability of shareholder proposals and ISS opposed items passing. As this setting relies on the possibility that the phantom underlying shares would be voted by the ETF, we go away from our total phantom shares variable and assign a vote direction (for/against) to the phantom underlying shares based on the vote of the ETF. In the case of shareholder proposals, an increase in phantom shares voted for decreases the probability of these proposals passing. Similarly, an increase in phantom shares voted against decreases the probability that ISS opposed items pass.

We then look at the pricing implications of phantom shares. In particular, we analyze the relation between phantom shares and the value of shareholder voting rights (i.e., voting premiums) around the shareholder meetings. We calculate the voting premiums of underlying shares using the methodology introduced by Kalay, Karakaş and Pant (2014). This methodology essentially synthesizes a non-voting share using options, and obtains the voting premium by subtracting the synthetic (non-voting) share from the underlying (voting) share. We find that voting premiums increase with the phantom shares, around the record date for shareholder meetings, particularly for meetings that are contentious. Analyzing whether phantom shares do predict the contentious meetings, we find no effect. This suggests that the potential selection bias in firms with more phantom shares is unlikely to explain the increase in the voting premium in the presence of

phantom shares. Together with the earlier results with the vote outcomes, our findings suggest that phantom shares make the voting process less efficient by reducing the shares voted (and increasing the broker non-votes), which in turn is reflected in more increase in the voting premium around the contentious shareholder meetings.

While this paper is the first to examine the impact of phantom ETF shares on voting, prior work has explored the issue of short-selling, phantom shares and empty voting for traditional equities (e.g., Christoffersen et al. (2007), Kahan and Rock (2008), and Welborn (2008)). This literature makes the important point that securities lending may be associated with over-voting both directly, as market participants borrowed shares over the voting record date in order to vote them, and indirectly, as multiple claims of ownership may give rise to more than one vote per share. In contrast to this finding of over voting, our results suggest that ETF phantom shares are associated with reduced voting. The difference stems from two sources. First, this literature, in part, helped to motivate changes in regulation about voting including the Dodd-Frank rules about broker voting on non-routine matters that helped to curb over voting. Second, unlike borrowing or short-selling individual equities, the connection between ETF phantom shares and voting on the underlying is not direct. Rather, ETF shares in and of themselves have no associated voting rights. Rather, it is the underlying securities that have associated voting rights and the nature of these underlying securities (e.g., cash plus a futures overlay as collateral for an ETF loan) and the location of these securities (e.g., the actual stocks underlying the ETF are held by a broker as opposed to the sponsor/custodian) determines whether or not they are voted.

Overall, our paper contributes to the literatures on corporate control and governance by introducing a novel measure of the separation of cash flow and voting rights: phantom ETF and underlying shares. We also show that, separate from index funds as alternative passive investment

vehicles, this disassociation of economic exposure and voting rights arises from the unique short-selling and liquidity provision aspects of the ETF market. Given the dramatic increase in ETF assets world-wide, this is an important difference relative to other passive vehicles that should give investors, managers and regulators pause. This study also contributes to the ETF pricing literature by highlighting the important of the value of voting rights in the underlying shares, which have not been examined by the literature previously, but are priced as our evidence suggests.

The rest of the paper proceeds as follows. Section 1 describes the data used and our approach to estimating ETF and underlying security phantom shares. Section 2 looks at how proxy voting outcome are affected by phantom shares. Section 3 examines the pricing implications of phantom shares, and Section 4 concludes.

1. Data and Methodology

1.1 ETF and Proxy Voting Data

The database used in our analysis is constructed from a number of different sources. The ETF data, including holdings, is obtained from the CRSP Mutual Fund Database. Our initial ETF sample consists of all US Equity ETFs, excluding levered ETFs, from 2004 until 2016. Panel A of Table 1 shows the summary statistics for the ETF-holdings report data observation level. The average ETF size is $1.273 billion and the median ETF size is $104 million. Consistent with a largely passive investment approach, the average expense and turnover ratio are 0.5% and 44.1%, respectively.

In order to better characterize the underlying holdings of the ETFs, we then merge the holdings data with CRSP and Compustat to add firm specific variables. We also then add aggregate

institutional holdings data from the Thomson-Reuters Global Ownership database as well as aggregate index and active mutual fund ownership from the CRSP holdings database used above. Panel B of Table 1 has the average statistics of these firms including firm age and institutional ownership.

(~Insert Table 1 about here~)

While the databases mentioned above are more commonly used in academic research, our final data source, the ETF-level and firm-level voting data, may not be as familiar to academic readers, so we describe this data in greater detail. Specifically, we use N-PX data compiled by Institutional Shareholder Services (ISS) as the source of our ETF voting record information. Beginning in 2004, the SEC required mutual funds and other registered management investment companies to disclose proxy vote records for the most recent twelve months ending June 30 of each year via the form N-PX with August 31 as the filing deadline.[6] The filing requires detailed disclosure on the policies and procedures used to guide proxy vote decisions, typically reported in the Statement of Additional Information (SAI), along with the proxy voting record for each security in each mutual fund portfolio.[7] It includes a brief identification of the matter voted on, information about whether the matter was proposed by the management or a shareholder, how the fund voted (e.g., for or against the proposal, or abstain; for or withhold regarding election of directors), and specifically whether the fund's vote aligned with management's recommendation or not.

[6] Final Rule can be found in this link: https://www.sec.gov/rules/final/33-8188.htm. Details on the contents of N-PX filings are in the N-PX pdf instructions document available in this page: https://www.sec.gov/reportspubs/investor-publications/investorpubsmfproxyvotinghtm.html.

[7] For example, many State Street ETFs (SPDRs) report their voting records under the SPDR Series Trust (CIK: 0001064642) registrant. See, for example, the individual vote records on each security held by 80+ SPDR ETFs in the twelve months period ending in June 2011 can be found in the following report filed on August 30, 2011: https://www.sec.gov/Archives/edgar/data/1064642/0000950123-11-081354-index.htm.

In order to map the ISS N-PX data on WRDS with our ETF holdings data, we extract the ETF ticker information from the header of the N-PX filings using the WRDS SEC Analytics Suite. Specifically, we first extract the detailed series information, class/contract information, as well as the share class name, and ticker symbol for each N-PX filing, then map this data to the ISS N-PX records by matching the N-PX FileID to the SEC's accession number. This merged sample consists of 5,928,246 voting records on 5,128 different US public companies from 1,451 ETFs.

