# Institutional Investors' Impact on the Outcome of Freezeout Tender Offers

by

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## Abstract

We study institutional investors' impact on going private tender offers by controlling shareholders ("freezeout" offers) because these are occasions where engagement-restraining considerations such as keeping the long term relations with the firm are less relevant. Further, we examine data from Israel, where regulation over freezeout offers is loose and where (consequently?) about half of the offers are rejected. We find that in accepted offers, the offer premium increases with institutional investor holdings. Institutional ownership also increases the likelihood that the offer is rejected. However, in rejected offers, institutional investors do not appear to add to public value. This complex evidence is consistent with institutional investors acting as strategic bargaining agents.

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We study institutional investors' impact on going private tender offers by controlling shareholders ("freezeout" offers) because these are occasions where engagement-restraining considerations such as keeping the long term relations with the firm are less relevant. Further, we examine data from Israel, where regulation over freezeout offers is loose and where (consequently?) about half of the offers are rejected. We find that in accepted offers, the offer premium increases with institutional investor holdings. Institutional ownership also increases the likelihood that the offer is rejected. However, in rejected offers, institutional investors do not appear to add to public value. This complex evidence is consistent with institutional investors acting as strategic bargaining agents.



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*Keywords:* Freeze-out transactions; Institutional Investors activism; bargaining with controlling shareholders; tender offers.

# 1. Introduction

Firms with controlling shareholders are pervasive around the world and pose to regulators a host of agency problems. The main challenge is that some controlling shareholders tend to extract private benefits from the firm at the expense of other shareholders – see Dyck and Zingales (2004). Public shareholders expropriation is carried out via self-dealing and other forms of tunneling by the controlling shareholders – see Johnson, Laporta, Lopez-de-Silanes and Shleifer (2000) and Atanasov, Black and Ciccotello (2011) for definitions, and Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) for some empirical evidence.

Two factors facilitate private benefits extraction. First, public shareholders are typically dispersed, hence it is not economical for them to monitor the firm. In contrast, controlling shareholders have large ownership stakes and a natural interest in the firm, granting them the leadership role and disproportional power over firm's business decisions. Second, as insiders, controlling shareholders possess superior information over firm's business conditions and future opportunities.

The main regulatory protection of public shareholders is granting them some special rights. For example, it is generally required that firm transactions with controlling shareholders be confirmed by various firm board committees and by non-interested public shareholders. One of the reasons for such regulations is the hope that institutional investors will examine every resolution and can serve as representatives or unbiased professional gatekeepers for the rest of the public investors. Thus, in many economies around the globe institutional investors are required by law to vote (and sometimes even to disclose to the public their vote) on "agency sensitive" proposals in closely-held firm.

The voluminous academic literature on institutional investors remains unclear as to what extent institutional investors exert due efforts to monitor and discipline publicly-traded companies, upholding and promoting "small investors'" interests. On one hand, in practice, some institutional investors commonly raise corporate governance and sustainability issues before firm management and its Board of Directors (McCahery, Sautner, and Starks, 2016). Hence, some institutional investors appear as alert gatekeepers. On the other hand, it can be argued that institutional investors are preoccupied with their principal role of achieving high returns and are largely indifferent to and incompetent in corporate governance issues. Consistent with this view, professional activists and private-equity funds emerged as a response to the lax passive conduct of institutional investors. It appears that institutional investors are not avid protectors of the public and may have other motives and considerations.

We contribute to the debate by examining institutional investor response in the extreme situation of freeze-out tender offers. In these deals the controlling shareholders issue a tender offer to all public shareholders proposing to buy all public shares, and if successful, they take the firm private. Freeze-out transactions are suspect as tunneling events because it is the controlling shareholders who initiate them and because they (the controlling shareholders) typically possess inside information. In some sense freeze-out transactions are large scale insider trading. Atanasov et al (2011) classify freeze-outs as potential equity tunneling. i.e., as a change in the controlling shareholders' share in the firm at the expense of minority shareholders.[1]

[1] Evidence on freeze-out offers is scarce. However, Atanasov, Black, Ciccotello and Gyoshev (2010) document how in Bulgaria a change in the law increased the median freeze-out offers premium from about zero to 42%. Apparently, before the Bulgarian law reform, freezeout offers were grossly exploitive.

We expect institutional investors to act relatively decisively in freeze-out transactions because of several reasons. First, the transaction is big and significant to all shareholders. Second, as a terminal deal, motives like maintaining good relations with the firm, which regularly inhibit or restrain institutional engagement, disappear, as the firm is about to get delisted from the exchanges. Last, these transactions are probably at the focus of public and regulatory attention, thus for public image reasons "responsible" institutional investors must opine and react.

Our sample comprises 201 freeze-out tender offers made by controlling shareholders of Israeli publicly traded firms during 2000 – 2016. Israeli regulation of tender offers is lax. Unlike the U.S., in Israel there is no board approval or even a board discussion requirement for tender offers. Controlling shareholders make the offer directly to the public. Disclosure requirements are likewise loose. Besides the offer price, the tender offer provides only information about the controlling shareholders' holdings and several statistics of the recent stock price record. In such a free unregulated environment, it is easy for controlling shareholders to make freeze-out offers and some of them may even attempt exploitive offers to the public.

The possibility of tunneling via opportunistic exploitive freeze-out offers challenges institutional investors in Israel further than in the U.S. Thus, in our sample the institutional investor problem is accentuated. Perhaps in such extreme situations institutional investors' actions in defense of the public can be observed more clearly.

We find that institutional investor holdings increase accepted offers' premium. There is very little information about prior negotiations between controlling shareholders and large public shareholders such as institutional investors. Nevertheless, with or without 'behind the scene" discussions with institutional investors, the end result

is that in executed freezeout transactions (accepted offers), public shareholders receive a more generous premium when institutional investors hold the stock.

Holdings by institutional investors also increase the likelihood of rejection of freezeout offers. Possibly, the professional institutional investors filter out some exploitive freezeout offers. However, when we examine the stock returns of firms with rejected offers, it appears that holdings by institutional investors do not improve the quality of the rejection decision. The mean cumulative excess return of stocks with rejected offers in the period from offer announcement to half a year after the offer rejection is slightly higher when institutional investors do not hold the stock. We interpret this result as suggestive of a strategic repeated-games-induced behavior of institutional investors.

Section 2 provides a concise background on institutional investors' activism and engagement, and presents three competing hypotheses. Section 3 describes the sample and data. Section 4 reports our results. Section 5 discusses the results, and Section 6 concludes.

## 2. Institutional Investor Impact on Going-Private Tender Offers

### 2.1. Previous Evidence on Institutional Investor Engagement

The academic literature generally accepts that institutional investors are more informed (Sias, and Starks, 1997; Nagel 2005; McCahery, Sautner, and Starks, 2016), help to diminish the information asymmetry (Boone, and White, 2015), and engage in some monitoring activities (Callen, and Fang, 2013). Institutional investors also tend to suffer less, than the public at large, from behavioral biases (Barber, and Odean, 2008; Kaustia, 2010; Chang, Solomon, and Westerfield, 2016).

However, it is not easy to identify any significant impact of institutional investors on firm governance. The reason for it is that there exist engagement-mitigating factors. First and foremost, institutional investors specialize and are competing with each other on their portfolio returns. Achieving high returns absorbs all their time, attention and energy. Corporate governance issues are typically less urgent (i.e., with a longer-term perspective), or require some activist specialization which institutional investors lack. Engagement may not fit institutional investors. This also explains why most institutional investors prefer to sell firm shares ("exit") rather than confront management. Second, some institutional investors want to keep positive relations with the portfolio firm management in order to obtain some responses from it on regular days and when firm-specific events occur. Hence, any criticism of management is moderated.

