

Non-Controlling Blocks

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Abstract

Non-controlling blocks arise when a firm acquires a significant stake in another firm that already has a controlling shareholder. Using a sample of European deals I study non-controlling blocks. I study both their determinants and their effects. Consistent with a potential expropriation by targets' controlling shareholders, I find that targets' agency problems not only discourage them from taking place, they also affect the price acquirers pay. Yet non-controlling blocks also fulfil two roles. They help financial acquirers in getting their targets being taken over afterwards. They also solve contractual incompleteness' problems between firms and their intensive R&D suppliers. In line with this, non-controlling blocks' targets increase investment and innovation after the deal. Surprisingly, they do not seem to alleviate targets' financial constraints.

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I. Introduction

Non-controlling blocks arise when a firm acquires an equity stake in another firm that already has a controlling shareholder. Crucially, the acquired block does not allow the incoming shareholder to gain target's control. For instance, in 2010 Repsol, the Spanish oil and gas giant acquired 20% of AlgaEnergy, a biotech firm that develops biofuels. Repsol is far from being an exception, as this type of deal is actually widespread. Non-controlling blocks provide interesting insights on the importance of both agency and contractual incompleteness' problems in economic transactions (Grossman and Hart (1985), Shleifer and Vishny (1997) and Aghion and Tirole (1994)). On one hand, they expose acquirers to a potential expropriation by target's controlling shareholder, or tunneling (Johnson et al (2000)). On the other, they help to resolve contractual incompleteness problems between firms and their intensive research and development (R&D) suppliers (Aghion and Tirole (1994) and Dasgupta and Tao (2000)). In such cases, non-controlling blocks are superior to full acquisitions as they allow the acquiring firm to reap the benefits of innovation while preserving targets' incentives to perform it. Non-controlling blocks might also facilitate a subsequent acquisition of the target firm (Greenwood and Schor (2009)).

In this paper I study both the determinants and effects of non-controlling blocks. I analyze a sample that involves Western European (non-UK) targets, where controlling shareholders are prevalent (La Porta, Lopez de Silanes and Shleifer (1999), Faccio and Lang (2002), among others) and minority investor protection is below US standards (Djankov et al (2008)). The sample includes private and public targets, allowing me to understand non-controlling blocks' importance beyond listed firms. Throughout the paper I compare non-controlling blocks' acquisitions to M&As as in Aghion and Tirole (1994). To study non-controlling blocks' determinants I compare them before the deal (Ouimet (2012)), while to study their effects I compare them after the deal (Pagano, Panetta and Zingales (1998) and Kim and Weisbach (2008)). I use M&As as a counterfactual for several reasons. After an M&A the target becomes a subsidiary of the acquiring firm. A potential expropriation by the former controlling shareholder is no longer possible, and so tunneling problems disappear. Therefore, in firms where there is a divergence of interests between controlling and minority shareholders, or in

firms where expropriation is relatively easy to achieve, M&As should be more common. The second reason is that, if non-controlling blocks solve contractual incompleteness problems, then they should occur between firms and their intensive R&D suppliers only. Firms should prefer M&As when acquiring customers or competitors. They should also prefer M&As when suppliers are not R&D intensive. Finally, and also related to contractual incompleteness' problems, when the target becomes a subsidiary through an M&A it loses its initiative (Grossman and Hart (1986) and Aghion and Tirole (1994)). Comparing non-controlling blocks and M&A targets after the deal allows me understand the importance of targets' initiative.

I first find that proxies of agency problems discourage non-controlling blocks from taking place. Acquirers do fear a potential expropriation. Both the difference between voting and cash flow rights or wedge (a commonly used proxy for agency problems (Claessens, Djankov, Fan, and Lang (2002), Lin, Ma, Malatesta, and Xuan (2011), among others)), and the anti-self dealing index measuring minority investor protection (Djankov et al (2008)), show that non-controlling blocks are more likely to occur when target's incentives are well aligned with those of the incoming shareholder. Agency problems also affect the price acquirers pay for non-controlling blocks. I separate acquirers according to whether they fear an expropriation or not. The former are those that acquire a stake in the firm for the first time, the latter those that further increase their holdings. Proxies of agency problems like the wedge and family firm's dummy (Bloom and Van Reenen (2006) and Bertrand et al (2008)) reduce the price paid. The anti-self dealing index, which ensures a better treatment of minority investors, increases the price acquirers pay. Such a relationship does not exist for acquirers who do not fear an expropriation.

I also find that non-controlling blocks alleviate contractual incompleteness problems between firms and their intensive R&D suppliers (Aghion and Tirole (1994) and Dasgupta and Tao (2000)). Non-controlling blocks are more likely when the target is an intensive R&D supplier (Fee, Hadlock and Thomas (2006)). Consistent with the importance of targets' initiative (Grossman and Hart (1986) and Aghion and Tirole (1994)), non-controlling blocks' targets not only invest more after the deal takes place (Allen and Phillips (2000)), they invest more in intangible fixed assets like advertising and

software. Furthermore, these targets also increase their patenting activity. It seems then that non-controlling blocks are not only related to intensive R&D suppliers, they also seem to spur targets' R&D. Yet non-controlling blocks also serve another role, as the evidence supports financial acquirers use them to facilitate a later takeover, as in Greenwood and Schor (2009). Most acquirers of non-controlling blocks are financial firms. And, as the data shows, 27% of their targets are taken over afterwards, compared to 22% for non-financial acquirers.

I perform a variety of robustness checks. The results in this paper are robust to different definitions of non-controlling blocks and to the inclusion of partial acquisitions along M&As (Ouimet (2012)). They are also robust to the use of matching estimation techniques. Yet more interestingly, the results show that non-controlling blocks do not ease targets' financial constraints. Previous evidence with US listed firms shows that block acquisitions are related to easing targets' financial constraints (Fee, Hadlock and Thomas (2006), Ouimet (2012) and Liao (2010)). The data in this paper shows that non-controlling blocks' targets tend to be larger and listed firms, two proxies for firms being financially unconstrained (Faulkender and Petersen (2006) and Hadlock and Pierce (2010)). These are also less indebted than M&As' targets. This evidence is confirmed by what happens after the deal. Although investments increase for non-controlling blocks' targets, showing that financial constraints might be eased, cash holdings do not decrease. A reduction in cash holdings is typically associated with a relaxation of financial constraints (Erel et al (2012)). Overall, the fact that non-controlling blocks do not seem to ease targets' financial constraints is surprising for two reasons. First, in the sample of Western European countries I consider, financial development is significantly smaller than that of the US (Djankov et al (2008)). Second, more than 65% of non-controlling blocks' targets are private firms. Therefore, if anything at all, easing targets' financial constraints should matter more in this sample than in US listed firms.

The paper aims to contribute to two non-related strands of literature. First, recent research on ownership dynamics with controlling shareholders finds that these do reduce their ownership by selling blocks or issuing shares. Block sales to arguably sophisticated investors seem to be fairly priced, as opposed to share issuances which are set to benefit controlling shareholders' interests

(Larrain and Urzúa I. (2012) and Kim and Weisbach (2008)). In this sense, this paper shows the other side of the coin: it shows who acquires these large stakes, what their motives are, and when do acquirers avoid these types of deals.

The second strand of literature refers to minority blocks in US listed firms, i.e., firms without controlling shareholders. In the US blocks are an uncommon phenomenon which seems to have both short and long term purposes. In the short term, they reduce information asymmetries and lead to a subsequent M&A by the same acquirer (the traditional toehold in Betton et al (2009) and Povel and Sertsios (2012)), or help the target being taken over by another firm (Greenwood and Schor (2009)). In the long term blocks not only help to develop product market relationships (Allen and Phillips (2000), Fee et al (2006), and Ouimet (2012)), they also help financially constrained targets (Fee et al (2006) and Liao (2010)). With respect to this literature I show that non-controlling blocks are indeed very common in countries where controlling shareholders are prevalent, involving considerable amounts of money. I also show that targets' agency problems play a significant role, preventing deals from taking place when the expropriation is potentially large. Finally, I show that both investment and innovation increase in non-controlling blocks' targets, consistent with their role in solving contractual incompleteness problems.

The rest of the paper is as follows. Sections two and three review both theories and data; sections four and five show the empirical analysis, with section six concluding.

II. Why Do Non-controlling Blocks Take Place?

Hereby I review the theories that help to explain why and when non-controlling blocks take place.

a. Agency problems

Controlling shareholders have both the potential to monitor the management, benefiting all shareholders, and to tunnel firms' resources, damaging minority investors (Shleifer and Vishny (1997)). As a matter of fact, their private benefits can be as large as 38% of firm value in Austria, or 29% in Italy, according to Dyck and Zingales (2004) and Nenova (2003). There is even a small literature on tunneling, or how controlling shareholders expropriate minority investors (Johnson et al (2000)). Therefore, when considering a non-controlling block acquisition target's agency problems should play a role. If the incoming minority shareholder thinks he might be expropriated by the existing controlling shareholder, he is unlikely to acquire a non-controlling block. And if he ends up acquiring one, he might demand a discount on the price paid. As a consequence, these deals should be less likely, and prices should be lower, in firms where agency problems are an issue. For instance, those were controlling shareholder's incentives differ from those of minority investors (Lin, Ma, Malatesta, and Xuan (2011)), or countries where expropriation by controlling shareholders is relatively easy to achieve (Djankov et al (2008)).

b. Contractual Incompleteness

Aghion and Tirole (1994) show that, for a firm that needs an intensive R&D input it can be optimal to acquire a non-controlling stake in the supplying firm. The rationale is as follows: since R&D projects are plagued with contractual incompleteness problems, it might be impossible to write a contract specifying which kind of input the firm needs, and the conditions under which it must be developed. The other alternative is for the firm to vertically integrate (through an M&A for instance). The problem, as noted already by Grossman and Hart (1986), is that full integration might not provide enough incentives for the supplier to exert effort and produce the input the firm needs. The in-between

option, which is for the firm to purchase a stake in the supplier, both keeps supplier's incentives to develop an appropriate product while also providing incentives for the acquiring firm to help develop the product he needs. Dasgupta and Tao (2000) show that, though this result depends on several assumptions, it holds when there are several firms that can acquire the input the supplying firm produces. Empirically, non-controlling blocks should be related to firms acquiring stakes in intensive R&D suppliers, where contractual incompleteness' problems are an issue, as in Allen and Phillips (2000) and Fee et al (2006). Furthermore, and consistent with the role of targets' initiative, after the deal non-controlling blocks' targets should invest more in R&D as compared to those that were taken over through an M&A.