We then merge this fund-company level voting data with the company voting results dataset also compiled by ISS. This data provides information on the vote results reported in the 8-K or 10-Q filing subsequent to the firm's annual meeting. As ISS describes in their data manual, the vote results represent the summary of the voting by all investors, including ETFs. These results include the total votes for, against, abstaining, broker non-votes, and the vote outcome along with the ISS vote recommendation for each item. The dataset also includes the vote requirement threshold, an indication how the percentage voting threshold necessary for a proposal to pass is calculated, which is primarily relevant for proposals requiring supermajorities. The vote outcome is derived from the comparison of support rate and required threshold disclosed by company. If the support rate is greater than or equal to the threshold, "Pass" is recorded, or "Fail" otherwise.[8]

This data also includes two important dates for each annual shareholder meeting. The meeting date on which the vote is held, and the record date on which the vote proxies are issued using the ownership of shareholders as of that date. We use the record date in the ISS vote results dataset to construct the actual ownership of ETFs and their holdings of individual securities in the ETF portfolio likely mapping their voting right claims.

[8] Vote outcomes can also be recorded as "Not Disclosed", "Withdrawn" or "Pending" for votes that are respectively not disclosed, eventually withdrawn or are currently pending.

1.2 Phantom Shares: Methodology

While the actual voting decisions of ETFs is an important control in our analysis, the primary variables of interest are the ETF phantom shares and their share of the associated underlying securities. In this section, we describe our two different approaches to estimating phantom shares from short interest (Phantom Shares (SI)) and from the Thompson Financial institutional ownership data (Phantom Shares (TH)).

Our estimate of ETF phantom shares is simply the difference between the total number of ETF shares held by investors, and the actual number of ETF shares created and outstanding. Whenever the number ETF shares held is larger than the number of ETF shares created, the extra shares held are, by definition, phantom shares. While it might seem at first blush that these two numbers should be equal, recall that short selling and operational shorting of ETF shares increase ETF share ownership without increasing the underlying number of ETF shares outstanding. To estimate phantom shares, we take the daily ETF shares outstanding data from CRSP/Bloomberg,[9] but we create two different estimates of the total number of shares held by investors of a given ETF using two different sources: ETF short interest data and Thompson Financial ETF institutional ownership data. The short interest phantom share measure is the product of the short interest ratio and the ETF shares outstanding. To create the phantom share measure using the institutional ownership data, we aggregate the number of ETF shares owned by institutions from the 13f fillings. If the number of shares held by institutions exceeds the number of ETF shares outstanding,

[9] We calculate the number of shares held by the ETF, implied by both, CRSP and Bloomberg and use the value from the data provider (CRSP/Bloomberg) that gives us the number of implied shares that is closest to the number of shares reported on the N-PX filling. We then use CRSP (Bloomberg) for the implied shares at the daily level, until the next N-PX filling, where we then repeat the process of comparing the implied shares to the actual reported.

the difference is our phantom share estimate; otherwise we set our phantom share estimate to be zero. The summary statistics for these inputs are given in Table 2.

(~Insert Table 2 about here~)

With these two different ETF phantom share measures in hand, we then estimate our measure of phantom share ownership of the underlying securities as the product of the ETF phantom share ratio (phantom ETF shares to ETF shares outstanding) and our estimate of the total shares of the underlying owned by the ETF. We begin with the most recent antecedent ETF holdings data observation, which gives the number of shares of the underlying held by the ETF.[10] Because the holdings report date does not necessarily coincide with the voting record date, we then need to estimate the shares of the underlying held by the ETF on the record date of interest. Using the daily ETF TNA data and accounting for changes in the share price of the underlying security (relative to the other securities in the portfolio), we estimate the number of actual shares of underlying held by the ETF on the record date. We then multiply the underlying shares held by the ETF on the record date by the ratio of phantom ETF shares to ETF shares outstanding to estimate the phantom share ownership of the underlying. Overall, this process gives us three measures that we will use in the voting regression: ETF shares owned, Thomson Phantom Shares, Short Interest Phantom Shares.

We then add the fund voting records on day *t–3* before the record date of the company vote. As the ISS fund vote file does not report the number of shares voted by the ETF, we assume that the ETF votes all of the underlying shares owned. From this, we assign all of the shares owned by

[10] While the reporting frequency of ETF holdings as increased over the sample, some ETFs do not report holdings monthly. To account for the possibility that a fund holds the stocks but did not report holdings in the current month, we calculate implied shares for up to two months if holdings are not reported in month *t+1* or month *t+2* after a holdings disclosure in month *t*.

the ETF in the underlying as being voted either for or against based on the ETF vote direction indicated in the ISS data. For each company-meeting-agenda item, we then aggregate all ETF shares voted for or against the item to create an aggregated measure of ETF votes for or against the agenda item. Lastly, as phantom shares should not have voting rights, we do not assign a vote direction to those shares. Instead, we only use the aggregate number of phantom shares implied by ETF ownership, in the underlying stock at *t–3* before the voting record date. This gives us our final sample of company votes, where each agenda item from a meeting has a total number of ETF shares voted for or against and the total number of Thomson Phantom Shares and Short Interest Phantom Shares.

Table 3 gives the summary statistics for overall voting data (i.e., for, against, broker non-vote) and the voting by ETFs, index funds and implied underlying phantom shares. While the overall average ETF share ownership across our sample is low at 2.61%, the phantom share average using short interest, for example, is relatively high in comparison. Of the total ETF share ownership (phantom plus regular ETF shares, 3.24%), phantom share ownership of the underlying is 19.4%. Put another way, the average $1.00 invested in ETFs corresponds to $0.806 with both cash flow and voting rights and $0.194 with no voting rights. The dollar or value-weighted measure of phantom shares indicates an almost three times larger percentage of the underlying shares outstanding.

