

STOCKHOLM SCHOOL OF ECONOMICS

To Have or Not to Have?

The Impact of Financial Targets on the Cost of Capital

Erika Madebrink¹

Linda Shi²

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Abstract: We study the effect of communicating long-term financial targets, but not the attainment of them, on the equity cost of capital. We examine the effect targets have on risk factors in an augmented Fama and French model, where illiquidity is added as a risk factor, and find that dividend, profitability and leverage targets decrease the cost of capital through the market risk premium and SMB risk factors. Sales, share-related and cash flow targets have no impact. Contrary to our initial belief, the impact of targets on the cost of capital does not feed through the illiquidity risk factor. We conclude that firms should communicate financial targets regarding dividend pay-out ratio, profitability and leverage if they are interested in lowering their cost of capital. A future research topic is the effect the attainment of financial targets has on the cost of capital.

Keywords: equity cost of capital, estimation risk, financial targets, liquidity risk, voluntary information disclosure

Tutor: Christian Huse, Assistant Professor, Stockholm School of Economics

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¹ 22443@student.hhs.se

² 22492@student.hhs.se

Table of Contents

1.	Introduction.....	2
2.	Theoretical Framework.....	6
	2.1 Previous Literature.....	6
	2.2 Hypotheses.....	10
3.	Data.....	11
	3.1 Specification of Variables.....	11
	3.2 Data Collection Methodology.....	12
	3.3 Descriptive Statistics.....	13
4.	Methodology.....	19
	4.1 Research Design.....	19
	4.2 Regression Models.....	20
	4.3 Research Design Issues and Robustness Tests.....	23
5.	Results.....	24
	5.1 Illiquidity Regression.....	24
	5.2 Factor Regressions.....	26
	5.2.1 Alpha.....	26
	5.2.2 Market Excess Return.....	27
	5.2.3 SMB.....	28
	5.2.4 HML.....	30
	5.2.5 IML.....	31
	5.3 Robustness Tests.....	32
6.	Analysis.....	34
7.	Conclusion.....	39
8.	Reference List.....	41
9.	Appendix.....	43
	9.1 Generation of Risk Factors.....	43
	9.2 Robustness Test Results.....	45

1. Introduction

In our thesis we look at what effect setting and communicating quantitative long-term financial targets has on a firm's cost of capital. Many publicly listed firms communicate long-term financial targets for e.g. sales growth, operating margin, profitability and dividend pay-out ratio, either by publishing them in the annual report or through other investor relations activities. Does this voluntary disclosure of financial targets have any effect on the cost of capital of the firm? This is an important question primarily for boards and executive management teams of listed firms, since it will have implications for the firm's financing, e.g. the amount of capital the firm will be able to raise in a seasoned equity offering. The matter could also be of interest for boards, owners and executive management of unlisted firms looking to do an initial public offering, as it will affect the amount of shares they will be able to sell and/or capital they will be able to raise in the public market. If we assume that financial targets have informational value for investors and that this affects the cost of capital, the parameters upon which rational investors base their investment decision will change when targets are communicated. Hence our thesis should be of interest to investors as well.

The question of how financial targets affect the cost of capital is linked to that of the voluntary disclosure of information by firms in general and its effect on the cost of capital. This area is covered quite extensively in the literature. In previous research, it is a truth almost universally acknowledged that a higher degree of information disclosure decreases a firm's cost of capital, with a few exceptions. The main explanation and theory behind this result has to do with information asymmetry and the principal-agent problem. By disclosing more information, the information asymmetry between management of a firm, on the one hand, and the shareholders of the firm and other potential investors, on the other hand, should decrease, thus leading to reduced so called estimation risk for investors and increased market liquidity. Thereby the cost of capital should decrease (Leuz & Verrecchia, 2000; Welker, 1995; Bravo Urquiza et al., 2012; Botosan, 1997).

However, previous literature also point out that under some circumstances the theory of reduced information asymmetry does not apply in practice. Some researchers find that increased disclosure of information actually can lead to a decrease in market liquidity and an increase in the cost of capital. For example, Kim & Verrecchia (1992) find that since information asymmetry can increase around the time of an announcement, due to some

traders being better at interpreting disclosed information compared to other traders, market liquidity may decrease. Botosan & Plumlee (2001) argue that a more extensive timely disclosure, such as interim reports, increases the cost of capital, perhaps due to an increase in share volatility.

Although there is ample literature investigating and arguing for whether voluntary disclosure of e.g. increased accounting information decreases the cost of capital or not, previous research within this area provides very little guidance as to if the same conclusions apply to disclosure of information regarding financial targets, i.e. forward-looking statements. Our aim is to fill this gap in the literature and to be able to give a recommendation to boards and executive management teams in the question of whether they should communicate financial targets in order to decrease the firm's cost of capital or not. If so, we try to examine which financial targets are effective in decreasing the cost of capital. Thus our research question can be formulated as:

- *How does setting and communicating quantitative, long-term financial targets regarding different financial measures affect a firm's cost of capital?*

Here we want to emphasize the limitations of our study. Firstly, a definition of the term "cost of capital" should be made. In the previous literature, the cost of capital refers to the equity cost of capital, i.e. not the weighted average cost of debt and equity, but the return that equity investors require. We will use the term cost capital as it has been used in previous research. Hence when we refer to the cost of capital, we mean the equity cost of capital.

Secondly, another important limitation of our study is that we do not examine the effect of attainment of financial targets, i.e. we do not know if targets communicated are met or not. We are only interested in the effect of their existence. As such we do not make any distinction between targets that are attained and targets that are not, but treat them all equally. However, we cannot entirely separate the effect of target achievement vis-à-vis the mere communication of targets. Thus a discussion of this issue is further covered in our analysis.

To answer our research question we analyse data of Swedish firms in the NASDAQ OMXS index. We gather data from two main sources; we manually collect data of financial targets of firms from the annual reports for the five years between 2010 and 2014, which are

then combined with data of share variables from Thomson Reuters' database Datastream. We propose a new methodology where we incorporate an asset-pricing model to find out whether having financial targets affects a firm's cost of capital. The asset-pricing model used is a multifactor model comprising four different risk factors: the market risk premium, the SMB and HML risk factors, as suggested by Fama & French (1993), as well as an illiquidity risk factor IML, which is calculated in accordance with the methodology suggested by Amihud et al. (2015).

First, to ascertain that the illiquidity measure, which the IML risk factor is based on, is commensurable to the bid-ask spread, the proxy for market liquidity used in previous research, we regress the illiquidity measure *Illiqsqrt* for each day and firm on dummy variables for the financial targets of the firm. Then we regress the return of each share on the return of the four risk factors to estimate the exposure of each share to the risk factors, i.e. the beta, with respect to market risk premium, SMB, HML and IML for each firm. Finally, to conclude whether having financial targets has an effect on the cost of capital or not, we regress the estimate of the beta of each risk factor of the multifactor model on the financial target variables. Volatility, an illiquidity measure, firm size, and book-to-market are added as control variables. By this methodology, we can conclude if communicating financial targets have explanatory power on the exposure to the risk factors and thus the cost of capital.

We find that disclosing financial targets, independent of which type of target, increases liquidity. We also find that communicating a dividend pay-out ratio target, a profitability or a leverage target decreases the cost of capital, through reducing the exposure to the market risk premium and the SMB risk factor. However, we cannot find any support for that having targets regarding cash flow, sales or share-related measures decreases the cost of capital. We draw the overall conclusion that by disclosing targets the estimation risk for investors is reduced and that the estimation risk is in fact a systematic, priced risk. Our results are in line with previous literature such that they confirm that information disclosure reduces the cost of capital. However, they differ by suggesting that it is not through increased liquidity that this effect is obtained, but rather through decreased exposure to other priced risk factors.

The remainder of this thesis is organised as follows. Previous research and our hypotheses are outlined in Section 2. Section 3 contains a description of the data used and descriptive statistics. In Section 4 we go through our research design and describe our methodology,

whereas in Section 5 the main results are displayed. The results are analysed in Section 6. Section 7 concludes our thesis with a discussion of results and a proposal of directions for future research. Section 8 provides the list of references, and finally in Section 9 the Appendix is found.

2. Theoretical Framework

2.1 Previous Literature

From an investor perspective one could question why firms should spend valuable resources on producing and disclosing voluntary information, as the financial benefits are not apparent. However, given the financial literature on information asymmetry and agency issues that persist in the relationship between the firm and its investors, it is not as odd as it can be perceived initially.

Agency issues can be illustrated by the principal-agent problem. The basic idea of the principal-agent problem is that when one party, i.e. the agent, undertakes to perform certain activities on behalf of the other party, i.e. the principal, and the benefits of performing the activities accrue only to the principal, a conflict of interest arises. This conflict of interest arises due to the agent not being incentivised to act in the best interest of the principal, who is striving to maximise the benefits, as none of these will accrue to the agent. This results in the principal-agent problem. This problem would not lead to such negative implications if not for the inherent information asymmetry that usually exists in the principal-agent relationship. Since the agent performs the activities in question, she usually has an informational advantage about the benefits they will result in. The unequal degree of information between principal and agent creates information asymmetry between the parties.

An example of the principal-agent relationship is the one between shareholders and management of most publicly traded firms. The separation of ownership and control in listed firms will lead to the management, in the absence of an appropriate executive compensation plan, not seeking to maximise the value of the firm, which is the primary objective of the shareholders. The principal-agent relationship between shareholders and management and the consequential information asymmetry will also incur difficulties in valuing the firm, since management, relative to the shareholders, has more information about the expected future cash flows and their innate riskiness. This will in turn be an obstacle for current shareholders when reaching an agreement with potential shareholders about a fair valuation of the share. The underlying theory is that a price perceived as fair will create more market liquidity for the security in question. The implication of this reasoning is that by disclosing more financial information the information asymmetry between management and shareholders is reduced. Thereby the risk of holding the share decreases, which leads to a decrease in the cost of

capital. (Berk & DeMarzo, 2011).