c. Financial Acquirers

Financial firms may be able to acquire a non-controlling block if they foresee that the target will be taken over later on, as in Greenwood and Schor (2009). Then, they either cash their shares or get shares in a larger, more liquid firm. According to the same authors, targets are taken over either as a consequence of hedge funds' activism (Brav et al (2008)), or because the target would have been taken over in any case. Empirically, non-controlling blocks should be related to financial acquirers, and they should also be likely targets for a takeover, i.e., smaller and worse performing firms.

d. Financial Constraints

Information asymmetries may preclude firms from issuing shares and investing in profitable projects, as in Myers and Majluf (1984). If other sources of funds are exhausted, a private issuance acquired by one better informed firm might help solving the problem. Under this view, non-controlling blocks would ease firms' financial constraints. There is, in fact, mixed evidence for this hypothesis. While Allen and Phillips (2000) find that blocks are not related to easing targets' financial constraints, Fee et al (2006), Ouimet (2012) and Liao (2010) do. Similar to these, Erel, Jang and Weisbach (2012), show that the easing of financial constraints seems to be a motive in acquisitions. It is, therefore, an open question whether non-controlling blocks also serve the same role. Small, private, and highly indebted firms should be non-controlling blocks' targets, as size and listed status proxy for

firms being financially unconstrained (Faulkender and Petersen (2006) and Hadlock and Pierce (2010)). Furthermore, targets of non-controlling blocks should increase their investments and reduce their cash holdings after the deal takes place (Erel, Jang and Weisbach (2012)).

III. Data

a. Sources

I obtain data from two sources, Zephyr and Amadeus. Deal data is from Zephyr, the Bureau van Dijk's transactions database. Since I want to understand deals where the target has a controlling shareholder, I only focus on countries where controlling shareholders are prevalent, as in non-UK Western Europe (La Porta, Lopez de Silanes and Shleifer (1999), Faccio and Lang (2002), among others). I consider deals where the target is from Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Norway, Netherlands, Portugal, Spain, Sweden, and Switzerland. For instance, only 13% of Italian listed firms are widely held (Faccio and Lang (2002)). Deals must have been completed between 1997 and 2010. Acquirers and targets can be either private or public firms.

The second source is Amadeus, a European database of public and private companies' accounting information also from Bureau van Dijk. Since Zephyr provides a unique firm identifier, it allows me to obtain acquirers and targets' data from Amadeus. This allows me to study what happens both before and after the deal takes place. Both for targets and acquirers I obtain firm data for a period of seven years: the year before the deal, the year the deal takes place and five years after. Importantly, it must be noted that both Zephyr and Amadeus' coverage has been increasing throughout the years, especially after the beginning of the century.

b. Control

A key issue in understanding non-controlling blocks is to correctly identify transactions where control is achieved. For private firms, control is attained when the acquirer has less than 50%

of target's shares before the deal, and more than 50% after. This is less straightforward for public firms, and I follow Dyck and Zingales (2004). They define control transfers as deals where the acquirer holds less than 20% of target's shares before the deal and acquires 10% or more, eventually holding more than 20%. For instance, if the acquirer purchases 15% of target's shares, previously having none, that deal is a non-controlling block. Yet if the acquirer had 7% of target's shares before the deal, and gets the same stake (15%), it would reach 22% and target's control. I also consider as a control acquisition the case when the acquirer purchases, at different points in time, several stakes that sum more than 10% and fulfil Dyck and Zingales' criteria. Non-controlling blocks are all those transactions where control was *not* achieved.

c. Summary Statistics

Table 1 provides a description of the database. Panel A shows a description of non-controlling blocks, toeholds and M&As both in volume and value. Toeholds, again, are those deals where the acquirer first acquires a non-controlling block and later acquires control (Betton et al (2009) and Povel and Sertsios (2012)). Out of 71,570 deals, 10,460 are non-controlling blocks. As a comparison, Allen and Phillips (2000) find 402 acquisitions of more than 5% of targets' shares by US non-financial corporations between 1982 and 1991; similarly, Fee et al (2006) find that firms holding equity stakes in their suppliers happens in 338 US listed firms between 1988 and 2001. Looking at value, the average non-controlling block is €68.1 million, and altogether these deals account for €458 billion. Toeholds have a higher average value as they convey more shares (€345.7 million), and amount more than €1.6 trillion. As expected, M&As are the most common type, with over 50,000 deals since 1997, amounting €3.1 trillion. Non-controlling blocks are anything but an exception, both when compared to blocks' acquisitions in the US and when compared to M&As in Europe. Non-controlling blocks represent almost one fifth of M&As in volume, and one sixth in value.

Table 1, Panel B, looks at how many shares do non-controlling blocks and M&As convey, and also at listed firms' involvement. Non-controlling blocks convey, on average, 13.1% of target's shares. This figure differs for listed and private targets: whereas it is 2.9% for listed, it is 18% for

private ones. Since the average listed firm in Italy, Germany and France has a controlling shareholder holding approximately 50% of company's votes (Faccio and Lang (2002)), it is clear that the acquirer does not obtain target's control. Oppositely, by definition M&As always end up with the acquirer holding all target's shares. The Panel also shows listed firms' involvement. As expected, the proportion of listed firms is larger for non-controlling blocks, both as acquirers (13% as opposed to 8% for M&As) and targets (31% as compared to almost none).

The last panel of Table 1, Panel C, provides a first univariate assessment of the empirical validity of the theories outlined in Section II. It shows the differences between non-controlling blocks and M&As in terms of agency problems, patterns of vertical integration and R&D intensity. Furthermore, the Panel also looks at how many of all non-controlling blocks were subsequently acquired by another firm, as in Greenwood and Schor (2009).

First, I look at three different proxies of agency problems. Using ownership data from Faccio and Lang (2002), who provide Europe's listed firms voting and cash flow rights around 1999, I calculate the wedge between voting and cash flow rights, a commonly used proxy for agency problems (see, among others, Claessens, Djankov, Fan, and Lang (2002), Lin, Ma, Malatesta, and Xuan (2011), and Donelli, Larrain and Urzúa I. (2012), etc.). A key assumption for using Faccio and Lang data is that ownership remains relatively constant between 1999 and the time these firms engage in a deal. As stressed by Foley and Greenwood (2010), Franks et al (2012) and Donelli et al (2012), ownership remains stable in countries with weak investor protection, like the Western European countries I now study¹². The second proxy is whether the target is family controlled or not. Bloom and Van Reenen (2006) find that family firms have worse management practices, while Bertrand et al (2008) find that tunneling raises once control passes from the founder to the next generation. The third and final proxy is the country level anti-self dealing index by Djankov et al (2008). The index measures how easy it is for the controlling shareholder to expropriate minority investors, taking a

¹ Furthermore, Donelli et al (2012), using a 20 year sample of Chilean firms that have controlling shareholders, show that firms with a wedge between voting and cash flow rights are even more unlikely to change their ownership structure.

² More than 95% of all deals for which there is accounting information for targets and acquirers occurred after 1999. Besides, regressions restrict deals that happen before 2000 from the sample.

value between 0 and 1, 1 being the strongest minority investor protection. As the Panel shows, the average non-controlling block target has a higher wedge (0.2) than the average M&A target, yet this arises as non-controlling blocks targets' are more often listed firms for which the wedge is available. The anti-self dealing index, available for all firms, shows that the average minority investor protection is better for non-controlling blocks than for M&As, highlighting the importance of targets' agency problems.

Aghion and Tirole (1994) assume that the supplier is an intensive R&D firm. Therefore, understanding whether the target is an intensive R&D supplier becomes crucial. Integration patterns, or how much of its inputs (products) acquirers obtain (sell) from (to) the target, can be seen in Panel C. Ideally, I would look at firms' customers and suppliers, as previous research has done with US firms (see Fee et al (2006), for instance). However, such detailed data is not available in Zephyr or Amadeus. Instead, I use the 2002 input-output table by the Bureau of Economic Analysis (BEA), from the US Department of Commerce, and I see whether the target belongs to a supplying (upstream integration) or customer industry (downstream integration). Horizontal mergers occur when both firms are in the same 4-digit NAICS code. As the Panel shows, most non-controlling blocks are either upstream or downstream integrated, while most M&As are horizontal. The panel then shows targets' R&D, the second concern in Aghion and Tirole's (1994) model. Again, the ideal would be to know how much each firm spends in R&D, yet neither Zephyr nor Amadeus provide such data. I circumvent this problem using Compustat data: for each 4-digit NAICS industry-year I calculate the proportion of firms whose expense in R&D is larger than 5% of its sales, capturing industries' R&D intensity. As shown in the Panel, both the average and median R&D intensity are higher for non-controlling blocks' targets than for M&As.

Finally, Greenwood and Schor (2009) show that block acquisitions by financial firms aim at getting the target being taken over afterwards. Panel C considers this possibility and shows that financial acquirers represent 55.8% of all acquirers (5,834/10,460), and that 27% of their targets are taken over afterwards. Since only 22% of targets acquired by non-financial firms are taken over afterwards, the data supports Greenwood and Schor (2009) previous findings for US hedge funds. The

last rows in the table look at the type of payment (cash, shares, mixed). Mixed payment seems to be the most common for both types of deals, yet even more for M&As (90% as compared to 63% of all non-controlling blocks). Oppositely, 36% of all non-controlling blocks are paid in cash.

Yet there might be also other characteristics that distinguish non-controlling blocks' firms from M&As' firms. Table 2, Panel A, looks at firms' characteristics the year before the deal. I first look at acquirers and targets across deals. Non-controlling blocks acquirers are larger, equally profitable in terms of return over assets (ROA) and less indebted than the average M&A acquirer. These differences also hold for targets: non-controlling blocks' targets are larger, less indebted, less profitable, and more often listed. Firm size and listed status proxy for firms being financial unconstrained in Faulkender and Petersen (2006) and Hadlock and Pierce (2010). The evidence indicates that easing targets' financial constraints does not seem to play a role in non-controlling blocks. These differences are statistically significant and economically relevant, with the exception of profitability between acquirers. The Panel also differentiates by type of deal, comparing firms involved in non-controlling blocks separately from those involved in M&As. Acquirers are always larger and less indebted than targets, yet only more profitable in non-controlling blocks' acquisitions. The average ROA for non-controlling acquirers is 7%, while for their targets is 3%.