(~Insert Table 3 about here~)

1.3 Estimating Phantom Shares: An Example

To illustrate our approach to measuring phantom shares, we explore a specific example of the SPDR S&P Retail ETF, XRT and the June 3rd, 2011 proxy vote associated with one of the holdings

of this ETF, Netflix. Using Bloomberg data, we find that the number of XRT shares that have been created (i.e., the underlying basket of securities is being held by a third-party custodian on behalf of the ETF sponsor, State Street Global Advisors) as of May 31st, 2011 is 19,800,000. These ETF shares all have both economic ownership and associated voting rights. We then use the 13f data from the most recent quarter end and the bi-weekly short-interest data to estimate the total number of shares with economic ownership. The 13f data, which underestimate the total shares because only a subset of investors are required to file, show institutional ownership of 123,000,000 XRT shares. Similarly, the short-interest data which are reported at a greater frequency, indicate investor ownership of 165,842,820 shares. Through either operational shorting or repeated lending and short-selling of the same XRT shares, only 10% of the total estimated shares held by investors are backed by underlying securities held at the ETF sponsor. In other words, only 10% of the total estimated shares held by investors have associated voting rights.

For a small subset of our data, the actual shares of underlying security voted by the ETF are disclosed in the SEC form N-PX filing. To lend credence to our claim above, we can compare the actual number of shares voted to the number of shares with economic ownership for a given underlying security. Translating the 13f and short interest estimates of investor ETF ownership into underlying Netflix shares (1.29% of the XRT ETF assets were held in Netflix as of May 31st, 2011), the number of Netflix shares would be 338,909 and 456,956 respectively. However, the actual number of Netflix shares XRT reports voting on is 38,216. In line with the estimates above, only approximately 10% of investors' XRT Netflix ownership has actually been voted. To estimate the number of phantom shares of a given underlying security, we simply take the difference between the number of underlying security shares implied by the 13f (or by short interest estimates) and the number of shares implied by the shares outstanding.

2 Company Vote Regressions

For each company-meeting date, our merged database gives us the total shares owned by ETFs and total phantom shares. These measures will be consistent across all agenda items for each company meeting. Our measures of ETF shares voted for and ETF shares voted against will vary across each agenda item of a company meeting, as ETFs may vote in different directions. Our three main dependent variables will be the total number of shares voted for and against the agenda item, and the total number of broker non-votes. Finally, we then scale all of our main variables of interest and dependent variables by the total number of shares outstanding.

Once we have the total ETF shares, voted for and against as well as phantom shares for each company-meeting-agenda item, we filter out agenda items that may have characteristics that could weaken the identification of the voting rights of phantom shares. First, we exclude any agenda item where the vote requirement to pass is equal to 1%. We do this as these votes are formalities and could, in most cases, be passed by the votes of insiders. Second, we exclude any director election. We do this, as SEC rule changes regarding broker voting may cause uncertain behavior of broker non-votes. Prior to 2010, brokers were allowed to vote their shares in director elections. However, after 2010 the SEC no longer allowed the brokers to vote their shares in director elections. In a later test, we will repeat our main tests on the sample of only director elections. Excluding director elections and those agenda items with a 1% vote requirement leaves us with a sample of 60,331 company-meeting-agenda item observations.

To determine the relationship between phantom shares and voting, we run three main specifications, using total shares voted for, total shares voted against and broker non-votes in the

company vote as the dependent variables. As phantom shares do not have voting rights, we do not assign the shares as being voted for or against the agenda item; instead, we include the total number of phantom shares in each of our main specifications. As the ETF shares do have voting rights, we include ETF shares voted for in the votes for regression, and ETF shares voted against, in the voted against regression. Finally, the aggregate measures of both phantom shares and ETF shares are included in the broker non-vote regressions.

Each regression includes firm fixed effects, and we cluster standard errors by firm and meeting. We control for the size and age of the firm, as well as the book to market and return on assets. Additionally, we control for different types of ownership in the firm: index mutual funds, active mutual funds, block holders, and total institutional ownership. Lastly, to ensure that recent firm performance may not be affecting our results, we included a 6-month momentum measure for each firm-meeting. These filters leave us with a total of 5,128 firms and 28,397 meetings in our main test sample.

2.1 Company Vote Regression Results

Table 4 presents our main results examining the relationship between phantom shares and votes cast in company meetings. In Columns 1 to 3 of Table 4, we define phantom shares using the short interest outstanding in the ETF. In Columns 4 to 6 of Table 4, we repeat the tests from Columns 1 to 3, but use the institutional ownership from Thomson to create the phantom share variable. In Columns 1 and 2, we find that an increase in the number of phantom shares leads to less voting, both for and against, in company meetings. In Columns 4 and 5, we again find results consistent with phantom shares leading to less voting. For both short interest and institutional ownership phantom shares, we find results consistent with our hypothesis that phantom shares will lead to less voting. In each specification, we find that our measure of ETF shares voted for and

ETF shares voted against is positively and significantly related to the number of votes for, and number of votes against, respectively. In Columns 3 and 6, we examine the relationship between phantom shares and broker non-votes. If phantom shares are being held by brokers, either as a result of shorting, or AP failures to deliver, then we should see these shares show up in the number broker non-votes cast. Here, we again find results that are consistent with our initial hypothesis that ETF phantom shares do not carry voting rights in the underlying stocks. In Columns 3 and 6, we find that phantom shares are related to an increase in the number of broker non-votes cast in company votes. Importantly, we also find that our aggregate measure of ETF shares has now significant relationship with broker non-votes. As these ETF shares have both economic and ownership rights, we should not see a relationship between them and broker non-votes. Overall, the results in Table 4 provide support for our initial hypothesis that for certain shareholders of ETFs, their shares do not carry ownership rights in the underlying stock which in turn lead to less votes cast in company meetings.

(~Insert Table 4 about here~)

In Table 5, we extend our study of phantom shares and votes cast using a discreet cut off in the ability of brokers to vote their shares in director elections. Prior to 2010 the SEC allowed brokers to vote in director elections. A rule change was proposed and passed in 2009 that stated brokers were no longer allowed to vote their shares in director elections. In Table 5, we split our phantom share variables into pre- and post-2010, and use this rule change as a clean setting to examine the voting rights of phantom shares. For this test, we replicate the regressions in Columns 3 and 6 of Table 4, but run them on a sample of only director elections.