Recent research uncovers however some reliable evidence on institutional investors' engagement and on institutional investors' non-trivial impact. Aggarwal, et al. (2011) show that an increase in institutional ownership induces subsequent improvements in firm-level governance. Chhaochharia, et al. (2012) report that local institutional ownership (from the same state) is associated with better corporate governance. It appears that local institutional ownership facilitates engagement that improves corporate governance and firm profitability. Appel, Gormley and Keim (2016) find that large institutional investors' presence is associated with improved governance (fewer takeover defenses, for example). Liu, Low, Masulis and Zhang (2017) demonstrate that when institutional investors are distracted from board monitoring, they are less likely to discipline ineffective firm directors. Finally, Appel, Gormley and Keim (2017) present evidence that true activists take bolder actions in firms where passive institutional ownership is relatively large.

Recent surveys of institutional investors such as McCahery, Sautner, and Starks (2016) highlight institutional investor attitude and positions towards engagement and activism. Most institutional investors prefer selling their shares ("exit") as a response and threat to deficient corporate governance companies. However, "voice" is also customary, as some institutional investors are voting against firm management and/or expressing their concerns behind the scenes by engaging management privately.

Closer to our study, the impact of institutional investors should manifest itself more clearly in significant firm decisions. Gaspar, Massa, and Matos (2005) find that target firms held by institutional investors extract on average a 3% higher premium in mergers and acquisitions. Other studies on mergers and acquisitions also find a significant impact of institutional investors. For example, Chen, Harford, and Li (2007) show that holdings by independent long-term institutions are positively associated with post-merger performance. Moreover, the presence of these institutions makes withdrawal of bad proposals more likely.

### 2.2. Freezeout Tender Offers

The financial and legal literature has studied various aspects of going private transactions. Focusing on companies incorporated in Delaware, for example, Subramanian (2007) studies differences in minority protection across transaction structures. He shows that premiums in going-private mergers in the U.S. tend to be higher than those of going-private tender offers (where judicial review tends to be less demanding). However, following the Delaware courts' adoption of a unified approach to freeze-out tender offers and mergers in 2005, Restrepo and Subramanian (2015) find that in the post-2005 era (since June 6, 2005) deal outcomes have converged.

Subramanian (2005) argues that freezeout deals (going-private transactions initiated by controlling shareholders) can become a principal channel for tunneling. On the one hand, these transactions can serve legitimate business purposes. For example, buying out minority shareholders can facilitate synergies with other companies affiliated with the controlling shareholder. Further, delisting the company can save the compliance costs associated with being a publicly-traded company subject to onerous regulation, and it can conceal sensitive information about the firm from competitors' and the public.[2] On the other hand, even when there is a genuine business rationale for taking the firm private, the controlling shareholders can exploit their informational advantage to buy minority shares at a price that does not reflect their fair value (Bebchuk, and Kahan, 2000).

The law protects public investors from the potential exploitation of freezeout transaction. In the United States, freeze-out transactions require the firm's board of directors' involvement. If the transaction is structured as a tender offer, the board is required to render its opinion on the transaction and it will normally rely on a fairness opinion. Unlike the U.S., going private tender offers in Israel do not require any board participation or even discussion. Moreover, the regime is considerably lax on controlling shareholders. Controlling shareholders making a freeze-out tender offer have no extensive disclosure requirements, and take their offer *directly* to minority investors.[3] The law allows controlling shareholders to take the company private if at

[2] Note that going-private transactions initiated by controlling shareholders are unlikely to be motivated by the desire to replace existing management because the controller is already in charge and will maintain its control over the firm.

[3] In contrast, in a going-private merger in Israel, the controlling shareholders are legally compelled to negotiate the transaction with the board. The board, in turn, normally relies on a fairness opinion to approve the transaction. The transaction is also subject to shareholders' approval, and can take place only if a majority of minority shareholders approve. It could become subject to judicial review, should minority shareholders bring a lawsuit accusing the directors of breaching their fiduciary duties. Thus, the more common transaction structure for going private transactions in Israel is the freeze-out tender offer.

the end of the offering period controlling shareholders own at least 95% of the company's shares.

2.3. Three Competing Hypotheses

It is interesting to examine the alternative approaches to institutional investor activism. The first view is that institutional investors are preoccupied with achieving high returns on their portfolios. Thus, they regularly pay little attention to corporate governance issues and are passive even regarding large corporate events such as freezeout offers. This fits as a Null hypothesis:

***Hypothesis 1:*** Institutional investor holdings has no impact on the outcome of freezeout tender offers.

The above Null hypothesis appears a bit extreme. After all, freezeout tender offers are relatively big deals that justify institutional investor attention. Such large deals are probably analyzed by institutional investors who hold the firm, and most of them probably opine and react. Opposing a freezeout deal or its terms is more palatable also because engagement-restraining factors such as keeping the long-term relations with the firm, become less relevant.

However, institutional investors' perspective and criteria for evaluating freezeout offers remain unclear. A common approach argues that institutional investors analyze each freezeout offer and if it is "fair" ("unfair") they approve (disapprove) it and bid (don't bid) their shares. Institutional investors with their professional analytic

tools dissect each freezeout deal and provide a rational response to it. This can be phrased as

***Hypothesis 2:*** Institutional investor provide an unbiased rational response to each freezeout offer.

This hypothesis portrays institutional investors as public gatekeepers or even saviors. In firms where institutional holdings are relatively high, exploitive offers would not pass. Further, accepted offers' prices would typically be fair. This is the viewpoint legislators often adopt. Regulators rely on institutional investors as efficient market judges of the character and merit of each freezeout offer.

Hypothesis 2 has several implications. First, if exploitive freezeout offers exist, then institutional investors' ownership would filter out the rotten apples and accept only fair or even generous (to the public) offers. Consequently, accepted offers' premia are higher when institutional investors hold the stock and premia may increase with institutional holdings. This suggests

***Hypothesis 2a:*** On average, accepted offers' premia increase with institutional holdings.

Higher institutional ownership may also increase the frequency of offer rejection, as some unfit offers would be identified and rejected by institutional investors. This prediction is however tenuous because controlling shareholders may know that in general they cannot fool institutional investors and may be deterred from making unfair offers. However, since in Israel, our sample origin, making tender offers is easy and relatively cheap, we propose

***Hypothesis 2b:*** Higher institutional ownership increases the frequency of offer rejection.

Hypothesis 2 posting institutional investors as efficient gatekeepers also suggests that on average rejected offers deserved rejection because they were exploitive. Exploitive offers may be based on positive inside information about the firm. If controlling shareholders were trying to buy the firm from the public before this information becomes public, and if they fail because of institutional investors' resistance, then after an offer is rejected the firm stock should not reverse to its pre-offer price and would exhibit higher cumulative return than the offer premium. The implication is:

***Hypothesis 2c:*** On average, stock price does not retreat after the offer is rejected and its cumulative excess return exceeds the offer premium.

The concrete and rational institutional investor view of Hypothesis 2 may be a bit simplistic. Institutional investors and controlling shareholders are engaged in repeated interactions. In practice, it is a repeated game framework where institutional investors may be acting strategically. In this setting, the institutional investors' long-term reputational concerns may be more dominant than the simple concrete decision on a specific offer. In short, institutional investors may have additional considerations besides the rational evaluation on whether or not the offer is fair. Black (1992) contends that the institutional investor long-term reputational concerns gives rise to incentives that differ fundamentally from those of isolated transactions. Hence, the sophisticated institutional investor approach suggests:

***Hypothesis 3:*** Institutional investor provide a strategic response to freezeout offers.

In general, controlling shareholders can easily observe previous actions taken by institutional investors in similar cases. Thus, in order to assure due respect by controlling shareholders, institutional investors may occasionally decide to demonstrate

sheer arbitrary power. For example, in our case of freezeout offers, institutional investors may strategically and systematically decline fair offers in order to extract from controlling shareholders a higher fraction of the deal surplus.

The strategic institutional investor hypothesis (Hypothesis 3) agrees with most of the predictions of Hypothesis 2. Similarly to Hypothesis 2a, it (Hypothesis 3) predicts higher premia in accepted freezeout offers when institutional investors hold the company. This is because controlling shareholders know that in order for the offer to succeed they have to offer higher premia when institutional investors hold the stock.

