The Economics of Decoupling

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Abstract

Financial innovation has created a multitude of techniques for activist investors to acquire voting rights in excess of their economic exposure. We provide structure to the manifold of decoupling techniques by classifying them into *Buy&Hedge*, *Hedge&Buy*, and *Vote Trading* techniques. The possibility to cast votes without bearing the effect on share value is of particular interest to an activist who wants to push her private agenda, instead of maximizing firm value. Thus, we analyze which classes of decoupling techniques can be exploited profitably by a hostile activist. We find that *Vote Trading* techniques are most profitable and have the largest potential to reduce overall and shareholder welfare. *Buy&Hedge* techniques are constrained efficient because the activist suffers from a commitment problem. *Hedge&Buy* techniques fall in between, exhibiting inefficient and constrained-efficient equilibria. The results match the empirical evidence on vote prices from options and equity lending markets.

Keywords: decoupling techniques, empty voting, hostile activism, shareholder activism, vote trading

1 Introduction

Even if a company formally adheres to the "one-share one-vote" principle, this does not imply that the number of votes a shareholder can cast is actually aligned with his or her stake in the company. Financial innovation has created a vast set of "decoupling techniques" for activist investors to acquire votes without taking a long position, decoupling their voting power from their economic exposure. As the cases collected by Hu & Black (2015),[1] the aggregate evidence found by Christofferson et al. (2007) as well as Kalay et al. (2014), and the recent fight for control over Premier Foods (2018) show,[2] these decoupling techniques are very popular with activist investors. Thereby, it comes as no surprise that the practice caught the eye of the press and regulatory authorities alike.[3]

What stands out about the public cases of decoupling is the variety of techniques employed, ranging from the usage of repo contracts to the acquisition of shares and hedges. While all these techniques ultimately resulted in a misalignment of voting power and economic exposure, they differed substantially in the transactions, timing, and parties involved. This begs the question if from the activists' perspective, different decoupling techniques are mere substitutes or whether there are meaningful economic differences in the cost and incentives they impose on activist investors.

The second, complementary question is what motivates activist investors to employ these decoupling techniques. While decoupling has been used to improve corporate governance, the prospect of voting without bearing the effect on share value is undoubtedly of particular interest to activists who want to push their private agenda, instead of maximizing firm value. *"[Therefore,] [i]t is a source of some concern that [...] important corporate actions [...] might be decided by persons who could have the incentive to [...] block actions that are in the interests of the shareholders as a whole"* (SEC, Concept Release on the U.S. Proxy System, p. 139).[4]

In this paper, we give structure to the vast amount of decoupling techniques by deriving three classes of economically equivalent decoupling techniques: *Buy&Hedge* techniques, *Hedge&Buy* techniques and *Vote Trading* techniques.[5]

Afterward, we analyze which of these three classes can be exploited profitably by a hostile

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[1]Here, and henceforth, we quote Hu & Black (2015) as the most recent overview of their extensive documentation of decoupling, Hu & Black (2006, 2007, 2008, 2015).

[2]Financial Times, July 15, 2018, "Market reverberates with accusations of empty voting", https://www.ft.com/content/0e28929e-85dd-11e8-a29d-73e3d454535d.

[3]See, for instance, the ESMA's "Call for evidence on empty voting" (September 2011), https://www.esma.europa.eu/press-news/consultations/call-evidence-empty-voting, or the "SEC Staff Roundtable on the Proxy Process" (July 2018), https://www.sec.gov/news/public-statement/statement-announcing-sec-staff-roundtable-proxy-process.

[4]See https://www.sec.gov/rules/concept/2010/34-62495.pdf.

[5]In Speit & Voss (2020), we analyze the pros and cons of Vote Trading techniques as means of activist intervention compared to traditional forms of shareholder activism. In this paper, we consider Vote Trading techniques as a benchmark.

activist who opposes a firm value increasing reform, and we uncover a clear ranking in welfare implications. We find that Vote Trading techniques allow the activist to push her private agenda and expropriate shareholders at zero costs, whereas Buy&Hedge techniques are constrained efficient because the activist suffers from a commitment problem. Hedge&Buy techniques fall in between, exhibiting inefficient and constrained-efficient equilibria.

By categorizing the decoupling techniques, we develop a framework to assess existing and novel financial transactions in their potential to promote hostile activism.[6] Thereby, we provide guidance on which financial transactions need the closest monitoring and, potentially, regulation. Further, our results match and help to better understand differences in empirical findings of decoupling via equity lending markets Christofferson et al. (2007) and options markets Kalay et al. (2014).

1.1   Shareholder voting processes and decoupling techniques

Before we can classify the decoupling techniques and preview our results, we need to provide a short overview of the shareholder voting process and highlight how it is vulnerable to decoupling.

Shareholders can exercise their voting rights in ordinary, annual meetings, and special meetings. Proceedings conducted at a record date, held roughly 30 days prior to the meeting, determine which shareholders are eligible to vote how many shares:[7] doing so, the shareholder structure is locked-in, such that later changes are not taken into account. At the meeting day, decisions are made either with a simple majority or a supermajority.

There are different features of this process that allow an activist investor to decouple her voting power from her economic exposure. First, the allocation of voting rights is agnostic toward coupled assets in the activist's portfolio. For example, the allocation does not take any hedges into account, allowing an activist to shed her economic exposure to retain only the voting right. Further, the shareholder structure is fixed after the record date, such that trades between the record date and meeting do not affect the number of votes a shareholder can cast. By acquiring shares before the record date (cum voting rights) and offloading them right after (ex voting rights), the activist can acquire voting rights without the economic exposure. Even more significant, the number of votes is determined by the temporary possession of the shares. Hence, the activist is eligible to vote borrowed shares, or shares that she has already sold for later delivery at the time of the record date.