Table 2, Panel B shows differences between those non-controlling blocks' targets that remain independent from those that are taken over afterwards. I first look at them at the time of the non-controlling block acquisition. Independent non-controlling blocks perform better than their peers, are slightly more indebted and smaller. Then I compare taken over targets, both at the time they were part of a non-controlling block (time t), and at the time of the takeover (time $t+1$). Although I lose many observations between t and $t+1$, these targets increased their leverage and slightly improved their performance. They also trimmed down their assets. It must be noted, however, that this is hardly any evidence that financial acquirers, hedge funds in Greenwood and Schor (2009), cause these changes.

All in all, summary statistics in Tables 1 and 2 show that non-controlling blocks are common in countries where controlling shareholders are prevalent, as in Western Europe (La Porta, Lopez de

Silanes and Shleifer (1999) and Faccio and Lang (2002)). The Tables also show that non-controlling blocks are more likely to happen in countries with better minority investors' protection, and between vertically related, R&D intensive firms. Acquirers of non-controlling blocks are often financial firms, managing to get their targets taken over afterwards. Furthermore, firms involved in this type of deal greatly differ from the average M&A firm in size, leverage and profitability. Finally, a definition for all variables and their sources is in the Data Appendix.

IV. Empirical Results Using Data Before the Deal

a. Cross Sectional Analysis

In this section I empirically analyse non-controlling blocks. Therefore, I estimate a probit model, where $p_{i,t}$ is the probability that the acquirer obtains a non-controlling block, and $(1 - p_{i,t})$ the probability that an M&A occurs. I model $p_{i,t}$ as a function of variables that should lead or dissuade firms from acquiring non-controlling blocks: target and acquirer's characteristics, integration variables, R&D, type of payment, and a set of controls, including year dummies as well as targets' country and industry fixed-effects (at the 3-digit NAICS code).

$$p_{i,t} = \Phi(\text{Firms' Characteristics}_{i,t-1} + \text{Deal Characteristics}_{i,t} + \text{Controls}_{i,t})$$

Where Φ is the cumulative standard normal distribution. Only firm level variables are measured the year before the deal, avoiding accounting changes caused by the deal itself. Standard errors are clustered in two dimensions, industry and year, as mergers come in waves (Harford (2005)).

Table 3 looks at firm level agency problems. The first column shows that the difference between voting and cash flow rights, or wedge, is negatively related to non-controlling blocks' acquisitions. Acquirers seem to avoid non-controlling blocks in firms where the divergence of interests between controlling shareholders and outside investors is potentially large. Column 2 looks at family firm control, while column 3 considers both the wedge and the dummy for family firms. However, only the wedge is negatively related to acquisitions of non-controlling blocks. Columns 4 to

6 look at proxies of acquirers' agency problems. While the wedge is not significant, family firm control is. Family firms are less likely to acquire non-controlling blocks, preferring to obtain targets' control. One possible explanation for why family firms avoid non-controlling blocks is that they prefer to retain control. While it can be that they prefer to enjoy private benefits of control (Bertrand et al (2008)), it might also be that families are risk averse and prefer control over being minority shareholders (Bach (2010)). So far, the results show that acquirers avoid non-controlling blocks in targets where agency problems are likely to be an issue. Control variables show that larger, less indebted and less profitable targets are more likely to be part of a non-controlling block, whereas larger, less indebted and non-listed firms are more likely to acquire a non-controlling block. Faulkender and Petersen (2006) and Hadlock and Pierce (2010) find that both exchange listings and firm size proxy for firms being financially unconstrained. Since larger, less indebted and listed targets are more likely to be part of a non-controlling blocks, it seems unlikely that this type of deal is motivated by the easing of targets' financial constraints.

Table 4 offers a closer look at agency problems, while also studying the role of contractual incompleteness (Aghion and Tirole (1994) and Dasgupta and Tao (2010)) and financial acquirers (Greenwood and Schor (2009)). The Table now looks at all deals for which information is available, providing a more robust approach. Only the last column includes firms' characteristics as in Table 3 (dropping almost three quarters of all observations). Since the wedge and family firms' dummy are only available for listed firms (Faccio and Lang (2002)), I use another proxy of agency problems, the anti-self dealing index by Djankov et al (2008). This index measures minority investor protection at the country level. The results show that the index is positively related to non-controlling blocks, i.e., an improvement in minority investor protection facilitates this type of deal. The effect is economically significant, as a one standard deviation increases the probability of a non-controlling block acquisition in 5.9% (the unconditional probability is 16%). Therefore, acquirers seem to avoid non-controlling blocks in targets where they might be expropriated. As for contractual incompleteness' problems, the table shows that non-controlling blocks are only more likely when the target is an intensive R&D supplier. As Columns 1, 2 and 3 show, non-controlling blocks seem to solve contractual

incompleteness problems. Only intensive R&D suppliers, which I measure using the interaction between R&D and upstream integration, are more likely to be non-controlling blocks' targets (Column 3). The effect is economically significant, as a one standard deviation of the interaction term increases the probability of a non-controlling block by 2.29% (again, the unconditional probability is 16%).

The Table also looks at financial acquirers. If these, as Greenwood and Schor (2009) suggest, acquire non-controlling blocks to get targets being taken over afterwards by another firm, the dummy for financial acquirers should be positively related to non-controlling blocks. Indeed, this is the case through all specifications, as the coefficient is positively related to non-controlling blocks, and its economic effect is significant, increasing the likelihood of a non-controlling block in 22%. Finally, adding controls like type of payment (cash and shares) in column 4, or firm characteristics in column 5, does not alter the results significantly: the anti-self dealing index remains positive but non significant when considering firm characteristics and losing three quarters of all observations (Column 5); the coefficient of the interaction term between R&D and upstream integration increases, perhaps implying that this is a problem for large firms rather than small firms, as the focus in Column 5 shifts to large firms for which accounting data is available.

I perform several robustness checks in Appendix A. First, I use a 20% threshold to determine control in listed firms (La Porta et al (1999) and Faccio and Lang (2002)). I expand control acquisitions to all those acquirers that trespass the 20% threshold in listed firms, reducing the number of non-controlling blocks' acquisitions in listed firms. The results in Appendix A, Tables A1 and A2, confirm previous findings. Non-controlling blocks are negatively related to targets' agency problems; do not seem to be related to the easing of financial constraints; help solving contractual incompleteness' problems between firms and intensive R&D suppliers; and are related to financial acquirers, which may use a non-controlling block as a way to get the firm taken over. A second set of robustness checks also considers partial acquisitions, following Ouimet (2012). The results in Appendix A, Tables A3 and A4, again confirm previous findings. Non-controlling blocks are negatively related to targets' agency problems, help solving contractual incompleteness problems with

intensive R&D suppliers, and are used by financial acquirers to get targets being taken over afterwards.

In a related paper, Ouimet (2012) studies the costs of acquiring control in U.S. public firms by comparing minority and majority blocks' acquisitions. She finds that control acquisitions are more common when keeping targets' management equity incentives is important. On the one hand, larger targets, which may become significant divisions in the merged firm, are fully integrated. On the other, smaller targets are not, preserving targets' management equity incentives. She also finds that there are potential costs to create an internal capital market when integrating firms from different industries, as in Rajan, Servaes, and Zingales (2000). Minority acquisitions are more common when the target belongs to an unrelated industry. Unlike her findings, I find that in the sample of mostly private European deals I study, preserving targets' management incentives does not seem to play a role, consistent with managers not having equity-based compensation. Larger targets are more likely to be targets of non-controlling blocks³. When it comes to avoiding diversified internal capital markets, the regressions in Table 4 show that non-controlling blocks targets' are more likely to be intensive R&D suppliers only. However, for this hypothesis to have empirical bite, these deals should be related to all but horizontal mergers, yet M&As are related to both upstream and downstream integration, i.e., to integrate both suppliers and customers, diversifying acquirers' internal capital markets⁴. Finally, Ouimet (2012) also suggests the possibility that acquirers are financially constrained and so can only get a minority block, although her results do not support this view. Empirically, however, this doesn't seem to be the case as acquirers' leverage coefficient is negative and significantly related to non-controlling blocks' acquisitions. Less financially constrained acquirers are those involved in these deals.

³ In a separate set of regressions (not shown) I further test this hypothesis by considering the relative size variable, as in Ouimet (2012). The results show that its coefficient is, if anything, positively related to non-controlling blocks' acquisitions, exactly the opposite from her results. Furthermore, I also restrict my sample to listed targets and find that size is still positively related to non-controlling blocks' acquisitions.

⁴ I replicate the results in Ouimet (2012) by considering the difference between target and acquirer's industry growth in sales. The results show that this variable is not significantly related to non-controlling blocks' acquisitions

Summarizing, targets' agency problems discourage non-controlling blocks' acquirers, which fear a potential expropriation. Also, non-controlling blocks empirically support Aghion and Tirole's (1994) innovation model: non-controlling blocks would solve firms' contractual incompleteness problems with intensive R&D suppliers. This result is also consistent with previous findings for the role of blocks in firms without controlling shareholders (Allen and Phillips (2000) and Fee et al (2006)). Yet this is not the only role for this type of deal, as they serve financial acquirers (hedge funds in Greenwood and Schor (2009)) as a way to get their targets being taken over. Finally, this type of transaction does not seem to be related to the easing of targets' financial constraints.

b. Agency Problems and Deal Prices

Targets' agency problems should also matter for the price acquirers pay to obtain a non-controlling block. On the one hand, if the acquirer thinks he might be expropriated, he would demand a discount⁵. Proxies of agency problems, indicating a potential expropriation, should be negatively related to the price paid. If, on the other hand, the acquirer thinks he won't be expropriated, he will not require such a discount, and proxies of agency problems should not be related to the price. Empirically, acquirers that fear an expropriation are those that acquire a stake in the firm for the first time. Those who do not think they will be expropriated are the ones that already have a stake in the firm and further increase their holdings, going, for instance, from 3 to 7% of target's shares⁶. Another issue is how to normalize prices, since deals differ both in price and proportion of shares acquired. I do so by using the ratio (in log) of the price paid over the proportion of shares acquired as dependent variable⁷. The regression is, then

$$y_i = Agency\ Problems_i + Target's\ Controls_i + \mu_t + \pi_j + \varepsilon_{i,t}$$

Where y_i is firm's i ratio of price over the acquired stake (in log), agency problems include the wedge, a family firm dummy and the anti-self dealing index; target's controls include assets (in

⁵ It must be noted that if the acquirer knows he will be expropriated, he would either avoid acquiring the block or require a massive discount, perhaps making the deal unfeasible.