Both agency issues and information asymmetry have been given a lot of attention in the finance literature and the general conclusion reached is that information problems, and the resulting incentive problems, prevent efficient capital allocation (Jensen & Meckling, 1976; Healy & Palepu, 2001). Akerlof (1970) shows how trading can cease completely, under some circumstances, in markets where the seller has more information about the product compared to the buyer. Thus, reducing information asymmetry in the market becomes essential for maintaining a liquid market where resources can be allocated efficiently. However, Healy & Palepu (2001) emphasize that in order for voluntary disclosure of information to decrease information asymmetry and thus improve resource allocation in the capital markets, the disclosed information needs to have a high degree of credibility. They highlight two mechanisms that can increase information credibility. Firstly, the firm can use a third-party intermediary to ascertain the quality of the information, such as auditing firms, and secondly, disclosure can be validated through required financial reporting.

The effect of disclosing voluntary information on the financial markets has been thoroughly studied and the results are somewhat ambiguous, although the bulk of it points towards that a greater disclosure decreases cost of capital. The literature in favour of this brings up two main explanations for the effect that disclosure supposedly has on the cost of capital: an increase in liquidity and a decrease of non-diversifiable estimation risk. The first explanation, that greater disclosure could increase the market liquidity of the security in question, could result either in that transaction costs borne by investors are reduced, or that the demand for the share is increased, by for example attracting attention of certain, and possibly new, groups of investors (Diamond & Verrecchia, 1991; Glosten & Milgrom 1985). Easley & O'Hara (2004) focus in particular on the role of the heterogeneity that exists among investors and argue that the effect of voluntary disclosure arises from the fact that there are both informed and uninformed investors. Informed investors are better at shifting their portfolio to incorporate newly announced information, which leaves the uninformed investors at a disadvantage, making them require a higher return for holding shares with a greater degree of private information. The explanation that disclosure increases market liquidity of a security also has some empirical support. It has been shown that different types of voluntary disclosure decrease the bid-ask spread and therefore it is argued that it should increase market

liquidity (Leuz & Verrecchia, 2000; Welker, 1995). Some research finds that the effect of disclosure on the cost of capital depends on the type of information disclosed and the extent of analyst coverage of the firm in question (Bravo Urquiza et al., 2012; Botosan, 1997). Bravo Urquiza et al. (2012) in particular find that only information that is forward-looking in its nature, e.g. specifics about a firm's future actions, programmes and decisions, reduces its cost of capital.

The second explanation for that increased disclosure should decrease the cost of capital is that it reduces non-diversifiable estimation risk, which arises when investors try to estimate a share's pay-off distribution or return, based on historical financial information (Botosan, 2006; Coles et al., 1995). However, there exist no consensus around the question as to whether estimation risk is systematic or diversifiable, which make Clarkson et al. (1996) conclude that "the extent of the impact of estimation risk remains, fundamentally, an empirical question". Regardless of this, Blanco et al. (2015) find a negative relation between segment disclosure and cost of capital, but that some firms refrain from disclosure for proprietary reasons, i.e. some firms are unwilling to disclose key information due to their competitive environment. They also confirm, using asset-pricing tests, that segment disclosure is a priced risk factor. In their study, Blanco et al. use the Fama and French three-factor model as a starting point, adds momentum and liquidity portfolios and also quality of earnings and segment disclosure as two new priced risk factors in the asset pricing model. Dhaliwal et al. (2011) on the other hand go beyond financial measures and examine the effect of disclosing information about corporate social responsibility (CSR) activities, a recent trend in voluntary information disclosure. They find that firms that disclose such information do enjoy a subsequent reduction in the equity cost of capital, but those that do tend to have a higher equity cost of capital to start with.

On the other hand, there is also some evidence against that information disclosure decreases the cost of capital. Kim & Verrecchia (1992) find that the new information available in connection to earnings announcements will increase the information asymmetry due to the fact that some traders are better at interpreting new information than other traders. The increased information asymmetry will hence increase the bid-ask spread and thereby decrease market liquidity. Lambert et al. (2006) provide another explanation. They focus on accounting information and argue that the disclosure of it can either increase or decrease the

cost of capital depending on the circumstances, since the cost of capital is influenced both directly and indirectly. Directly, disclosure of higher quality accounting information affects the investors' assessment of the covariances of a firm's cash flows with those of other firms, hence possibly changing the firm's cost of capital. Indirectly, higher quality disclosures could affect the operational decisions of a firm and thus influence the cost of capital by changing the ratio between the expected future cash flows of the firm and the covariance between these cash flows and the sum of all the cash flows in the market.

On the same note of ambiguity, Botosan & Plumlee (2001) find evidence in favour of that more extensive information disclosure in annual reports has a decreasing effect on cost of capital, whereas more substantial reporting of a frequent nature, such as extensive quarterly reports, has an increasing effect on the cost of capital. They account for it by suggesting that even though both types of disclosures decrease information asymmetry and thus the cost of capital, a high level of timely disclosure may attract the attention of more short-term investors, such as institutions trading on short-term earnings news. This could increase the cost of capital, possibly due to increased share volatility. The ambiguity of the effect of voluntary disclosure of financial information is also highlighted by Francis et al. (2008) who look at the quality of earnings and the cost of capital. Although they find a significant negative relation between disclosure and the cost of capital proxies they use, when conditioning the cost of capital on the quality of earnings, the effect is substantially reduced or disappears. Hence they find that firms with good earnings quality have a more expansive voluntary disclosure, which implies an endogeneity problem.

This leads us to an important issue to be aware of when studying the capital market effects of increased voluntary disclosure of information, which is the risk of endogeneity. As mentioned above, several researchers has brought up the risk of potential endogeneity in their studies, and put forward other explanations, in addition to the one pointed out by Francis et al. (2008). For example, there may exist a self-selection bias when firms choose to disclose voluntary information, since firms tend to disclose more information when they are performing well (Healy & Palepu, 2001). Thus the effect on capital market variables observed when firms increase disclosure could be due to better financial performance, rather than due to the disclosure of information. The overall conclusion is that endogeneity limits the reliability of conclusions that can be drawn from the findings cited above.

2.2 Hypotheses

Following the previous literature in this area of research, we conclude that firms with a larger voluntary disclosure of information should enjoy higher market liquidity, as an increase in information will allow investors to make more educated decisions. As a consequence, the improved information environment ought to permit a lower cost of capital for firms that do communicate long-term forward-looking statements. Thus we assume two hypotheses regarding the outcome of our study.

Hypothesis I

Firms that communicate quantitative, long-term financial targets will have higher market liquidity compared to firms that do not.

If this hypothesis holds true, we further examine whether these firms are able to achieve a lower cost of capital because of a higher degree of voluntary disclosure of information.

Hypothesis II

Firms that communicate quantitative, long-term financial targets will have lower cost of capital compared to firms that do not.

3. Data

In our study, we examine the cost of capital by looking at financial targets covering six areas: dividend pay-out ratio, profitability, cash flow, sales, shares related and leverage. Thus the data for this empirical study comprises forward-looking goal-oriented statements, i.e. financial targets, communicated by constituents of the NASDAQ OMXS index, as well as return, volatility, market value and volume of shares, obtained from Thomson Reuters' Datastream service. The dataset includes 232 firms which were publicly traded for the five years between 2011 and 2015. In total, the dataset has approximately 230,000 daily observations. The dataset is manually constructed and unique. As an estimate for the risk-free rate we have used the repo rate from the Swedish central bank Riksbanken, which should be a reasonable estimate of the return of a risk-free security in this context.

3.1 Specification of Variables

We have been strict in our interpretation of what constitutes a long-term financial target. The target has to be i) clearly stated in a quantitative manner, i.e. a number not being relative to e.g. the future performance of other players in the sector, and ii) distinctly long-term, such that the target will hold not only for the following year but for a minimum of the next three years. Please see Table 1 for an explanation of the financial targets collected. However, the communication of financial targets and the time horizon of achievement is less than clear-cut. While some firms explicitly communicate a timeline for target achievement e.g. *Targets for 2011-2015*, most firms state targets under a headline similar to *Vision, Strategy and Targets*³. This leaves room for interpretation as to when targets are aimed to be achieved.

Note that only financial targets are included in the dataset. Operational targets such as production levels and R&D investments, have not been included. In addition, firms which trade as Swedish Depositary Receipts are not included in the dataset, as we aim to look at firms who have their main listing on the NASDAQ OMXS stock exchange.

³ In Swedish: "Vision, strategier och mål" or "Mål och strategier"

TABLE 1. Specification of Financial Targets

Target	Description
Dividend	Dividend pay-out ratio, i.e. the fraction of net earnings distributed to shareholders.
Profitability	Operating margin, e.g. EBIT and/or EBITDA as a percentage of sales, and capital return measures, e.g. ROCE and ROE.
Cash flow	All targets relating to cash flows, e.g. cash conversion on EBITDA, cash flow/operating income ratio.
Sales	Compounded annual growth (CAGR) sales target for a period of 3-5 years.
Share related	Growth in earnings per share (EPS).
Leverage	Various targets related to debt level, e.g. equity-to-assets ratio, interest coverage ratio, net debt/EBITDA.

3.2 Data Collection Methodology

To obtain the financial targets of the firms we screened annual reports for the five financial years between 2010 and 2014 with the following search words: “goal”, “target”, “objective” and “policy”. Where possible, we have looked through annual reports in English. For reports in Swedish, equivalent search words have been used (“mål”, “målsättning” and “rikt-”). Since the research question concerns the communication of financial targets, we argue that this method of collecting data should be sufficient in finding the targets. Firms without clearly stated targets cannot be considered to be communicating effectively. We have not screened other investor relations related documents e.g. capital markets day presentations, as we want to restrict the sources of data collection and because most investor presentations take place several weeks or months after the annual report publication. As a rule, the annual report is considered to be the most essential source of information for analysts and investors (Botosan, 1997). In order to measure the level of disclosure of financial targets, dummy variables are constructed such that they equal to 1 if the firm has *at least* one quantitative long-term

financial target disclosed in its most recent annual report, and 0 otherwise. By screening press releases, publication dates of each annual report was also collected. In the case where no such press releases were found, the date of audit has been retrieved.