Combined, these three features open the possibility for a multitude of decoupling techniques, which can substantially diverge in their economic implications depending on the

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[6]It is worth pointing out that our classification does not square with the one suggested in the 2010 SEC Concept Release on the U.S. Proxy System, https://www.sec.gov/rules/concept/2010/34-62495.pdf.

[7]We do not consider one specific jurisdiction. Note that the details of the process can vary across countries. In the UK, for instance, the period is considerably shorter. However, it is easy to check that, apart from practical frictions, the lead time is irrelevant for the outcomes and incentives of the decoupling techniques.

timing, order of transactions, and counterparties involved. In any of these decoupling techniques, however, the activist has to achieve two goals. First, she has to obtain possession of the shares for the record date, either by buying or borrowing them. In case she purchased the share, she then has to shed the associated economic exposure. This can be done by either selling the shares after the record date or by hedging them. In fact, a hedge can be bought before or after acquiring the shares. Combined, this gives rise to three classes of decoupling techniques.

Buy&Hedge: In the first class of decoupling techniques, the activist buys the shares she wants to vote (prior to the record date) before hedging them. This hedging can be done, for instance, by acquiring options or simply selling the shares after the record date, retaining only the voting rights. In this class of decoupling techniques, the activist assumes positive economic exposure before reducing it again.

Hedge&Buy: The second class of decoupling techniques simply flips the order of transactions of Buy&Hedge techniques. By hedging her economic exposure first, the activist is essentially short before acquiring the shares, such that she never takes a long position in the company.

Vote Trading: The third class of decoupling techniques is composed of those which are equivalent to the outright trade of voting rights. Essentially, in these techniques, the shares and hedge are both provided by the same shareholder. Thereby, the economic exposure remains with the shareholder at all times, and only the voting rights ever change hand. Most importantly, Vote Trading techniques include the common practice of borrowing shares over the record date (Christofferson et al. 2007), but also the usage of repos or synthetic assets. For instance, in a repo contract, the shares posted as collateral are already set to be repurchased, such that only the voting rights are reallocated.

1.2 Preview of results

To analyze which classes of decoupling techniques can be exploited profitably by a hostile activist to push her private agenda, we consider a simple model in which dispersed shareholders vote on the implementation of a reform. Shareholders know the reform to be value increasing and, thus, support it. The hostile activist, on the other hand, derives a private benefit from the status quo and wants to prevent the reform. The activist's motives are common knowledge.

We find that because the activist's hostile motives are known, she does not benefit from hedging her economic exposure after acquiring the shares (Buy&Hedge technique): any rational and competitive market providing her with a hedge will charge her the fair value, taking into account the activist's motives. Consequently, the hedging market is irrelevant to the activist's incentives. The shares commit her to implement the reform unless her private benefit from the status quo exceeds the loss in share value on the blocking minority of shares.

Thus, the outcome of decoupling via a Buy&Hedge technique is constrained efficient.

Still, a hedge may be beneficial to the activist when the order of transitions is flipped, that is when the activist uses a Hedge&Buy technique. By acquiring the hedge first, the activist builds a short position, which commits her to block the reform whenever she gets the chance. If shareholders anticipate that the activist will be successful in acquiring a blocking minority, they are willing to sell their shares at the depressed "no reform"-price. Thereby, shareholders suffer a loss in share value, and the activist can prevent the reform while earning a profit. On the other hand, if shareholders do expect the reform to pass, they demand the high "successful reform"-price, which the activist may not be willing to pay when her private benefit from the status quo is small. Thus, when the activist's private benefit is small, there are two types of self-fulfilling equilibria: ones in which the reform is blocked and ones in which the reform passes.

Last, Vote Trading techniques have a unique equilibrium in which the activist acquires the necessary voting rights at zero prices and always blocks the reform. When employing a Vote Trading technique, the activist essentially bundles the buy and hedge transaction and only trades with the shareholders. Thereby, shareholders always retain the economic exposure and only sell their voting right. When evaluating the offer by the hostile activist, shareholders value their voting right according to their expectation of whether it will change the outcome of the vote. When there are many shareholders, no individual shareholder is pivotal with positive probability, such that the voting right holds no value to him. As a result, there is no monetary transfer from the activist to the shareholders.

In conclusion, we can rank the three classes of decoupling techniques in order of their implications on (shareholder) welfare as

$$\text{Buy\&Hedge} \succ \text{Hedge\&Buy} \succ \text{Vote Trading.}$$

While Buy&Hedge techniques are constrained efficient, Hedge&Buy techniques have two types of equilibria: ones which are constrained efficient and inefficient ones, which allow the hostile activist to block the reform and earn a profit, even when her private benefit from the status quo is small. Vote Trading techniques only have inefficient equilibria and result in the lowest (zero) transfer from the activist to the shareholders.

We also analyze the interaction of decoupling techniques and dual-class structures. In dual-class structures, the activist only has to acquire voting-shares, reducing the economic exposure she has to assume to block the reform. Thereby, dual-class structures foster hostile activism through Buy&Hedge and Hedge&Buy techniques by reducing the private benefit required to make a hostile intervention profitable. In contrast, we find that dual-class structures have no impact on the inefficiency of Vote Trading techniques.

The rest of the paper is structured into eight sections. After discussing the related liter-

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ature in Section 1.3, we set up the model in Section 2. In Section 3 we analyze Buy&Hedge techniques, and in Section 4 Hedge&Buy techniques. In Section 5 we analyze Vote Trading techniques. We discuss the effect of dual-class structures in Section 6, relate our results to previous empirical findings in Section 7, and conclude in Section 8.