Hypothesis 2b is also consistent with Hypothesis 3. Institutional ownership increases offer rejection rate because this is how institutions want to appear. According to Hypothesis 3 it is essential for institutional investors to demonstrate their power and object even fair deals, which increases offer rejection rate when institutional investors are present.

The difference between Hypothesis 2 and 3 is in the stock return predictions. Hypothesis 2c argues that institutional investors make each rejection decision separately and aspire that it would be rational. As a result, on average, investors do not lose from rejected offers, as the cumulative stock return eventually exceeds the offer premium. In contrast, Hypothesis 3 allows for rejections of fair or even slightly beneficial offers and may result in a mean cumulative stock return below the offered premium. According to Hypothesis 3, institutional investors behave strategically. Hence, they are willing to lose some in rejected freezeout offers in order to gain on accepted offers. Such a policy is rational if the extra return on accepted offers more than offsets the loss incurred as a consequence of arbitrary rejections.

In sum of the above discussion, the set of testable propositions implied by Hypothesis 3 are:

***Hypothesis 3a:*** On average, accepted offers' premia increase with institutional holdings;

***Hypothesis 3b:*** Higher institutional ownership increases the frequency of offer rejection;

and,

***Hypothesis 3c:*** On average, stock price may or may not retreat after the offer is rejected and the stock cumulative excess return may or may not exceed the offer premium.

2.4. Contribution of the study

We contribute to the literature on institutional investors' impact by examining an extreme situation (freezeout tender offers) in an extremely lax regulatory environment (Israel). This endeavor yields several new interesting results.

We also offer the first attempt to test the hypothesis that institutional investors' decisions are not based on simple case by case rational analysis of each issue they face. Rather, institutional investors engage in continuous repeated-game contests with controlling shareholders, and must act strategically. This possible strategic behavior of institutional investors may contrast or complement the traditional regulatory favored thesis that in every deal institutional investors take a concrete rational decision, i.e., defend other small shareholders.

## 3. Sample

### 3.1. Sample construction

We search Maya (the web site of Tel Aviv Stock Exchange that assembles all public companies announcements) for freezeout offers, and find 274 such offers in 2000-2016. From offer announcements we extract information about: the offer price, the offer deadline, and the controlling shareholders' holdings in the company on the eve of the offer. If the offer price is revised before the offer deadline, we use the revised offer price.

The Tel Aviv Stock Exchange web site is also the source of our stock return and trading volume data, and company industry classification. Market capitalization, and the book value of equity and debt are from Super-Analyst (a local data retailer), and institutional investors' holdings in the companies is from Praedicta (a local data vendor).

From the initial sample we exclude companies with zero trading volume during month preceding the offer (43 cases) because for these offers the premia cannot be credibly calculated. We also omit 30 offers in which the offer price is below the recent stock price. (We compare offer price to stock price on day -42, day -6, and day -1 before the offer announcement, and only if offer price is below stock price in all these dates we omit the offer). Offers with consistent negative premia are probably offers for firms in distress that need restructuring, hence they are different from regular tender offers. Our final sample consists of 201 freezeout offers in 170 different firms. (Hence, 31 of the offers are repeated offers.)

The sample does not represent well the industry distribution of Tel Aviv Stock Exchange firms. Sample industry distribution is as follows (in parentheses we report the Tel Aviv Stock Exchange corresponding figures): merchandising – 31% (14%),

manufacturing – 22% (15%), real estate – 21% (21%), investment and holding – 18% (11%). Interestingly, our sample does not include any technology firm, and has relatively few banks and financial services firms.

Finally, we tried to augment the data by searching merger proposals in Israel during the 2000-2016 period. We find 38 merger proposals by controlling shareholders that are essentially going-private attempts (reverse triangular mergers). The low frequency of going-private mergers, relative to freezeout tender offers, probably reflects the fact that in Israel the regulatory requirements governing going-private mergers are much tighter. In addition, the acceptance rate of these mergers is 92% compared to a 52% acceptance rate in freezeout tender offers. Thus, going-private mergers appear different than freezeout offers, and are not added to our sample.

### 3.2. Descriptive statistics

Table 1 presents descriptive statistics for our freezeout sample. The average market capitalization of all sample firms is 192 million New Israeli Shekels (NIS), which given an average exchange rate of about 4 NIS per U.S. Dollar, equals about 48 million Dollars. The mean Tobin's Q, calculated as the ratio of market values of equity and debt to the book value of total assets, is 1.03. Controlling shareholder holdings average 82.1%, and institutional investors hold, on average, 4.3% of the firms' equity at the end of the quarter preceding the offer.

(Insert Table 1 about here)

Table 1 also reviews freezeout offer attributes and success rate. The mean offer premium relative to the stock price six trading days prior to the tender offer announcement is 20.0% (the median premium is 16.6%). Figure 1 depicts the distribution of the freezeout offer premiums. The sample includes eight offers with

negative premia and one offer with above 100% premia. In our empirical tests we will winsorize the premium data.

(Insert Figure 1 about here)

The mean time given to shareholders to tender their stock is 23 days (median is 19 days). Interestingly, the sample includes 31 repeated offers, 27 of them second attempts by controlling shareholders to take the firm private, and 4 are third attempts.[4]

However, the most noteworthy result in Table 1 is the relatively large proportion of rejected offers. The overall failure rate is 43%, and when we restrict ourselves to the first offers only, this figure climbs to 48%. These failure rates are large relative to existing evidence from other economies. Restrepo and Subramanian (2015) examine failure rates in the U.S. in 2001-2012. They document rejection rates for freezeout tender offers of between 12.5% in the pre Cox-ruling era to 23% after it. Bøhren and Krosvik (2013) document an 11% rejection rate Norway in 1999-2010.

We suspect that the loose regulation of freezeout offers in Israel is responsible for the relatively high failure rate. It is cheap for controlling shareholders in Israel to submit a freezeout offer (no board approval and very little disclosure). Thus, controlling shareholders might attempt a freezeout offer even when its acceptance chances are uncertain. Furthermore, in such a loose regulatory environment, some controlling shareholders might attempt exploitive offers. Public investors in Israel recognize these possibly wrong incentives, and are more suspicious and resentful towards freezeout offers.

[4] The median time between first and second tender offers is about 6.5 months.

The relatively wild environment of freezeout offers in Israel poses a real challenge to Israeli institutional investors. In such a challenging environment, the engagement and impact of institutional investors could be more pronounced. In the next section we will examine whether it is.

## 4. The Impact of Institutional Investors on Freezeout Offers

### 4.1. Offer premia

Table 2 reports the mean offer premium in the overall sample and in several subsamples: accepted offers, rejected offers, first offers and repeated offers. Offer premium is assessed as the natural logarithm of offer price divided by stock price six trading days before the offer announcement. The choice of the denominator, price on day -6 relative to the announcement, is designed to eliminate the possible price effect of information leakage in the days preceding the freezeout offer announcement.

(Insert Table 2 about here)

In Table 2 the mean offer premium hovers around 20%. In the overall sample, the mean offer premium is 20.1%; in the subsample of accepted (rejected) offers it is 20.2% (20.0% respectively); and in first (repeated) offers it is 20.1% (19.8% respectively).[5] Most interesting is the finding that the mean premium in successful offers equals the mean premium in failed offers.

Our focus in this study is on institutional investors' impact. When we split the sample according to institutional investor presence and holdings, some differences in premia do emerge. In firms with no institutional holdings the mean premium is 18.6% whereas in firms with institutional holdings the mean premium is 20.8%. Another

[5] The results are qualitatively the same when we look on premiums relative to day -42.

possible split of the sample based on institutional holdings yields similar results. When institutional holdings are below (above) the median the average premium is 18.3% (21.7% respectively). These differences in average premia are statistically insignificant. However, they are economically non-negligent because an increase in the premium from 18.3% to 21.7% implies that the public is offered about 3% more when institutional investors' holdings are above median. Consistent with Hypothesis 2a and 3a, controlling shareholders appear to be somewhat more “generous” when institutional investors hold their stock. Apparently, institutional investors "squeeze" controlling shareholders and benefit the public.