The collection the financial target data is a rather complex process. By observation, financial targets can vary between firms within a year, but also within a firm between different years. The number of targets is subject to the firms' own discretion, as well as the consistency of target definition. In our study, however, we do not seek to interpret financial targets. Nor do we want to understand the definition of the targets as such. What we do want to understand is if the mere existence of these targets impacts firms' cost of capital, from the perspective of the firm as well as outside investors.

The application of strict limitations and criteria, as mentioned in the above section, has aided us in the data collection process. As a consequence of the criteria applied, the dataset will be subject to bias. Our time horizon criteria of five years excludes firms who have been listed less than five years on the stock exchange. Since firms only tend to publicly list, and stay publicly listed, once reaching a certain size and to some degree, operational efficiency, the decision to exclude younger firms will create a large firm bias. However, since we control for variables such as size and volatility, which are associated with older and younger firms respectively, in our regressions, this bias should not affect our results substantially. We have also chosen to include firms listed only in Sweden. This may or may not introduce a bias in the data, depending on if investors in different geographical markets interpret financial targets differently. However, since the previous research on information disclosure has not pointed out any geographical differences, it is likely that the geographical bias does not affect our results.

3.3 Descriptive Statistics

In Table 2, we show the pair-wise correlation between the financial target dummies. We find that dividend and profitability display a relatively high degree of correlation of 37.9%. Two variables that are even more correlated are sales and profitability, which correlate by 52.3%, as well as leverage and profitability, where the correlation is 40.8%. The correlation between share-related targets and sales is negative, however small. It amounts to -1.7%. In absolute terms, share-related targets and profitability have the smallest correlation of 0.2%.

TABLE 2. Correlation Matrix For Financial Targets Dummy Variables

	Dividend	Profitability	Cash flow	Sales	Share	Leverage
Dividend	1.000					
Profitability	0.379	1.000				
Cash flow	0.043	0.113	1.000			
Sales	0.290	0.523	0.120	1.000		
Share	0.042	0.002	0.227	-0.017	1.000	
Leverage	0.283	0.408	0.097	0.151	0.029	1.000

The table shows the pair-wise correlation between the financial target dummies. The sample consists of approximately 230,000 observations of 232 firms' financial targets between years 2011 and 2015.

Table 3 and Table 4 show the number of firms reporting targets for each target category, and statistics of all targets reported per year and firm, respectively. The cut-off date for each year is July 1st, a somewhat arbitrary chosen date. However all firms in our dataset reported their annual reports six month into the year. We see that the dividend target is the most common one, followed by profitability targets and leverage targets. Cash flow targets and share-related targets are the least common. This is related to the type of firms that report these targets. Cash return and EPS growth targets are communicated by normally very large and R&D intensive firms⁴, see Table 5. Announcing targets that are directly shareholder related can be a way of justifying costly activities. It signals that the firm is actually creating value despite large investments in intangible assets whose effects are not immediate. Moreover, some investment and holding companies, due to the nature of their business model, set their financial targets in terms of value added to the shareholders, which will result in a per share measure. The population varies between years because of split financial year for some firms in the dataset.

Looking at the number of targets per year, the mean lies between 2.45 and 2.50 and is stable for the five observed years. The median varies between two and three targets. The number of targets per firm ranges from 0 to 8, the former mostly consisting of medical technology companies at the early or intermediate stage of product development.

⁴ For example Alfa Laval, Astra Zeneca, Ericsson, and Hexagon

TABLE 3. Number Of Firms With Targets By Year

Year	Dividend	Profitability	Cash flow	Sales	Share	Leverage	N
2011	139	128	13	80	6	110	218
2012	150	137	13	86	6	117	230
2013	157	136	13	86	4	118	231
2014	154	139	12	79	5	119	232
2015	154	140	12	84	5	117	232

The table shows the number of firms reporting targets for each target category on an annual basis. The cut-off date for each year is July 1st as all firms in our dataset have published annual reports six month into the year.

TABLE 4. Number Of Targets By Year

Year	Min	Median	Mean	Max
2011	0.00	3.00	2.46	7.00
2012	0.00	3.00	2.49	7.00
2013	0.00	3.00	2.50	7.00
2014	0.00	3.00	2.45	7.00
2015	0.00	2.00	2.45	8.00

The table shows statistics of the number of reported targets per year in the firm population. The cut-off date for each year is July 1st as all firms in our dataset have reported their annual reports six month into the year.

In Table 5 we show the mean market value of firms per year for each target. The cut-off date for each year is July 1st. As most firms have dividend targets, the mean becomes somewhat close to the average firm value in the sample population. In general, we see that firms with no target in each target category are smaller than firms that have a target, for each year. This is clearly the case for targets relating to cash flows and shares, and to some extent also leverage, for the above mentioned reason about firm size and the nature of business. The smallest mean value difference for all years is for sales targets. Another observation is that while firms having targets increase in mean market value over the years between 2011 and 2015 irrespective of target category, the average market value of firms with share-related targets decrease to almost exactly half the value compared to the starting year, from SEK 64,711m in 2011 to SEK 32,410m in 2015. A significant jump takes place between 2012 and 2013. For firms without targets, the mean market value actually increases. Either, firms who

had share-related targets simultaneously dropped in market value, or a big number of considerably smaller firms decided to set up and communicate this target, making the average value shrink to a quarter. The increase in the mean market value of firms without share-related targets between the immediate years following, i.e. 2013 to 2015, tells that this latter reasoning could hold true.

Table 6 shows the mean share volatility of firms in percent by target and year. Again, the cut-off date for each year is July 1st. Overall, mean volatility decreases over the years for every target for firms with and without targets. We cannot observe any large deviation in volatility. The volatility seems to range somewhere between 23.2% and 31.2% during our time period.

TABLE 5. Mean Market Value By Target And Year

Millions of SEK		Dividend		Profitability		Cash flow		All
Year		Yes	No	Yes	No	Yes	No	
2011		18,144	13,543	17,896	14,460	35,783	15,253	16,477
2012		16,455	13,742	16,725	13,724	38,353	14,143	15,512
2013		14,992	11,602	14,385	13,222	29,138	12,998	13,906
2014		17,564	13,449	18,460	12,773	39,155	14,928	16,181
2015		20,112	26,491	25,244	17,711	48,061	20,849	22,257
		Sales		Share		Leverage		All
Year		Yes	No	Yes	No	Yes	No	
2011		18,068	15,555	64,711	15,112	21,088	11,781	16,477
2012		17,528	14,308	61,541	14,279	19,765	11,108	15,512
2013		14,536	13,533	15,566	13,877	16,214	11,496	13,906
2014		18,262	15,106	19,147	16,115	22,136	9,909	16,181
2015		22,857	21,916	32,410	22,033	26,721	17,714	22,257

The table shows the mean market value for each target category on an annual basis. The cut-off date for each year is July 1st. In general, we see that firms with no target in a target category are smaller than firms who have a target, for each year.

TABLE 6. Mean Volatility By Target And Year

In percent, % Year	Dividend		Profitability		Cash flow	
	Yes	No	Yes	No	Yes	No
2011	29.4	30.4	29.1	30.7	23.5	30.1
2012	29.4	30.6	29.2	30.7	23.5	30.2
2013	28.3	32.6	28.5	31.4	25.0	30.0
2014	27.4	31.9	27.5	31.1	25.6	29.1
2015	23.7	29.0	23.2	29.0	23.6	25.6
All						
2011-2015						
Year	Sales		Share		Leverage	
	Yes	No	Yes	No	Yes	No
2011	27.5	31.1	31.0	29.7	29.2	30.3
2012	27.4	31.2	31.0	29.8	29.4	30.2
2013	27.3	31.1	27.1	29.7	28.3	31.1
2014	27.1	29.8	26.8	29.0	28.0	29.8
2015	23.5	26.6	24.1	25.5	23.5	27.5
All						

The table shows the mean share volatility of the firm universe in percent per target category . The cut-off date for each year is July 1st. Overall, mean volatility decreases over the years for every target for both “Yes” and “No” .

4. Methodology

4.1 Research Design

In the previous literature, researchers have encountered two considerable problems when studying whether information disclosure affects the cost of capital. In this study, we propose two new solutions to these problems.

(i) *Measuring Voluntary Information Disclosure*

The first problem is how information disclosure should be measured. In most previous research this problem has been solved by creating some sort of disclosure index. A disclosure index is usually created by measuring the amount of information disclosed by each firm using a method, where a high value is assigned to firms that on average disclose much information and a low value is assigned to firms that on average disclose little information, see for example Botosan (1997) and Bravo Urquiza et al. (2012). The degree of disclosure of each firm is estimated quite arbitrarily when using this method and it also becomes difficult for firms to act on the implications of this research, since it is unclear what information that is beneficial for firms to disclose.

(ii) *Measuring The Cost Of Capital*

The second problem is how the cost of capital should be measured and to solve it a range of different methods have been employed in previous research. Most of them are based upon the dividend discount model, where the cost of capital is derived through using forecasts of future cash flows, usually obtained from the consensus forecast of analysts, in conjunction with the current share price. Since this way of modelling cost of capital is dependent on analysts' forecasts, a measurement error may be introduced, given that the market has a different view on future cash flows that does not coincide with that of analysts' (Botosan, 2006).

In order to solve these two problems and to estimate whether having financial targets affects a firm's cost of capital we propose a new methodology. In short we use a multifactor asset-pricing model to estimate the exposure to a number of risk factors that affect the cost of capital for each firm. We then regress the estimated exposures – the betas – on the variables for financial targets and a number of control variables. We also regress the alpha on the same variables to see if there is an effect of the targets that is not picked up by the model. To

reduce some endogeneity, we choose to control for volatility, market value, book-to-market, and illiquidity. All regressions are performed with the robust option in the statistical software Stata. The variables for the financial targets consist of six different dummy variables, one for each financial target group, as outlined in Section 3.1. Thus we can conclude if having financial targets affects the exposure to the different betas. Since these betas constitute parts of the total cost of capital, we can hence by using this methodology conclude how the financial targets affect the total cost of capital.