1.3 Literature

The early papers on the optimal design of voting rights in the corporation are primarily concerned with dual-class structures. Grossman & Hart (1988), as well as Harris & Raviv (1988) provide conditions under which a single share class is optimal in corporate control contests. The subsequent literature has also shown that dual-class structures can be useful in the context of corporate takeovers to overcome the free-rider problem (Grossman & Hart 1980). In particular, non-voting shares can be used to increase private benefits of control (Burkart et al. 1998), or solve problems of asymmetric information (At et al. 2011), thereby enabling value-increasing takeovers. In a model with finitely many shareholders, Gromb (1992) shows that reducing the number of voting shares increases the pivotality probability and thus mitigates shareholders' free-riding behavior. For a detailed overview of the literature on dual-class structures, see Burkart & Lee (2008). Recently, Burkart & Lee (2015) demonstrate how synthetic assets can be used to overcome adverse selection problems and free-riding in takeovers.[8]

As far as decoupling techniques go, Vote Trading techniques have received by far the most attention. In the context of corporate governance, Brav & Mathews (2011) and Eso et al. (2015) show that Vote Trading techniques may be beneficial for corporate governance when information about the optimal decision is dispersed. On the other hand, Casella et al. (2012) shows that there is generally no competitive equilibrium in the market for voting rights when market participants have different preferences about the outcome of the vote. Neeman (1999), Bó (2007), and Speit & Voss (2020) show in different models that Vote Trading techniques generally lead to inefficiently low vote prices, which can be exploited by a hostile activist. Further, in Speit & Voss (2020), we demonstrate that shareholders can learn from activist's willingness to employ a Vote Trading technique but that traditional forms of activist interventions are superior in communicating information. Blair et al. (1989) and Dekel & Wolinsky (2012) consider the effect of Vote Trading techniques on control contests. Blair et al. (1989) analyze the effect of taxation on the choice of vehicle by the contestants. Dekel & Wolinsky (2012) prove that Vote Trading techniques can be socially harmful by fostering welfare decreasing takeovers.

Levit et al. (2019) consider a model with heterogeneous shareholder preferences in which shareholders can trade shares before the voting stage. Trading opportunities render the

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[8]In particular, they consider a takeover where an external bidder offers shareholders cash plus a call option.

shareholder base endogenous, introducing a feedback loop and self-fulfilling equilibria. In Kalay & Pant (2009), shareholders use the options market as a commitment device to improve their bargaining position in a subsequent control contest. This effect is similar to the one the activist exploits in our model when employing a Hedge&Buy technique.

2   Model

Investors: Consider a public company owned by a continuum of shareholders with mass 1. Every shareholder owns one share, consisting of a cash-flow claim and a voting right. Further, there is an activist investor who owns no shares. All investors are risk neutral.

Shareholder meeting: The company has an upcoming shareholder meeting with a single, exogenously given reform-proposal on the agenda. The vote is binding, and the reform is implemented if at least $\lambda \in (0,1)$ votes are cast in favor of it. Otherwise, the status quo prevails.

Payoffs: If the company sticks with the status quo, the company's total value remains unchanged at $v > 0$; if the reform is implemented, the company's value increases by $\Delta > 0$ to $v + \Delta$. In spite of its positive effect on the firm value, the activist opposes the reform as she gains private benefits $b > 0$ if the status quo remains. These private benefits may, for instance, stem from other assets of her portfolio: debt in the same company reducing the risk appetite or cross ownership leading to different supplier preferences. Alternatively, the status quo may allow the activist to (continue to) extract b at a cost to the firm of $\Delta \geq b$. In any case, we take b to be exogenously given. If $b < \Delta$, the reform increases overall welfare, whereas the status quo is efficient whenever $b > \Delta$.

2.1   Voting stage

We ignore the peculiar equilibria in which voters play weakly dominated strategies, meaning that investors always vote in favor of their preferred alternative. Hence, the outcome of the votes is uniquely determined by who owns how many voting rights at the time of the meeting. In the following, we do not explicitly model the voting stage, but only use that the activist can block the reform if she controls at least $(1 - \lambda)$ of the voting rights.

3   Buy&Hedge techniques

We first consider the class of decoupling techniques we call "Buy&Hedge" techniques. In this simplest form of decoupling, the hostile activist buys shares from the shareholders and hedges her position afterward, for instance, by procuring put options or reselling the shares after the record date has passed.

3.1 Order of transactions

Suppose that the activist can make a public take-it-or-leave-it offer $p \in \mathbb{R}_+$ per share. She can restrict her offer to be valid for m shares she is willing to buy. If more shareholders decide to sell, they are rationed. It is without loss to assume that the activist makes offers for up to $m = 1 - \lambda$ shares.

Shareholders observe the offer p and decide whether they want to sell their share. To capture the predominant anonymity among shareholders, we consider symmetric strategies, denoted by their mixing probability $q : \mathbb{R}_+ \to [0,1]$.

Having acquired $q(p)$ shares for p, the activist then has the option to hedge her entire position, guaranteeing her the "successful reform"-value $v + \Delta$. For instance, this can be done by buying put options with a strike price of $v + \Delta$.[9] We assume that the hedging market is rational and competitive, such that the activist needs to pay the fair value.

An explicit overview of the payoffs can be found in Appendix A.1. Here, and henceforth in this paper, we analyze subgame perfect equilibria.