⁶ It is hard to imagine that an acquirer will increase his holdings in a firm if he knows he is being expropriated.

⁷ This is not comparable to the price per share as each firm might have a different number of shares.

log), leverage, profitability (ROA) and listed status the year before the deal. Fixed effects include year (μ_t) and industry (π_j). Standard errors are robust and clustered at the country and industry level.

Table 5, columns 1 to 4, show that proxies of agency problems also influence the price paid for non-controlling blocks. The difference between voting and cash flow rights, or wedge, is negatively related to the price paid in Column 1. The same happens with family firm's dummy in Column 2, as it is also negatively related to the price. Improvements in minority investor protection, in Column 3, increase the price paid, consistent with the importance of agency problems. Considering all proxies together, in column 4, does not change the results significantly. These results are both statistically and economically significant: using the anti-self dealing index, as it is available for all firms, I find that a one standard deviation increases the price to stake ratio by more than 6%. Acquirers seem to demand a discount when acquiring non-controlling blocks where they fear a potential expropriation. Oppositely, when acquirers do not fear an expropriation, proxies of agency problems are not related to the price paid. Columns 5 to 8 show that this is the case when replicating the previous set of regressions. Neither the wedge nor family firms' dummy are significantly related to the price over acquired stake ratio. The same happens with the anti-self dealing index, which is not significantly related to the ratio either.

V. What Happens After the Deal Takes Place?

a. Investment and Cash Holdings After the Deal

In the last two sections of the paper I study non-controlling blocks' effects. Using each acquirer/targets' unique Bureau van Dijk identifier I map Zephyr's firms into Amadeus, obtaining firm-level data for a period of seven years: the year before the deal, the year the deal takes place and the five subsequent years. The database has information for 6,595 acquirers and 5,092 targets' firm-year observations.

Following Pagano, Panetta and Zingales (1998) and Kim and Weisbach (2008), I look at what happens after the deal takes place. The regression is:

$$y_{i,t+j} = \text{Non Controlling Block}_{i,t} + \text{Firm Controls}_{i,t-1} + \mu_t + \pi_j + \omega_c + \varepsilon_{i,t}$$

Where $y_{i,t}$ is firm's i outcome of interest for years $t+j$. By considering $j=1, 3, 5$, I am able to study the differences between non-controlling blocks and M&As in a relatively large horizon. *Non-Controlling Block* $_{i,t}$ is a dummy that takes the value of one for all non-controlling blocks (and zero for all M&As). Firm controls in $t-1$ include firm size (in log), leverage, profitability (ROA), fixed assets, cash flows to assets ratio, and age (in log). I also include year (μ_t), industry (π_j) and country (ω_c) fixed effects. Standard errors are robust and clustered at the firm level. Finally, and again following Kim and Weisbach (2008), for the construction of $y_{i,t}$ I define flow and stock variables:

$$y_{i,t+j}^{flow} = \ln \left[\frac{\sum_{k=1}^{k=j} v_{t+k}}{assets_{i,t}} + 1 \right]$$

$$y_{i,t+j}^{stock} = \ln \left[\frac{v_{i,t+j} - v_{i,t}}{assets_{i,t}} + 1 \right]$$

Where intangible and tangible investments are flow variables, and cash a stock variable. As before, $j=1, 3, 5$. As in Erel et al (2012), tangible investments also consider depreciation. All variables are winsorized at the 1%.

Table 6, Panel A, looks at targets after the deal takes place, supporting Aghion and Tirole's (1994) predictions. The first three columns look at intangible fixed assets one, three, and five years after the deal. Non-controlling blocks' coefficients are always positive and significant, and surprisingly, increasing within time, as the one at $t+5$ is more than three times larger than the one at $t+1$. Since intangible investments are, according to IFRS IAS38: "identifiable nonmonetary asset without physical substance...", including, for example, patents, computer software, advertising, etc, it is clear that the results support Aghion and Tirole's (1994) model. Even further, these results are economically significant, as the mean (median) intangible over assets ratio varies between .5% and 3.7% (0%) depending on the time ($t+j$). Tangible investments, in the next three columns, are also

positively related to non-controlling blocks. Erel et al (2012) find that targets' investments increase after an acquisition takes place, and that this is consistent with financial constraints being relieved. Yet for financial constraints to be eased, cash holdings should decrease. The last columns in Panel A look at cash holdings and show that this is not the case. Cash holdings actually increase for non-controlling targets, the opposite that should happen were these firms being relieved from their financial constraints.

A controversial approach to measure firm's financial constraints is to relate firms' investments to their cash holdings, as introduced by Fazzari, Hubbard and Petersen (1988). Financially constrained firms, which find difficulties in accessing capital markets, should have a positive relation between these variables. Alternatively, Almeida, Campello and Weisbach (2004) look at firm's propensity to save cash from incremental cash flows, the cash flow sensitivity of cash, as another way to measure firm's financial constraints. In an attempt to capture targets' financial constraints, the previous set of regressions control for firms' cash flows (standardized by total assets) as in Erel et al (2012). The results, however, are far from clear, as cash flows are negatively related to intangible investments, but positively related to tangible investments. Yet this is not surprising as tangible investments also include depreciation expenses (Erel et al (2012)). Further, they are not related to firms' cash holdings. It seems, if anything, that non-controlling blocks' targets are not financially constrained. In a separate set of regressions (not shown), I interact the cash flows variable with non-controlling blocks' dummy. The results, which could shed further light on the issue, are not significant.

These results can be complemented by looking at what happens to *acquirers* after the deal takes place. Table 6, Panel B, looks now at acquirers' intangible and tangible investments, as well as cash holdings. The Panel shows that firms acquiring non-controlling blocks reduce their investments in intangibles. There are two potential explanations. First, it can be that firms that do an M&A recognize goodwill, increasing their intangibles *vis a vis* those firms that acquire a non-controlling block. The other explanation is that acquirers of non-controlling blocks outsource their R&D investments in the target. Given that the dummy for non-controlling blocks is significant up to five

years after the deal, it is hardly the case that the effect is only due to goodwill recognition. Therefore, these results tend to show that acquirers of non-controlling blocks reduce their intangible investments, consistent with Aghion and Tirole's (1994) model. When analyzing tangible and cash holdings, no significant differences can be seen after three and five years between both type of acquirers. Non-controlling blocks invest less in tangibles the year after the deal takes place but not afterwards.

Aghion and Tirole (1994) show that non-controlling blocks might arise to solve contractual incompleteness problems between firms and their intensive R&D suppliers. It follows from their theory that suppliers' R&D investments should increase after the deal takes place, whereas firms' investments should decrease. This is exactly what the data shows. Targets investments in intangibles, which proxy for R&D, increase up to five years after the deal, whereas acquirers' investments decrease. Also, the results show that this type of deal does not appear to alleviate targets' financial constraints. For this to be the case investments should increase and cash holdings decrease, as firms do not need to hold cash for precautionary reasons. Though targets' intangibles and tangible investments increase, cash holding do not decrease, showing that financial constraints do not seem to play a role in non-controlling blocks.

I perform a variety of robustness checks using a matching estimation. More specifically, I use a propensity score matching, as in Lemmon and Roberts (2010). The matching allows me to overcome several problems that may arise in the data. For instance, as Table 2 shows, firms in M&As differ from those involved in non-controlling blocks in every single characteristic (size, profitability, leverage and listed status). Therefore, the estimation can be greatly improved by using non-parametric techniques. I match non-controlling blocks' targets (acquirers) with their closest five M&A targets (acquirers) using their firm characteristics one year before the deal takes place (size, profitability, leverage, fixed assets, cash holdings, age, industry classification and country) and also using the year the deal takes place. Outcomes are as defined in the previous section, making results comparable to OLS. Average treatment effects on the treated (ATT) for targets and acquirers are in Appendix B. The results in Table B1 show that both intangible and tangible investments increase for non-controlling blocks' targets, but there is no change for acquirers of non-controlling blocks. These results are robust

to the use of a different number of matches (from 1 to 4 as can be seen in Appendix B, Table B2) and also the inclusion of variables' growth, thus taking into account the parallel trends assumption (in Table B3).

b. Patenting Activity

Previous results show that non-controlling blocks' targets invest more in intangible fixed assets after the deal takes place. I strengthen this result by looking at patent activity. Zephyr provides patent data from EPO, the European Patent Office. More specifically, it provides data on the number of patents per company, and also on patents' associated publications. These publications include data on whether the patent was also granted in a country other than that where it was initially granted. For instance, a European patent can also be granted in Japan or the US. Yet these publications also include documents referring to the application and not the granting of the patent. Again I obtain patent data for a period of seven years: the year before the deal, the year the deal takes place and the five subsequent years. I use a diff-in-diff estimation to study whether being a target of a non-controlling block has any effect on patenting activity. The regression is:

$$y_{i,t} = Non\ Controlling\ Blocks_{i,t} + Target's\ Controls_{i,t} + \mu_t + \pi_i + \varepsilon_{i,t}$$

Where $y_{i,t}$ is either the number of patents or patents' associated publications, and *Non-Controlling Blocks*_{*i,t*} a dummy that takes the value of one the years after the deal for non-controlling blocks. Target *i*'s controls in year *t* include assets (in log), leverage, ROA, age and cash flows and fixed assets. Fixed effects include year (μ_t) and firm (π_i). Standard errors are robust and clustered at the firm-level.

The results in Table 7 show that non-controlling blocks' targets increase their patenting activity. Columns 1 to 4 look at targets' patenting activity, while columns 5 to 8 look at acquirers' activity. Column 1 shows that the number of patents increases after firms are targeted for a non-controlling block acquisition. While the dummy for non-controlling blocks is not significant in Column 2 after losing one third of the sample, it is still positive. In the same line, Columns 3 and 4

show that patents' associated publications also increase after the firm is target of a non-controlling block. The coefficients on the dummy for non-controlling blocks imply an increase in patenting activity between 10 and 16%. Furthermore, they also support previous findings that investments in intangible fixed assets also increase for non-controlling blocks' targets. If anything, patenting activity seems to increase after firms are targets of a non-controlling block. However, patenting activity does not seem to decrease for acquirers of non-controlling blocks. Columns 5 to 8 show that the dummy for non-controlling blocks is negative, yet not significant.