In Column 1 of Table 5, we use a piecewise regression to examine the relationship between short interest phantom shares and broker non-votes around the SEC rule change. Prior to 2010, we

find a negative and significant coefficient on the phantom shares measure; a sign that brokers were actively voting their shares in director elections. After the rule change, we find a positive and significant coefficient on the phantom share measure. In Column 2, we replicate this test using the institutional ownership measure of phantom shares, and find consistent results. Using this setting in Table 5, we are able to examine the voting rights of phantom shares around an exogenous change to the voting rights of brokers in director elections.

(~Insert Table 5 about here~)

While ETF phantom shares may increase broker non-votes, the question remains if there is any material impact on voting outcomes. In Table 6, we estimate the probability of passing for shareholder proposals (Columns 1 and 3) and those items opposed by ISS (Columns 2 and 4). All variables are standardized and coefficients are given as odds ratios[11], so coefficients greater than 1 indicate and increase in the probability of an item passing, while coefficients less than 1 indicate a decrease in probability. While in Tables 4 and 5, we focused on total phantom shares, in this table we separate phantom shares into those that conceivably would have been cast for and against the proposal, based on the ETF's decision to vote the actual shares held by the ETF for or against. While the actual votes cast by ETFs and Index funds for and against these important proposals positively and negatively, respectively, affect the probability of passing as expected. Phantom shares, on the other hand, have the opposite effect. In the case of shareholder proposals, an increase in phantom shares of the underlying associated with an ETF that otherwise cast its vote in favor of the proposal, decreases the probability of the shareholder proposal passing. Similarly, in the case of ISS opposed items, an increase in phantom shares of the underlying associated with an ETF that

[11] In this case, the odds ratio reported represents a one standard deviation increase in the independent variable

otherwise cast its vote against the item, increases the probability of the ISS opposed item passing. When shares of the underlying are not voted because they are held by the broker as collateral as described above, the phantom underlying shares that would have been voted in favor of (against) a proposal, are negatively (positively) affect the probability of the proposal passing.

(~Insert Table 6 about here~)

3 Voting Premium Regressions

We also analyze the impact of phantom shares on the value of shareholder voting rights (i.e., the voting premium). Given the inefficiencies created at the voting process and outcomes with the phantom shares discussed in the previous section, we expect such inefficiencies to reflect on the prices of the votes, the voting premium.

3.1. Constructing the Voting Premium

We calculate the daily voting premium following the method in Kalay, Karakaş and Pant (2014). This method relies on two observations: (i) a stock is a package of two components: cash flow rights and the control/voting rights (Manne (1964)), and (ii) option prices derive their value from the cash flows of the underlying stocks, but not from the voting rights. Hence, subtracting the price of a non-voting stock synthesized using options, $\hat{S}$, from that of the underlying stock, S, we obtain the value of voting rights in the stock. In order to compare the voting premium over time and across companies, we normalize the price differential between the underlying (voting) stock and the synthetic (non-voting) stock by the price of the underlying stock.

Formally, we calculate $\hat{S}$ using put-call parity for an option pair with the same maturity T and strike price X, and adjust for the early exercise premiums (EEPs) of American options and for dividends (DIVs) paid before the options mature:

$$\hat{S} = C - P + PV(X) + adjustments\ for\ EEPs\ and\ DIVs,$$

$$Voting\ Premium = (S - \hat{S})\ /\ S,$$

where *C* and *P* are the American call and put option prices, respectively, and *PV(X)* is the present value of investing in a risk-free bond with face value *X* that matures at time *T*.

Kalay, Karakaş and Pant (2014) show that liquidity of stock or option, or other non-control-related frictions do not drive the changes in the voting premium around shareholder meetings. In addition, they show that the voting premium is positive on average and increases with the expected maturity of the synthetic stock.[12]

The voting premium is time-varying and depends on the probability of control contest and the economic significance of the contest (Zingales (1995)). Consistently, Kalay, Karakaş and Pant (2014) also document that voting premium increases around events in which control would be expected to matter and be valuable. These events include special shareholder meetings and/or contentious meetings with close votes, episodes of hedge fund activism, and merger and acquisition events.

The method we employ has an important advantage, compared to other common ways to calculate the value of control in the literature using dual-class shares (see, e.g., Nenova (2003) and

[12] Voting premium for options with maturity *T* can be annualized with the following formula (Kalay, Karakaş and Pant (2014): 1 – (1 – voting premium)$^{365/T}$. Given that the average voting premiums across firms is 13.6 basis points (Table 3) and the median (average) maturity of options employed in our analysis is 32 (64) days, the corresponding annualized voting premium is 1.55% (0.78%) of the stock price.

Zingales (1994)) or controlling block sales (see, e.g., Barclay and Holderness (1989) and Dyck and Zingales (2004)): we can estimate the market value of voting rights for a large number of widely held public firms at any point in time.

Voting premium reflects private benefits consumptions and associated managerial inefficiencies, priced by the market. Mohseni and Karakaş (2018) and Gurun and Karakaş (2019) use the same voting premium we employ. The former finds that firms with staggered boards on average have higher voting premium, which is in line with the entrenchment view on staggered boards. The latter documents that the voting premium increases with the unexpectedly negative earnings, particularly around the shareholder meetings, consistent with an increased probability of capital gains from improving the inefficient management of the firm.

3.2. Options Data

We use the OptionMetrics database at the WRDS for the calculation of daily voting premium. OptionMetrics is the standard data set used for studies on options and provides data on US equity options starting from 1996. This database provides end-of-day bid and ask quotes, trading volume, open interest, and option-specific data, such as implied volatility, maturity, strike price, for the American call and put options on stocks traded on US exchanges. The database also provides the stock price and dividends of the underlying stocks and zero-coupon interest rates.

Voting premium calculation requires availability of both call and put option prices. To construct the synthetic stock, following Kalay, Karakaş and Pant (2014), we form option pairs which consist of matched call and put options on the same underlying stock and with identical strike price and time to maturity. We drop option pairs for which the quotes for either the call or the put options are locked or crossed. The option prices are taken as the midpoints of the bid and

ask quotes, which are the best closing prices across all exchanges on which the option trades. Since the options are of American style, we compute the early exercise premium for both the call and put options using the binomial option-pricing model.