4.2 Regression Models

In this section we will go through the methodology in greater detail. We begin by looking at the asset-pricing model we use to estimate the exposure to the different risk factors that the cost of capital comprises. We have chosen to use a model consisting of four risk factors, where we use the Fama and French three-factor model as a starting point (Fama and French, 1992 & 1996). We augment their three-factor model with an illiquidity factor IML , in accordance with the methodology used by Amihud et al. (2015). The previous literature points out increased liquidity as an explanation for the observed decrease in the cost of capital when there is a high degree of voluntary disclosure. Thus we want to use an asset-pricing model that incorporates illiquidity as a risk factor. The aim is to separate and distinguish between the systematic and diversifiable effects that increased information disclosure has on the cost of capital. The following regression is the augmented Fama and French three-factor model performed for each share i to obtain the exposure to the four different risk factors and an estimate of the alpha:

(1)

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_i^{MRP} r_{MRP,t} + \beta_i^{SMB} SMB_t + \beta_i^{HML} HML_t + \beta_i^{IML} IML_t + \varepsilon_{i,t}$$

where $r_{i,t}$ is the realised return for share i on day t , $r_{f,t}$ the risk-free rate on day t . The excess market return $r_{MRP,t}$ is the return of a value-weighted Swedish market portfolio on day t . SMB_t is the return on the small minus big portfolio on day t . HML_t is the daily return on high book-to-market firms minus low book-to-market firms. The illiquidity risk factor IML_t , with which we augment the original Fama and French model, is the return on day t of a portfolio

strategy based on going long in high illiquidity shares and short in low illiquidity shares. For more details on how the different risk factors, i.e. the risk market premium, SMB, HML and IML factors, are calculated, see section 9.1 in the Appendix. The IML risk factor is based on the illiquidity measure *Illiqsqr*t, which was developed by Hasbrouck (2005), who based it on the measure Illiq, as proposed by Amihud (2002). It is defined as follows:

(2)

$$ILLIQSQRT_{i,t} = \frac{1}{D_{i,t}} \sqrt{\sum_{d=1}^{D_i} \frac{|r_{i,t,d}|}{VOL_{i,t,d}}}$$

where D is the number of trading days in period t for share i , $|r_{i,t,d}|$ the absolute return for share i in period t on day d and $VOL_{i,t,d}$ is the volume traded in SEK for share i in period t on day d .

Since most previous research has used the bid-ask spread to measure liquidity, we want to ascertain that the *Illiqsqr*t is comparable to the bid-ask spread within this area of research and with the current data set, i.e. that disclosure of information significantly affects Illiqsqr. The following regression is performed to establish that this liquidity measure have a corresponding measuring power.

(3)

$$\begin{aligned} ILLIQSQRT_{i,t} = & \beta_0 + \beta_1 \text{dividend target}_{i,t} \\ & + \beta_2 \text{profitability target}_{i,t} + \beta_3 \text{cash flow target}_{i,t} \\ & + \beta_4 \text{sales target}_{i,t} + \beta_5 \text{share related target}_{i,t} + \beta_6 \text{leverage target}_{i,t} \\ & + \beta_7 \text{volume of shares}_{i,t} + \beta_8 \text{volatility}_{i,t} + \beta_9 \text{market value}_{i,t} + \varepsilon_{i,t} \end{aligned}$$

In this regression, the independent variables are the dummy variables for the financial targets, which is 1 if firm i has a target for the financial measure in question on day t and 0 otherwise. We add control variables for volume of shares traded, volatility and size.

Then we want to test our main hypothesis: if disclosing financial targets significantly affects the cost of capital. To do this we test if having financial targets affects the exposure to the different risk factors that make up the cost of capital, i.e. if the betas for market risk

premium, SMB, HML and IML are affected by having financial targets. We also test the estimated alpha from (1) in the same way. If we find an effect we can draw a conclusion about how different financial targets affect the total cost of capital. Thus we perform five different regressions in total, where the alpha and the betas for the risk market premium, SMB, HML and IML respectively are regressed on the dummy variables for each financial target.

We add control variables for volatility, size, book-to-market and illiquidity, since these variables are associated with the betas and may cause an endogeneity problem if omitted. For example, as we see in Table 5, large firms tend to disclose financial targets to a greater degree than small firms. We also know that large firms have a lower exposure to the SMB risk factor compared to small firms. Thus if we did not control for size, the decreasing effect of having financial targets on the exposure to the SMB factor would be overestimated. Controlling for market value reduces the endogeneity, i.e. the bias of the betas and thus of the results. The same reasoning applies to the HML factor and the book-to-market control variable. Omitting this control variable would bias the results. The following regressions are performed:

(4)

$$\begin{aligned}\alpha_i = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_{10} \text{Illiqsqrt}_i + \varepsilon_i\end{aligned}$$

(5)

$$\begin{aligned}\beta_i^{\text{MRP}} = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_{10} \text{Illiqsqrt}_i + \varepsilon_i\end{aligned}$$

(6)

$$\begin{aligned}\beta_i^{SMB} = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_7 \text{Illiqsqrt}_i + \varepsilon_i\end{aligned}$$

(7)

$$\begin{aligned}\beta_i^{HML} = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_7 \text{Illiqsqrt}_i + \varepsilon_i\end{aligned}$$

(8)

$$\begin{aligned}\beta_i^{IML} = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_7 \text{Illiqsqrt}_i + \varepsilon_i\end{aligned}$$

where β_i is the beta of the risk factor in question for firm i , obtained in regression (1).

4.3 Research Design Issues and Robustness Tests

To test the robustness of our results, we perform a robustness test using the original Fama and French model. The Fama and French model is one of the most established ways of explaining the variation in returns and thus the cost of capital. Hence if our results remain the same in this robustness test, they should be credible. The original Fama-French regression is

(9)

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_i^{MRP} r_{MRP,t} + \beta_i^{SMB} SMB_t + \beta_i^{HML} HML_t + \varepsilon_{i,t}$$

where variable and factor constituents are explained in regression (1).

5. Results

5.1 Illiquidity Regression

To test our first hypothesis, we perform a regression of Illiqrt on the financial target dummies. Table 7 shows the results from regression (3) including the control variables volume of shares, volatility, and market value. The results are significant at the 1% level and all targets, except for sales, have a negative coefficient. This result is according to expectations and implies that having financial target disclosure decreases the illiquidity. Thus the Illiqrt is comparable as an alternative measure to the bid-ask spread.

TABLE 7. Regression Results of Illiqrt on Financial Targets

Illiqrt		
	Variable	Coefficient
Targets	Dividend	-0.0005*** (-5.99)
	Profitability	-0.0018*** (-26.63)
	Cash flow	-0.0016*** (-27.81)
	Sales	0.0008*** (14.69)
	Share	-0.0013*** (-12.14)
	Leverage	-0.0016*** (-31.12)
Controls	Volume	0.0000*** (-16.10)
	Volatility	0.0001*** (26.20)
	Market Value	0.0000*** (-45.71)
	Intercept	0.0060*** (53.65)
	N	232,631
	R ²	0.024

***, **, and * denote 1%, 5% and 10% significance levels respectively. t-statistics in parentheses.

Table 7 shows the results from regression (3) where the dependent variable is the illiquidity measure Illiqrt, which is calculated as shown in section 3, for firm i on day t . The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target on day t and 0 if it does not. Volume of traded shares, volatility, and market value are added as control variables. The regression ascertains that Illiqrt is comparable to the bid-ask spread which has been typically used within this area of research.

5.2 Factor Regressions

5.2.1 Alpha

Table 8 shows the regression results for the alpha, regression (4). The results show that having financial targets does not significantly affect the alpha. This is the case both when controls are included and omitted.

TABLE 8. Regression Results Of Alpha On Financial Targets

Alpha		(1)	(2)	(3)	(4)	(5)
	Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.00013 (-0.75)	-0.00024 (-1.27)	-0.00024 (-1.28)	-0.00025 (-1.37)	-0.00026 (-1.38)
	Profitability	-0.00003 (-0.22)	-0.00001 (-0.03)	-0.00001 (-0.05)	0.00000 (-0.02)	0.00003 (0.15)
	Cash flow	-0.00016 (-0.95)	-0.00003 (-0.14)	-0.00001 (-0.06)	-0.00002 (-0.09)	-0.00018 (-0.89)
	Sales	0.00016 (1.32)	0.00006 (0.49)	0.00007 (0.51)	0.00008 (0.58)	-0.00003 (-0.17)
	Share	0.00033 (0.97)	0.00016 (0.54)	0.00023 (0.69)	0.00023 (0.69)	0.00029 (0.79)
	Leverage	-0.00016 (-1.09)	0.00008 (0.56)	0.00009 (0.64)	0.00008 (0.59)	0.00007 (0.52)
Controls	Volatility	0.00003*** (3.05)	0.00003*** (3.15)	0.00003*** (3.10)	0.00003*** (3.18)	
	Illiqsqrt	0.00000 (-0.73)	0.00102 (1.40)	0.00096 (1.31)		
	Market Value	-0.00062** (2.39)	0.00000 (1.45)			
	Book-to-Market	0.00078*** (3.92)				
	Intercept	-0.00135*** (-5.95)	-0.00090*** (-4.66)	-0.00088*** (-4.64)	-0.00087*** (-4.60)	-0.00007 (-0.27)
	N	229	232	232	232	232
	R ²	0.139	0.076	0.074	0.072	0.010

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 8 shows the results from regression (4) where the dependent variable is the estimated alpha from regression (1). The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, the illiquidity measure Illiqsqrt, market value, and book-to-market, are added as control variables. We perform the alpha regression to see if there is an effect of the targets that is not picked up by our multifactor asset-pricing model.

5.2.2 Market Excess Return

Table 9 shows the regression result for regression (5). We see that in the full regression, when controlling for volatility, size, book-to-market and illiquidity, the only target that significantly affects the market premium beta is the dividend target, which decreases the beta with almost 0.10 at a 1 % significance level. All other targets are insignificant.