VI. Conclusion

Non-controlling blocks arise when a firm acquires an equity stake in a firm that already has a controlling shareholder. Crucially, the stake does not allow the incumbent shareholder to gain target's control. In this paper I document non-controlling blocks and study their determinants. I also study their implications in terms of investments and innovation activity. Using a comprehensive sample of deals that involve Western European (non-UK) targets I find that non-controlling blocks are indeed very common. Between 1997 and 2010 there were 10,460 deals, summing up €458 billion.

Using M&As as a counterfactual I study non-controlling blocks' determinants and implications. First, consistent with incoming shareholders being afraid of a potential expropriation by the existing controlling shareholder, I find that targets' agency problems deter non-controlling blocks from taking place. Furthermore, targets' agency problems also influence the price paid. Acquirers demand a discount when they fear a potential expropriation by the controlling shareholder. Second, non-controlling blocks seem to solve firms' contractual incompleteness problems with intensive R&D suppliers (Aghion and Tirole's (1994) and Dasgupta and Tao (2000)). Non-controlling blocks are more likely to occur when the target is an intensive R&D supplier. Third, non-controlling blocks are also used by financial firms as an intermediate step before an acquisition by another firm. Notably, a large proportion of these targets are taken over afterwards, supporting Greenwood and Schor's (2009). When it comes to non-controlling blocks' effects, I find that in line with their role in solving contractual incompleteness problems, these targets invest more in intangibles fixed assets, like patents

and software, after the deal takes place. Furthermore, they also increase their patenting activity. Finally, I show that non-controlling blocks do not seem to ease targets' financial constraints.

Non-controlling blocks open interesting avenues for future research. Promising areas to be explored are the product market consequences of this type of deals, as well as its impact on competing firms' decisions to acquire or merge with other firms.

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Table 1 Panel A: Non-Controlling Blocks, Toeholds, and M&As

The panel presents statistics for non-controlling blocks, toeholds and M&As. Non-controlling blocks are defined as deals where control is not achieved. Control is defined as the acquirer obtaining more than 50% of shares in private targets, and, in listed targets, acquiring 10% of the shares or more, and increasing his stake from less than 20% before the acquisition, to more than 20% after the acquisition (Dyck and Zingales (2004)). Toeholds are deals where the acquirer first gets a non-controlling block, and then obtains control, as in Betton et al (2009). M&As are deals where the acquirer ends with 100% of target's shares. The panel shows the number of deals, the average deal value, and total value of all deals per year, in thousand Euros. Data from Zephyr.

	Non-Controlling Blocks			Toeholds			M&A (100% acquisitions)		
	Number	Value (Mean)	Value (All)	Number	Value (Mean)	Value (All)	Number	Value (Mean)	Value (All)
1997	23	16,323	293,821	69	242,258	14,100,000	1,119	234,124	63,000,000
1998	37	149,887	1,948,533	137	662,295	64,200,000	3,490	299,160	147,000,000
1999	35	70,009	840,103	207	980,043	94,100,000	4,387	449,792	352,000,000
2000	92	316,353	12,000,000	257	615,510	109,000,000	3,421	597,850	560,000,000
2001	104	160,959	3,863,015	251	362,982	65,000,000	3,179	203,897	157,000,000
2002	458	93,892	16,300,000	427	314,669	91,300,000	3,112	193,892	142,000,000
2003	875	97,450	37,700,000	505	421,568	142,000,000	3,313	139,691	102,000,000
2004	973	46,730	23,100,000	610	214,963	93,500,000	3,894	233,387	198,000,000
2005	1,330	54,254	45,700,000	787	333,038	184,000,000	4,492	157,297	172,000,000
2006	1,525	92,359	99,800,000	940	224,375	149,000,000	4,890	276,646	321,000,000
2007	1,829	65,866	92,300,000	994	331,459	256,000,000	4,726	273,199	341,000,000
2008	1,366	57,830	59,900,000	775	453,785	248,000,000	4,412	388,563	379,000,000
2009	956	61,507	39,500,000	454	214,442	64,800,000	4,097	116,451	64,500,000
2010	857	44,328	25,500,000	603	297,452	104,000,000	5,562	154,507	107,000,000
All	10,460	68,093	458,745,472	7,016	345,725	1,679,000,000	54,094	275,157	3,105,500,000

Table 1, Panel B: Acquisition Process in Non-Controlling Blocks and M&As

The panel presents statistics for non-controlling blocks and M&As. The panel shows the initial number of shares the acquirer holds in the target prior to the acquisition (initial stake), the acquired number of shares (acquired stake), and the final number of shares (final stake), both for non-controlling blocks and M&As. The panel also separates between private and public targets. Finally, it also shows the proportion of acquirers and targets that are listed firms for both types of deal. Variable definitions in the Data Appendix. Data from Zephyr. *** p<0.01, ** p<0.05, * p<0.1.

Non-Controlling Blocks				
	All	Listed	Private	T-test
Initial Stake (%)	4.49	4.25	4.60	2.16**
Acquired Stake (%)	13.13	2.88	18.00	51.93***
Final Stake (%)	17.61	7.12	22.60	55.06***

M&A				
	All	Listed	Private	T-test
Initial Stake (%)	1.04	0.66	1.05	0.79
Acquired Stake (%)	98.96	99.34	98.95	-0.79
Final Stake (%)	100.00	100.00	100.00	-

Listed		
	Acquirers	Targets
Non Controlling	0.12	0.32
M&A	0.08	0.00

Table 1, Panel C: Agency Problems, Contractual Incompleteness and Financial Acquirers

The panel presents statistics for non-controlling blocks and M&As. The panel first shows mean values for proxies of agency problems. First, the difference between voting and cash flow rights (wedge), then the proportion of family firms, and then the anti self dealing index by Djankov et al (2008). The panel shows integration patterns, i.e., the proportion of its inputs the acquirer obtains from targets industry (upstream integration), the proportion it sells of all its products to target's industry (downstream integration), and whether both acquirer and target belong to the same 4-digit NAICS industry (horizontal integration). Non related deals are all those deals that do not fall in any of the previous categories. The panel also shows R&D intensity, defined as the proportion of firms whose expense in R&D is larger than 5% of its sales, at the 4-digit NAICS and year level, from Compustat. The panel also shows the number of non-controlling blocks that remain independent, and the number that are taken over by another firm as in Greenwood and Schor (2009). Finally, the panel also shows types of payment, where payment in cash (shares) means that the deal was fully paid in cash (shares). Variable definitions in the Data Appendix. Data from Faccio and Lang (2002), Djankov et al (2008), the Bureau of Economic Analysis' input-output table, Compustat and Zephyr.

Agency Problems				
	Wedge	Family Firms	Anti Self Dealing Index	
Non-Controlling	0.02	0.00	0.37	
M&A	0.00	0.00	0.36	
Integration (as % of all deals)				
	Upstream	Downstream	Horizontal	Non Related
Non-Controlling	0.28	0.34	0.12	0.25
M&A	0.23	0.16	0.38	0.22
Targets' R&D Intensity				
	Average		SD	Median
Non-Controlling	0.76		0.26	0.83
M&A	0.72		0.25	0.79
Type of Acquirer and Future Takeovers				
	Number	Independent (%)	Taken Over (%)	
Financial Acquirer	5,834	0.73	0.27	
Non-Financial Acquirer	4,626	0.78	0.22	
Payment				
	All Cash	All Shares	Mixed	
Non-Controlling	0.36	0.00	0.63	
M&A	0.07	0.03	0.90	

Table 2, Panel A: Firms' Characteristics

The panel presents statistics for non-controlling blocks and M&As' acquirers and targets. The panel shows firm level statistics the year before the deal. These include returns over assets (ROA), defined as EBITDA (EBIT) over total assets; leverage, defined as debt over assets; assets (in million EUR); and a listed status dummy, that takes the value of 1 for all listed firms. Variable definitions in the Data Appendix. Data from Zephyr. All variables are winsorized at the 1%. *** p<0.01, ** p<0.05, * p<0.1.

Acquirers	Non-Controlling	M&A	T-test
ROA	0.07	0.07	-1.53
Leverage	0.49	0.54	-10.99***
Assets (million €)	56,700	3,244	27.79***
Listed	0.12	0.08	13.59***
Targets	Non-Controlling	M&A	T-test
ROA	0.03	0.07	-14.54***
Leverage	0.52	0.63	-23.57***
Assets (million €)	8,274	271	18.42***
Listed	0.32	0.00	152.38***
All	Acquirers	Targets	T-test
ROA	0.07	0.06	6.60***
Leverage	0.53	0.61	-29.19***
Assets (million €)	16,400	2,242	16.66***
Listed	0.09	0.06	24.57***
Non-Controlling	Acquirers	Targets	T-test
ROA	0.07	0.03	14.26***
Leverage	0.49	0.52	-5.33***
Assets (million €)	56,700	8,274	14.78***
Listed	0.12	0.32	-38.06***
M&A	Acquirers	Targets	T-test
ROA	0.07	0.07	-0.21
Leverage	0.54	0.63	-31.46***
Assets (million €)	3,244	271	9.78***
Listed	0.08	0.00	65.20***

Table 2, Panel B: Independent and Taken Over Non-Controlling Blocks' Characteristics

The panel presents statistics for non-controlling blocks and M&As' acquirers and targets. The panel shows firm level statistics, such as ROA, leverage, assets (in million EUR), and a listed status dummy, as previously defined in Table 2, Panel B. T tests comparing means are also shown. The panel differentiates between those targets that remain independent after being part of a non-controlling block (Independent), from those that were taken over afterwards (Taken Over). More specifically, compares ROA, leverage and assets both before the acquisition of the non-controlling block (t), and before the takeover (t+1). Variable definitions in the Data Appendix. Data from Zephyr. All variables are winsorized at the 1%. *** p<0.01, ** p<0.05, * p<0.1.