In our calculations, we use the most liquid option pair for each firm-day, which is defined as the one with the highest option volume (minimum volume of call and put), closest-to-the-money and shortest maturity. We use only the options with positive volume. Using the closest-to-the-money options also minimizes the potential downward biases in the voting premium due to the early exercise possibilities of the American options (see Kalay, Karakaş and Pant (2014) for a more detailed discussion).

3.3. Results of Voting Premium Regressions

Kalay, Karakaş and Pant (2014) find that voting premium increases around shareholder meetings, particularly when the control contest is contentious (e.g., special meetings, meetings with close votes). Following Kalay, Karakaş and Pant (2014), we measure the median voting premium for each firm [–3,0] trading days before the cum-date, which is three trading days prior to the record date (to allow for settlement of the stock trades) for the upcoming shareholder meeting. We include in the regression an indicator variable of whether or not the voting item of interest is "*Critical*" as identified by five scenarios: (i) an annual meeting and the vote difference was less than 10%, (ii) an annual meeting/special item, (iii) a special meeting, (iv) a proxy contest, or (v) ISS recommended voting against the item. If the voting item meets one of those five criteria, the "Critical Item" indicator variable takes a value of one, and zero otherwise.

(~Insert Table 7 about here~)

In Table 7, we find that voting premiums increase with the phantom shares, around the record date for shareholder meetings for those meetings which are likely to be contentious based on the inclusion of a “Critical Item”. Consistent with our expectations discussed earlier, our results are stronger with the short interest-based phantom shares which are calculated with data on a bi-weekly frequency, compared to 13f-based phantom shares measure which are calculated with data on a quarterly frequency.

(~Insert Table 8 about here~)

Analyzing whether phantom shares do predict the contentious meetings, we find no positive effect of critical items (Table 8) on vote premiums. This suggests that the potential selection bias in firms with more phantom shares is unlikely to explain the increase in the voting premium in the presence of phantom shares. Together with the earlier results with the vote outcomes, our findings suggest that phantom shares make the voting process less efficient by reducing the shares voted (and increasing the broker non-votes), which in turn is reflected in more increase in the voting premium particularly around the contentious shareholder meetings.

3.4. Performance Regression Results

As a final exploration in to the implications of phantom shares and voting, we look at relationship between phantom shares and stock returns more generally in Table 9. Because phantom shares give the holder cash flow rights but no voting rights, we might expect those firms with large phantom share ownership to underperform as firm governance is hindered by the lack of voting rights. From one perspective, increased phantom shares of the underlying in tantamount to the creation of a dual share class with the same cash flow rights but no voting rights.

The dependent variable in Table 9 is a 4-factor alpha (Fama-French 3 factor plus momentum) obtained from a daily regression from month *t+1* to month *t+12*. Each month, we sort firms into deciles based on the average monthly ratio of phantom shares to shares outstanding in the firm from month *t–11* to month *t*. Top (Bottom) Phantom Share Decile is a dummy variable that takes the value of one if a firm is in the top (bottom) decile each month, and zero otherwise. We follow this same procedure to calculate the top and bottom deciles of ETF and Index Mutual fund ownership. All other controls are defined the same as in Table 4 including firm fixed effects. All columns include firm fixed effects, and Columns 3, 5 and 6 include Month × Year fixed effects.

Looking at the results in Table 9, we see that high levels of ETF phantom shares are associated with worse risk-adjusted performance, while low levels of ETF phantom share ownership are associated with better risk-adjusted performance even after controlling for firm characteristics.

(~Insert Table 9 about here~)

4 Conclusion

This paper analyzes the impact of ETFs on the shareholder voting on the underlying shares of the ETFs. We introduce a novel measure of the wedge between the economic ownership and the voting rights of underlying shares through ETFs, the phantom shares, and analyze the implications of phantom shares for the voting process, voting outcomes, voting premium, and firm performance.

We find that phantom shares are costly for the investors, since they do not convey voting rights to the ETF owners, but are sold at the full price of share, which reflects both cash flow rights and voting rights. Phantom shares also seem to create inefficiencies within the voting process by

increasing the broker non-votes, and decreasing both the shares voted for and the shares voted against in the shareholder meetings. This becomes particularly important in cases with close votes. Relatedly, we find phantom shares to be positively related to the voting premium, particularly during the meetings with contentious votes.

Our findings highlight an important phenomenon with the recent surge of the ETFs and have policy implications. In particular, due to the existence of phantom shares through ETFs, there could happen inefficiencies regarding the exercise of control rights, and in turn regarding the corporate governance and market for corporate control, for the firms with phantom shares particularly during times the markets are bearish and/or when the votes are critical and very valuable. This is particularly important when considered against the simple alternative of investing in index funds which are fully collateralized by the underlying securities held by a custodian and voted by the sponsor. In other words, index funds do not suffer from a similar lack of voting rights.

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Table 1: ETF and Firm Summary Statistics

In this table, we present the summary statistics for the ETFs in our final sample and firm characteristics. Panel A presents summary statistics for the ETFs. Observations are taken at the date ETFs report holdings. *Total Net Assets* is the total net assets of the fund taken from CRSP, in millions. *Return* is the return of the ETF in the reporting month. *Expense Ratio* and *Turnover Ratio* are the expense and turnover ratios of the fund reported by CRSP. *Fund Age* is the number of years since the fund was introduced. *Net Flows* is the net flows into the ETF in the month that holdings were reported. Panel B reports summary statistics on the firms in our sample of company votes. Each observation here is an agenda item of a meeting. *6 Month Moment* is the return of the stock over the six months prior to the meeting. *Book to Market, Assets, and Return on Assets* are the book to market, assets in million and return on assets reported by Compustat. *Institutional Ownership, Index Mutual Fund Ownership,* and *Active Mutual Fund Ownership* are the percentage of shares outstanding owned by institutional investors, index mutual funds and active mutual funds, respectively.