Examining the subsamples in Table 2 reveals that the institutional investor impact is strongest in the subsample of accepted offers. In firms with (without) institutional holdings the mean offer premium is 21.9% (17.0%), a difference close to 5%. We argue that this subsample of accepted offers is the most relevant for tests of the impact of institutional investors on the offer premium. This is because accepted offers are the only offers where the transaction is consummated and the public actually receives cash or collects the premium. In rejected offers no deal occurs, hence the associated offer premiums may be arbitrary and difficult to interpret.

Table 3 examines institutional investor impact on accepted offers' premium in more detail. We regress the natural logarithm of the offer premium on several measures of institutional investors' holdings, using firm size, and the repeated offer indicator as controls. Industry and calendar year fixed effects are also employed.

(Insert Table 3 about here)

In Table 3 the coefficient of firm size on accepted offers' premium is negative and typically statistically significant. It appears that controlling shareholders of larger

firms have to pay lower premia when taking their firms private. Larger firms attract more analysts and more followers, hence typically there is more market information and less information asymmetry about larger firms. If market prices are more credible for larger firms, public suspicion about the true motives behind the freezeout offers are reduced and the required premium for a successful offer is lower. According to this interpretation, public investors demand a premium for information uncertainty, and in larger firms where information uncertainty is presumably lower, the requested offer premium is moderated. It is noteworthy that the lower percentage premium offered and paid by larger firms does not imply lower monetary premia.

The coefficients of the other control variables in Table 3 have the expected sign, yet are statistically insignificant. The coefficient of the repeated offer indicator is positive probably because in repeated offers controlling shareholders need to be slightly more generous. Likewise, the coefficient of the controlling shareholders' pre-offer holdings is negative, probably because when controlling shareholders hold a larger stake in the firm, the amount and proportion of shares they have to purchase in order to reach the 95% holding threshold needed for taking the firm private is lower. If public shareholders have a continuous reservation price for tendering the stock, when less shares are needed to accomplish a successful freezeout offer, a less generous offer price might suffice.

The central explanatory variables in Table 3 regressions describe institutional investors' holdings. First, we examine the effect of the mere presence of institutional investors. The coefficient of a dummy variable that equals 1 when any institutional investor holds the company shares and equals zero when no institutional investor holds the company, is positive and statistically significant. It appears that accepted offers premia are 10-11% higher when there is at least one institutional investor that holds the

company shares. This increased premium is economically significant, and is twice our former estimate of institutional investors' impact on the offer premium deduced from Table 2 evidence.

Second, when we add the aggregate percentage holdings of institutional investors as an explanatory variable (see column 4), its coefficient is positive and statistically insignificant. According to the regression summarized in column (4), at the average institutional investor holdings of 4.3%, the fitted increase in premium due to institutional investors is 11.7%, most of which (9.2%) is due to the mere presence of institutional investors. Higher holdings by institutional investors are associated with higher premia, yet the main factor boosting the premium appears to be the mere presence of institutional investors.

The evidence in Table 3 supports hypotheses 2b and 3b. Institutional investor holdings increase accepted offers' premia. This can be a result of institutional investors being effective representatives of the public or of institutional investors collecting the fruits of their repeated games strategic behavior.

4.2. Offer acceptance likelihood

Another fundamental variable is offer acceptance likelihood. Examining this likelihood is particularly interesting given the relatively low freezeout offers acceptance rate in our sample. (About half of the offers are rejected.) We estimate offer acceptance likelihood using the following model:

(1) $$Success_i = \alpha + \beta inst_i + O'_i\gamma + T'_i\delta + \tau_t + \varphi_s + \varepsilon_{irts}$$

where $Success_i$ is the tender offer outcome (binary, success or failure); $inst_i$ is the institutional investors presence indicator (or cumulative holdings) in the target firm; $O'_i$ is a vector of offer characteristics; $T'_i$ is a vector of firm characteristics; $\tau_t$ is a year

fixed effect; $\varphi_s$ is an industry fixed effect; and $\varepsilon_{irts}$ is an error term clustered at the firm level. Our main interest is in the effect of $inst_i$on $Success_i$.

For all of our model specifications, results are qualitatively similar when using a linear model (estimated by OLS), Logit, or Probit models. Table 4 reports the results of a Probit analysis. We find that the larger the firm, the higher the probability of freezeout offer's success. This finding may be a result of information asymmetry and uncertainty. Information asymmetry generates suspicion and disbelief amongst public investors, spurring a negative response to any offer of controlling shareholders. Information asymmetry and uncertainty are lower for larger firms since these firms typically attract analyst and media coverage. Public shareholders who fear exploitive freezeout offers can more precisely and confidently examine and evaluate freezeout offers in larger firms; thus they reject them less often.

(Insert Table 4 about here)

A second determinant of freezeout offer's success is the controlling shareholders' pre-tender holdings in the firm. The coefficient of the control group's pre-offer stake is positive and statistically significant probably because when the pre-offer holdings of the control group are higher, it needs to purchase less shares from the public in order to clear the 95% holding hurdle assuring freeze-out offer success.

Third, offer premium has a positive yet statistically insignificant coefficient. It appears that a higher offer premium moderately increases offer's success chances. The relation between offer price and acceptance chances is complex, as evidenced by our finding in Table 2 that accepted and rejected offers have an almost identical mean offer premium. Offer premium and offer success rate may be endogenous. However, since the study focuses on institutional investors' impact we refrain at this stage from more

complex modeling. In any case, Figure 2 portrays acceptance rate by offer premium quintile. Acceptance rate tends to increase with offer premium. In the lower premium quintile offer acceptance rate is 53.7% while in the upper quintile it is 60.0%.

(Insert Figure 2 about here)

Fourth, the positive coefficient of the repeated offers indicator shows that second and third offers tend to be more successful. It is likely that repeated offers are preceded by more careful preparations and/or prior negotiations with large public shareholders, leading to repeated offers' higher acceptance rate.

Last and most relevant to our theme, the presence of institutional investors in a company is associated with a lower probability of offer acceptance. Using OLS estimates, the probability of offer rejection increases by 25% when institutional investors hold firm's stock. Interestingly, the cumulative institutional investors' holdings do not have any additional explanatory power. As previously in Table 3, the main trigger appears to be the mere presence of an institutional investor.

### 4.3. Rejection decision ex-post rationality

The finding in the previous section that institutional investors' presence increases the likelihood of offer failure may be interpreted in two ways. First, institutional investors may be more professional than public shareholders. Hence, they identify and filter out some exploitive freezeout offers that the public cannot identify on its own. This interpretation, based on our Hypothesis 2, presents institutional investors as public saviors and gatekeepers, judging each offer concretely. An alternative or complementary interpretation is that institutional investors act strategically. They reject some fair or even slightly beneficial offers as well. This approach, based on Hypothesis 3, suggests that the strategic hostile behavior of

institutional investors forces controlling shareholders to respect institutional investors and offer better terms, i.e., higher premia, when institutional investors are amongst firm shareholders.

We attempt to distinguish between Hypotheses 2 and 3 by looking at the cumulative excess return of firm shares from offer proposal to about half a year after its rejection. Half a year after the rejection is chosen because if some freezeout offers are based on inside information, we have to allow some period after the rejection decision for most of this information to leak out. Second, the median time till a repeated offer is about 6.5 months, and we do not want to overlay offers. The cumulative excess return from a few days prior to the rejection to half a year after the rejection is our central measure in this section, hence we denote it as CAR_rejection.

According to Hypothesis 2, on average, rejection decisions are rational, i.e., public investors do not lose by rejecting an offer. This implies that CAR_rejection should be equal or higher than the offer premium. That is, CAR_rejection – offer premium $\geq 0$. Further, according to Hypothesis 2, rejection decisions are especially rational when institutional investors hold the firm. That is, CAR_rejection – offer premium is higher in the subsample where institutional investors hold the firm, relative to the subsample where they do not.

In comparison, Hypothesis 3 does not require that each rejection decision is fully rational when examined alone. If institutional investors strategically reject fair offers or even slightly beneficial offers, CAR_rejection may be equal or even slightly below the offer premium. Furthermore, according to the strategic approach CAR_rejection – offer premium may even be lower in the subsample where institutional investors hold the firm, relative to the subsample where they do not.