Independent and Taken Over NCBs			
Targets	Independent	Taken Over	T-test
ROA	0.03	0.02	3.88***
Leverage	0.53	0.51	1.73*
Assets (million €)	7,406	11,000	-2.06**
Listed	0.33	0.30	2.52**

Taken Over NCBs			
Targets	Non Controlling (t)	Takeover (t+1)	T-test
ROA	0.02	0.03	-1.19
Leverage	0.51	0.57	-3.77***
Assets (million €)	11,000	2,135	2.46**

Table 3: Probit Regressions for Non-Controlling Blocks on Agency Problems at the Firm-level

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and M&As the value of zero (0). Wedge is defined as the difference between voting and cash flow rights. Voting rights are the proportion of voting rights the controlling shareholder has in the firm. Family firm dummy is a dummy that takes the value of one (1) for all family controlled firms, and zero (0) otherwise. Initial stake is the number of shares (in %) the acquirer holds in the target prior to the acquisition. Controls include country, industry and deal year fixed effects. Variable definitions in the Data Appendix. Data from Zephyr and Faccio and Lang (2002). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Targets'						
Wedge (Voting - Cash Flow Rights)	-0.02** (0.01)		-0.03** (0.01)			
Voting Rights	0.01 (0.02)		0.01 (0.02)			
Family Firm Dummy		0.48 (0.47)	0.53 (0.49)			
Assets (in log)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)
Leverage	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)
ROA	-0.91*** (0.09)	-0.91*** (0.09)	-0.91*** (0.09)	-0.90*** (0.09)	-0.90*** (0.09)	-0.90*** (0.09)
Listed Dummy	2.53*** (0.92)	1.62*** (0.49)	2.48*** (0.96)	-0.22 (0.78)	1.22*** (0.22)	-0.12 (0.77)
Acquirers'						
Wedge (Voting - Cash Flow Rights)				-0.04 (0.03)		-0.05 (0.03)
Voting Rights				-0.03* (0.01)		-0.03** (0.01)
Family Firm Dummy					-0.63*** (0.10)	-0.67*** (0.14)
Assets (in log)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Leverage	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.09)	-0.69*** (0.09)	-0.69*** (0.09)
ROA	0.10 (0.23)	0.10 (0.23)	0.10 (0.23)	0.10 (0.23)	0.09 (0.23)	0.09 (0.23)
Listed Dummy	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)
Initial Stake (%)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,872	13,872	13,872	13,892	13,892	13,892

Table 4: Probit Regressions for Non-Controlling Blocks on Agency Problems at the Country-level, Contractual Incompleteness, and Financial Acquirers

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and M&As the value of zero (0). The anti-self dealing index by Djankov et al (2008) measures minority investor protection, being one (1) the maximum and zero (0) the minimum. Controls include country, industry and deal year fixed effects. Variable definitions in the Data Appendix. Data from Zephyr and Djankov et al (2008). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables		(1)	(2)	(3)	(4)	(5)
Agency Problems	Anti Self Dealing Index	3.39*** (1.21)	3.42*** (1.23)	3.41*** (1.23)	2.61** (1.26)	1.58 (1.71)
Contractual Incompleteness	Same Industry Dummy	-0.77*** (0.10)	-0.78*** (0.10)	-0.78*** (0.10)	-0.75*** (0.09)	-0.47*** (0.09)
	Upstream Integration	-2.05*** (0.32)	-2.11*** (0.35)	-4.60*** (1.38)	-4.82*** (1.30)	-4.14*** (1.50)
	Downstream Integration	-1.12*** (0.25)	-1.12*** (0.26)	-1.13*** (0.26)	-1.13*** (0.28)	-0.30 (0.27)
	R&D		-0.04 (0.10)	-0.09 (0.11)	-0.10 (0.10)	-0.15 (0.14)
	R&D x Upstream Integration			2.80** (1.14)	3.17*** (1.08)	3.87** (1.82)
Financial Acquirer	Financial Acquirer Dummy	1.46*** (0.12)	1.46*** (0.12)	1.45*** (0.12)	1.34*** (0.12)	1.43*** (0.13)
Payment	Cash				0.85*** (0.07)	0.56*** (0.07)
	Shares				-0.97*** (0.12)	-1.57*** (0.20)
Controls		Yes	Yes	Yes	Yes	Yes
Firms' Characteristics		No	No	No	No	Yes
	Observations	63,400	61,654	61,654	61,654	15,061

Table 5: OLS Regressions on the Price per Stake

The table presents OLS regressions for the ratio (in log) of price paid over acquired stake as dependent variable. The regressions consider first time acquirers of non-controlling blocks (uninformed acquirers) and second or subsequent time acquirers of non-controlling blocks (informed acquirers). Controls include industry and deal year fixed effects. Variable definitions in the Data Appendix. Data from Zephyr, Faccio and Lang (2002) and Djankov et al (2008). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	Uninformed Acquirers				Informed Acquirers			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Agency Problems								
Wedge (Voting - Cash Flow Rights)	-0.01*** (0.00)			-0.00 (0.01)	-0.01 (0.01)			-0.01 (0.01)
Voting Rights	-0.00 (0.00)			-0.00 (0.01)	-0.03** (0.02)			-0.03* (0.02)
Family Firm Dummy		-0.87** (0.43)		-0.93* (0.53)		-0.07 (0.35)		0.20 (0.30)
Anti Self Dealing Index			0.67 (0.45)	1.18* (0.60)			0.15 (0.34)	0.42 (0.32)
Targets'								
Assets (in log)	0.74*** (0.03)	0.79*** (0.03)	0.79*** (0.03)	0.75*** (0.03)	0.67*** (0.07)	0.78*** (0.03)	0.78*** (0.03)	0.67*** (0.07)
Leverage	-0.77*** (0.20)	-0.73*** (0.17)	-0.71*** (0.16)	-0.77*** (0.21)	-0.25 (0.32)	-0.53*** (0.17)	-0.53*** (0.17)	-0.25 (0.32)
ROA	-0.01 (0.28)	-0.08 (0.24)	-0.05 (0.24)	-0.02 (0.28)	0.30 (0.75)	0.52 (0.41)	0.52 (0.42)	0.29 (0.76)
Listed Dummy	-0.12 (0.09)	-0.03 (0.10)	-0.03 (0.10)	0.08 (0.81)	-1.44 (0.92)	0.28** (0.11)	0.28** (0.11)	-1.40 (0.93)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,177	1,850	1,850	1,177	1,564	3,973	3,973	1,564
R-squared	0.72	0.77	0.77	0.72	0.70	0.75	0.75	0.70

Table 6, Panel A: OLS Regressions on Targets

The panel presents OLS regressions for intangible and tangible investments, and cash holdings, on a dummy that takes the value of one (1) for all non-controlling blocks, and zero otherwise, and a set of controls. Dependent variables are as in Kim and Weisbach (2008). Variable definitions in the Data Appendix. Controls include country, industry and deal year fixed effects. All variables are winsorized at the 1%. Data from Zephyr and Amadeus. Robust and firm clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	Intangible Investments			Tangible Investments			Cash to Assets Ratio		
	t+1	t+3	t+5	t+1	t+3	t+5	t+1	t+3	t+5
Non-Controlling Block (t)	0.015*** (0.002)	0.036*** (0.007)	0.056*** (0.015)	0.048*** (0.009)	0.093*** (0.020)	0.114*** (0.036)	0.026*** (0.007)	0.036*** (0.010)	0.039** (0.018)
Firm Characteristics (t-1)									
Assets (in log)	-0.002*** (0.001)	-0.010*** (0.002)	-0.018*** (0.004)	-0.009*** (0.002)	-0.034*** (0.005)	-0.057*** (0.010)	-0.011*** (0.002)	-0.019*** (0.003)	-0.028*** (0.005)
Leverage	-0.009*** (0.003)	-0.022** (0.010)	0.005 (0.018)	-0.038*** (0.015)	-0.099*** (0.035)	-0.049 (0.057)	0.044*** (0.011)	0.065*** (0.019)	0.064* (0.035)
ROA	0.021** (0.009)	0.019 (0.022)	0.103*** (0.034)	-0.143*** (0.040)	-0.263*** (0.099)	-0.150 (0.139)	-0.005 (0.028)	-0.099** (0.045)	-0.111 (0.074)
Fixed Assets	-0.012*** (0.004)	-0.036*** (0.011)	-0.033 (0.023)	-0.054*** (0.016)	0.013 (0.038)	0.153** (0.069)	0.074*** (0.011)	0.113*** (0.018)	0.158*** (0.030)
Cash Flows	-0.026** (0.011)	-0.048* (0.027)	-0.078** (0.039)	0.157*** (0.045)	0.246** (0.118)	0.251 (0.178)	0.012 (0.028)	0.095** (0.043)	0.099 (0.072)
Age (in log)	-0.001 (0.001)	0.003 (0.004)	0.012 (0.008)	-0.015*** (0.005)	-0.012 (0.013)	-0.022 (0.024)	-0.005 (0.004)	0.005 (0.006)	-0.008 (0.010)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,092	3,382	1,787	3,385	2,208	1,165	4,963	3,416	1,873
R-squared	0.031	0.048	0.065	0.048	0.081	0.100	0.038	0.060	0.073