TABLE9. Regression Results Of The Market Premium On Financial Targets

Market premium beta		(1)	(2)	(3)	(4)	(5)
Variable		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.09918*** (-2.62)	-0.10329 (0.04)	-0.10333*** (-2.75)	-0.09133** (-2.34)	-0.09384** (-2.32)
	Profitability	0.01766 (0.44)	0.01616 (0.41)	0.01369 (0.34)	0.00812 (0.20)	0.01644 (0.37)
	Cash flow	0.01777 (0.38)	0.00145 (0.03)	0.01325 (0.51)	0.01889 (0.04)	-0.02292 (0.37)
	Sales	0.03273 (0.95)	0.03247 (0.96)	0.03460 (0.98)	0.02566 (0.72)	-0.00060 (-0.02)
	Share	0.01168 (0.11)	0.01547 (0.14)	0.06356 (0.51)	0.06439 (0.52)	0.07949 (0.62)
	Leverage	-0.03320 (-0.99)	-0.02786 (-0.90)	-0.02015 (-0.64)	-0.01208 (-0.37)	-0.01376 (-0.39)
Controls	Volatility	0.00762*** (4.05)	0.00738*** (4.15)	0.00706*** (4.08)	0.00677*** (4.02)	
	Illiqsqrt	-1.05169*** (-4.59)	-1.04114*** (-4.78)	-1.07977*** (-4.92)		
	Market Value	0.00000*** (2.89)	-0.10329*** (2.91)			
	Book-to-Market	0.00483 (0.15)				
	Intercept	0.73956*** (9.30)	0.75259*** (10.40)	0.77311*** (11.10)	0.76804*** (11.28)	0.97869*** (24.15)
	N	229	232	232	232	232
	R ²	0.180	0.181	0.157	0.126	0.030

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 9 shows the results from regression (5) where the dependent variable is the beta for market risk premium. The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, the illiquidity measure Illiqsqrt, market value, and book-to-market, are added as control variables.

5.2.3 SMB

Table 10 shows regression results of the SMB beta on financial target dummies controlled for volatility, size, book-to-market and illiquidity, i.e. regression (6). By looking at the results, we see that three financial targets out of six have significant results at the 1% and 5% level: dividend, profitability, and leverage, irrespective of how many controls are added or subtracted. Signs are according to expectations and our second hypothesis; that there is a negative relation between financial targets and the cost of capital. We find that having a dividend target decreases the SMB beta by 0.21, whereas having a profitability target decreases it by 0.24. The SMB beta is decreased by 0.28 by a leverage target.

TABLE 10. Regression Results Of The SMB Risk Factor On Financial Targets

SMB beta		(1)	(2)	(3)	(4)	(5)
	Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.21023*** (-2.29)	-0.20751** (-2.25)	-0.20743** (-2.23)	-0.20666*** (-2.25)	-0.21371** (-2.23)
	Profitability	-0.24164*** (-2.89)	-0.22984*** (-2.73)	-0.22528*** (-2.66)	-0.22564*** (-2.66)	-0.20227** (-2.28)
	Cash flow	-0.04498 (-0.33)	0.04316 (0.30)	0.02137 (0.15)	0.02173 (0.15)	-0.09574 (-0.82)
	Sales	0.03567 (0.49)	0.02677 (0.37)	0.02284 (0.31)	0.02227 (0.31)	-0.05149 (-0.7)
	Share	-0.11872 (-0.69)	-0.15895 (-0.88)	-0.24778* (-1.85)	-0.24772* (-1.86)	-0.20528 (-1.58)
	Leverage	-0.28163*** (-3.73)	-0.27639*** (-3.66)	-0.29062*** (-3.80)	-0.29011*** (-3.83)	-0.29482*** (-3.71)
Controls	Volatility	0.01862*** (4.41)	0.01846*** (4.67)	0.01904*** (4.75)	0.01902*** (4.79)	
	Illiqsqrt	-0.32605 (-0.62)	-0.14039 (-0.29)	-0.06903 (-0.13)		
	Market Value	0.00000** (-2.46)	0.00000** (-2.57)			
	Book-to-Market	0.0903837 (1.00)				
	Intercept	0.18173 (1.13)	0.23504* (1.73)	0.19713 (1.45)	0.19681 (1.45)	0.78865*** (7.24)
	N	229	232	232	232	232
	R ²	0.301	0.296	0.284	0.284	0.168

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 10 shows the results from regression (6) where the dependent variable is the beta for the SMB factor in our model. The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, the illiquidity measure Illiqsqrt, market value, and book-to-market, are added as control variables. The regression tests if having financial targets affects the exposure to the SMB risk factor.

5.2.4 HML

Table 11 shows regression results of the HML beta on financial target dummies and controls, i.e. regression (7). We find that no targets have any significant effect on the HML beta.

Having a leverage target significantly affects the HML beta if book-to-market is not controlled for in the regression, but it ceases to have relevance on the beta once all controls are included.

TABLE 11. Regression Results Of The HML Risk Factor On Financial Targets

HML beta		(1)	(2)	(3)	(4)	(5)
	Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	0.11846 (1.48)	0.03990 (0.46)	0.03990 (0.46)	0.04374 (0.52)	0.04218 (0.49)
	Profitability	0.01599 (0.26)	0.04111 (0.60)	0.04100 (0.60)	0.03922 (0.57)	0.04438 (0.67)
	Cash flow	-0.02740 (-0.62)	0.02609 (0.30)	0.02662 (0.31)	0.02843 (0.33)	0.00245 (0.03)
	Sales	0.00292 (0.08)	-0.07013 (-1.44)	-0.07003 (-1.44)	-0.07289 (-1.52)	-0.08920* (-1.83)
	Share	0.06794 (1.47)	-0.04885 (-0.61)	-0.04666 (-0.56)	-0.04640 (-0.56)	-0.03701 (-0.51)
	Leverage	-0.03303 (-0.68)	0.14769*** (2.64)	0.14804*** (2.63)	0.15062*** (2.70)	0.14958*** (2.69)
Controls	Volatility	0.00427 (1.06)	0.00431 (1.01)	0.00430 (1.01)	0.00421 (1.01)	
	Illiqsrt	-1.61301*** (-3.02)	-0.34337 (-0.70)	-0.34514 (-0.70)		
	Market Value	0.00000** (2.54)	0.00000 (0.16)			
	Book-to-Market	0.60517*** (6.77)				
	Intercept	-0.57170*** (-4.75)	-0.22857** (-1.99)	-0.22763*** (-2.02)	-0.22926*** (-2.01)	-0.09838 (-0.85)
	N	229	232	232	232	232
	R ²	0.223	0.035	0.035	0.034	0.026

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 11 shows the results from regression (7) where the dependent variable is the beta for the HML factor in our model. The independent variables are dummy variables of the financial targets, which is 1 if firm *i* has a target and 0 otherwise. Volatility, the illiquidity measure Illiqsrt, market value, and book-to-market, are added as control variables. The regression tests if having financial targets affects the exposure to the HML risk factor.

5.2.5 IML

Table 12 provides regression results of the IML beta on financial target dummies and controls, i.e. regression (8). Despite our initial belief and stated hypothesis that target disclosure should reduce cost of capital through increased liquidity, our findings do not point in this direction. Financial targets have no effect on the IML beta and thus these results suggests that financial targets have no impact on the cost of capital, through affecting liquidity.

TABLE 12. Regression Results Of The IML Risk Factor On Financial Targets

IML beta		(1)	(2)	(3)	(4)	(5)
	Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	0.02903 (0.79)	0.01503 (0.41)	0.01510 (0.40)	0.01315 (0.35)	0.01414 (0.38)
	Profitability	0.02872 (0.85)	0.02899 (0.86)	0.03314 (0.92)	0.03404 (0.94)	0.03078 (0.86)
	Cash flow	-0.00950 (-0.26)	-0.03659 (-0.84)	-0.05641 (-1.38)	-0.05732 (-1.40)	-0.04092 (-1.10)
	Sales	-0.01873 (-0.60)	-0.02576 (-0.83)	-0.02933 (-0.86)	-0.02788 (-0.83)	-0.01758 (-0.53)
	Share	0.02625 (0.47)	0.02618 (0.50)	-0.05458 (-0.95)	-0.05471 (-0.95)	-0.06064 (-1.16)
	Leverage	-0.04163 (-1.35)	-0.01705 (-0.63)	-0.02999 (-1.06)	-0.03130 (-1.11)	-0.03064 (-1.09)
Controls	Volatility	-0.00332 (-1.63)	-0.00323* (-1.65)	-0.00270 (-1.39)	-0.00266 (-1.39)	
	Illiqsqrt	-0.00228 (-0.01)	0.10996 (0.34)	0.17484 (0.47)		
	Market Value	0.00000*** (-4.62)	0.00000*** (-4.64)			
	Book-to-Market	0.05375 (1.41)				
	Intercept	0.26485*** (3.93)	0.29428*** (4.55)	0.25982*** (4.06)	0.26064*** (4.02)	0.17796*** (3.62)
	N	229	232	232	232	232
	R ²	0.106	0.096	0.024	0.023	0.008

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 12 shows the results from regression (8) where the dependent variable is the beta for the IML factor in our model. The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, the illiquidity measure Illiqsqrt, market value, and book-to-market, are added as control variables. The regression tests if having financial targets affects the exposure to the IML risk factor.

5.3 Robustness Tests

Table 13 shows the regression results for the robustness test regression (9) with all controls included. Similar to our model, the Fama and French model shows that dividend and profitability targets have a significant impact on the cost of capital, through the market risk premium and SMB beta. The leverage target also affects the SMB beta significantly at a 1% level. The coefficient signs for all significant targets correspond to our previous results, i.e. negative. We find that results are at large similar to those obtained when our model is used. Please see tables in the Appendix Section 9.2 for a full representation of results for each factor with added controls.