We estimate CARs (cumulative excess returns) using the net of market methodology. This choice is not arbitrary. When we attempt the market model methodology with parameter estimation before the freezeout announcement, we find negative intercepts for most of our sample stocks. This suggests that on average firms that receive freezeout offers are in some kind of a crisis or slide before the offer. Perhaps in view of this stock price deterioration, controlling shareholders make the freezeout offer. Anyway, the deterioration biases market model parameters and renders the market model estimation unfit. We also attempt to employ the market model with parameter estimation after the offer rejection. However, this shrinks sample size by about a third.[6]

In practice, we compute the excess return of stock i, as:

(2) $AR_{iT} = R_{i,T} - R_{M,T}$,

where $AR_{iT}$ is the excess return of stock i on day T of the event window, $R_{i,T}$ is stock return on day T of the event window, and $R_{M,T}$ is the return on the Yeter (small stock) index of the Tel Aviv Stock Exchanges on day T of the event window. (The Yeter Index is used as the market index because all of our sample stocks belong to it.) In addition, we compute the Cumulative Abnormal Return (CAR) of each stock as:

(3) $CAR_i(T_b, T_e) = \prod_{T=Tb}^{T=Te}(1 + AR_{iT})$ ,

where $CAR_i(T_b, T_e)$ is the cumulative abnormal return of stock i from day $T_b$ through day $T_e$ of the event window, and $AR_{iT}$ is as above.

[6] When using the market model with parameter estimation after offer rejection, the results are similar and the conclusions are identical to those obtained with the net of market methodology.

Figure 3 depicts the cumulative excess returns of the shares of 86 firms with rejected freezeout offers.[7] The picture is striking. The cumulative excess return in the period from a few days before offer announcement to offer rejection date is about 20%, similar to the offer premium. Further, on offer rejection we observe only a slight drop in CAR. Apparently, most of the accumulated excess return stays even though the offer and its premium are no longer valid. It appears that on average the offer premium is integrated into the stock price regardless whether or not the offer is accepted.

(Insert Figure 3 about here)

The "permanent" upper revision in stock price shows that rejections of freezeout offers are not horrendous for public shareholders. We can examine now to what extent offer rejections are rational. Table 5 tests the (ex-post) rationality of the offer rejection decision, comparing the offer premium (relative to day A-1) to CAR_reject. For robustness purposes we present two measures of CAR_reject: 1) CAR(A,D), the CAR from offer announcement to offer rejection date, and 2) CAR(A,D+125), our central measure, equal to the CAR from offer announcement to about half a year (125 trading days) after the rejection decision.

(Insert Table 5 about here)

Panel A looks narrowly on the A to D stock performance. In this period, premiums tend to be slightly higher than the respective CARs. The mean CAR(A,D) of all rejected offers is 21.26% while the mean premium is 22.65%, a difference of 1.38% that is statistically insignificant. The median difference between CAR(A,D) and offer premium is -0.58%, again statistically and economically insignificant. Similarly to

[7] Out of our 87 rejected offers, in one case the firm's stock was delisted from the stock exchange during the announcement to decision period. Hence, we cannot calculate the relevant CARs for it.

Figure 3, it appears that the offer premium is added to stock price after offer announcement, and is not deducted from it after the offer failure. This finding suggests that the decision to reject did not hurt public investors. On average, they do not lose the premium; hence, their decision to reject is not irrational.

In Panel A we also observe that institutional investors' holdings have little effect on the difference between the offer premium and CAR. We divide the sample into 63 rejected offers in firms with institutional investors' holdings, and 23 offers in firms with no institutional investor holdings. In the institutional investors' subsample the mean loss (= difference between premium and CAR) of shareholders is 1.52%, while in the subsample with no institutional holdings the mean loss is 1.00%. The median loss is 0.03% when institutional investors are present and 2.88% when they are absent.

Panel B reports results for the window from offer announcement to half a year after offer rejection. The mean differences between CAR(A,D+125) to offer premium is 9.22%. Shareholders gained from offer announcement to half a year after offer rejection more than 9% more than the offer premium. This portrays the rejection decision as beneficial and rational. However, because of the relatively long event window period, the estimated CARs are relatively noisy, and there are several offers with extreme CARs.[8] Thus, a more conservative approach would rely on median analysis. The median difference between CAR (A, D+125) to offer premium is -1.25%, similar to the median difference of -0.58% in the shorter period (see Panel A).

When we rely on median analysis, the effect of institutional investors' presence continues to be minimal. When institutional investors are present the median difference is -0.76%, whereas when they are absent the median difference is -3.07%. Based on the

[8] In particular, there are two cases where CAR is about three times larger than the respective premium. In addition, these two offers are in firms without any institutional holdings.

median analysis, one could be tempted to deduce that institutional investor holdings somewhat benefit shareholders. However, the finding in Panel B that the mean difference between CAR(A, D+125) and offer premium is much higher when institutional investors do not have any holdings (23.0% when they don't versus 4.19% when they do) illustrates that such a conclusion is dubious.

In an attempt to further analyze the effect of institutional holdings on the difference between CAR_reject and offer premium (our measure of the rejection decision rationality) we run the following regression:

(4) $$diff_i = \alpha + \beta inst_i + O'_i\gamma + T'_i\delta + + \tau_t + \varphi_s + \varepsilon_{irts}$$

where $diff_i$ is the difference between CAR_reject and the offer premium (a proxy for a "correct" rejection); $inst_i$ is the institutional investors presence indicator (or cumulative holdings) in the target firm; $O'_i$ is a vector of offer characteristics; $T'_i$ is a vector of firm characteristics; $\tau_t$ is a year fixed effect; $\varphi_s$ is an industry fixed effect; and $\varepsilon_{irts}$ is an error term clustered at the firm level.

The fitted coefficients of the regression specified in equation (4) above are all statistically insignificant regardless of which measure we use as our measure of CAR_reject [CAR(A,D) or CAR(A, D+125)]. It appears that we fail to document any reliable evidence that institutional investors' presence contributes to rejection decision rationality.

## 5. Discussion

The study examines institutional investors' decisions and impact in freezeout offers. Freezeout offers are large "terminal" deals toward which institutional investors might be less indifferent. We also use data from Israel where freezeout offers are

rejected in about half of the cases, leaving institutional investors plenty of room for engagement and public defense. In these extreme environment of a terminal deal and frequent rejections, we aspire to better observe any institutional investors' effect.

. Our first finding is that the presence of institutional investors increases the likelihood of offer rejection. This observation rejects the null Hypothesis (Hypothesis 1) that institutional investors have no impact. This evidence is also consistent with the traditional regulatory view of institutional investors (see Hypothesis 2), according to which institutional investors are professional and rational, and effectively serve as small investor's guards. According to this traditional view institutional investors' presence is associated with higher rejection rates because institutional investors filter out some bad exploitive freezeout offers that the rest of the public investors cannot identify on their own.

We further examine the traditional view by studying the stock returns of firms with rejected offers. We estimate the cumulative excess return (CAR) of the stocks of firms with rejected offers from offer announcement till half a year after the offer rejection, and compare them to the respective offer premiums. In general, the difference between CAR and offer premium is small and statistically insignificant. It appears that on average decisions to reject freezeout offers were rational and did not hurt public shareholders.

More relevant to us, there is no evidence that when institutional investors are present, CAR is larger than offer premium. (The mean difference is positive, yet the median is negative, and both are statistically insignificant.) This is a problematic result for the gatekeeper institutional investor school (Hypothesis 2). For if institutional

investors filter out exploitive freezeout offers, we should find that on average the rejection decision CAR exceeds the offer premium.

Also troubling to the traditional gatekeeper view is our finding that in firms with and without institutional investors, the CAR versus offer premium picture is similar. In fact, on average, the difference between CAR and the offer premium is larger in the subsample with no institutional investors. Clearly, having no holdings by institutional investors does not hurt the small public shareholders.