3.2 Hedging stage

Solving the model from the back, suppose that the activist acquired $q^*(p) < 1 - \lambda$ shares in the buying stage. In this case, she cannot swing the decision and the share value is $v + \Delta$. As a result, the hedge is free, and the activist is indifferent between acquiring or not.

Alternatively, suppose that the activist bought the necessary $1 - \lambda$ shares and also the hedge. Then, the value of her portfolio is fixed at $(1 - \lambda)(v + \Delta)$, such that it is strictly optimal for her to block the reform. In this case, the hedge has to pay out $(1 - \lambda)\Delta$. The rational and fully informed market providing the hedge expects this and charges $(1 - \lambda)\Delta$ for the hedge. As a result, the activist is, again, indifferent about hedging her shares, and her decision whether to block the reform is unaffected. Consequently, she will only block the reform if $b \geq (1 - \lambda)\Delta$.

Wrapping up, since hedging markets ask for the fair price, the ability to hedge does not affect the activist's payoffs or her decision: the activist will only block the reform in case she acquired $1 - \lambda$ shares (the blocking minority) and $b \geq (1 - \lambda)\Delta$ (blocking is profitable).

3.3 Buying stage

When $b < (1 - \lambda)\Delta$, rational shareholders anticipate that the activist will never block the reform and are not willing to sell their share unless the activist pays them the "successful

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[9]If the activist could choose the strike price and size of the hedge, insuring all of her shares at $v + \Delta$ would constitute a best response. Note that in contrast to the share market, the activist cannot exploit any potential coordination failure in the market for hedges (e.g. by splitting and randomizing her purchase of options), since non-shareholders make at least zero profits by standard participation constraints.

reform"-price of $v + \Delta$ per share.[10] Therefore, the activist is indifferent between buying the shares and not. In any equilibrium, the reform passes, the firm value rises to $v + \Delta$, and the payoffs of the shareholders and the activist are unchanged.

When $b > (1 - \lambda)\Delta$, shareholders correctly anticipate that the reform is blocked if the activist can acquire sufficiently many shares, $q^*(p) \geq 1 - \lambda$. Depending on how shareholders coordinate, this gives rise to a continuum of equilibria where $p^* \in [v, v + \Delta]$ and reform is always blocked. Details can be found in the proof in the appendix.

Proposition 1. *Suppose that the activist employs a Buy&Hedge technique,*

- *if $b < (1 - \lambda)\Delta$, the reform passes and the firm value increases to $v + \Delta$ in any equilibrium. The shareholders' and the activist's payoffs are unchanged;*

- *if $b > (1 - \lambda)\Delta$, the reform is blocked and the firm value remains at v in any equilibrium. Shares trade at prices between v and $v + \Delta$, such that the total loss incurred by shareholders is between $\Delta - (1 - \lambda)\Delta$ and Δ. The activist's profit is between b and $b - (1 - \lambda)\Delta$.*

If $b < (1 - \lambda)\Delta$, shareholders are fully protected against hostile activism through Buy&Hedge techniques. Absent of asymmetric information, the activist cannot fool the hedging market and is, thereby, stuck with the economic exposure of the shares she seeks to vote. When the private benefit from the status quo is small, these shares commit her to implement the reform.

If $b > (1 - \lambda)\Delta$, the economic exposure of the blocking minority of shares does not commit the activist to implement the reform, such that the reform is blocked. Depending on the coordination among shareholders, their aggregate loss is between $\lambda\Delta = \Delta - (1 - \lambda)\Delta$ and Δ.

Note that the inefficient outcome in case $b > (1 - \lambda)\Delta$ and $b < \Delta$ stems from the externality of voting. If a fraction $(1 - \lambda)$ of voters were to equally share the benefit $b > (1 - \lambda)\Delta$, they would block the reform without any regard to their externality on the other λ voters. In that sense, Buy&Hedge techniques result in efficient outcomes, constrained only by the inefficiency from the voting process itself.

For coherent exposition, we phrase the transaction in which the activist sheds her economic exposure in terms of a hedge, e.g., put options. As we mention in the introduction to this section, the same can be achieved via share sales after the record date. In this case, a competitive and rational outside market will pay the activist the fair value for her share position, anticipating her actions.[11] In particular, when the activist sells all of her shares or

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[10]Put differently, the activist cannot commit to implementing the value-decreasing reform, if her private benefit is not too large.

[11]Alternatively, the activist could sell her shares to existing shareholders. In our model with a continuum of shareholders, existing shareholders have the same willingness to pay for the shares as an outside market. If the number of shareholders was finite, such that their decision whether to buy shares could affect the

none (cf. footnote 9), the outside market will pay her v per share. Therefore, the activist does not benefit from selling her shares, and she only blocks the reform if $b \geq (1 - \lambda)\Delta$.

4 Hedge&Buy techniques

In this section, we consider "Hedge&Buy" techniques. In this class of decoupling techniques, the hostile activist switches the order of transactions of the Buy&Hedge techniques, such that she uses the hedge to build a short position before acquiring the shares.

4.1 Order of transactions

Suppose that the activist can buy a hedge from the outside market which guarantees her a firm value of $v + \Delta$; for instance, in the form of put options with a strike price at $v + \Delta$. It is without loss to assume that she either buys no hedge or insures $(1 - \lambda)$ shares (cf. footnote 9). The hedging market is rational and competitive, such that the activist can acquire the hedge for its fair value

After deciding whether to buy a hedge, the activist can make a public take-it-or-leave-it offer $p \in \mathbb{R}_+$ for which she is willing to acquire shares. She can further set an upper bound on the number of shares she is willing to acquire. If more shareholders decide to sell their shares, they are rationed. Assume that the activist makes offers for up to $1 - \lambda$ shares. The activist conditions her offer on whether she acquired a hedge, such that her strategy becomes $p : \{0, 1 - \lambda\} \to \mathbb{R}_+$.