Panel A: ETF Statistics

VARIABLES	Obs.	Mean	Std. Dev.	p1	p25	p50	p75	p95	p99
Total Net Assets (MM)	72,023	1,320	6,474	1.778	22.74	109.6	510.7	5,307	22,950
Return (%)	72,657	0.563	6.609	–19.28	–2.24	0.805	3.815	9.464	16.69
Expense Ratio (%)	62,241	0.509	0.262	0.07	0.32	0.50	0.650	0.950	1.24
Turnover Ratio (%)	61,085	44.11	91.76	2.00	11.00	24.00	50.00	137.00	304.00
Fund Age (Years)	70,078	5.17	3.99	0.0833	1.917	4.333	7.583	13.08	16.5
Net Flows (%)	71,996	0.878	22.633	–20.857	–2.640	0.729	4.005	10.389	21.721

Panel B: Firm Statistics

VARIABLES	Obs.	Mean	Std. Dev.	p1	p25	p50	p75	p99
6 Month Momentum (%)	29,660	7.397	40.120	–72.730	–11.140	5.939	22.380	62.830
Book to Market	28,989	0.661	0.610	0.038	0.309	0.542	0.862	1.521
Assets	29,998	10,603	75,418	17.08	320.2	1,167	4,111	31,008
Return on Assets (%)	29,182	–0.369	8.293	–28.990	–0.153	0.630	1.889	4.863
Firm Age (Years)	30,032	22.620	16.280	3.000	10.000	18.000	30.000	58.000
Block Holder Own (%)	29,635	21.600	16.290	0.000	8.666	19.990	31.580	50.200
Institutional Own (%)	29,038	69.930	28.840	4.495	50.820	76.000	91.270	105.600
Active Mutual Fund Own (%)	29,979	16.650	11.110	0.000	7.380	16.110	24.460	35.990

Table 2: ETF Ownership

In this table, we present summary statistics for the institutional ownership, shares outstanding and short interest of ETFs. *CRSP Shares* is the number of outstanding shares reported by CRSP. *Bloomberg Shares* is the number of shares outstanding reported by Bloomberg. *Institutional Shares* is the number of ETF shares held by institutions taken from Thomson 13f ownership data. *13f Ratio* is the ratio of shares owned by institutions to the number of shares outstanding of the ETF. The number of shares outstanding is taken from either CRSP or Bloomberg, depending on the accuracy of using each to calculate the implied number of shares the ETF holds in an underlying stock. *Short Interest Ratio* is the short interest ratio of the ETF taken from CRSP and reported on the same day as the holdings of the ETF.

VARIABLES	Obs.	Mean	Std. Dev.	p1	p50	p75	p95	p99
ETF Shares (CRSP)	68,563	21,870,000	76,300,000	50,000	2,900,000	11,400,000	94,100,000	343,200,000
ETF Shares (Bloomberg)	64,432	21,000,000	73,890,000	50,000	2,831,000	11,200,000	90,900,000	308,100,000
Institutional Shares	70,968	12,270,000	52,980,000	500	811,194	4,278,000	207,600,000	207,600,000
13f Ratio	61,404	0.565	7.898	0.007	0.375	0.565	0.998	2.402
Short Interest Ratio	56,332	0.084	0.417	0.000	0.009	0.033	0.323	1.407

Table 3: Phantom Shares Summary Statistics

In this table, we present the summary statistics for the Phantom Shares measures that we use in our main regressions. *Votes For (Against) [Broker Non-Vote]* are the number of shares voted for, against or that were broker non-votes, as a percentage of shares outstanding for each agenda item in a company meeting. *ETF Shares* is the number of shares in the firm that are held by all ETFs in our sample. *ETF Voted For (Against)* is the number of shares owned by ETFs that voted for (against) the agenda item, as a percentage of shares outstanding. *Phantom Shares (TH)* is the total number of ETF phantom shares, implied by Thomson ownership data, as a percentage of shares outstanding. *Phantom Share (SI)* is the total number of ETF Phantom Shares implied by ETF short interest, as a percentage of shares outstanding. *Voting Premium* is the voting premium as defined by the measure introduced by Kalay, Karakaş and Pant (2014). The premium is taken as the median value from days 0 to t–3 around the cum-date, which is three trading days prior to the record date for shareholder meeting (to allow for settlement of stock trades).

VARIABLES	Obs.	Mean	Std. Dev.	p1	p25	p50	p75	p99
Votes For – Per Outstanding (%)	232,110	74.6	169.4	14.1	66.6	78.6	86.1	97.5
Votes Against – Per Outstanding (%)	232,114	5.10	10.2	0.01	0.62	1.61	4.51	52.9
Broker Non-Vote – Per Outstanding (%)	231,973	7.88	10.6	0	0	5	11.6	45.3
ETF Shares – Per Outstanding (%)	232,280	2.61	2.38	0	0.75	2.16	3.67	10
ETF Shares Voted For – Per Outstanding (%)	232,280	2.47	2.38	0	0.5	2	3.53	9.94
ETF Shares Voted Against – Per Outstanding (%)	232,280	0.07	0.43	0	0	0	0	2.08
Index MF Shares – Per Outstanding (%)	230,351	2.93	9.74	0	0	2.03	4.65	11.6
Index MF Shares Voted For – Per Outstanding (%)	230,351	2.75	9.46	0	0	1.61	4.46	11.3
Index MF Shares Voted Against – Per Outstanding (%)	230,351	0.09	0.77	0	0	0	0	3.55
Phantom Shares (SI) – Per Outstanding (%)	29,899	0.63	0.75	0	0.02	0.43	1.06	1.55
Phantom Shares (TH) – Per Outstanding (%)	29,899	0.41	0.94	0	0	0.07	0.57	1.01
Phantom Shares (SI) – Dollar weighted (%)	29,899	1.77	0.63	0.70	1.40	1.65	2.02	2.32
Phantom Shares (TH) – Dollar weighted (%)	29,899	0.82	0.33	0.33	0.61	0.76	0.89	1.42
Voting Premium (Median in % – [3,0] days of cum-date)	11,573	0.17	1.21	–1.61	–0.06	0.04	0.18	4.07
Voting Premium (Average in % – [3,0] days of cum-date)	11,573	0.17	1.21	–1.63	–0.06	0.04	0.18	4.13