A possible alternative approach views institutional investors as selfish strategic players (Hypothesis 3). Institutional investors do not want to appear weak in the eyes of controlling shareholders. They have to exercise their power from time to time. A strategic display of arbitrary power assures that controlling shareholders would not ignore them. Watching institutional investor reputation and deterrence is a repeated game strategy, and it requires that institutional investor would reject fair or even slightly beneficial freezeout offers.

Occasional or even systematic rejections of fair or slightly beneficial offers serves institutional investors in two ways. First, it promotes institutional investors stance in all potential disputes with controlling shareholders. Second, it forces controlling shareholders to offer higher premia to the public, biting some of the deal surplus that controlling shareholders envision.

Our evidence is consistent with the strategic view of institutional investors (Hypothesis 3). According to this view, the difference between CAR and offer premium need not be positive. This is because of: a) when institutional investors are present they may reject even slightly beneficial offers, and b) controlling shareholders might be deterred from making gross exploitive offers when institutional investors hold the firm

stock. The strategic view is also consistent with our previous above-discussed finding that when institutional investors hold the stock, offers are more likely to be rejected. According to Hypothesis 3, institutional investors reject more offers than necessary, acting strategically in a repeated-game long-term perspective.

The strategic approach is also consistent with the third major result of the study. We find that freezeout offer premium tends to be higher when institutional investors hold the firm. The strategic behavior of institutional investors assures that controlling shareholders seeking to take their firms private would be more benevolent to the public. The finding that premiums are higher when institutional investors hold the firm is also consistent with the traditional gatekeeper view of institutional investors. Institutional investors defend small investors and guarantee higher premiums to the public.

Finally, the strategic view implies that small investors and institutional investors' interests sometimes diverge. Acting strategically leads to occasional rejections of some fair or even slightly beneficial offers, hurting small public investors in some cases. However, it is arguable that a strategic behavior by institutional investors serves public cause at large. This is because such a strategic behavior also increases offer premiums in accepted offer, which might contribute to public welfare more than the damage done when unnecessarily rejecting offers.

One reservation is in order. The comparison of firms with and without institutional investors might be improper if firms with institutional investors differ materially from firms without institutional ownership. For example, it can be argued that institutional investors elect better firms, and in such better firms, the premium controlling shareholders have to pay in order to take the firm private is higher. On the other hand, if part of the premium is intended to overcome disbelief and asymmetric

information problems, then in firms with a relatively large information asymmetry (firms without any institutional investor), controlling shareholders must offer higher premia. The two opposing arguments above illustrate that even if firms with and without institutional investors differ, our first finding concerning accepted offers' premia is not an obvious result of some problem or bias.

Likewise, our second finding that institutional investor presence increases the likelihood of offer rejection cannot be easily explained by a fundamental difference between firms with and without institutional holdings. For example, given that firms with institutional investor ownership offer higher premia, why are their offers rejected more frequently? We do not argue that firms with and without institutional investors are not different. We just discount the possibility that our results are a consequence of such a difference.

Finally, our third finding of similar CARs in firms with and without institutional investors is also potentially sensitive to the difference between these firms. If controlling shareholders act rationally, then offers to firms with institutional investors are less exploitive. Consequently, the CARs of firms with rejected offers are modest. The problem of this "rational controlling shareholder" interpretation is that we find that in firms with institutional investors, offers are rejected more often. It is difficult to understand how the more considerate offers of controlling shareholders (to firms with institutional investors) presumed above, are consistent with the higher rejection rates.

In sum, there might be differences between firms with and without institutional investors' ownership, and there might be some endogeneity issues. However, these potential problems do not appear able to provide a unified, defensible thesis consistent

with our results. In contrast, our two competing hypothesis do provide such a solid consistent thesis.

## 6. Summary and Conclusions

We examine institutional investors' impact is a sample of about 200 freezeout offers in Israel. Freezeout offers are extreme "terminal" decisions where institutional investors' actions might be more decisive and evident. Likewise, the choice of Israeli data, where freezeout offers are rejected relatively frequently, affords higher engagement by institutional investors.

The study document three major findings. First, freezeout offers are rejected more frequently when institutional investors hold the firm. Second, in accepted offers, the offer premium is higher when institutional investors hold the firm. Last and most interesting, institutional investors do not appear to play a prudent role when rejecting freezeout offers. On average, the cumulative stock returns of firms with rejected offers (from offer announcement to half a year after offer rejection) is similar to the offer premium, regardless on whether institutional investors have or do not have holdings in the firms.

Overall, the evidence provides some support to the hypothesis that institutional investors are strategic players in a repeated game or conflict with controlling shareholders. This view appears a bit more consistent with our findings regarding the stock returns of firms with rejected offers than the alternative traditional view of institutional investors as public defenders and gatekeepers. However, the predictions of both these competing hypotheses overlap in a vast majority of the cases. Thus, practically, the strategic view, first examined in this study, appears as a small refinement of the traditional view. Further analysis of the implications of the strategic

approach, as well as study replications in other corporate events and other datasets, are definitely necessary.

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**Figure 1: The Distribution of Tender Offer Premium**

We depict the distribution of the offer premium defined as the natural logarithm of offer price divided by the pre-announcement (day A-6) market price

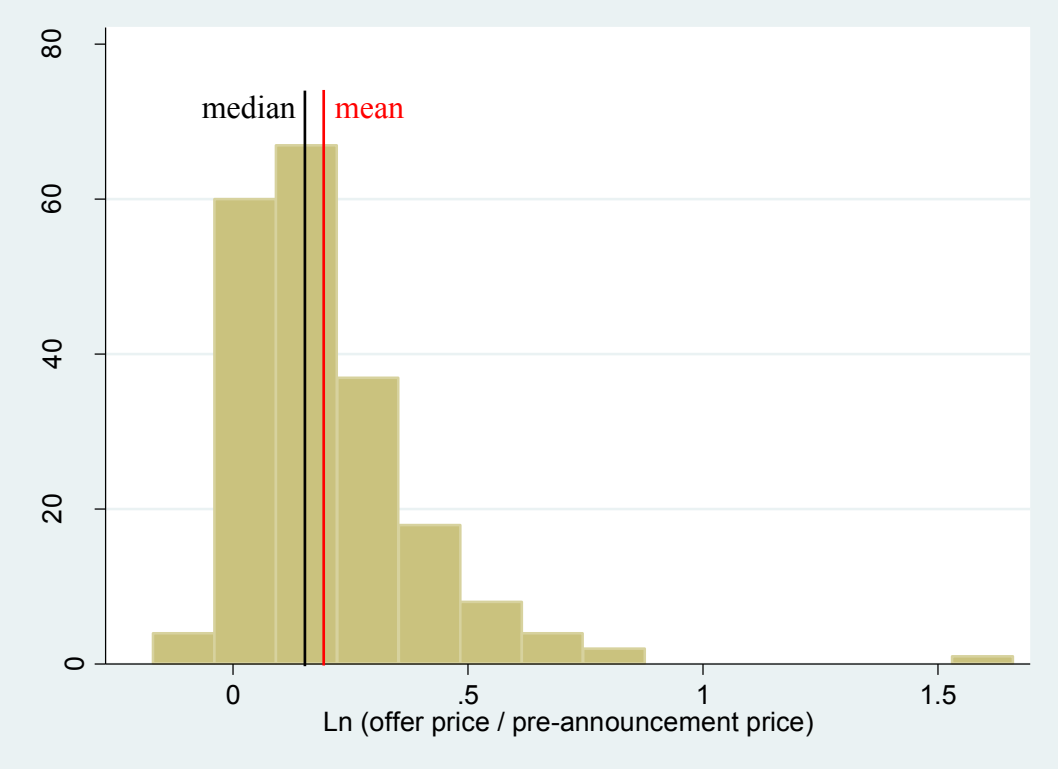
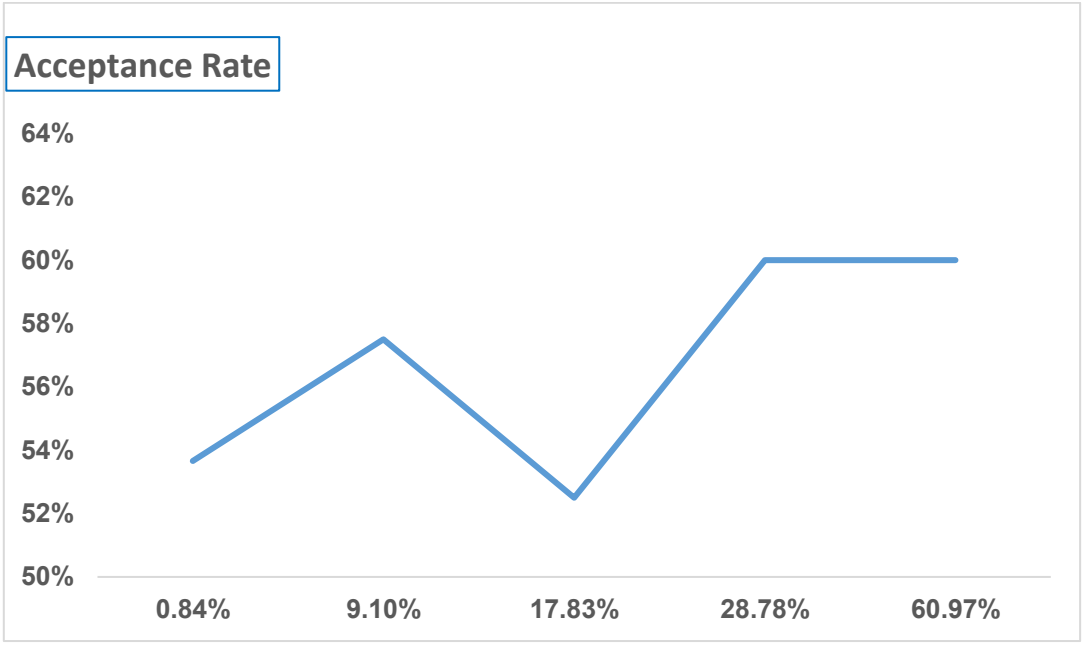