Shareholders observe whether the activist hedged her position as well as the offer p and decide whether they want to sell their share. We denote shareholders' symmetric strategy by $q : \{0, 1 - \lambda\} \times \mathbb{R}_+ \to [0, 1]$.

An explicit overview of the payoffs is in Appendix A.1.

4.2 Buying stage

In the body of text, we solve the game when the activist's private benefit is small, $b < (1 - \lambda)\Delta$. The solution to the game with a large private benefit, $b > (1 - \lambda)\Delta$, can be found in the proof to Proposition 2 in the appendix. Again we solve the game from the back.

The activist can only block the reform in case she offers a price p such that shareholders sell with probability $q^*(\cdot, p) \geq (1 - \lambda)$. Further, she only wants to do so if she hedged her position beforehand. Otherwise, the economic exposure of the shares commits her to implement the value-increasing reform (cf. Section 3.2). If the activist does not own a hedge, shareholders know that the activist will implement the reform and demand the "successful

outcome of the vote, they would pay less: the incumbent shareholders would internalize that with positive probability, their acquisition encourages the activist to block the reform, reducing the value of their existing share portfolio.

reform"-price of $v + \Delta$. Thus, when the activist owns no hedge, the reform passes, the activist is indifferent between acquiring the shares or not, and her payoff is 0.

Now, suppose that the activist hedged her shares which commits her to block the reform. Shareholders anticipate this and base their decision whether to sell on the other shareholders' equilibrium decision. Since no shareholder is pivotal with positive probability, it is optimal for any shareholder to sell his share if $p \geq v$ and $q^*(1 - \lambda, p) \geq 1 - \lambda$, such that the reform is blocked, or whenever $p \geq v + \Delta$.[12] Not selling is optimal for the shareholder whenever $p \leq v + \Delta$ and $q^*(1 - \lambda, p) < 1 - \lambda$, such that the reform passes. The activist, on the other hand, has an incentive to pay any price $p \leq \frac{b}{1-\lambda} + v + \Delta$ as long as $q^*(1 - \lambda, p) \geq (1 - \lambda)$ because this provides her with a payoff of

$$V_{hedge}(p) = b + (1 - \lambda)v + \underbrace{(1 - \lambda)\Delta}_{\text{payout hedge}} - (1 - \lambda)p > 0,$$

whereas any price p such that $q^*(1 - \lambda, p) < (1 - \lambda)$ results in a payoff of at most zero. Since a price $p > v + \Delta$ guarantees her $q^*(1 - \lambda, p) \geq 1 - \lambda$, the activist will always choose a price p^* such that $q^*(1 - \lambda, p^*) \geq 1 - \lambda$. This gives rise to a continuum of equilibria in the buying stage when the activist owns a hedge. For any $p^* \in [v, v + \Delta]$ there is an equilibrium in which $q^*(1 - \lambda, p^*) \geq 1 - \lambda$ and $q^*(1 - \lambda, p) < (1 - \lambda)$ for all $p < p^*$. Consequently, the value from owning a hedge is $V_{hedge}(p^*) \in [b, b + (1 - \lambda)\Delta]$.[13]

Combined, there are two possibilities. When the activist did not acquire a hedge, she does not block the reform, and her payoff is 0. In case she did buy a hedge, she always blocks the reform and her payoff is $V_{hedge}(p^*) \in [b, b + (1 - \lambda)\Delta]$.

4.3 Hedging stage

If the activist decides to buy a hedge, she will always block the reform, such that the sellers of the hedge incur a loss of $(1 - \lambda)\Delta$. The rational outside market anticipates this and demands the fair value for the hedge, $(1 - \lambda)\Delta$.

As a result, it only pays for the activist to buy a hedge and block the reform in case the value from owning a hedge is $V_{hedge}(p^*) \geq (1 - \lambda)\Delta$. Since $b < (1 - \lambda)\Delta$, this means that there are two types of equilibria, depending on the equilibrium in the buying stage: when $V_{hedge}(p^*) > (1 - \lambda)\Delta$, the activist acquires the hedge and blocks the reform, whereas if $V_{hedge}(p^*) < (1 - \lambda)\Delta$, she does not buy the hedge and the reform is implemented.

Proposition 2. *Suppose that the activist employs a Hedge&Buy technique,*

- *if $b < (1 - \lambda)\Delta$, there are two types of equilibria:*

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[12]If $q^*(1 - \lambda, p) \leq 1 - \lambda$ and $p \geq v + \Delta$, selling shareholders are not rationed, and any shareholder is better off selling. If $q^*(1 - \lambda, p) \geq 1 - \lambda$ the reform is blocked which is compatible with any price $p \geq v$.

[13]Note that $p^* \leq v + \Delta$ because at any $p > v + \Delta$, $q^*(1 - \lambda, p) = 1$ such that the activist is strictly better off lowering her offer to $p' = \frac{p+v+\Delta}{2}$.