Table 4: Phantom Shares and Votes Cast

In this table, we examine the effect that Phantom Shares have on voting in company meetings. In Columns 1 and 4, the dependent variable is the number of votes for the agenda item as a percentage of shares outstanding. Columns 2 and 5 use the number of shares voted against, while the dependent variable in Columns 3 and 6 is the number of broker non-votes, both as a percentage of shares outstanding. *Phantom Shares (SI)* and *Phantom Shares (TH)* are defined as the total number of phantom shares defined using short interest and Thomson ownership, respectively. Both are a percentage of shares outstanding. *ETF Shares For (Against)* is the percentage of shares outstanding that were held by ETFs and voted for (against) the item. *ETFs Shares* is the total number of shares held by ETFs. All control variables are defined the same as in Table 1. In this table, we exclude director elections and any agenda item that has a pass requirement of 1%. All models include firm fixed effects. Standard errors clustered by firm and meeting are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	For	Against	Broker Non-Vote	For	Against	Broker Non-Vote
Phantom Shares (SI)	–1.334***	–0.191**	0.391***			
	(0.148)	(0.076)	(0.082)			
Phantom Shares (TH)				–0.480***	–0.055	0.093**
				(0.107)	(0.042)	(0.044)
ETF Shares For	1.266***			1.114***		
	(0.073)			(0.068)		
ETF Shares Against		3.237***			3.229***	
		(0.205)			(0.205)	
ETF Shares			–0.035			0.030
			(0.044)			(0.039)
Index MF Shares For	0.035***			0.037***		
	(0.011)			(0.012)		
Index MF Shares Against		0.754***			0.755***	
		(0.169)			(0.169)	
Index MF Shares			0.001			0.000
			(0.003)			(0.003)
Shareholder Sponsor	–0.252***	0.198***	0.009***	–0.254***	0.199***	0.009***
	(0.007)	(0.007)	(0.002)	(0.007)	(0.007)	(0.002)
ISS Against	–0.245***	0.162***	0.048***	–0.246***	0.162***	0.048***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)
log (Assets)	–0.001	0.005***	–0.003*	–0.001	0.005***	–0.003*
	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Company Age	–0.008***	–0.001***	0.005***	–0.007***	–0.001***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Institutional Ownership	0.048***	0.021***	–0.042***	0.043***	0.020***	–0.040***
	(0.009)	(0.006)	(0.006)	(0.008)	(0.006)	(0.006)
6-Month Momentum	–0.004*	0.001	0.003**	–0.004*	0.001	0.003**
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Ownership by Block Holders	0.043***	–0.012**	0.007	0.045***	–0.012**	0.006
	(0.008)	(0.005)	(0.005)	(0.008)	(0.005)	(0.005)
Book to Market	–0.010***	0.000	0.005***	–0.011***	0.000	0.005***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Return on Assets	0.026*	0.001	0.007	0.022	0.000	0.008
	(0.014)	(0.009)	(0.009)	(0.014)	(0.009)	(0.010)
Observations	57,713	57,793	57,692	57,713	57,793	57,692
R-squared	0.706	0.794	0.322	0.705	0.794	0.322
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: Broker Non-Votes in Director Elections

In this table, we examine the effect of Phantom Shares on the number of broker non-votes around an SEC ruling that made brokers ineligible to vote in director elections starting in 2010. For this test, we include only the agenda items that are director elections. In Columns 1 and 2, the dependent variable is the number of broker non-votes case in the election as a percentage of shares outstanding. We split the Phantom Shares measure using the Post 2010 dummy. Phantom Shares Pre 2010 (Post 2010) replicate the Phantom Shares variable in Table 3, but take the value of zero for years after 2010 (before 2010). Firm controls include index mutual fund ownership, active mutual fund ownership, log of assets, firm age, institutional ownership, blockholder ownership, book to market and return on assets, and are defined the same as in Table 1. All models include firm fixed effects. Standard errors clustered by firm and meeting are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	For	Against	Broker Non-Vote	For	Against	Broker Non-Vote
Phantom Shares (SI) – Pre 2010	–1.185***	0.051	0.025			
	(0.244)	(0.092)	(0.172)			
Phantom Shares (SI) – Post 2010	–1.608***	0.201***	1.366***			
	(0.182)	(0.063)	(0.174)			
Phantom Shares (TH) – Pre 2010				–0.099	–0.165***	–0.045
				(0.156)	(0.059)	(0.086)
Phantom Shares (TH) – Post 2010				–0.749***	0.174***	0.353***
				(0.121)	(0.053)	(0.085)
ETF Shares For	1.157***			0.848***		
	(0.074)			(0.067)		
ETF Shares Against		2.938***			2.940***	
		(0.231)			(0.231)	
ETF Shares			–0.227**			–0.047
			(0.090)			(0.075)
Index MF Shares For	0.019**			0.024***		
	(0.008)			(0.008)		
Index MF Shares Against		0.684***			0.682***	
		(0.257)			(0.257)	
Index MF Shares			–0.005			–0.007
			(0.004)			(0.005)
Post 2010	0.006*	–0.008***	0.062***	–0.079***	–0.008***	0.070***
	(0.003)	(0.001)	(0.004)	(0.003)	(0.001)	(0.003)
Observations	144,703	144,910	144,795	144,703	144,910	144,795
R-squared	0.773	0.551	0.754	0.758	0.551	0.751
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Phantom Shares and Proposal Pass Rate

In this table, we examine the effect of phantom shares on the pass rate of important votes in a panel logit specification. The dependent variable in each column is a dummy variable that takes the value of one if the vote passed and the coefficients are given as odds ratios. *Phantom Shares For (Against)* is calculated by first multiplying the number of underlying phantom shares by an indicator variable of whether or not the ETF voted for (against) the proposal in their actual underlying shares. This is then aggregated across all ETFs that voted for (against) the proposal and divided by the number of shares outstanding of the firm. We standardize all independent variables so that each coefficient reported in the table represents the odds ratio for a one standard deviation increase. Columns 1 and 3 are shareholder proposals. Columns 2 and 4 are items that ISS is against. All other controls are the same as in Table 4. Standard errors clustered by firm are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Phantom Shares (SI)		Phantom Shares (TH)	
	(1)	(2)	(3)	(4)
VARIABLES	Pass	Pass	Pass	Pass
Phantom Shares For	0.361***	0.829	0.900	1.029
	(0.111)	(0.109)	(0.190)	(0.088)
Phantom Shares Against	1.031	1.092***	1.037	1.052***
	(0.043)	(0.026)	(0.234)	(0.018)
ETF Shares For	78.499***	4.259***	41.249***	3.551***
	(31.610)	(0.746)	(13.930)	(0.536)
ETF Shares Against	0.737***	0.691***	0.749***	0.724***
	(0.037)	(0.023)	(0.035)	(0.022)
Index Shares For	57.769***	4.140***	79.144***	4.492***
	(38.753)	(0.059)	(54.478)	(0.636)
Index Shares Against	0.895***	0.993	0.901**	0.989
	(0.034)	(0.021)	(0.034)	(0.020)
Observations	3,006	4,412	3,006	4,412
Number of Firms	314	602	314	602
Firm Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Table 7: Phantom Shares and Voting Premium