TABLE 13. Robustness Test Regression Results

		Alpha	Market beta	SMB beta	HML beta
	Variable	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.00013 (-0.75)	-0.10752*** (-2.80)	-0.17897** (-1.99)	0.12355 (1.54)
	Profitability	-0.00004 (-0.22)	0.01130 (0.27)	-0.21293** (-2.57)	0.02085 (0.34)
	Cash flow	-0.00017 (-0.98)	0.02060 (0.40)	-0.05477 (-0.38)	-0.02950 (-0.68)
	Sales	0.00016 (1.30)	0.03608 (1.00)	0.01606 (0.21)	-0.00037 (-0.01)
	Share	0.00033 (0.97)	0.00498 (0.05)	-0.09049 (-0.43)	0.07267 (1.55)
	Leverage	-0.00016 (-1.13)	-0.02278 (-0.65)	-0.32584*** (-4.64)	-0.03998 (-0.83)
Controls	Volatility	0.00003*** (3.02)	0.00849*** (4.97)	0.01521*** (3.46)	0.00367 (0.92)
	Illiqsqrt	-0.00061 (-0.72)	-1.05474*** (-5.11)	-0.32526 (-0.42)	-1.60661*** (-3.26)
	Market Value	0.00000*** (2.38)	0.00000*** (3.50)	0.00000*** (-3.68)	0.00000 (1.19)
	Book-to-Market	0.00079*** (3.94)	-0.00819 (-0.23)	0.14602 (1.80)	0.61313*** (6.78)
	Intercept	-0.00134*** (-5.88)	0.66812*** (9.15)	0.45543*** (2.75)	-0.52460*** (-4.60)
	N	229	229	229	229
	R ²	0.140	0.224	0.301	0.224

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table 13 shows the results from regression (9) where the dependent variables are the factors in the Fama and French multifactor model. The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 if it does not. Volatility, the illiquidity measure Illiqsqrt, market value, and book-to-market, are included as control variables. We perform the regression as a robustness test and find that results are largely similar to the results obtained when our model is used. Similar to using our model, the Fama and French model shows that dividend, leverage, and profitability targets have a significant impact on the cost of capital when all controls are included.

6. Analysis

Our results suggest that the activity of setting and communicating some financial targets have an effect on the equity cost of capital while other targets do not. The targets with significant effect on the cost of capital are those related to the dividend pay-out ratio, profitability, and leverage. Targets without significant results relate to cash flow, sales and shares. From our overall results we can draw the conclusion that disclosure of targets reduces systematic risk. Hence they support that the estimation risk, which arises when investors try to estimate a share's future pay-off distribution and return, is in fact a systematic, priced risk, which can be reduced by information disclosure, as discussed in previous literature. Analysing each financial target on a stand-alone basis, the dividend pay-out ratio target yields significant results for the market beta and SMB beta regressions at a 1% level, when we look at the regression which includes all control variables. Moreover, for the SMB beta, the dividend pay-out ratio target is significant with and without control variables. Since all signs are negative the results show that communicating a dividend target has a decreasing effect on the cost of capital, which is as expected. A widely held notion is that firms tend to commit to dividend targets since investors will penalise them for not keeping the same level of pay-out or lowering pay-outs. Dividend pay-out activities are strongly related to management's prospect of future earnings and overall health of the firm, and as such, their signalling effect becomes significant. As Table 3 shows, the dividend target is the most commonly disclosed target and this is empirical evidence of the importance of the dividend target. In an investing environment where transparency is rewarded, it should be beneficial to state a visionary target rather than not having a target at all. This is also what our study aims to look at: whether the mere existence of targets matter. For the dividend target, we find that it matters.

Having a profitability target is significant only with regards to the SMB beta, for which the full regression yields a significance level of 1%. Similar to the dividend target, the sign for profitability target is as expected, i.e. negative. Of all the targets we choose to look at in our study, profitability may be the target that is subject to the largest variations. This is displayed not only by the many methods to measure it, as seen in Table 1, but the measure in itself can vary in definition depending on how the firm chooses to specify it. For example, the capital base of the return on capital employed, ROCE, can be adjusted differently. Nevertheless, since we only look at the target existence as such, our results show us that having a profitability

target of some kind lowers the cost of capital. Moreover, measurement and definition differences that arise between firms in the same industry or sector may be accounted for by analysts and investors who know better the peculiarities of firms. What is important is a firm's stated effort to be operationally efficient. Relating profitability to dividends, the link between the two targets can be seen as relatively strong. In the long run, a good-profitability company should be able to pay out more of its earnings as dividends.

The third financial target of interest is the leverage target. The leverage target displays significant results at the 1% level for the full SMB beta regression, but no significance for the full HML beta regression after adding a book-to-market control. Something interesting appears when looking at the signs of coefficients for the two factor regressions. For the SMB beta regression, leverage is negative and thus clearly lowers the cost of capital. This is according to our expectations. However, in the HML beta regression, leverage seems to have a positive effect on the cost of capital up to the point when book-to-market is controlled for. This could be explained by that high book-to-market firms tend to have leverage targets to a greater extent, perhaps because high book-to-market firms are more often either distressed or low growth firms. Firms with distressed debt may be more prone to disclose leverage targets to signal self-discipline to the market, in order to improve their financing situation. Low growth firms perhaps use more leverage to increase return to shareholders. Developing further, having a leverage target could implicitly imply a high leverage level, which would make the book value of equity relatively smaller. If debt forms a large part in a firm's capital structure, equity would be exposed to more risk. Equity investors would therefore require a premium to compensate for the riskier return, and thus a higher equity cost of capital for the firm. The reasoning that transparency of any kind should be rewarded with a lower cost of capital clearly does not hold given this reasoning. However, results point towards that some investors do view having a leverage target as a positive, and do not interpret other meanings into the communication of such a target, as the SMB beta regression shows. The results for the leverage target may however not be entirely contradictory. The SMB and HML portfolios are to some extent opposite investment strategies; small market capitalisation firms are often growth shares, i.e. low book-to-market, and high book-to-market firms are often value shares, i.e. high book-to-market. One portfolio longs and shorts the other portfolio's value and growth shares. This could explain the opposite signs that leverage has for the two different factor

regressions. The ambiguous results we obtain for the leverage target manifest that there is no standard procedure in how targets are perceived, and that the effect of stating them are far from linear.

Looking at the pair-wise correlation between the three significant financial targets, we see that they have a relatively high correlation, ranging between 28.3% and 40.8%, see Table 2. This implies that firms that disclose one of these targets are also likely to disclose the other type of target. Further, it could also mean that firms who communicate targets more willingly than others are also more transparent about other aspects of business activities e.g. regular contact with the press on events or transaction deal details which has informational value from an investor perspective. In this case, financial targets could be a representation of how transparent the firm is in general, and it is this overall transparency that the market could price into the firm's cost of capital.

Next we turn to the remaining three financial targets without significant results. Looking at the share-related target, one interpretation of the result is that investors only care for one such similar per-share target, which is the dividend pay-out ratio. The dividend target may fully function as a share-related target, making the latter relatively redundant. Moreover, if we assume that many investors want to avoid transaction costs, and are thus passive, they would prefer dividend pay-outs to an increase in the share price. Hence they would focus more on a dividend target compared to an EPS growth target, i.e. a share-related target. Another explanation for the results is related to the dataset, as touched upon in Section 3.3. Simply, the number of firms communicating share-related targets might just be too few for any significant results to show. A larger dataset consisting of more firms with share-related targets might have shown a different outcome. The same reasoning can be applied to cash flow targets. If cash flow targets are a representation of future dividends to be paid out, investors may care less about operational cash flow measures and focus entirely on dividend targets. Again, in the long-term, a firm with healthy cash flows should be able to pay out relatively higher dividends.

The insignificance of having a sales target can be interpreted as investors putting more relevance on profit targets. A sales growth target may be perceived as more intangible in comparison to a profit margin, since the top line may not have a direct impact on the cash flow that investors ultimately receive. Sales are also subject to more external factors that are outside the control of the firm, e.g. industry outlook and macroeconomic environment, making such

targets less meaningful in comparison. Operational targets, on the other hand, are directly and often more solely linked to firm performance and execution.

Leaving the individual target analysis, we turn to our illiquidity risk factor IML. In our study, we have aimed to examine the influence of adding an illiquidity measure factor to the Fama and French model. The regression for the IML beta does not yield any significant results for the targets, which is surprising given the results of previous research in this area. Our results in Table 7, Section 5.2.3, as well as previous literature, show that increased information disclosure leads to increased market liquidity, thus supporting our first hypothesis. The literature has also argued that this increase in liquidity causes a decrease in the cost of capital. For our obtained results, this is not the case. Drawing from regression (3), as well as our robustness test, we can conclude that, contrary to what is found in previous research, it is *not* first and foremost through increased market liquidity that information disclosure decreases the cost of capital. Rather, this transmission mechanism consists of a reduction in the exposure to other risk factors: the market risk premium and the SMB risk factor. However, we should note that the majority of the previous research studies the period before the financial crisis in 2007-2009. It could be argued that the crisis had a lasting effect on the determinants of the illiquidity risk factor and that this could explain our lack of significant results. In other words, the aftermath of the crisis might prevail still. Behavioural aspects can have an effect on traders' and investors' willingness to trade. Irrational investment decisions based on over-prudence and exacerbated risk-aversion, which could be a remaining effect from the crisis, is an example that could affect market liquidity.

Looking at the entirety of our results, one aspect to discuss is the credibility of different financial targets. Our results could be explained by a possibility that some targets are more credible than others. One reason could be that some targets are generally achieved by most firms, e.g. the dividend target, and thus possess an inherent credibility. A second reason could be management related. Top managers who have historically performed well should give credibility to the financial targets set, irrespective of what firm she or he currently works for. Underlying is the belief that such managers have exceptional capabilities. Thirdly, credibility could also be a question pertaining to investors' heterogeneous beliefs regarding firm performance and governance. There could be differences between informed and uninformed investors, where the former know better the firm situation and behaviour and the latter apply

standard analysis tools without e.g. having talked to management. In this case, the credibility of a firm is subject to investor beliefs and knowledge, meaning that the outcome of an attempt to disclose forward-looking targets in order to enjoy cost of capital benefits is not always, unfortunately, from a firm governance perspective, in the hands of the firm. For the firm, it means that treating all investors as a homogenous group could be costly. However, whether the additional disclosure activity is beneficial would need to be evaluated through a cost-benefit analysis for the individual firm.