1. *either the activist buys the hedge for $(1-\lambda)\Delta$, acquires $(1-\lambda)$ shares, and blocks the reform. In this case, the firm value remains at v. Shares trade at prices between v and $v + \frac{b}{1-\lambda}$, such that the total loss incurred by shareholders is between $\Delta - b$ and Δ. The activist's profit is between b and 0.*

2. *or the activist does not buy a hedge, the reform passes and the firm value increases to $v + \Delta$. The shareholders' and the activist's payoffs are unchanged.*

- *if $b > (1-\lambda)\Delta$, the reform is blocked and the firm value remains at v in any equilibrium. Shares trade at prices between v and $v + \Delta$, such that the total loss incurred by shareholders is between $\Delta - (1-\lambda)\Delta$ and Δ. The activist's profit is between b and $b - (1-\lambda)\Delta$.*

Since the hedging market anticipates the activist's actions, it charges the correct fair value for the hedge. Thus, the activist does not benefit directly from hedging her shares (cf. equation (1)). Nevertheless, acquiring a hedge before the shares can be beneficial for her because it ensures that the activist never holds a long position. Whereas in a Buy&Hedge technique the interim ownership of the shares commits the activist with a low private value, $b < (1-\lambda)\Delta$, to pass the reform, buying the hedge first lifts this commitment. This gives rise to two types of self-fulfilling equilibria when $b < (1-\lambda)\Delta$.

In both equilibria, conditional on owning a hedge, the activist offers a price p^* such that she acquires the blocking minority of shares, $q^*(1-\lambda, p^*) \geq 1-\lambda$. Thus, if the activist buys the hedge and prevents the reform, her ex ante payoff is

$$(1-\lambda)v + b - (1-\lambda)p^* + \underbrace{(1-\lambda)\Delta}_{\text{payoff hedge}} - \underbrace{(1-\lambda)\Delta}_{\text{price hedge}}. \tag{1}$$

However, only when $p^* < v + \frac{b}{1-\lambda}$, it pays for the activist to buy the hedge and the blocking minority of shares. This is the first type of equilibrium. In the other type of equilibrium, $p^* > v + \frac{b}{1-\lambda}$, such that the activist's profits from acquiring the shares and blocking the reform do not suffice to cover the cost of the hedge, preventing her from doing so.

When $b > (1-\lambda)\Delta$, the case we mostly ignored in this section, the result is unchanged relative to the result of the Buy&Hedge technique. Since the activist has an incentive to prevent the reform independent of a hedge, the reform is blocked in any equilibrium, and the price the activist pays is $p^* \in [v, v + \Delta]$, as in Section 3.

5 Vote Trading techniques

Last, we turn to the class of decoupling techniques, which are equivalent to the outright trade of voting rights, such as borrowing shares over the record date via the equity lending market. A more thorough analysis with a finite number of shareholders can be found in

Speit & Voss (2020). Here, we keep the analysis Vote Trading techniques short and treat it primarily as a benchmark.

Suppose that before the record date, the activist can make a public take-it-or-leave-it offer $p \in \mathbb{R}_+$ per voting right.[14] Shareholders observe the offer and decide with which probability to sell their voting right, $q : \mathbb{R}_+ \to [0, 1]$.

Appendix A.2 gives an explicit overview of the payoffs.

Proposition 3. *In any equilibrium, the activist offers* $p^* = 0$*, shareholders sell with probability* $q^*(0) \geq 1 - \lambda$ *and the activist always blocks the reform.*

When the activist employs a Vote Trading technique, the economic exposure never leaves the original shareholders. Hence, the activist only needs to compensate shareholders for their voting rights. Since there are many shareholders, they correctly anticipate that their individual sale is not going to change the outcome of the vote, such that shareholders do not value their voting rights—the curse of pivotality. Thus, they are willing to sell their voting rights at any positive price. The activist, on the other hand, never assumes economic exposure herself, making it optimal for her to block the reform, independent of her private value $b > 0$. As a result, the activist can always acquire the voting rights for free and block the reform.

6   Dual-class structures

Up to now, we assumed that all shares are identical voting shares. To also cover dual-class structures, suppose there are $\phi \in (0, 1]$ voting and $1 - \phi$ non-voting shares. Every shareholder holds either one or the other. Given the dual-class structure, the activist can block the reform if she controls $(1 - \lambda)\phi$ shares.

Corollary 1. *All previous results remain valid for dual-class structures when replacing* $(1 - \lambda)$ *by* $(1 - \lambda)\phi$*.*

The proofs hold verbatim, replacing $(1-\lambda)$ by $(1-\lambda)\phi$. In dual-class structures, holders of non-voting shares get no say in the outcome of the vote, such that the inefficiency of voting increases: if $(1 - \lambda)\phi$ shareholders prefer a particular course of action, they ignore the effect on the $(1 - \phi) + \lambda\phi$ minority. As a result, Buy&Hedge techniques, as well as the first type of equilibria in Hedge&Buy techniques, remain constrained efficient given the inefficiency of voting in dual-class structures. Still, the private benefit required for a hostile activist to profit from blocking the reform decreases from $(1 - \lambda)\Delta$ to $\phi(1 - \lambda)\Delta$. Further, the total compensation to shareholders decreases. Vote Trading techniques, on the other hand, are unaffected by dual-class structures.[15]

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[14]The activist might restrict her offer to $(1 - \lambda)$ voting rights, but this does not affect the results.

[15]In the context of corporate takeovers, Hart (1995) points out that dual-class structures are irrelevant if voting rights and cash flow claims can be unbundled.

Note that our analysis of Buy&Hedge techniques concluded that hedging after the acquisition of shares is never strictly profitable, such that the Buy&Hedge techniques are, essentially, "Buy" techniques. Thereby, the results for the Buy&Hedge techniques also cover the simple form of hostile activism in which the activist blocks the reform through the acquisition of (few) voting shares.