**Figure 2: Acceptance Rate as a Function of Tender Offer Premium**

We divide the offers into five quintiles based on the premium size. The mean premium in each quintile is shown on the horizontal axis.




Mean premium over the pre-announcement (day A-6) market price

**Figure 3: Cumulative Abnormal Returns Surrounding Failed Offers.**

The figure shows the mean cumulative abnormal return (CAR) for the target stocks in 86 failed offers around the offer announcement for each day. To calculate abnormal returns, we employ the net of market methodology. First, for each offer we identify the announcement day (day A) and decision day (day D). For each day T within the window A-25 through D+25, we compute the abnormal return of the stock *i* as: $AR_{i,T} = R_{i,T} - R_{MARKET,T}$, where $R_{i,T}$ is stock i's return on day T of the event window, and $R_{MARKET,T}$ is Israeli small stock *(Yeter*) index return on day T.(All of our sample stocks belong to this index.). Then, we compute the Cumulative Abnormal Return (CAR) for stock *i* as: $CAR_i(Tb, Te) = \prod_{Tb}^{Te}(1 + AR_{i,T}) - 1$, where day Tb is day A-25, and day Te is the respective day T on the horizontal axis, till the day D+25.

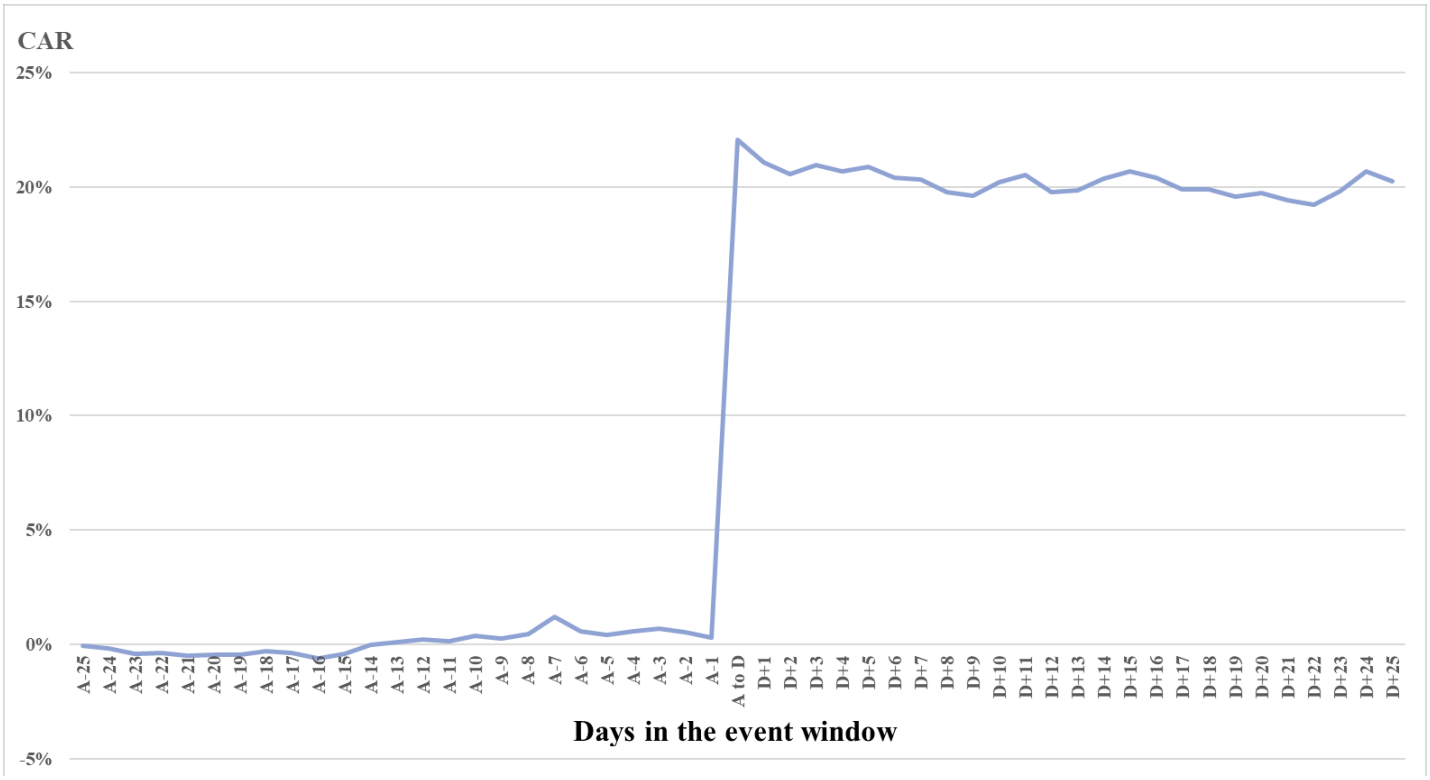


**Table 1: Sample Descriptive Statistics.**

| | Mean | Median | Standard Deviation |
|---|---|---|---|
| **Company characteristics** | | | |
| Market value of firm shares (in million NIS)[a] | 192 | 74 | 355 |
| Tobin's Q | 1.03 | 0.97 | 0.35 |
| Control group holdings (as a proportion of equity) | 82.1% | 85.3% | 10.5% |
| Institutional holdings (as a proportion of equity) | 4.3% | 1.9% | 5.8% |
| **Offer attributes** | | | |
| Premium [Ln (offer /day A-6 price)] | 0.200 | 0.166 | 0.198 |
| Repeated offer indicator (1=repeated, 0=first offer) | 0.15 | 0 | 0.36 |
| Days from announcement to decision | 23 | 19 | 10.7 |
| Acceptance rate (1st Offer) | 0.52 | 1 | 0.50 |
| Acceptance rate (all offers) | 0.57 | 1 | 0.50 |

[a] Based on an average exchange rate of 4.03 New Israeli Shekels (NIS) per US Dollar during the sample period (2000-2016), the figures in US Dollars are about 1/4 of the figures in NIS.