Yet another way of achieving credibility as to financial targets is to have a history of attaining communicated targets. Looking at the results, you could argue that what we actually observe is perhaps the effect of the attainment of targets. Could it be that the activity of merely disclosing targets has in fact no influence on the cost of capital? Could it be that the significant effect we find of having dividend, profitability and leverage targets is the result of many firms in the sample having a history of target attainment regarding said targets? Following this reasoning, cash flow, share-related and sales growth targets, is perhaps not achieved to the same extent as opposed to dividend, profitability, and leverage targets. It is likely that investors reward or penalise firms for achieving targets or failing to do so, and if this is the case, the degree of reward or penalty possibly depend on the historical performance of attaining them. This can be observed by negative share price reactions to profit warning announcements. Nevertheless, previous literature concludes that the disclosure of information should have some effect on the cost of capital, and thus, our explanation should be in line with this and the conclusion should hold. Measuring how much of the observed effect that pertains to having targets and how much pertains to achieving them is indeed a very interesting topic for further research. However, we must note that the attainment of long-term targets is difficult to measure. It is technically possible to measure if a target has been achieved at a certain point in time, but the issue is determining the correct time horizon for the achievement of a long-term target. Investors could also have different perspectives on this issue. We conclude that the attainment of long-term targets is even less measurable and more ambiguous than the setting and communication of them.

7. Conclusion

In our thesis we study the effect of having financial targets on the equity cost of capital, but not the effect of attaining them. We look at data of listed Swedish firms over the period 2010 to 2014 and categorise their financial targets into six different categories: dividend, profitability, cash flow, sales, share-related, and leverage targets. We first examine whether the disclosure of financial targets decreases illiquidity by regressing a liquidity measure on the financial targets. To determine whether the targets affect the cost of capital we propose a methodology where we use an asset-pricing model, which is an augmented Fama and French model, to estimate the exposure of each firm to the four risk factors: market premium, SMB, HML and an illiquidity measure IML. We then regress the exposures on dummy variables for the different categories of financial targets. We find that disclosing financial targets decreases illiquidity, which confirms our first hypothesis and is line with previous research. We also find that in total three of the financial targets affect two of the risk factors, and thus the cost of capital. Having a profitability or leverage target decreases a firm's exposure to the SMB beta, whereas having a dividend target reduces its exposure to both the market risk premium and the SMB beta. Thus our data supports that communicating long-term, quantitative financial targets for dividend-pay-out ratio, profitability and leverage decreases a firm's cost capital. This confirms our second hypothesis and is line with previous research. However, we cannot find support for any effect of communicating targets regarding cash flow, sales or shares on the risk factors and thus the cost of capital. Nor, contrary to our initial belief, can we find any impact of the financial targets on the illiquidity risk factor IML and thus the cost of capital, despite our finding of that increased information disclosure leads to increased market liquidity. Moreover, the results support the notion that estimation risk is a priced, systematic risk, which can be reduced by information disclosure.

Our focus of study is the effect of having financial targets, and we do not examine what the effect is of actually achieving them. Our results could be related to firms being rewarded or penalised for attaining goals, and if this is the case, the question is to what degree. However, previous literature supports that disclosing information should have some effect on the cost of capital, and thus our results should hold to a certain extent. How to measure the achievement of long-term targets in a reasonable manner is less than clear-cut. Thus, the impact of financial target attainment is an interesting topic for further research. Additional areas of interest for

future research are expanding the time horizon to pre-financial crisis periods, i.e. years prior to 2007, or expand target definition to include relative targets e.g. targets defined in relation to the future performance of industry peers.

Based on our findings, our conclusion and recommendation to firms is that they should communicate long-term financial targets regarding dividend pay-out ratio, profitability, and leverage, if they are interested in lowering their cost of capital.

8. Reference List

- Akerlof G., 1970, The Market for “Lemons”; Quality Uncertainty and the Market Mechanism, *The Quarterly Journal of Economics*, 84 (3), 488-500.
- Amihud Y., 2002, Illiquidity and Stock Returns: Cross-Section and Time-Series Effects, *Journal of Financial Markets*, 5 (1), 31-56.
- Amihud Y., Hameed A., Kang W. and Zhang H., 2015, The Illiquidity Premium: International Evidence, *Journal of Financial Economics*, 117 (2), 350-368.
- Berk, J., DeMarzo, P., 2011, *Corporate Finance* (Pearson Education, Essex, England).
- Blanco B., Garcia Lara J. M. and Tribo J. A., 2015, Segment Disclosure and Cost of Capital, *Journal of Business Finance & Accounting*, 42 (3), 367-41.
- Botosan C., 1997, Disclosure Level and the Cost of Capital, *The Accounting Review*, 72 (3), 323-349.
- Botosan C., 2006, Disclosure and the Cost of Capital: What do we know?, *Accounting and Business Research*, 36 (supplement 1), 31-40.
- Botosan C. and Plumlee M., 2002, A Re-Examination of Disclosure Level and the Expected Cost of Equity Capital, *Journal of Accounting Research*, 40 (1), 21-40.
- Bravo Urquiza F., Abad Navarro M. C. and Trombetta M., 2012, Disclosure Strategies and Cost of Capital, 33 (7-8), 501-509.
- Clarkson P., Guedes J. and Thompson R., 1996, On the Diversification, Observability and Measurement of Estimation Risk, *Journal of Financial and Quantitative Analysis*, 31 (1), 69-84.
- Coles J., Loewenstein U. and Suay J., 1995, On Equilibrium Pricing under Parameter Uncertainty, *Journal of Financial and Quantitative Analysis*, 30 (3), 347-364.
- Dhaliwal D.S., Li O. Z., Tsang A. and Yang Y. G., 2011, Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting, *The Accounting Review*, 86 (1), 59-100.
- Diamond D. and Verrecchia R., 1991, Disclosure, Liquidity and the Cost of Capital, *The Journal of Finance*, 46 (4), 1325–1359.

Easley D. and O'Hara M., 2004, Information and the Cost of Capital, *The Journal of Finance*, 59 (4), 1553–1583.

Fama E. and French K., 1992, The Cross-Section of Expected Stock Returns, *The Journal of Finance*, 47 (2), 427-465.

Fama E. and French K., 1996, Multifactor Explanations of Asset Pricing Anomalies, *The Journal of Finance*, 51 (1), 55-84.

Francis J., Nanda D. and Olsson P., 2008, Voluntary Disclosure, Earnings Quality, and Cost of Capital, *Journal of Accounting Research*, 46 (1), 53-99.

Glosten L. and Milgrom P., 1985, Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders, *Journal of Financial Economics*, 14 (1), 71-100.

Hasbrouck J., 2005, Trading Costs and Returns for US Equities: The Evidence from Daily Data, NYU Stern School Department of Finance Working Paper, New York University.

Healy P. and Palepu K., 2001, Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature, *Journal of Accounting and Economics*, 31 (1-3), 405-440.

Kim O. and Verrecchia R., 1994, Market Liquidity and Volume Around Earnings Announcements, *Journal of Accounting and Economics*, 17 (1-2), 41-67.

Lambert R., Leuz C. and Verrecchia R., 2006, Accounting Information, Disclosure and the Cost of Capital, *Journal of Accounting Research*, 45 (2), 385-420.

Leuz C. and Verrecchia R., 2000, The Economic Consequences of Increased Disclosure, *Journal of Accounting Research*, 38 (supplement), 91-124.

Welker M., 1995, Disclosure Policy, Information Asymmetry and Liquidity in Equity Markets, *Contemporary Accounting Research*, 11 (2), 801-827.

9. Appendix

9.1 Generation of Risk Factors

Market Risk Premium

The market risk premium is generated by constructing a value-weighted index for all 232 shares that are included in our study. Thus it can be calculated as follows:

$$r_{MRP,t} = \sum_{i=1}^{232} \left(r_{i,t} * \frac{\text{Market capitalisation}_{i,t}}{\sum_{k=1}^{232} \text{Market capitalisation}_{k,t}} \right)$$

i.e. the market risk premium on day t is generated through taking the weight that each share i has on day t , by taking the ratio between the market capitalisation of share i divided by the total market capitalisation on day t , and then multiplying this weight with the return of share i on day t .

SMB and HML Risk Factors

The SMB and HML risk factors are generated by dividing all shares into six different portfolios for each day t based on two dimensions: the market value and book-to-market ratio of each share. The portfolios are referred to as the small value, small neutral, small growth, big value, big neutral and big growth portfolios. The cut-off point for the small portfolios in relation to the big portfolios is the median market value of all shares. Between the value and neutral portfolios the cut-off point is the 70th percentile of the book-to-market ratio of all shares, whereas between the growth and neutral portfolios it is the 30th percentile. The value-weighted return is calculated for each portfolio and day. The SMB factor return on day t is then calculated as follows:

$$SMB_t = \frac{\sum_{i=1}^3 r_{\text{Small portfolio}_{i,t}}}{3} - \frac{\sum_{k=1}^3 r_{\text{Big portfolio}_{k,t}}}{3}$$

i.e. as the difference in simple average of the return of the three small portfolios on day t and the simple average return of the three big portfolios on day t .

The HML factor return on day t is generated as follows:

$$HML_t = \frac{r_{Small\ value,t} + r_{Big\ value,t}}{2} - \frac{r_{Small\ growth,t} + r_{Big\ growth,t}}{2}$$

i.e. as the difference in simple average of the return of the two value portfolios on day t and the simple average return of the two growth portfolios on day t .

IML Risk Factor

To generate the IML risk factor we begin by dividing the shares into 15 different portfolios, depending on illiquidity, using the measure *Illiqsqrt*, and volatility. Firstly, three portfolios are formed, based on the shares' volatility during the 90 preceding days, where shares with volatility below the 30th percentile of the volatility of all shares are sorted into the low volatility portfolio and shares with volatility above the 70th percentile are sorted into the high volatility portfolio. Secondly, each of these three portfolios are sorted by their average *Illiqsqrt* over the preceding 90 days, into five portfolios, where the quintiles are used as cut-off points. This results in a total of 15 portfolios. To compute the factor return the portfolios with the highest and the lowest illiquidity, i.e. the highest and the lowest quintile, in each of the three volatility groups are used. The IML factor return on day t is then given by the following:

$$IML_t = \frac{\sum_{i=1}^3 r_{High\ illiquidity\ portfolio_{i,t}}}{3} - \frac{\sum_{k=1}^3 r_{Low\ illiquidity\ portfolio_{k,t}}}{3}$$

i.e. the difference between simple average of the return of the high illiquidity portfolios on day t and the simple average of the return of the low illiquidity portfolios on day t .