Table 6, Panel B: OLS Regressions on Acquirers

The panel presents OLS regressions for intangible and tangible investments, and cash holdings, on a dummy that takes the value of one (1) for all non-controlling blocks, and zero otherwise, and a set of controls. Dependent variables are as in Kim and Weisbach (2008). Variable definitions in the Data Appendix. Controls include country, industry and deal year fixed effects. All variables are winsorized at the 1%. Data from Zephyr and Amadeus. Robust and firm clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	Intangible Investments			Tangible Investments			Cash to Assets Ratio		
	t+1	t+3	t+5	t+1	t+3	t+5	t+1	t+3	t+5
Non Controlling Block (t)	-0.011*** (0.002)	-0.014*** (0.005)	-0.016* (0.010)	-0.035*** (0.010)	-0.031* (0.018)	0.011 (0.032)	0.007 (0.006)	0.006 (0.010)	-0.005 (0.015)
Firm Characteristics (t-1)									
Assets (in log)	-0.004*** (0.001)	-0.007*** (0.001)	-0.008*** (0.002)	-0.025*** (0.002)	-0.053*** (0.004)	-0.066*** (0.007)	-0.005*** (0.001)	-0.015*** (0.002)	-0.021*** (0.003)
Leverage	0.011** (0.005)	0.010 (0.010)	0.023 (0.019)	-0.042*** (0.015)	-0.034 (0.028)	-0.042 (0.047)	0.044*** (0.008)	0.100*** (0.017)	0.102*** (0.024)
ROA	-0.012 (0.013)	0.062** (0.028)	0.031 (0.053)	-0.110** (0.047)	-0.144 (0.090)	-0.177 (0.155)	0.032 (0.026)	0.021 (0.046)	0.145* (0.077)
Fixed Assets	0.000 (0.004)	-0.016* (0.009)	-0.032** (0.016)	0.024 (0.015)	0.076*** (0.029)	0.128** (0.050)	0.071*** (0.008)	0.135*** (0.015)	0.151*** (0.023)
Cash Flows	-0.012 (0.011)	-0.051** (0.024)	-0.044 (0.037)	0.125** (0.049)	0.291*** (0.099)	0.362** (0.151)	-0.019 (0.024)	0.011 (0.041)	-0.066 (0.062)
Age (in log)	-0.003** (0.001)	-0.007** (0.003)	-0.000 (0.005)	-0.016*** (0.004)	-0.024*** (0.008)	-0.052*** (0.015)	-0.004* (0.002)	-0.000 (0.004)	-0.004 (0.006)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,595	4,549	2,629	5,400	3,654	2,093	6,460	4,529	2,730
R-squared	0.058	0.048	0.053	0.086	0.115	0.116	0.029	0.057	0.064

Table 7: Panel Fixed Effect Regressions on Patenting Activity

The table presents panel fixed effect regressions for the number of patents and patents' associated publications as dependent variables. Fixed effects include firm and deal year. Variable definitions in the Data Appendix. Data from Zephyr and EPO. All variables are winsorized at the 1%. Robust and firm-clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	Targets				Acquirers			
	Patents (in log)		Associated Publications (in log)		Patents (in log)		Associated Publications (in log)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-Controlling Block (t)	0.005** (0.002)	0.004 (0.003)	0.007*** (0.002)	0.008** (0.003)	-0.001 (0.003)	-0.004 (0.003)	-0.000 (0.004)	-0.004 (0.004)
Firm Characteristics								
Assets (in log)	0.012*** (0.001)	0.018*** (0.002)	0.015*** (0.002)	0.021*** (0.002)	0.021*** (0.002)	0.027*** (0.003)	0.026*** (0.002)	0.031*** (0.003)
Leverage	-0.001 (0.003)	-0.002 (0.004)	-0.002 (0.003)	-0.003 (0.005)	0.007 (0.007)	0.012 (0.008)	0.009 (0.008)	0.016 (0.010)
ROA	-0.014*** (0.004)	-0.024** (0.010)	-0.018*** (0.006)	-0.029** (0.012)	-0.024** (0.010)	-0.016 (0.017)	-0.017 (0.012)	-0.002 (0.018)
Age (in log)	0.011** (0.005)	0.013** (0.006)	0.009* (0.005)	0.012* (0.007)	0.033*** (0.006)	0.026*** (0.006)	0.035*** (0.006)	0.027*** (0.007)
Cash Flows		0.003 (0.010)		0.003 (0.012)		-0.010 (0.016)		-0.015 (0.017)
Fixed Assets		0.003 (0.007)		-0.000 (0.008)		0.003 (0.010)		0.001 (0.012)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and Industry FE	No	No	No	No	No	No	No	No
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44,968	31,473	44,968	31,473	52,897	39,694	52,897	39,694

Appendix A: Robustness Checks

Table A1: Redefining Control Acquisitions

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and M&As the value of zero (0). The panel replicates Table 3, but, for listed firms, non-controlling blocks are defined now as all those deals where the acquirer ends up with less than 20% of the shares, as suggested by La Porta et al (1999) and Faccio and Lang (2002). Variable definitions in the Data Appendix. Data from Zephyr and Faccio and Lang (2002). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Targets'						
Wedge (Voting - Cash Flow Rights)	-0.02** (0.01)		-0.03** (0.01)			
Voting Rights	0.01 (0.02)		0.01 (0.02)			
Family Firm Dummy		0.48 (0.47)	0.53 (0.49)			
Assets (in log)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)	0.19*** (0.02)
Leverage	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)	-0.61*** (0.06)
ROA	-0.91*** (0.09)	-0.91*** (0.09)	-0.91*** (0.09)	-0.90*** (0.09)	-0.90*** (0.09)	-0.90*** (0.09)
Listed Dummy	2.53*** (0.92)	1.62*** (0.49)	2.48*** (0.96)	-0.22 (0.78)	1.22*** (0.22)	-0.12 (0.77)
Acquirers'						
Wedge (Voting - Cash Flow Rights)				-0.04 (0.03)		-0.05 (0.03)
Voting Rights				-0.03* (0.01)		-0.03** (0.01)
Family Firm Dummy					-0.63*** (0.10)	-0.67*** (0.14)
Assets (in log)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Leverage	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.09)	-0.69*** (0.09)	-0.69*** (0.09)
ROA	0.10 (0.23)	0.10 (0.23)	0.10 (0.23)	0.10 (0.23)	0.09 (0.23)	0.09 (0.23)
Listed Dummy	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)	-0.30*** (0.08)
Initial Stake (%)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,872	13,872	13,872	13,892	13,892	13,892

Table A2: Redefining Control Acquisitions (continued)

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and M&As the value of zero (0). The panel replicates Table 4, but, for listed firms, non-controlling blocks are defined now as all those deals where the acquirer ends up with less than 20% of the shares, as suggested by La Porta et al (1999) and Faccio and Lang (2002). Variable definitions in the Data Appendix. Data from Zephyr and Faccio and Lang (2002). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables		(1)	(2)	(3)	(4)	(5)
Agency Problems	Anti Self Dealing Index	3.42*** (1.21)	3.46*** (1.23)	3.45*** (1.23)	2.63** (1.26)	1.59 (1.71)
Contractual Incompleteness	Same Industry Dummy	-0.77*** (0.10)	-0.78*** (0.10)	-0.78*** (0.10)	-0.75*** (0.09)	-0.47*** (0.09)
	Upstream Integration	-2.03*** (0.32)	-2.09*** (0.35)	-4.52*** (1.37)	-4.75*** (1.29)	-4.13*** (1.49)
	Downstream Integration	-1.10*** (0.26)	-1.10*** (0.26)	-1.12*** (0.27)	-1.12*** (0.28)	-0.30 (0.27)
	R&D		-0.04 (0.10)	-0.09 (0.10)	-0.10 (0.10)	-0.15 (0.13)
	R&D x Upstream Integration			2.73** (1.13)	3.11*** (1.08)	3.85** (1.82)
Financial Acquirer	Financial Bidder	1.46*** (0.12)	1.46*** (0.12)	1.45*** (0.12)	1.34*** (0.12)	1.43*** (0.13)
Payment	Cash				0.85*** (0.07)	0.56*** (0.07)
	Shares				-0.97*** (0.12)	-1.56*** (0.20)
Controls		Yes	Yes	Yes	Yes	Yes
Firms' Characteristics		No	No	No	No	Yes
	Observations	63,318	61,572	61,572	61,572	15,020

Table A3: Considering Partial Acquisitions

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and partial acquisitions and M&As the value of zero (0), following Ouimet (2012). The panel replicates Table 3, but now including partial acquisitions as well. Variable definitions in the Data Appendix. Data from Zephyr and Faccio and Lang (2002). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	
Targets'	Wedge (Voting - Cash Flow Rights)	-0.02** (0.01)		-0.03** (0.01)			
	Voting Rights	0.01 (0.02)		0.01 (0.02)			
	Family Firm Dummy		0.53 (0.47)	0.58 (0.49)			
	Assets (in log)	0.18*** (0.01)	0.18*** (0.01)	0.18*** (0.01)	0.18*** (0.01)	0.18*** (0.01)	0.18*** (0.01)
	Leverage	-0.59*** (0.06)	-0.59*** (0.06)	-0.59*** (0.06)	-0.59*** (0.06)	-0.59*** (0.06)	-0.59*** (0.06)
	ROA	-0.87*** (0.09)	-0.87*** (0.09)	-0.87*** (0.09)	-0.87*** (0.09)	-0.87*** (0.09)	-0.87*** (0.09)
	Listed Dummy	2.55*** (0.89)	1.66*** (0.49)	2.49*** (0.92)	-0.13 (0.76)	1.26*** (0.20)	-0.03 (0.76)
Acquirers'	Wedge (Voting - Cash Flow Rights)			-0.04 (0.03)		-0.05 (0.03)	
	Voting Rights			-0.03* (0.01)		-0.03** (0.01)	
	Family Firm Dummy				-0.62*** (0.11)	-0.65*** (0.15)	
	Assets (in log)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
	Leverage	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)	-0.69*** (0.08)
	ROA	0.12 (0.24)	0.12 (0.24)	0.12 (0.24)	0.11 (0.23)	0.11 (0.23)	0.11 (0.23)
	Listed Dummy	-0.33*** (0.08)	-0.33*** (0.08)	-0.33*** (0.08)	-0.33*** (0.08)	-0.33*** (0.08)	-0.33*** (0.08)
Initial Stake (%)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	14,149	14,149	14,149	14,169	14,169	14,169	

Table A4: Considering Partial Acquisitions (continued)