7   Empirical implications

Our model predicts that the (implicit) prices for voting rights vary substantially, depending on the decoupling technique employed. When voting rights are acquired via a Vote Trading technique, prices are zero. This is in line with the empirical evidence from the equity lending market, which finds a significant trade volume and close to zero prices (Christofferson et al. 2007).[16] Turning to Buy&Hedge and Hedge&Buy techniques, when $b < (1 - \lambda)\Delta$, Buy&Hedge techniques are not profitable for the activist. Depending on the equilibrium selection, however, the activist may be able to block the reform using a Hedge&Buy technique. In this case, the implicit price of a voting right, i.e. the difference between the price offered by the activist and the value of the cash flow entitlement, is between 0 and $\frac{b}{1-\lambda}$. When $b > (1 - \lambda)\Delta$, Buy&Hedge techniques as well as Hedge&Buy techniques, allow the activist to block the reform. Here, the implicit price of a voting right is between 0 and Δ, depending on the equilibrium selected. The positive prices are consistent with the findings by Kalay et al. (2014) who detect a spike in the options trading around the record date, and find that the implicit prices for voting rights derived from options are strictly positive.

Moreover, our results show that hostile activism via Buy&Hedge techniques and Hedge&Buy techniques are particularly likely when λ is large, i.e., when the reform requires a supermajority. This is in line with most of the cases collected by Hu & Black (2015), which predominantly involved supermajority decisions.

8   Conclusion

Our analysis focuses on hostile activism in an environment without hidden motives. Thereby, we seek to bound the threat of hostile activism through decoupling techniques and abstract from any inefficiencies stemming from asymmetric information.[17] We find that the three

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[16]Christofferson et al. (2007) attribute their findings to the supposedly common interests of shareholders. However, this explanation seems to be at odds with the evidence by Hu & Black (2015). As we argue more extensively in Speit & Voss (2020), low prices are the result of a market failure in the market for voting rights, and no sign of aligned interests.

[17]Whereas activists with an aligned agenda have ample opportunity to communicate and verify their best interests to implement value-increasing reforms, hostile activists must rely on methods that allow them to gain control of the company without bearing the full economic costs. Thus, while decoupling may also aid friendly activists, hostile activists set the benchmark for the efficiency loss from decoupling, cf. Speit & Voss (2020).

classes of decoupling techniques can be ranked in terms of their implications on shareholder and overall welfare as

$$\text{Buy\&Hedge} \succ \text{Hedge\&Buy} \succ \text{Vote Trading}.$$

When $b < (1 - \lambda)\Delta$, the activist cannot use a Buy&Hedge technique to block the reform, such that overall welfare is maximized. Hedge&Buy techniques, on the other hand, have two types of equilibria: equilibria, in which the reform passes, reducing shareholder and overall welfare, and equilibria in which the reform is blocked. Thus, the result is ambiguous and relies on equilibrium selection. Last, Vote Trading techniques always result in a blocked reform and zero transfer to the shareholders. Therefore, this class of decoupling techniques is the worst in terms of shareholder and overall welfare.

When $b > (1 - \lambda)\Delta$, all three classes of decoupling techniques allow the activist to block the reform. However, Vote Trading techniques guarantee that there is zero transfer from the activist to the shareholders, whereas Buy&Hedge, as well as Hedge&Buy techniques, can result in strictly positive transfers.

By ranking the three classes of decoupling techniques, we provide insights into which current and future transactions need the most rigorous monitoring and, potentially, regulation.[18] Further, we find that dual-class structures increase the threat of hostile activism via Buy&Hedge and Hedge&Buy techniques, whereas Vote Trading techniques, already least efficient, remain unaffected. Last, we note that simple majority rules are most robust to hostile activism via Buy&Hedge and Hedge&Buy techniques, by maximizing the constrained-efficient parameter regions and minimize the loss to shareholders, independent of the labeling of the options.

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[18]For instance, our results show that share-blocking systems which prevent one type of Buy&Hedge technique have no benefit when there is no asymmetric information.

A Payoffs

A.1 Buy&Hedge and Hedge&Buy techniques

Shareholders: When the activist offers p per share, a shareholder who sells his share and is not rationed receives a payoff of p. If the shareholder is rationed or rejects the offer, his payoff is equal to the firm value: if the reform is implemented it is $v + \Delta$, if the status quo remains it is v.

Activist: If the activist does not buy a hedge, offers p per share, and receives $q(p)$ of the shares, her payoff is

$$\min\{q(p), 1 - \lambda\}(v - p) + b,$$

in case she blocks the reform (which requires $q(p) \geq 1 - \lambda$), and

$$\min\{q(p), 1 - \lambda\}(v + \Delta - p),$$

when she does not block the reform.

If the activist buys a hedge for p_h, offers p per share, and receives $q(p)$ of the shares, her payoff is

$$\min\{q(p), 1 - \lambda\}(v - p) + b + (1 - \lambda)\Delta - p_h,$$

when she blocks the reform (which requires $q(p) \geq 1 - \lambda$), and

$$\min\{q(p), 1 - \lambda\}(v + \Delta - p) - p_h,$$

in case she does not.

Note that in the second stage of the game, either the cost of the hedge, p_h, or the cost of the shares, $p \min\{q(p), 1 - \lambda\}$, are sunk.

A.2 Vote Trading techniques

Shareholders: When the activist offers p per voting right, a shareholder who sells his voting right and is not rationed receives a payoff of p plus the firm value: if the reform is implemented it is $p + v + \Delta$, if the status quo remains it its $p + v$. If the shareholder is rationed or rejects the offer, his payoff is equal to the firm value v or $v + \Delta$, respectively.

Activist: If the activist offers p per voting right and receives $q(p)$ of the voting rights, her payoff is

$$b - q(p)p,$$

when she blocks the reform (which requires that $q(p) \geq 1 - \lambda$), and

$$-q(p)p,$$

in in case she does not.

B   Proofs

B.1   Proof of Proposition 1

The case in which $b < (1 - \lambda)\Delta$ is covered in the body of the text.

Since the outside market charges the fair value for the hedge, the activist is indifferent between hedging her position and not, and because $b > (1 - \lambda)\Delta$, she always blocks the reform. Shareholders anticipate this. Since no shareholder is pivotal, they are willing to sell their shares for v if they anticipate that the activist will block the reform, $q^*(p) \geq 1 - \lambda$, or require $v + \Delta$ if they anticipate that the activist will not block the reform, $q^*(p) < 1 - \lambda$. This means that when $q^*(p) < 1 - \lambda$ but $p \leq v + \Delta$, they are (weakly) better off not selling, such that $q^*(p) \leq 1 - \lambda$ is a best response. If $q^*(p) \geq 1 - \lambda$ and $p \geq v$, they are (weakly) better off selling, such that $q^*(p) \geq 1 - \lambda$ is a best response.

Since $b > (1 - \lambda)\Delta$, the activist makes a strict profit by offering p marginally above $v + \Delta$, where $q^*(p) = 1$. Therefore, it cannot be that the equilibrium price p^* is such that $q^*(p^*) < 1 - \lambda$ and the activist makes (weakly) negative profits. Further, it has to hold that $p^* \leq v + \Delta$. Otherwise, $p' = \frac{p^* + v + \Delta}{2}$ would always be a profitable deviation. Thus, the equilibrium price has to be $p^* \leq v + \Delta$ and $q^*(p^*) \geq 1 - \lambda$, which implies that $p^* \geq v$.

The continuum of equilibria can be constructed by fixing any $p^* \in [v, v + \Delta]$. If $q^*(p^*) = 1$, and $p^* \geq v$, then selling is a best response for shareholders. For all $p < p^*$ and $q^*(p) = 0$, not selling is a best response. Since the activist chooses the lowest p such that $q^*(p) \geq 1 - \lambda$, the result follows.

B.2   Proof of Proposition 2

The case in which $b < (1 - \lambda)\Delta$ is covered in the body of the text.

If $b > (1 - \lambda)\Delta$ and the activist acquired $(1 - \lambda)$ shares, the activist always blocks the reform, independent of any hedge. Let her payoff from the buying stage be $W_{hedge}(p_h^*)$ in case she owns a hedge and $W_{nohedge}(p_{nh}^*)$ in case she does not own a hedge.

If p^* is such that $q^*(\cdot, p^*) \geq 1 - \lambda$, then the activist's payoff from paying p^* is $W_{hedge}(p^*) = V_{hedge}(p^*)$ and $W_{nohedge}(p^*) = V_{hedge}(p^*) - (1 - \lambda)\Delta$. Note that for p marginally above $v + \Delta$, it must be true that $q^*(\cdot, p) = 1$ such that $W_{hedge}(p) > (1 - \lambda)\Delta$, and $W_{nohedge}(p) > 0$. This means that in equilibrium, it has to hold for $p^* \in \{p_h^*, p_{nh}^*\}$ that $q^*(\cdot, p^*) \geq 1 - \lambda$. Otherwise, the activist would make a (weakly) negative profit and could profitably deviate to a p marginally above $v + \Delta$. Further, because $p > v + \Delta$ guarantees $q^*(\cdot, p) = 1$, it follows that $p^* \leq v + \Delta$. Otherwise, the activist could always lower her offer to $p' = \frac{p^* + v + \Delta}{2}$ and

achieve the same outcome at lower cost. Thus, the equilibrium price has to be $p^* \leq v + \Delta$ and $q^*(\cdot, p^*) \geq 1 - \lambda$, which implies that $p^* \geq v$.

For any $p^* \in [v, v+\Delta]$ there is an equilibrium in which $q^*(\cdot, p^*) \geq 1-\lambda$ and $q^*(\cdot, p) < 1-\lambda$ for all $p < p^* \leq v + \Delta$. Given that $p \leq v + \Delta$, if $q^*(\cdot, p) < 1-\lambda$, shareholders anticipate that the reform will pass and are (weakly) better off not selling. If $p \geq v$ and $q^*(\cdot, p) \geq 1 - \lambda$, shareholders anticipate that the reform will pass and are (weakly) better off selling. As a result, there is a continuum of continuation payoffs: $W_{hedge}(p_h^*) \in [b, b + (1 - \lambda)\Delta]$ and $W_{nohedge}(p_{nh}^*) \in [b - (1 - \lambda)\Delta, b]$.

The outside market correctly anticipates that the activist blocks the reform and charges the fair value $(1 - \lambda)\Delta$ for the hedge. The activist buys it, depending on the value of the continuation game (the hedge has no direct effect on the activist's payoff, but may affect it through equilibrium selection in the continuation game). Taken together, the payoff of the activist is between $b - (1 - \lambda)\Delta$ and b.

B.3   Proof of Proposition 3

Since no shareholder is pivotal with positive probability, the vote's outcome is independent of any individual shareholder's sale. As a result, no shareholder values his voting right, such that $q^*(p) = 1$ for any $p > 0$. It follows that $p^* = 0$. Otherwise, $p' = \frac{p^*}{2} > 0$ would be a profitable deviation for the activist because p' would also guarantee her the voting right, $q^*(p') = 1$, but at a lower cost. Further, $q^*(0) \geq 1 - \lambda$. If it was the case that $q^*(0) < (1 - \lambda)$, the activist would make zero profits. Hence, she could profitably deviate to a price p marginally above 0 at which $q^*(p) = 1$, securing her all the voting rights at essentially zero cost, thereby guaranteeing her a profit.

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