9.2 Robustness Test Results

(A1)

$$\begin{aligned}\alpha_i = & \beta_0 + \beta_1 \text{dividend target}_i \\ & + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\ & + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\ & + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_7 \text{Illiqsrt}_i + \varepsilon_i\end{aligned}$$

TABLE A1. Robustness Test Regression Results Of Alpha On Financial Targets

Alpha		(1)	(2)	(3)	(4)	(5)
	Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.00013 (-0.75)	-0.00024 (-1.28)	-0.00024 (-1.29)	-0.00025 (-1.38)	-0.00026 (-1.38)
	Profitability	-0.00004 (-0.22)	-0.00001 (-0.04)	-0.00001 (-0.06)	0.00000 (-0.03)	0.00003 (0.15)
	Cash flow	-0.00017 (-0.98)	-0.00003 (-0.15)	-0.00002 (-0.08)	-0.00002 (-0.10)	-0.00018 (-0.89)
	Sales	0.00016 (1.30)	0.00006 (0.47)	0.00006 (0.49)	0.00007 (0.55)	-0.00003 (-0.19)
	Share	0.00033 (0.97)	0.00016 (0.54)	0.00023 (0.69)	0.00023 (0.68)	0.00029 (0.79)
	Leverage	-0.00016 (-1.13)	0.00007 (0.55)	0.00009 (0.62)	0.00008 (0.58)	0.00007 (0.51)
Controls	Volatility	0.00003*** (3.02)	0.00003*** (3.13)	0.00003*** (3.08)	0.00003*** (3.17)	
	Illiqsrt	-0.00061 (-0.72)	0.00105 (1.45)	0.00100 (1.36)		
	Market Value	0.00000*** (2.38)	0.00000*** (1.44)			
	Book-to-Market	0.00079*** (3.94)				
	Intercept	-0.00134*** (-5.88)	-0.00090*** (-4.58)	-0.00087*** (-4.56)	-0.00086*** (-4.52)	-0.00006*** (-0.26)
	N	229	232	232	232	232
	R ²	0.140	0.075	0.073	0.072	0.012

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table A1 shows the results from the robustness test regression (A1) where we use the original Fama and French model. The dependent variable is the estimated alpha from regression (1). The independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, Illiqsrt, market value, and book-to-market, are added as control variables.

(A2)

$$\begin{aligned}\beta_i^{MRP} = & \beta_0 + \beta_1 dividend\ target_i \\ & + \beta_2 profitability\ target_i + \beta_3 cash\ flow\ target_i \\ & + \beta_4 sales\ target_i + \beta_5 share\ related\ target_i \\ & + \beta_6 leverage\ target_i + \beta_7 volatility_i + \beta_8 market\ value_i + \beta_9 BTM_i + \beta_7 Illiqrt_i + \varepsilon_i\end{aligned}$$

TABLE A2 . Robustness Test Regression Results Of The Market Beta On Financial Targets

Market premium beta		(1)	(2)	(3)	(4)	(5)
Variable		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.10752*** (-2.80)	-0.10816*** (-2.86)	-0.10822*** (-2.81)	-0.09569** (-2.41)	-0.09846** (-2.38)
	Profitability	0.01130 (0.27)	0.00963 (0.24)	0.00604 (0.14)	0.00023 (0.01)	0.00941 (0.20)
	Cash flow	0.02060 (0.40)	0.01166 (0.24)	0.02882 (0.67)	0.03471 (0.82)	-0.01145 (-0.22)
	Sales	0.03608 (1.00)	0.03752 (1.06)	0.04061 (1.07)	0.03127 (0.81)	0.00228 (0.06)
	Share	0.00498 (0.05)	0.00849 (0.08)	0.07838 (0.59)	0.07924 (0.60)	0.09592 (0.71)
	Leverage	-0.02278 (-0.65)	-0.02348 (-0.74)	-0.01228 (-0.37)	-0.00386 (-0.12)	-0.00571 (-0.16)
	Intercept	0.66812*** (9.15)	0.67371*** (10.47)	0.70354*** (11.48)	0.69824*** (11.66)	0.93081*** (24.74)
Controls	Volatility	0.00849*** (4.97)	0.00824*** (5.15)	0.00778*** (5.05)	0.00747*** (4.92)	
	Illiqrt	-1.05474*** (-5.11)	-1.07142*** (-5.67)	-1.12757*** (-5.44)		
	Market Value	0.00000*** (3.50)	0.00000*** (3.53)			
	Book-to-Market	-0.00819*** (-0.23)				
N		229	232	232	232	232
R ²		0.224	0.226	0.177	0.145	0.031

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table A2 shows the results from the robustness test regression (A2) where we use the original Fama and French model. The dependent variable is the market beta, and the independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, Illiqrt, market value, and book-to-market, are added as control variables.

(A3)

$$\begin{aligned}
\beta_i^{SMB} = & \beta_0 + \beta_1 \text{dividend target}_i \\
& + \beta_2 \text{profitability target}_i + \beta_3 \text{cash flow target}_i \\
& + \beta_4 \text{sales target}_i + \beta_5 \text{share related target}_i \\
& + \beta_6 \text{leverage target}_i + \beta_7 \text{volatility}_i + \beta_8 \text{market value}_i + \beta_9 \text{BTM}_i + \beta_7 \text{Illiqsrt}_i + \varepsilon_i
\end{aligned}$$

TABLE A3. Robustness Test Regression Results Of The SMB Beta On Financial Targets

SMB beta		(1)	(2)	(3)	(4)	(5)
Variable		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	-0.17897** (-1.99)	-0.19077** (-2.11)	-0.19062** (-2.04)	-0.19188** (-2.07)	-0.19793** (-2.07)
	Profitability	-0.21293** (-2.57)	-0.20108** (-2.41)	-0.19227** (-2.20)	-0.19168** (-2.19)	-0.17166* (-1.90)
	Cash flow	-0.05477 (-0.38)	0.00570 (0.04)	-0.03640 (-0.25)	-0.03699 (-0.26)	-0.13766 (-1.12)
	Sales	0.01606 (0.21)	0.00008 (0.00)	-0.00750 (-0.09)	-0.00656 (-0.08)	-0.06978 (-0.88)
	Share	-0.09049 (-0.43)	-0.130993 (-0.61)	-0.30254** (-2.49)	-0.30263** (-2.49)	-0.26625* (-2.03)
	Leverage	-0.32584*** (-4.64)	-0.29518*** (-4.21)	-0.32268*** (-4.43)	-0.32353*** (-4.48)	-0.32757*** (-4.33)
	Intercept	0.45543*** (2.75)	0.53719*** (3.75)	0.46397*** (3.15)	0.46451*** (3.15)	0.97173*** (8.45)
Controls	Volatility	0.01521*** (3.46)	0.01515*** (3.69)	0.01627*** (3.84)	0.01630*** (3.91)	
	Illiqsrt	-0.32526 (-0.42)	-0.02408 (-0.03)	0.11375 (0.13)		
	Market Value	0.00000*** (-3.68)	0.00000*** (-3.76)			
	Book-to-Market	0.14602 (1.80)				
	Intercept	0.45543*** (2.75)	0.53719*** (3.75)	0.46397*** (3.15)	0.46451*** (3.15)	0.97173*** (8.45)
N		229	232	232	232	232
R ²		0.301	0.292	0.248	0.248	0.167

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table A3 shows the results from the robustness test regression (A3) where we use the original Fama and French model. The dependent variable is the SMB beta, and the independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, Illiqsrt, market value, and book-to-market, are added as control variables.

(A4)

$$\begin{aligned}\beta_i^{HML} = & \beta_0 + \beta_1 dividend\ target_i \\ & + \beta_2 profitability\ target_i + \beta_3 cash\ flow\ target_i \\ & + \beta_4 sales\ target_i + \beta_5 share\ related\ target_i \\ & + \beta_6 leverage\ target_i + \beta_7 volatility_i + \beta_8 market\ value_i + \beta_9 BTM_i + \beta_7 Illiqrt_i + \varepsilon_i\end{aligned}$$

TABLE A4. Robustness Test Regression Results Of HML On Financial Targets

HML beta		(1)	(2)	(3)	(4)	(5)
Variable		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Targets	Dividend	0.12355 (1.54)	0.04264 (0.49)	0.04265 (0.49)	0.04611 (0.54)	0.04473 (0.52)
	Profitability	0.02085 (0.34)	0.04585 (0.67)	0.04644 (0.68)	0.04483 (0.65)	0.04940 (0.74)
	Cash flow	-0.02950 (-0.68)	0.01935 (0.22)	0.01654 (0.19)	0.01817 (0.21)	-0.00484 (-0.05)
	Sales	-0.00037 (-0.01)	-0.07438 (-1.51)	-0.07489 (-1.52)	-0.07747 (-1.60)	-0.09192 (-1.87)
	Share	0.07267 (1.55)	-0.04404 (-0.56)	-0.05550 (-0.71)	-0.05527 (-0.71)	-0.04695 (-0.68)
	Leverage	-0.03998 (-0.83)	0.14464*** (2.60)	0.14280** (2.54)	0.14513*** (2.62)	0.14421*** (2.60)
Controls	Volatility	0.00367 (0.92)	0.00374 (0.89)	0.00381 (0.91)	0.00373 (0.90)	
	Illiqrt	-1.60661*** (-3.26)	-0.32121 (-0.71)	-0.31200 (-0.70)		
	Market Value	0.00000 (1.19)	0.00000 (-0.80)			
	Book-to-Market	0.61313*** (6.78)				
	Intercept	-0.52460*** (-4.60)	-0.1780278 (-1.63)	-0.18292* (-1.71)	-0.18439* (-1.70)	-0.06846 (-0.59)
N		229	232	232	232	232
R ²		0.224	0.033	0.032	0.032	0.025

***, **, and * denote 1%, 5% and 10% significance levels respectively.

Table A4 shows the results from the robustness test regression (A4) where we use the original Fama and French model. The dependent variable is the HML beta, and the independent variables are dummy variables of the financial targets, which is 1 if firm i has a target and 0 otherwise. Volatility, Illiqrt, market value, and book-to-market, are added as control variables.