The table presents probit regressions for non-controlling blocks and M&As, where non-controlling blocks take the value of one (1) and partial acquisitions and M&As the value of zero (0), following Ouimet (2012). The panel replicates Table 4, but now including partial acquisitions as well. Variable definitions in the Data Appendix. Data from Zephyr and Djankov et al (2008). All variables are winsorized at the 1%. Robust and dual-cluster (year-industry) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Variables		(1)	(2)	(3)	(4)	(5)
Agency Problems	Anti Self Dealing Index	2.58** (1.08)	2.97** (1.16)	2.97** (1.16)	2.45** (1.19)	0.47 (1.99)
Contractual Incompleteness	Same Industry Dummy	-0.69*** (0.09)	-0.72*** (0.09)	-0.72*** (0.09)	-0.67*** (0.08)	-0.45*** (0.07)
	Upstream Integration	-1.86*** (0.30)	-1.91*** (0.32)	-4.20*** (1.31)	-4.13*** (1.23)	-3.69*** (1.37)
	Downstream Integration	-1.05*** (0.29)	-1.07*** (0.31)	-1.08*** (0.31)	-0.99*** (0.31)	-0.65* (0.35)
	R&D		-0.07 (0.09)	-0.11 (0.09)	-0.12 (0.09)	-0.14 (0.14)
	R&D x Upstream Integration			2.58** (1.06)	2.68*** (1.00)	3.28** (1.63)
Financial Acquirer	Financial Bidder	1.29*** (0.10)	1.35*** (0.11)	1.35*** (0.11)	1.27*** (0.10)	1.22*** (0.12)
Payment	Cash				0.61*** (0.06)	0.39*** (0.06)
	Shares				-0.91*** (0.12)	-1.25*** (0.15)
Controls		Yes	Yes	Yes	Yes	Yes
Firms' Characteristics		No	No	No	No	Yes
	Observations	72,672	66,648	66,648	66,648	16,152

Appendix B: Robustness Tests Using Matching Estimation

Table B1: Propensity Score Matching

The table presents average treatment effects for the treated (ATT) for both targets and acquirers of non-controlling blocks, with targets and acquirers of M&As as counterfactual, using a propensity score matching for the five (5) closest firms on a set of characteristics the year before the deal. These include assets (in log), leverage, ROA, fixed assets, cash flows, firm age (in log), country and industry dummies, and the year the deal takes place, as in Table 6. Variable definitions in the Data Appendix. Data from Zephyr. Heteroskedasticity consistent standard errors are used. All variables are winsorized at the 1%. *** p<0.01, ** p<0.05, * p<0.

Non Controlling Blocks' Targets					
	Treated	Controls	Difference	S.E.	T-stat
Intangible Investments					
t+1	0.01	0.00	0.01	0.00	2.36**
t+3	0.03	0.00	0.04	0.01	3.72***
t+5	0.05	0.00	0.05	0.02	2.71***
Tangible Investments					
t+1	0.08	0.04	0.04	0.02	2.35**
t+3	0.23	0.14	0.10	0.04	2.76***
t+5	0.37	0.29	0.08	0.06	1.45
Cash to Assets Ratio					
t+1	0.02	0.01	0.00	0.01	0.48
t+3	0.02	0.01	0.01	0.01	1.07
t+5	0.03	0.02	0.01	0.02	0.53
Non Controlling Blocks' Acquirers					
	Treated	Controls	Difference	S.E.	T-stat
Intangible Investments					
t+1	0.00	0.02	-0.01	0.01	-1.43
t+3	0.01	0.02	-0.01	0.02	-0.8
t+5	0.02	0.04	-0.02	0.03	-0.67
Tangible Investments					
t+1	0.10	0.14	-0.03	0.03	-1.27
t+3	0.23	0.25	-0.02	0.05	-0.49
t+5	0.39	0.39	0.00	0.08	-0.01
Cash to Assets Ratio					
t+1	0.00	-0.01	0.01	0.01	0.59
t+3	0.00	0.00	0.00	0.02	0.16
t+5	-0.01	0.00	0.00	0.04	-0.08

Table B2: Matching with Different Number of Matches

The table presents average treatment effects for the treated (ATT) for both targets and acquirers of NCBs, with targets and acquirers of M&As as counterfactual, using a propensity score matching for the four, three, two and one closest firms on a set of characteristics the year before the deal. These include assets (in log), leverage, ROA, fixed assets, cash flows, firm age (in log), country and industry dummies, and the year the deal takes place. Variable definitions in the Data Appendix. Data from Zephyr and Amadeus. All variables are winsorized at the 1%. Heteroskedasticity consistent standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Non Controlling Blocks' Targets				
	N=4	N=3	N=2	N=1
Intangible Investments				
t+1	0.01**	0.01***	0.01**	0.01***
t+3	0.04***	0.04***	0.04***	0.05***
t+5	0.05***	0.05***	0.06***	0.06***
Tangible Investments				
t+1	0.04**	0.04***	0.05***	0.06***
t+3	0.10***	0.11***	0.10***	0.09**
t+5	0.08	0.08	0.09	0.08
Cash to Assets Ratio				
t+1	0.00	0.00	0.00	0.00
t+3	0.01	0.01	0.01	0.01
t+5	0.01	0.01	0.01	0.01

Table B3: Matching and the Parallel Trends Assumption

The table presents average treatment effects for the treated (ATT) for both targets and acquirers of NCBs, with targets and acquirers of M&As as counterfactual, using a propensity score matching for the five closest firms on a set of characteristics the year before the deal. These include assets (in log), leverage, ROA, fixed assets, cash flows, firm age (in log), country and industry dummies, and the year the deal takes place. The estimation also considers the variables' growth between two years before the deal and the year before the deal. The variables for which growth is considered are assets, leverage, profitability (ROA), cash flows and fixed assets. Variable definitions in the Data Appendix. Data from Zephyr and Amadeus. All variables are winsorized at the 1%. Heteroskedasticity consistent standard errors are used. *** p<0.01, ** p<0.05, * p<0.1

Non Controlling Blocks' Targets and Parallel Trends Assumption

	Treated	Controls	Difference	S.E.	T-stat
Intangible Investments					
t+1	0.02	0.00	0.02	0.01	2.25**
t+3	0.07	0.02	0.05	0.02	1.91*
t+5	0.08	0.05	0.03	0.05	0.67
Tangible Investments					
t+1	0.17	0.18	0.00	0.04	-0.07
t+3	0.43	0.28	0.15	0.06	2.37**
t+5	0.55	0.47	0.08	0.09	0.85
Cash to Assets Ratio					
t+1	0.05	0.05	0.00	0.03	0.01
t+3	0.07	0.04	0.03	0.03	0.84
t+5	0.05	0.05	0.00	0.05	-0.05

Data Appendix

Variables	Definition
Deal-level Variables	
Non-controlling Blocks	Non-controlling blocks are deals where control is not achieved. Control is defined as the acquirer obtaining more than 50% of shares in private targets, and, in listed targets, acquiring 10% of the shares or more, and increasing his stake from less than 20% before the acquisition, to more than 20% after the acquisition (Dyck and Zingales (2004)).
Toeholds	Toeholds are deals where the acquirer first gets a non-controlling blocks, and then obtains control, as in Betton et al (2009).
M&As	M&As are deals where the acquirer ends with 100% of target's shares.
Value per Stake (in log)	Deal price over proportion of target's shares acquired (in log) (Zephyr).
Initial Stake	Proportion of target's total shares the acquirer holds in the target prior to the acquisition (Zephyr).
Acquired Stake	Proportion of target's total shares acquired during the deal (Zephyr).
Final Stake	Final number of shares (Zephyr).
Upstream Integration	Proportion of its inputs the acquirer obtains from targets industry (Bureau of Economic Analysis' input-output table).
Downstream Integration	Proportion it sells of all its products to target's industry (Bureau of Economic Analysis' input-output table).
Horizontal Integration	Dummy that takes the value of one (1) if the firm is both acquirer and target belong to the same 4-digit NAICS industry (Zephyr).
Non Related	Non related deals are all those deals that are neither vertically nor horizontally integrated (Zephyr).
Independent Non-Controlling Blocks	Non-controlling blocks that are not taken over by another firm after the non-controlling block acquisition (Zephyr).
Taken Over Non-Controlling Blocks	Non-controlling blocks that are taken over by another firm after the non-controlling block acquisition (Zephyr).
All Cash	Dummy that takes the value of one (1) if the deal was paid in cash, zero otherwise (Zephyr).
All Shares	Dummy that takes the value of one (1) if the deal was paid in shares zero otherwise (Zephyr).
Mixed	Deals paid both in cash and shares.

Variables**Definition****Target and Acquirer Firm-level Characteristics (Tables 3, 4 and 5)**

Voting Rights	Proportion of voting rights the controlling shareholder has in the firm (Faccio and Lang (2002)).
Wedge	Difference between voting and cash flow rights (Faccio and Lang (2002)).
Family Firm Dummy	Dummy that takes the value of one (1) if the firm is family controlled (Faccio and Lang (2002)).
Anti-Self Dealing Index	Index measuring the ease with which controlling shareholders can expropriate minority investors. One (1) is the maximum protection, zero (0) the minimum (Djankov et al (2008)).
R&D Intensity	Proportion of firms whose expense in R&D is larger than 5% of its sales, at the 4-digit NAICS and year level (Compustat).
Financial Acquirer	Dummy that takes the value of one (1) if the acquirer belongs to NAICS 52 (Zephyr).
ROA	Returns over assets defined as EBITDA (EBIT) over total assets (Zephyr).
Leverage	Leverage, defined as debt over assets (Zephyr).
Assets (in million Eur)	Firms' assets (in million Eur).
Listed	Dummy that takes the value of 1 for all listed firms, zero otherwise (Zephyr).
Price per Stake	Ratio (in log) of the price paid over the acquired stake (the proportion of shares acquired) (Zephyr).

Target and Acquirer Firm-level Characteristics (Tables 6 and 7)

Intangible Investments	Ratio (in log) of intangible investments (IFAS) in years t+1, t+3 and t+5, normalized by assets (TOAS) in year t (Amadeus).
Tangible Investments	Ratio (in log) of tangible investments (TFAS) plus depreciation (DEPRE) in years t+1, t+3 and t+5, normalized by assets (TOAS) in year t (Amadeus).
Cash to Assets Ratio	Ratio (in log) of growth in cash holdings (CASH) in years t+1, t+3 and t+, normalized by assets (TOAS) in year t (Amadeus).
Assets (in log)	Log of assets (TOAS) (Amadeus).
Leverage	Leverage defined as current liabilities (CULI) and long term debt (LTDB) over assets (Amadeus).
ROA	Returns over assets defined as EBITDA (EBIT) over total assets (Amadeus).
Fixed Assets	Fixed assets (FIAS) over assets (TOAS) (Amadeus).
Cash Flows	Cash flows (CF) over assets (TOAS) (Amadeus).
Age	Firm age (in log) (Amadeus).
Patents (in log)	Number of patents granted per firm in a given year (in log) (European Patent Office)
Associated Publications (in log)	Number of patents' associated publications (in log). These include, but are not restricted to, the patent being granted in a country other than where the patent was originally granted (European Patent Office)