**Table 2: The Effect of Institutional Investor Holdings on Offer Premium**

The table reports the mean offer premium in the overall sample and different cross-sections. Offer premium is defined as Ln(offer price/stock price 6 days prior to the offer announcement day).

| | Mean Offer Premium across All Offers | Mean Offer Premium in Sub-Samples | | | |
|---|---|---|---|---|---|
| | | Successful Offers | Failed Offers | 1st Offer | 2nd and 3d Offers |
| Number of Obs. | 201 | 114 | 87 | 170 | 31 |
| All | 0.2005 | 0.1996 | 0.2016 | 0.2009 | 0.1980 |
| Institutional Holdings Above Median | 0.2174 | 0.2179 | 0.2100 | 0.2153 | 0.1914 |
| Institutional Holdings Below Median | 0.1834 | 0.1813 | 0.1930 | 0.1866 | 0.2050 |
| Institutional Investor Present | 0.2083 | 0.2192 | 0.1962 | 0.1996 | 0.2514 |
| No Institutional Investors | 0.1856 | 0.1695 | 0.2157 | 0.2033 | 0.0673 |

**Table 3: The Effect of Institutional Investors on Successful Offers' Premium**

The table reports results of OLS regressions of successful freeze out offers' premium on several measures of institutional investor holdings and some firm and offer controls. Offer premium is defined as Ln(offer price/stock price 6 days prior to the offer announcement day); Firm Size is the natural logarithm of the market value of all firm shares (in thousands of New Israeli Shekels); Control Group Holdings is the controlling shareholders' pre-offer holdings (fraction); Institutional Holdings is the institutional holdings at the end of the quarter preceding the offer (fraction); Institutional Presence Indicator equals 1 (0) when institutional investors have some (no) holdings in the company in the quarter preceding the offer; Number of Institutions is the number of different institutional investors holdings in the company in the quarter preceding the offer; and Repeated Offers Indicator equals 1 for a repeated offer on the firm (equals 0 for the first offer). Industry fixed effects are according to Tel Aviv Stock Exchange industry classification (9 industries); Premia data are winsorized at the 5% level (2.5% on each side); and standard errors, clustered at the firm level, appear in parentheses. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Firm Size | -.037* | -.032 | -.042* | -.043** |
| | (.020) | (.020) | (.022) | (.021) |
| Control Group Holdings | -.32 | | | |
| | (0.21) | | | |
| Institutional Holdings | | | **.88**** | **.58** |
| | | | **(0.39)** | **(0.39)** |
| Institutional Presence Indicator | **.104**** | **.110***** | | **.092**** |
| | **(.041)** | **(.042)** | | **(.044)** |
| Repeated Offers Indicator | .021 | .016 | .011 | .015 |
| | (.040) | (.041) | (.046) | (.042) |
| Calendar Year Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Number of Observations | 114 | 114 | 114 | 114 |
| $R^2$ | 0.21 | 0.19 | 0.16 | 0.20 |

**Table 4: Factors Affecting Freeze-out Offer Acceptance**

The table reports Probit regressions results. The dependent variable equals 1 if the freeze-out offer is accepted, and equals 0 if it is rejected. Offer premium is defined as Ln(offer price/stock price 6 days prior to the offer announcement day); Firm Size is the natural logarithm of the market value of firm shares (in thousands of New Israeli Shekels); Control Group Holdings is the pre-offer controlling shareholders' holdings (fraction); Institutional Holdings is the holdings of institutional investors at the end of the quarter preceding the offer (fraction); Institutional Presence Indicator equals 1 (0) when institutional investors have some (no) holdings in the company in the quarter preceding the offer; and Repeated Offers Indicator equals 1 for a repeated offer on the firm (equals 0 for the first offer). Industry fixed effects are according to Tel Aviv Stock Exchange (TASE) industry classification (9 industries); Premia data are winsorized at the 5% level (2.5% on each side); and standard errors, clustered at the firm level, appear in parentheses below the coefficients. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Firm Size | .29*** | .31*** | .28*** | .32*** | .31*** |
| | (.08) | (.10) | (.09) | (.11) | (.11) |
| Control Group Holdings | 2.73*** | 4.43*** | 2.29** | 3.98** | 4.43*** |
| | (1.03) | (1.34) | (1.09) | (1.57) | (1.55) |
| Offer Premium | .851 | .902 | .827 | .821 | .902 |
| | (.608) | (.688) | (.593) | (.668) | (.689) |
| Institutional Holdings | | | **-3.45*** | **-2.24** | **.015** |
| | | | **(2.08)** | **(2.96)** | **(3.13)** |
| Institutional Presence Indicator | **-.61***** | **-.63**** | | | **-.63**** |
| | **(.22)** | **(.28)** | | | **(.30)** |
| Repeated Offers Indicator | .85*** | 1.19*** | .83*** | 1.14*** | 1.19*** |
| | (.27) | (.33) | (.29) | (.32) | (.33) |
| Calendar Year Fixed Effects | No | Yes | No | Yes | Yes |
| Industry Fixed Effects | No | Yes | No | Yes | Yes |
| Number of Observations | 201 | 188 | 201 | 188 | 188 |
| *Pseudo* $R^2$ | 0.14 | 0.24 | 0.12 | 0.22 | 0.24 |

**Table 5: Testing the Ex-Post Rationality of the Offer Rejection Decision**

The table focuses on 86 failed offers. We compare the offer premium to the stock price response. Stock response is estimated by CAR (A, D) in Panel A, and CAR (A, D+125) in Panel B. CAR (A, D) is the cumulative abnormal return from the offer announcement (day A) to the offer decision day (day D), while CAR (A, D+125) is from announcement date to about half a year after the offer decision date (day D+125). In this table, offer premium is estimated relative to day A-1, and is defined as (offer price / stock price on day A-1) -1. CARs and premia data are winsorized at the 5% level.

Panel A: Stock response from the offer announcement to the offer decision day

| | Mean CAR (A, D) (in %) | Mean Offer Premium relative to day A-1 price (in %) | Mean Difference between CAR and the premium (%) | t-statistic of the Difference | Median Difference between CAR and the premium (%) | Number of Offers |
|---|---|---|---|---|---|---|
| All failed offers | 21.26 | 22.65 | -1.38 | -0.91 | -0.58 | 86 |
| Institutional Investors present | 19.86 | 21.38 | -1.52 | -0.86 | -0.028 | 63 |
| No Institutional Investors | 25.11 | 26.11 | -1.00 | -0.34 | -2.88 | 23 |

Panel B: Stock response from the offer announcement to half a year after the offer decision date

| | Mean CAR (A, D+125) (in %) | Mean Offer Premium relative to day A-1 price (in %) | Mean Difference between CAR and the premium (%) | t-statistic of the Difference | Median Difference between CAR and the premium (%) | Number of Offers |
|---|---|---|---|---|---|---|
| All failed offers | 31.87 | 22.65 | 9.22 | 1.61 | -1.25 | 86 |
| Institutional Investors present | 25.57 | 21.38 | 4.19 | 0.85 | -0.76 | 63 |
| No Institutional Investors | 49.11 | 26.11 | 23.00 | 1.40 | -3.07 | 23 |

## Appendix

### Table A1: Variables' Definition

| Variable | Definition |
|---|---|
| Tobin's Q | The market value of equity + the book value of debt divided by the book value of equity and debt. |
| Market Cap | The pre-offer market value of firm shares (in thousands of New Israeli Shekels). |
| Offer Price | The offer price. In case the offer price is revised prior to the shareholders' decision date, we use the revised price as offer price. |
| Premium over Market Price | Ln (offer price / firm share market price at some pre-announcement date) |
| Control Group Holdings | The controlling shareholders' holding in the company on the eve of the offer (as stated in the freeze-out offer) |
| Institutional Holdings | Aggregate institutional investors' holdings in the company at the end of the quarter preceding the offer. |
| Repeated Offers | An indicator variable that equals 0 for the first offer on the firm, and equals 1 for a repeated offer |
| Number of Institutional Investors | Number of different institutional investors that have holdings in the company at the end of the quarter preceding the offer. |