In this table, we examine the effect that phantom shares have on the voting premium around critical votes. Phantom Shares measure is created using short interest in Columns 1 and 2, and is created using ownership data from Thomson in Columns 3 and 4. The dependent variable in each column is the vote premium using the measure created by Kalay, Karakaş and Pant. (2014). We use the median value of the vote premium around a window of [0,–3] days around the cum-date, which is three trading days prior to the record date for shareholder meeting (to allow for settlement of stock trades). *Critical Item* is a dummy variable that takes the value of one if at least one item on the meeting agenda meets the following criteria, and zero otherwise: (i) an annual meeting and the vote difference was less than 10%, (ii) an annual meeting/special item, (iii) a special meeting, (iv) a proxy contest, or (v) ISS recommended voting against the item. Firm controls include index mutual fund ownership, active mutual fund ownership, log of assets, firm age, institutional ownership, blockholder ownership, book to market and return on assets, and are defined the same as in Table 1. All models include firm fixed effects. Standard errors clustered by firm and meeting are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Phantom Shares (SI)		Phantom Shares (TH)	
VARIABLES	(1) Voting Premium	(2) Voting Premium	(3) Voting Premium	(4) Voting Premium
Phantom Shares	0.015	0.017	–0.005	–0.005
	(0.029)	(0.030)	(0.015)	(0.015)
Critical Item	–0.000*		–0.000	
	(0.000)		(0.000)	
Critical Item × Phantom Shares	0.074**		0.033	
	(0.036)		(0.021)	
Log (1 + Critical Items)		–0.000		–0.000
		(0.000)		(0.000)
Log (1 + Critical Items) × Phantom Shares		0.066**		0.034*
		(0.032)		(0.019)
Observations	10,072	10,072	10,072	10,072
R-squared	0.383	0.383	0.383	0.383
Firm Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Table 8: Predicting Critical Votes

In this table, we test the possibility that our measures of Phantom Shares could cause critical votes. Phantom Shares measure is created using short interest in Columns 1 and 2, and is created using ownership data from Thomson in Columns 3 and 4. *Critical Item* is a dummy variable that takes the value of one if at least one item on the meeting agenda meets the following criteria, and zero otherwise: (i) an annual meeting and the vote difference was less than 10%, (ii) an annual meeting/special item, (iii) a special meeting, (iv) a proxy contest, or (v) ISS recommended voting against the item. Firm controls include index mutual fund ownership, active mutual fund ownership, log of assets, firm age, institutional ownership, blockholder ownership, book to market and return on assets, and are defined the same as in Table 1. All models include firm fixed effects. Standard errors clustered by firm and meeting are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Phantom Shares (SI)		Phantom Shares (TH)	
VARIABLES	(1) Critical Item	(2) Log (1 + Critical Items)	(3) Critical Item	(4) Log (1 +Critical Items)
Phantom Shares	0.000	0.000	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	29,243	29,243	29,243	29,243
R-squared	0.619	0.618	0.361	0.361
Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Table 9: Phantom Shares and Risk-Adjusted Performance

In this table, we examine possible long-term effects of phantom shares on firm value. In each column, the dependent variable is a 4-factor alpha (Fama-French 3 factor plus momentum) obtained from a daily regression from month t+1 to month t+12. Each month, we sort firms into deciles based on the average monthly ratio of phantom shares to shares outstanding in the firm from month t–11 to month t. *Top (Bottom) Phantom Share Decile* is a dummy variable that takes the value of one if a firm is in the top (bottom) decile each month, and zero otherwise. We follow the same procedure to calculate the top and bottom deciles of ETF and Index Mutual fund ownership. All other controls are defined the same as in Table 4. We exclude controls for momentum, firm size and book to market as they are controlled for in 4-factor alpha. All columns include firm fixed effects. Columns 3, 5 and 6 include Month × Year fixed effects. Robust standard errors clustered by firm and date are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively. While a constant is included in the regression, the coefficient is omitted for brevity.

VARIABLES	(1) 4F Alpha	(2) 4F Alpha	(3) 4F Alpha	(4) 4F Alpha	(5) 4F Alpha	(6) 4F Alpha
Top Phantom Share Decile	–0.03322**	–0.03066*	–0.03170**	–0.01544	–0.01553	–0.03294**
	(0.015)	(0.016)	(0.016)	(0.015)	(0.015)	(0.016)
Bottom Phantom Share Decile	0.04469***	0.00607	0.00881	0.02833**	0.03195**	0.01026
	(0.015)	(0.018)	(0.018)	(0.014)	(0.014)	(0.019)
Top ETF Decile		0.00971	0.00854			0.00945
		(0.013)	(0.013)			(0.014)
Bottom ETF Decile		0.04585**	0.04726**			0.04679**
		(0.021)	(0.021)			(0.022)
Top Index Fund Decile		0.00637	0.00367			0.00283
		(0.016)	(0.016)			(0.016)
Bottom Index Fund Decile		0.02214	0.01064			0.01035
		(0.016)	(0.016)			(0.017)
ETF Ownership				–0.67344***	–0.73510***	
				(0.196)	(0.208)	
Index Fund Ownership				0.10521**	0.08611*	
				(0.052)	(0.050)	
Short Interest - Firm						–0.12880**
						(0.057)
Observations	666,931	616,765	616,765	616,765	616,765	587,033
R-squared	0.03036	0.03006	0.03046	0.03008	0.03048	0.03021
Number of Firms	8,208	7,481	7,481	7,481	7,481	7,481
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effect	No	No	Yes	No	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes