CCGR

Centre for Corporate Governance Research

Tax concerns and agency concerns in dividend policy:

Holding companies as a separating device

Janis Berzins, Øyvind Bøhren and Bogdan Stacescu

BI NORWEGIAN BUSINESS SCHOOL

Tax concerns and agency concerns in dividend policy:
Holding companies as a separating device

by*

Janis Berzins   Øyvind Bøhren   Bogdan Stacescu

Abstract

Higher dividends may create value by reducing agency costs, but may also destroy value by increasing tax payments. This paper shows empirically how stockholders use holding companies to establish indirect ownership through operating companies in order to obtain the benefit of lower agency costs while also avoiding the cost of higher taxes. We identify this relationship by studying the effect of a regulatory shift in Norway from zero to positive dividend taxes for individuals, whereas intercorporate dividends remained tax-exempt. We find that the use of holding companies increases strongly after the tax reform, and that operating companies with a higher potential for agency conflicts are more often owned by holding companies. Dividends paid from operating companies to holding companies are higher when the operating company would face more severe agency conflicts if such payments were not made. The payout is also higher and more stable from operating companies than from holding companies. These findings are consistent with the notion that stockholders choose organizational forms that separate tax effects from agency effects in dividend policy.

January 24, 2013

---

1. Introduction

Dividend policy is irrelevant for firm value in perfect capital markets. With potential agency conflicts between majority and minority stockholders, however, the payment of dividends becomes a vehicle for limiting the majority's extraction of private benefits. In particular, the firm can reduce agency costs of majority-minority conflicts by paying out free cash flow to all stockholders based on their proportional cash flow rights. This payout shrinks the pool of financing for projects that benefit the majority stockholder at the minority's expense (Jensen and Meckling (1976); Jensen (1988)).

Although dividends may reduce agency costs in the dividend-paying firm, the payout is made costly by the taxation of dividend income received by the stockholders. Thus, optimal dividend policy involves a tradeoff between agency benefits and tax costs, and vehicles that reduce the severity of this tradeoff increase firm value. Our paper shows empirically how holding companies play such a cost-reducing role in a regulatory regime where dividend income is taxable for individuals, but not for corporations. In particular, we show that individuals use holding companies to own operating companies directly rather than indirectly. Moreover, we find that more dividends are paid through this channel the more serious the potential agency costs in the operating company. This happens because dividends paid from the operating company to the holding company reduce potential agency costs in the operating company by taking cash away from the controlling owner's discretion. Since these intercorporate dividends are not taxed, the reduced agency costs do not come at the expense of increased tax costs. Therefore, the tradeoff between agency concerns and tax concerns becomes irrelevant.

We examine a large sample of private Norwegian firms with a controlling stockholder that were exposed to a new tax law in 2006. The law involves a radical shift from the earlier 0% to the current 28% tax rate on dividend income in excess of a deduction based on riskless returns. This tax applies to dividends paid to individual owners, but not to intercorporate dividends, which are tax-free.[1] Since an operating company in our sample has both majority and minority stockholders, dividends may alleviate potential conflicts between the two stockholder groups. However, the tax reform increased the cost of such a dividend policy when the payout is made to individuals. At the same time, however, the reform left the tax cost of intercorporate dividends unchanged, since such payout continued to be tax-free.

---

[1] Capital gains are taxed like dividends for a given owner type. Hence, corporations pay no taxes on dividends and capital gains, while individuals pay 28% tax on both dividends and capital gains after the riskless deduction.

Therefore, if reducing the potential for agency costs is important, and if dividend payout is a relevant tool for this purpose, we expect the tax reform to trigger a shift from direct ownership by individuals to their indirect ownership through holding companies. In addition, this shift should be stronger and the fraction of earnings paid to indirect owners should be higher and more stable the more serious the potential agency cost in the absence of such payments.

Our findings support these hypotheses. The number of holding companies increases sharply after the tax reform, and more operating companies become indirectly owned. Moreover, the likelihood of an operating company being owned by a holding company increases with the potential conflict between the operating company's owners. The underlying tradeoff between agency benefits and tax costs is not just reflected in the choice of organizational form, but also in the fraction of earnings distributed as dividends. Operating companies with higher potential agency costs choose higher and more stable payout ratios, and more so if the firm is controlled through a holding company. The payout is also higher from the operating company than from the holding company, and the difference increases with the conflict potential in the operating company. Hence, the operating company's dividend policy seems to be driven more by the wish to reduce free cash flow than by the controlling owner's immediate consumption needs. Overall, these findings suggest that agency conflicts matter for payout policy, that stockholders choose organizational forms that allow them to separate agency effects from tax effects of dividends, and that the value created by this separation justifies the expense of establishing the required organizational form.

Like Faccio et al. (2001) and Morck and Yeung (2005), we examine indirect ownership. However, our setting and our results are quite different. For instance, Faccio et al. study pyramiding in business groups, finding evidence of rent extraction in East Asia, but not in Western Europe. While we do consider a setting with indirect ownership, there is little evidence of pyramiding, since most holding companies in our sample only have one owner. This means the holding company does not create the wedge between control rights and cash flow rights studied by Faccio et al. and by Morck and Yeung. Moreover, the proportion of firms with more than one level of indirect ownership is small in our sample.[2] Consequently, while agency costs in the existing literature are driven by indirect ownership, we do quite the opposite by analyzing how indirect ownership actually reduces agency costs. Doe to this

---

[2] 77% of the holding companies in our sample have just one owner after the tax reform, while 15% had two. Prior to the tax reform, the proportions were 71% and 18%, respectively. Less than 1% of the operating firms in our sample have more than one level of pyramiding after the tax reform.

effect, taxing intercorporate dividends like in the US is costly because it reduces payout incentives and hence increases the cost of reducing agency conflicts. We find that under a regime of tax-free intercorporate dividends, stockholders establish organizational forms that allow for agency costs to be reduced in a tax-efficient way. This result shows that the net benefit of taxing intercorporate dividends is more multidimensional and less obviously positive than what is suggested by the current literature on dividends and agency costs.

Starting from the seminal paper of Elton and Gruber (1970), the link between dividends and taxes has often been examined through the existence of dividend clienteles. Allen, Bernardo, and Welch (2000) show in a theoretical paper that dividends could be used to attract tax-exempt institutional investors, who may be better at screening and monitoring. Grinstein and Michaely (2005) test this prediction empirically and find that although institutional investors are more likely to invest in dividend-paying companies, they do not prefer higher payout ratios. Desai and Jin (2011) find that financial institutions consider their investors' tax preferences when choosing firms to invest in. Barclay, Holderness and Sheehan (2009) analyze the dividend preferences of corporate blockholders and find that, although subject to lower dividend taxes, they seem to prefer low or zero dividends, and mainly focus on the expansion of the firms they own.

In contrast to this literature, we look at the interaction between agency concerns and tax concerns. We do not assume that certain investors are better monitors than others. We consider the dividend an instrument for reducing opportunistic behavior, and we study the effect of a tax change that may have led the investor from one tax status to another by changing organizational form. This transformation is available to all investors, allowing them to avoid the tax cost of dividends and at the same time reduce moral hazard.

The existing research on dividends and taxes ignores the relationship to agency costs and mostly focuses on the relative taxation of dividends and capital gains (Bernheim (1991), Bernheim and Wantz (1995), Poterba (2004)). When dividend income taxes increase relative to capital gains taxes, stockholders have incentives to use repurchases as a cheaper substitute for dividends. Such a setting makes the dividend payout sensitive to changes in the relative taxation of dividends and capital gains.[3] In our case, however, dividends and capital gains are taxed the same way for a given investor type both before and after the regulatory shock. Therefore, concerns for the relative taxation of dividends and capital gains cannot motivate a

---

[3] The exception is the information asymmetry setting where the higher tax cost of dividends actually makes dividends more attractive, since high payout becomes a credible signal of high firm quality (Bernheim (1991), Bernheim and Wantz (1995)).

switch from one payout policy to another.[4] Since the tax reform increases the cost of paying dividends to individuals rather than to corporations, however, the new tax regime may induce lower payout and higher agency costs. However, we argue there is an opposing force driven by the stockholders' ability to change organizational.

Alstadsæter and Fjærli (2009) analyze the Norwegian 2006 tax reform, finding that dividend payout increases prior to the reform, drops just after the reform, and that the number of holding companies increases around reform. Alstadsæter, Kopczuk, and Telle (2011) examine the importance of social networks in the propagation of changing organizational form at the time of the tax reform. However, these studies do not relate the change in dividend payout and organizational form to firm characteristics, however, they are silent on the importance of any other dividend determinant than taxes. In contrast, we analyze the individual firm, how payout policy interact with organizational form, and how this relationship depends on both dividend taxation and the potential for agency costs.

Finally, our sample is based on private firms, where majority ownership is much more common than among public firms. We therefore bring evidence extending the insight into dividend payout policy in private firms as recently provided by Michaely and Roberts (2012). Using the exogenous shock provided by the tax reform, our findings support their intuition that concerns for agency costs play an important role in the payout policy of private firms. However, since an agency-motivated dividend policy has tax effects, and since the tax effect depends on owner type via organizational form, we study both components rather than just one.

The next section presents the regulatory setting and the resulting incentives to pay dividends and establish holding companies. Section 3 specifies hypotheses and empirical models, while section 4 presents our data sources and sampling procedures. Section 5 explores the decision to establish a holding company, and section 6 analyzes the dividend determinants. We summarize and conclude in section 7.

2. Regulation and incentives

The Norwegian tax system levies a flat 28% tax rate on corporate, financial, and labor income. Labor income is also subject to a progressive surtax. Dividends were tax-exempt

---

[4] Although stock repurchases have been allowed in Norway since 1999, the incidence of repurchases in our sample is minimal. Repurchases tend to be used only by large firms with dispersed ownership.

until the end of 2005, while the tax on capital gains was zero in most cases and hence equal to the zero tax rate on dividends.[5]

The tax reform was announced on March 26, 2004 and implemented on January 1, 2006. The new regulation introduced a 28% tax on dividend income and capital gains in excess of a threshold amount based on riskless returns. In contrast, corporations do not pay taxes neither on dividend income nor capital gains.[6] During the transition period from the old to the new regime, realized capital gains up to March 26, 2004 were made tax-free. Moreover, individuals could, under certain conditions, transfer personally held shares to a holding company in 2005 without triggering capital gains taxes. The cost of setting up holding companies was therefore temporarily reduced in the transition to the new tax regime. Overall, the tax reform increased the cost of dividends paid to individuals, but not to companies. The transition period facilitated the switch to indirect ownership, and taxes paid by a given tax payer on dividends, capital gains, salaries, and interest income were all aligned.

Taxing individuals but not corporations for dividend income is a characteristic feature of the tax system in most countries. An important exception is the US, where both individuals and corporations are taxed. The two tax systems have different effects across the various functions of dividends. For instance, dividends used to fund consumption need to reach the individual and will therefore be taxed under both systems. In contrast, dividends as a tool for reducing agency costs cannot be used without tax costs in the US. In Norway and many other countries, however, dividends can be paid with no tax drain if the recipient is a company.

Prior to the Norwegian tax reform, every function of payout could be fulfilled at no tax cost. After the tax reform some functions can only be fulfilled at zero tax costs in an intercorporate context. Hence, stockholders have incentives to switch from direct ownership to indirect. In a holding structure, the operating company pays the dividend to the holding company. The payment moves this part of the operating company's free cash flow beyond the control of its majority stockholder without generating taxes. Obviously, the cash will eventually be paid from the holding company to individual investors, and hence be taxed at the personal tax rate. Nevertheless, moving the cash away from the majority-controlled company into the holding company reduces the risk that the cash will finance consumption of private benefits for the majority rather than being shared with the minority. The switch to

---

[5] The exception was in 2001, when a tax rate of 11% applied to dividend income above a certain threshold.
[6] In the 2008-2010 period, corporations paid a 0.67% tax (3% of 28%) on dividend and capital gains in excess of the riskless return.

indirect ownership therefore allows the separation between the tax effect and the agency effect of dividend payout.

Reducing agency conflicts at a minimum tax cost may not be the only reason for establishing holding companies. Another incentive comes from heterogeneous liquidity needs among the operating company's stockholders. Given the tax cost of dividends paid by individual investors after the tax reform, they will only want to receive dividends when the liquidity benefit of dividends exceeds the personal tax cost. The problem is, however, that dividends are proportional cash disbursements to all stockholders based on their cash flow rights in the firm. Thus, dividends paid out to cover one stockholder's personal liquidity need may generate an unwanted tax cost for another stockholder who does not need the liquidity. Indirect ownership may solve this problem by allowing the cash to be paid out as dividends to holding companies with no tax consequences. Only investors faced with a sufficiently large liquidity need will then withdraw cash as dividends from their holding company and pay the resulting dividend tax. Hence, holding companies are useful also for managing uncoordinated liquidity shocks across heterogeneous stockholders in the same operating company.

Based on these incentives, we examine how stockholders react to the tax reform by establishing holding companies in order to separately deal with agency effects and tax effects. We consider the dividend from the operating company to the holding company as well as the dividend from the holding company to its individual owners. The former payout is more likely to be governed by agency concerns, since tax concerns can be ignored. In contrast, the holding company's dividend decision should be driven by the ultimate owners' consumption concerns, since the cash must get to the individual in order to finance personal needs. Moreover, agency conflicts and asymmetric liquidity needs are only second-order concerns in the holding companies of our sample, since more than three quarters of them have just one owner.

3. Hypotheses and models

Our hypotheses as presented in Table 1 concern the incentives to establish holding companies (hypotheses H1 and H2), and the determinants of the dividend payout from operating companies and holding companies (H3-H6).

The first hypothesis (**H1**) states that the tax reform increases *the use of holding companies*. We test this prediction by analyzing whether there was an increase in the number of holding companies around the tax reform, and whether more operating companies have

7

holding companies among their owners. We use t-tests for difference in the mean number of firms before and after the tax reform and also a difference-in-difference approach based on annual observations.

H2 states that the tendency to set up holding companies after the tax reform is stronger the more pressing the potential agency problem in the operating company. We estimate a logit model to test whether such operating companies are more likely to be owned through a holding company.

We use two measures for the potential agency conflict in the firm. The first measure is the firm's free cash flow, which represents the funding source of private benefits for the majority stockholder. Our second measure is based on the idea that the higher the cash flow right of the controlling stockholder, the lower the conflict potential with the minority. This happens because the more of the firm's equity the majority owns, the more of the lost firm value is internalized if the majority decides to not pay dividends but instead divert the cash for private benefits at the minority's expense. Consequently, our second proxy for potential agency problems is the fraction of cash flow rights held by the controlling stockholder in the operating company.

The potential agency problem between majority and minority owners is more serious the higher the *free cash flow* and the lower the *ownership concentration*. Under the substitute logic of dividends and agency costs, where dividends are used to mitigate agency problems (LaPorta et al. (2000)), the use of holding companies will increase with the free cash flow and decrease with the majority stake. The expected relationship is the opposite under the outcome logic, where the majority uses the power to opportunistically exploit the minority by paying less dividends the larger the potential agency conflict. In the following, we only specify the hypotheses under the substitute logic, since they are always the opposite under the outcome logic. Berzins et al. (2012) find support for the substitute logic in their analysis of dividend policy in Norwegian private firms.

We include a series of control variables, since some operating companies are more likely to pay dividends than others even in the absence of agency concerns. This dividend policy may induce the establishment of holding companies for tax reasons alone. Following the literature on such classic dividend determinants (DeAngelo et al. (2009)), we expect that the tendency to establish holding companies increases with the *size* of the operating company and decreases with *financial constraints*. We measure size by the log of total revenue. Financial constraints are measured by the ratio of sales to assets, the logic being that higher

sales relative to assets reflects lower slack, higher investment needs, and hence a lower dividend propensity.

Finally, we expect that operating firms with more risky revenue are more likely to set up holding companies. On the one hand, more risky revenue generally produces lower payout. In our case, however, where the new tax applies to dividends above the risk-free deduction, the owners of risky firms are penalized tax-wise. We expect this tax concern to be the more important one for the decision to establish indirect ownership. The volatility of sales growth over the last six years is used to measure *risk*.

H2 is tested by estimating the following model, where *HC* is a dummy variable which is 1 if the operating company has a holding company among its owners and 0 otherwise:

$$HC_{it} = \alpha + \beta_1 Ownership\ concentration_{it} + \beta_2 Free\ cash\ flow_{it}$$
$$+\beta_3 Size_{it} + \beta_4 Financial\ constraints_{it} + \beta_5 Risk_{it} + \varepsilon_{it}$$

(1)

H3 argues that the payout of operating companies in holding structures is partially driven by a concern for agency costs. According to our logic, holding companies are established to reduce the cost of extracting cash from operating companies. Consequently, dividends from the operating company should be higher the more important the agency concern in that company. In order to test this hypothesis, we regress the operating company's payout ratio on the dividend determinants from Equation (1). If dividends are used to reduce agency conflicts and if holding companies are used to reduce dividend taxes, the operating company's payout will relate negatively to ownership concentration and positively to free cash flow. We control once again for firm size, financial constraints, and risk, expecting a positive, negative, and negative relationship to the payout ratio, respectively.

H4 compares the payout from operating companies with and without a holding company among its owners. The hypothesis states that dividend are higher in a holding structure, and that this organizational form will make the operating company's payout relate more strongly to its inherent agency problems. Our rationale for H4 is that the cost of addressing the agency problem by dividends is smaller when the owner is not an individual. If holding companies are established for other reasons, however, the relationship in H4 should not be observed. First, dividends may be smaller rather than higher under a holding structure set up to facilitate the extraction of private benefits through pyramiding. Second, there will be no relationship between agency problems and payout if the holding company is constructed to

handle asymmetric liquidity shocks. We test H4 in the following way, studying the payout ratio *D* of operating companies with and without a holding company among its owners:

$$
\begin{aligned}
D_{it} = \alpha &+ \beta_1 Holding\ company_{it} + \beta_2 Ownership\ concentration_{it} \\
&+ \beta_3 Ownership\ concentration_{it} \cdot Holding\ company_{it} \\
&+ \beta_4 Free\ cash\ flow_{it} + \beta_5 Free\ cash\ flow_{it} \cdot Holding\ company_{it} \\
&+ \beta_6 Size_{it} + \beta_7 Financial\ constraints_{it} + \beta_8 Risk_{it} + \varepsilon_{it}
\end{aligned}
$$

(2)

We use the dividend payout ratio of the operating company as the dependent variable and add a dummy variable which we also interact with the two proxies for potential agency costs. This dummy variable, *Holding company$_{it}$*, is 1 if firm *i* is an operating company with a holding company among its owners at time *t* and 0 otherwise. We expect operating companies with a holding company to pay more dividends than operating companies outside holding structures. The payout difference will be larger the more severe the potential agency cost in an operating company controlled by a holding company. Hence, we predict $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 < 0$, $\beta_4 > 0$, and $\beta_5 > 0$. Like under H3 we expect $\beta_6 > 0$, $\beta_7 < 0$, and $\beta_8 < 0$.

H5 compares the payout in operating companies and holding companies. The hypothesis argues that the payout from the operating company is higher than that from the related holding company, and that the positive difference increases with potential agency costs in the operating company. The rationale is that payout to the holding company reflects persistent agency concerns and is also tax-free. In contrast, dividends from the holding company have less of a role in reducing agency costs, are taxable, and are associated with occasional liquidity shocks for the stockholders. Once taken out of the operating company, the cash can be saved in the holding company if not needed for consumption. The fact that the cash is saved in the holding company rather than the operating company illustrates the importance of control over cash as an agency problem. Unlike when testing H4, the sample used for H5 only includes operating companies with holding companies among their owners. Our model is the following:

$$
\begin{aligned}
DH_{it} = \alpha &+ \beta_1 Ownership\ concentration_{it} + \beta_2 Free\ cash\ flow_{it} \\
&+ \beta_3 Size_{it} + \beta_4 Financial\ constraints_{it} + \beta_5 Risk_{it} + \beta_6 DO_{it} \\
&+ \beta_7 Pre\text{-}existing\ holding\ company_{it} + \beta_8 Minority\ owner\ in\ holding\ company_{it} + \varepsilon_{it}
\end{aligned}
$$

(3)

DH is the payout ratio of the holding company. The independent variables in the first two lines of the model relate to the operating company. Like in (2), we expect $\beta_1 < 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 < 0$, and $\beta_5 < 0$.

DO is the payout ratio of the operating company, which we expect to be smaller than and also positively to the holding company's payout ($0 < \beta_6 < 1$). The dummy variable *Pre-existing holding company* is 1 if the holding company was established before the tax reform and 0 otherwise. We expect $\beta_7 > 0$, since an older holding company has supposedly accumulated more cash for non-tax reasons than a younger one and will hence distribute more of its earnings. Finally, the dummy variable *Minority owner in holding company* is 1 if there are at least two ultimate owners of the holding company and 0 otherwise. Based on the substitute logic for dividend policy and agency conflicts, we expect that the payout will be higher when there is a potential majority-minority issue in the holding company ($\beta_8 > 0$).

As already argued, we expect the agency problem in the operating company to be more persistent than the more occasional liquidity need driving the payout from the holding company. Therefore, **H6** predicts that the dividend from the holding company will be the more volatile.

4. Data

The data set is based on the population of firms with limited liability in Norway over the period 2000-2010. The data quality is unusually high, since the law mandates a standardized set of full accounting statements certified by a public auditor for every firm regardless of listing status, size, and industry. Failure to submit this information within 17 months after fiscal year-end triggers automatic liquidation by the court. The data includes family relationship by blood and marriage between all owners, directors, and the CEO.[7]

Our research design requires information about operating companies and the holding companies through which the operating company is partially owned. We apply a series of filters to build the sample of *operating* companies with potential agency problems between controlling and minority stockholders.

---

[7] Accounting, ownership, and board data are delivered by Experian (www.experian.com). Data on family relationships are from Skattedirektoratet, which is a state agency. All data items have been received in electronic form and stored in the data base of the Centre for Corporate Governance Research (www.bi.edu/ccgr).

1. Financial firms are excluded to avoid the impact of peculiar regulatory capital requirements and accounting rules. We also exclude utility and public administration firms, and in general firms where the government is the majority stockholder.

2. To avoid passive firms, a sample firm must have positive sales, assets, and employment.

3. The firm must have consistent accounting statements. For instance, total assets need to equal total liabilities plus stockholders' equity.

4. The firm must have a majority owner and more than one owner. This means more than 50% of the share capital must be held by a family with one or more stockholders, or by a firm whose ultimate owners cannot be identified. [8] Since our data set includes all firms in the economy, we can base this majority filter on ultimate control. In order to identify all companies the owner controls we start from a given owner and follow his controlling stakes in various companies, and subsequently the controlling stakes of those companies. This procedure allows us to determine which ultimate owner, if any, controls a given company.

5. We exclude business groups and subsidiaries unless controlled by a holding company.

6. We ignore the smallest 5% of firms by assets, sales, and employment.

Summing up the sampling procedure for operating companies, our basic sample is all but the very smallest non-financial, non-utility, non-state firms with significant economic activity, more than one stockholder, and which are ultimately controlled by a majority stockholder who is either a domestic family with one or more members, a domestic institutional investor, or a foreign entity.

We identify *holding* companies as firms set up to invest in operating companies. In order to qualify as a holding company the firm must own shares in an operating company and have either sales to assets below 5% (reflecting no significant economic activity) or have the official industry code dedicated to investment firms. The activity filter is applied because we only want holding companies that are used mainly to manage their owners' investment in operating companies. We have three reasons for this choice. First, we want to ignore dividends in a business group, which can be distorted by tax-motivated transfers between the

---

[8] A family is defined as a married couple and its minor children. Owners who cannot be identified would be institutions, foreign corporations or foreign personal investors. Since we do not know who owns a foreign corporations, we cannot identify its ultimate owners. We also do not know family relationships for foreigners.

group members, including the parent company. Second, pyramiding through layers of operating companies can be used to extract private benefits, which has already been addressed in the literature (Faccio, Lang, and Young (2001)). In contrast, we focus on how indirect ownership is used to reduce agency costs at zero tax costs. Third, since pyramiding in business groups is less widespread in Norway than in many other countries, we are not losing important parts of the overall economy by excluding them.

Since we focus on the agency conflict between majority and minority stockholders, we use a sample of firms where the controlling block can be clearly identified. This approach allows us to study how the majority is sharing free cash flows with the minority. Our test is based on keeping the majority control of the firm constant while exploiting the variation in the split of cash flow rights between the majority and the minority. Finally, since we want to avoid ambiguity concerning control, we ignore potential blockholder coalitions in the spirit of Laeven and Levine (2008). Instead, we focus on the easily identifiable coalition based on family connections.

5. Establishing holding companies

Table 2 presents summary statistics for the sample firms. The second column of results shows that about 16,000 operating companies pass our filters. Column four documents that the number of holding companies increases very strongly from 735 companies in 2000 to 6,719 in 2010. As expected, the large jump happens around the tax reform, as the number of holdings companies increases by 460% in 2005.

Column five shows that the number of owners per operating company stays around 2.6. Importantly, however, column six reveals that while 6% of the operating companies have a holding company among its owners before the tax reform, the number rises to 26% after. At the same time, the average number of owners per holding company in column seven decreases from 2.75 to 1.61, and the average number of operating companies per holding company in column 8 drops from 1.35 to 1.11. Both trends reflect the creation of new holding companies.

Using 2006 as the event year, we have estimated a difference-in-difference model to compare the number of operating companies and holding companies before and after the event. The estimates support the results from the tests of difference in means from Table 2

showing that the tax reform causes an abnormal growth in indirect ownership.[9] Overall, the observed pattern is consistent with hypothesis **H1** from Table 1.

The findings in Table 2 reflect a striking shift after the tax reform in the relationship between firms and owners. In particular, there is a growing layer of holding companies acting as intermediaries between operating companies and their ultimate owners. Hypothesis **H2** predicts that the existence of holding companies depends on the intensity of potential agency conflicts in the operating firm. Table 3 estimates how the likelihood of establishing holding companies depends on such firm characteristics.

Using data from the post-reform years (2006-2010) and controlling for the firm's size, financial constraints, and risk according to model (1), we find that operating firms where majority stockholders have a smaller ownership block are more likely to be owned by holding companies. This relationship is also true for companies with higher free cash flow. Both results are consistent with the substitute model of dividends, where higher potential agency problems induce higher payout. The findings also support the prediction in H2 that agency concerns induce the use of indirect ownership in order to mitigate agency costs without incurring tax costs. As for the control variables, the table shows that as predicted, firms with majority ownership are more prone to be owned indirectly when they are large, risky, and less financially constrained.

6. Dividend policy and organizational form

Hypothesis **H3** states that the payout from the operating company to the holding company is partially driven by the majority stockholder's concern for agency costs. Table 4 regresses the payout ratio of the operating company on proxies for potential agency conflicts and on controls. The sample consists of all operating firms that have a holding company among their owners.

The estimates show that higher payout is associated with a lower equity share for the controlling stockholder and with a higher free cash flow. Therefore, the fraction of earnings paid from the operating company to the holding company is larger the higher the potential agency costs in the operating company. This result is once more consistent with the substitute logic and with the use of holding companies to mitigate stockholder conflicts in a tax-

---

[9] We estimated is model $Y = a + b_1 X + b_2 Z + b_3 XZ$, where Y is the number of firms in the year, and X and Z are 0/1 dummy variables. $X=1$ if the observation is for a holding company, while $Z=1$ if the year is after 2005. The estimate of interest is b_3, which we find to be positive and strongly significant.

minimizing way. As predicted, larger firm size and lower risk increases payout, while the positive relationship between payout and financial constraints is not in line with the hypothesis.

Our hypothesis **H4** predicts that indirect ownership through a holding company rather than directly is associated with higher payout, and that this difference is larger the more serious the potential agency conflict. Table 5 shows the results of testing this proposition, which we specified in model (2). Unlike in Table 4, the sample includes all operating companies, regardless of whether or not there is a holding company among the owners.

The estimates show that the existence of holding companies is associated with higher payout from the operating company. The two interaction terms document that the effect of a holding company is also stronger for firms with higher potential for conflicts of interest as measured by low cash flow rights by the majority owner and by high free cash flow as a potential financing source for private benefits. Hence, the existence and the use of holding companies seem motivated by a desire to mitigate agency costs at minimum tax costs. These results are consistent with our prediction.

H5 conjectures that the payout will be higher from the operating company than from the holding company, and that the difference will be larger the more pressing the potential agency problem in the operating company. As usual, we measure the payout of the operating company as the ratio between its cash dividend and operating earnings. The payout ratio of the holding company is measured as the dividend paid by the holding company divided by the earnings of the operating company times the holding company's fractional ownership share in the operating company. This denominator is motivated by the fact that since the holding companies in our sample do not have operating activity, their main function is to receive and distribute investment returns received from operating companies. Hence, the appropriate starting point for normalizing the holding company's dividend is the operating firm's earnings. Since the holding company only owns a fraction of these earnings, we adjust for its fractional ownership share.[10]

Table 6 presents the findings based on model (3), where the key independent variable is Dividends from operating company. The estimates show that when we regress the dividends of the holding company on the dividends of the operating company while

---

[10] There are also cases where one holding company owns shares in several holding companies. In that case, we calculate the share of the holding company's earnings and payout corresponding to the specific operating company. We find that share as the ratio between the book value of the equity owned by the holding company in that particular operating company and the total book value of all the holding company's equity holdings.

controlling for potential agency conflicts, the regression coefficient is positive and significantly below 1. As predicted by H5, this result shows that dividends of the operating company and the holding company are positively correlated, and that less dividends are paid from holding companies than from operating companies. [11] Alternative specifications in models (A) - (C) produce identical results.

Finally, Table 7 relates the dividend volatility of the holding company to the dividend volatility of the operating company. **H6** is tested by constructing payout volatility pairs for holding companies and related operating companies that both pay dividends at least once during the sample period. Payout volatility is measured as the standard deviation of the dividend payout divided by the mean payout over the period. Only the portion of dividends reflecting the holding company's stake in the operating company is considered. We rank the volatility pairs across five quintiles based on the holding company's dividend volatility. Within each quintile, we compare the mean dividend volatility for holding companies and operating companies, expecting the former to exceed the latter.

As predicted, the estimates show that the payout is generally more volatile in the holding company than in the operating company that the holding company has invested in. The only exception is in the quintile of lowest volatility, where the opposite is true. The patterns are consistent in the full sample period and in the subperiod 2008-2010.

7. Conclusions

Analyzing a large sample of majority-controlled private firms, we find a distinct relationship between tax concerns and agency concerns in dividend policy. Our key to identifying this relationship is a tax reform which introduced taxes on dividend income and capital gains for individuals, but not for corporations. We document that this change in tax regime dramatically increases the use of tax-exempt holding companies, particularly by majority owners of operating companies that have serious potential agency conflicts. We also find that dividend payments from operating companies to holding companies are higher when the operating company would face particularly severe agency problems in the absence of such payments. Moreover, the presence of holding companies in the ownership structure tends to increase the fraction of earnings paid out as dividends from the operating company, especially

---

[11] The coefficient could be above one if the holding company makes additional returns on the cash it receives from the operating company, or if it realizes capital gains. It could be 1, or very close to 1, if the holding company simply pays out the dividends it receives from the operating company. We get a coefficient around 25%, which is both statistically and economically very far below 1.

if the potential is large for conflicts of interest among the stockholders. The payout is also higher and less volatile from operating companies than from holdings companies.

These results document the notion that changes in dividend taxation may induce changes in ownership towards the more tax-efficient way of owning stock. Specifically, our evidence is consistent with the idea that payout policy depends on the stockholders' concerns for agency costs, taxes, and particularly for the interaction between the two. Stockholders take the costly step of establishing holding companies when the potential for reduced agency conflicts and lower taxes is sufficiently high. Such an organizational form allows stockholders to choose a dividend policy that keeps agency costs low while simultaneously minimizing the tax burden.

References

Allen, Franklin, Antonio E. Bernardo, and Ivo Welch, 2000, A theory of dividends based on tax clienteles, *Journal of Finance* 55, 2499-2536.

Alstadsæter, Annette, and Erik Fjærli, 2009, Neutral taxation of shareholder income? Corporate responses to an announced dividend tax, *International Tax and Public Finance* 16, 571-604.

Alstadsæter, Annette, Wojciech Kopczuk, and Kjetil Telle, 2011, Social networks and tax avoidance: Evidence from a well-defined Norwegian tax shelter, University of Oslo Working Paper.

Barclay, Michael J., Clifford G. Holderness, Dennis P. Sheehan, 2009, Dividends and corporate shareholders, *Review of Financial Studies,* 22, 2423 – 2455.

Berhheim, B. Douglas, 1991, Tax Policy and the Dividend Puzzle, *RAND Journal of Economics* 22, 455-476.

Bernheim, B. Douglas, and Adam Wantz, 1995, A tax-based test of the dividend signaling hypothesis, *American Economic Review* 85, 532-551.

Berzins, Janis, Øyvind Bøhren and Bogdan Stacescu, 2012, Stockholder conflicts and dividend payout, CCGR working paper, BI Norwegian Business School.

Bøhren, Øyvind, 2011, Eierne, styret og ledelsen. Corporate governance i Norge. Bergen: Fagbokforlaget.

DeAngelo, Harry, Linda DeAngelo, and Douglas J. Skinner, 2009, Corporate payout policy, *Foundations and Trends® in Finance*, vol. 3, Now Publishers.

Demsetz, Harold, and Kenneth Lehn, 1985, The structure of corporate ownership - causes and consequences, *Journal of Political Economy* 93, 1155-1177.

Desai, Mihir A., and Li Jin, 2011, Institutional tax clienteles and payout policy, *Journal of Financial Economics* 100, 68-84.

Elton, Edwin J., and Martin J. Gruber, 1970, Marginal stockholder tax rates and the clientele effect, *Review of Economics and Statistics* 52, 68-74.

Faccio, Mara, Larry H. P. Lang, and Leslie Young, 2001, Dividends and expropriation, *American Economic Review* 91, 54-78.

Grinstein, Y., and Roni Michaely, 2005, Institutional holdings and payout policy, *Journal of Finance* 60, 1389-1426.

Jensen, Michael C. and William H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics* 3, 305-360.

Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *American Economic Review* 76, 323-329.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 2000, Agency problems and dividend policies around the world, *Journal of Finance* 55, 1-33.

Laeven, Luc and Ross Levine, 2008, Complex ownership structures and corporate valuations, *Review of Financial Studies* 21, 579-604.

Michaely, Roni, and Michael R. Roberts, 2012, Corporate dividend policies: lessons from private firms, *Review of Financial Studies*, 25, 711-746.

Morck, Randall and Bernard Yeung, 2005, Dividend Taxation and Corporate Governance, *Journal of Economic Perspectives* 19, 163-180.

Poterba, James, 2004, Taxation and Corporate Payout Policy, *American Economic Review* 94, 171-175.

Sørensen, Peter Birch, 2005, Neutral Taxation of Shareholder Income, *International Tax and Public Finance*, 12, 777-801.

Sørensen, Peter Birch, 2009, Dual Income Taxes: A Nordic Tax System, Economic Policy Research Unit, University of Copenhagen, Working Paper.

Table 1: The hypotheses

H1: Stockholders establish holding companies to reduce taxes on dividend income

- Holding companies are more common after the tax reform than before

H2: The use of holding companies increases with potential agency costs in the operating company

- An operating company with high potential agency costs is more often controlled by a holding company after the tax reform than before

H3: The dividend from an operating company to a holding company increases with potential agency costs in the operating company

- The payout ratio of an operating company controlled by a holding company is higher the more serious the potential agency problem in the operating company

H4: Dividends from an operating company are higher in holding structures than in non-holding structures. This difference increases with potential agency costs in the operating company in the holding structure

- The operating company's payout ratio is higher and relates more positively to its agency problems when the operating company has a holding company among its owners

H5: Dividends paid by the operating company to the holding company is larger than dividends paid from the holding company to its owners. The difference increases with potential agency costs in the operating company

- The difference between the payout ratios in the operating company and the holding company is positive and increasing with potential agency costs in the operating company

H6: Dividends from the operating company to the holding company will vary less than dividends from the holding company to its investors

- The volatility of the payout ratio is higher for the holding company than for the operating company

Table 2: Operating companies, holding companies, and their owners

Year	Total number of operating companies	Number of operating companies with multiple owners	Number of owners in operating companies	Number of holding companies	Number of owners per operating company	% of operating companies with holding company as an owner	Number of owners per holding company	Number of operating companies per holding company	Number of holding companies per operating company
2000	40,490	17,075	40,001	735	2.56	5.2%	2.58	1.39	1.10
2001	41,677	17,579	41,233	809	2.59	5.9%	2.85	1.43	1.03
2002	41,882	17,654	41,347	852	2.57	5.6%	2.92	1.32	1.07
2003	43,268	18,086	42,643	881	2.57	5.5%	2.78	1.33	1.03
2004	43,964	17,959	42,315	1,074	2.56	6.3%	2.59	1.30	1.06
2005	42,333	16,111	38,104	5,995	2.55	19.2%	1.84	1.10	1.30
2006	40,534	15,165	35,149	6,235	2.46	21.7%	1.48	1.10	1.30
2007	42,261	14,124	33,754	6,724	2.60	27.2%	1.56	1.11	1.29
2008	42,358	13,464	32,484	6,814	2.64	29.3%	1.61	1.13	1.29
2009	41,912	12,826	30,909	6,911	2.62	30.1%	1.59	1.12	1.31
2010	39,382	11,550	28,092	6,719	2.64	31.4%	1.56	1.12	1.30
Average	41,824	15,599	36,912	3,977	2.58	17.03 %	2.12	1.22	1.19
2000 - 2004	42,256	17,671	41,508	870	2.57	5.70 %	2.75	1.35	1.06
2005 - 2010	41,463	13,873	33,082	6,566	2.58	26.07 %	1.61	1.11	1.30
p-value, difference					0.468	0.000	0.000	0.000	0.000

This table presents aggregate statistics on operating companies, holding companies, and their owners. An operating company is sampled from the population of private limited liability Norwegian firms which are not a financial, not part of a business group, not majority-owned by the government, has consistent accounting statements, and at least 50% ownership by a nuclear-family based unit (couples and their under-age children). A holding company has some ownership stake in an operating company and has either a sales/assets ratio under 5% or uses the Statistics Norway sector code for a holding company. Ownership is based on ultimate cash flow rights. We exclude operating companies where one stockholder owns more than 90% of the equity. Except for the first column of results we exclude single-owner operating firms.

Table 3: Determinants of the decision to establish a holding company

Variable	Coefficient	p
Intercept	-7.9999	<.0001
Ownership concentration	-0.3945	<.0001
Free cash flow	0.8123	<.0001
Size	0.9131	<.0001
Financial constraints	-0.2223	<.0001
Risk	0.5821	<.0001
Pseudo R^2	0.1672	
Number of observations	57,238	

This table shows the results of estimating the probability that the operating company has a holding company among its owners, given a series of operating company characteristics as specified in the left column. The dependent variable in this logistic regression is a dummy variable which is 1 if the operating company has a holding company among its owners and 0 otherwise. Every independent variable relates to an operating company, which is sampled from the population of non-listed limited liability Norwegian firms that is not a financial, not part of a business group, not majority-owned by the government, has consistent accounting statements, and has at least 50% ownership by a nuclear-family-based unit. A holding company must have a stake in the operating company and either a sales/assets ratio below 5% or use the Statistics Norway sector code for holding companies. Ownership concentration is the ultimate share of the firm's largest owner. An owner is a nuclear family unit (a couple with minor children) or a non-personal investor. Free cash flow is cash flow from operations divided by sales, Size is the log of sales in MNOK, Financial constraints is sales over assets, and Risk is the standard deviation of sales growth over minimum three and maximum six preceding years. The model includes industry controls. All variables are standardized, and we winzorize Free cash flow, Risk, Financial constraints, and Size at the 0.5% and 99.5% tails. The sample is pooled for 2006-2010.

Table 4: The determinants of dividends from an operating company in a holding structure

Variable	Coefficient	p
Intercept	0.0835	0.0183
Ownership concentration	-0.1371	0.0010
Free cash flow	0.5695	<.0001
Size	0.0286	<.0001
Financial constraints	0.0068	0.0123
Risk	-0.1384	<.0001
Adjusted R^2	0.0923	
Number of observations	13,219	

The dependent variable of the model in this table is the payout ratio, which we define as cash dividends to net operating earnings. All variables in the model relate to an operating company, which is sampled from the population of non-listed limited liability Norwegian firms that is not a financial, not part of a business group, not majority-owned by the government, has consistent accounting statements, and has at least 50% ownership by a nuclear-family-based unit. A holding company must have a stake in the operating company and either a sales/assets ratio below 5% or use the Statistics Norway sector code for holding companies. Ownership concentration is the ultimate share of the firm's largest owner. An owner is a nuclear family unit (a couple with minor children) or a non-personal investor. Free cash flow is cash flow from operations divided by sales, Size is the log of sales in MNOK, Financial constraints is sales over assets, and Risk is the standard deviation of sales growth over minimum three and maximum six preceding years. The model includes industry controls, and all variables are standardized. The payout ratio is winsorized at the 0% and 98% values, while Free cash flow, Risk, Financial constraints, and Size are winsorized at the 0.5% and 99.5% tails. The estimated errors are heteroscedasticity consistent, and the sample is pooled for 2006-2010.

Table 5: Dividends inside vs. outside a holding structure

Variable	Coefficient	p
Intercept	-0.1703	<.0001
Holding company	0.1183	<.0001
Ownership concentration	-0.0464	0.0006
Ownership concentration*Holding company	-0.0926	0.0003
Free cash flow	0.3544	<.0001
Free cash flow*Holding company	0.2389	<.0001
Size	0.0442	<.0001
Financial constraints	-0.0075	<.0001
Risk	-0.0948	<.0001
Adjusted R^2	0.1055	
Number of observations	47,366	

This table shows the results of estimating a model where the dependent variable is the payout ratio, which we define as cash dividends to operating earnings. All variables in the model relate to an operating company, which is sampled from the population of non-listed limited liability Norwegian firms that is not a financial, not part of a business group, not majority-owned by the government, has consistent accounting statements, and has at least 50% ownership by a nuclear-family-based unit. Holding company is a dummy variable which is 1 if the operating company has a holding company among its owners and 0 otherwise. A holding company must have a stake in the operating company and either sales/assets ratio under 5% or be classified by Statistics Norway as a holding company. Ownership concentration is the ultimate share of the firm's largest owner. An owner is a nuclear family unit (a couple with minor children) or a non-personal investor. Free cash flow is cash flow from operations divided by sales, Size is the log of sales in MNOK, Financial constraints is sales over assets, and Risk is the standard deviation of sales growth over minimum three and maximum six preceding years. The model includes industry controls, and all variables are standardized. The payout ratio is winsorized at the 0% and 98% values, while Free cash flow, Risk, Financial constraints, and Size are winsorized at the 0.5% and 99.5% tails. The estimated errors are heteroscedasticity consistent, and the sample is pooled for 2006-2010.

Table 6: The dividend from the holding company

Variable	(A)		(B)		(C)	
	Coefficient	p	Coefficient	p	Coefficient	p
Intercept	-0.0468	0.1245	0.1305	<.0001	0.0842	<.0001
Ownership concentration	-0.0927	<.0001	-0.0797	<.0001		
Free cash flow	0.1420	<.0001	0.1127	<.0001		
Size	0.0213	<.0001				
Financial constraints	0.0016	0.5018				
Risk	-0.0277	0.0184				
Dividends from operating company	0.2543	<.0001	0.2429	<.0001	0.2253	<.0001
Pre-existing holding company	0.0131	0.1964				
Minority owner in holding company	-0.0100	0.1225				
Adjusted R^2	0.0751		0.0530		0.0427	
Number of observations	12,348		15,901		19,605	

The dependent variable of the model in this table is the payout ratio, which we define as cash dividends to net operating earnings. Ownership concentration, Free cash flow, Size, Financial constraints, and Risk are measured at the operating company, which is sampled from the population of non-listed limited liability Norwegian firms that is not a financial, not part of a business group, not majority-owned by the government, has consistent accounting statements, and has at least 50% ownership by a nuclear-family-based unit. A holding company must have a stake in the operating company and either sales/assets ratio under 5% or be classified by Statistics Norway as a holding company. Ownership concentration is the ultimate share of the firm's largest owner. An owner is a nuclear family unit (a couple with minor children) or a non-personal investor.Free cash flow is cash flow from operations divided by sales, Size is the log of sales in MNOK, Financial constraints is sales over assets, and Risk is the standard deviation of sales growth over minimum three and maximum six preceding years. Pre-existing holding company is 1 if the holding company was established before the tax reform in 2006 and 0 otherwise. Minority owner in holding company is 1 if there are at least two ultimate owners of the holding company and 0 otherwise. The payout ratio is winsorized at the 0% and 98% values, while Free cash flow, Risk, Financial constraints, and Size are winsorized at the 0.5% and 99.5% tails. All variables are standardized, the errors are heteroscedasticity consistent, and we control for industry membership. The sample is pooled for 2006-2010, and only includes operating companies that are partially owned by holding companies.

Table 7: Payout volatility

A: Full sample period 2006-2010

Dividend volatility quintile	N	Holding company			Operating company			Difference	
		Mean	Std Dev	Median	Mean	Std Dev	Median	Mean	p
1	249	0.357	0.144	0.382	0.510	0.304	0.463	-0.154	0.000
2	249	0.649	0.052	0.653	0.595	0.273	0.593	0.054	0.002
3	250	0.829	0.052	0.830	0.659	0.295	0.670	0.170	0.000
4	189	1.001	0.034	1.005	0.695	0.290	0.674	0.306	0.000
5	309	1.140	0.037	1.174	0.724	0.307	0.761	0.417	0.000
p of 5th less 1st quintile		0.000			0.000				

B: Sample period 2008-2010

Dividend volatility quintile	N	Holding company			Operating company			Difference	
		Mean	Std Dev	Median	Mean	Std Dev	Median	Mean	p
1	144	0.161	0.101	0.174	0.392	0.294	0.295	-0.230	0.000
2	145	0.490	0.106	0.488	0.441	0.277	0.405	0.049	0.047
3	144	0.668	0.034	0.665	0.565	0.314	0.624	0.102	0.000
4	162	0.953	0.085	1.005	0.597	0.323	0.624	0.356	0.000
5	127	1.005	0.000	1.005	0.639	0.330	0.651	0.366	0.000
p of 5th less 1st quintile		0.000			0.000				

This table compares the volatility of dividend payout in the holding company to the volatility of dividend payout in the operating company that the holding company invests in. We define the payout ratio as cash dividends to net operating earnings and construct payout volatility pairs for holding companies and related operating companies that both pay dividends at least once during the sample period. Payout volatility is measured as the standard deviation of the dividend payout divided by the mean payout over the period. Only the portion of dividends reflecting the holding company's stake in the operating company is considered. We use the transformation $\ln(x+1)$, where x is the payout volatility. The volatility pairs are ranked across the five quintiles based on the holding company's dividend volatility. Within each quintile, the two rightmost columns compare the mean dividend volatility for holding companies and operating companies. The samples only include firms with at least three years of observations.

The CCGR Working Paper Series: Contents

The papers may be downloaded without charge from our website http://www.bi.edu/ccgr

2007

1/2007   **Ole-Kristian Hope and John Christian Langli:**
            Auditor Independence in a Private Firm and Low Litigation Risk Setting
            Revised April 2009
            Accepted for publication in the *Accounting Review* June 2009

2008

1/2008   **Paul Ehling:**
            Risk Management with Cash and Insurance in Non-Listed Firms
            Revised May 2009

2009

1/2009   **Øyvind Norli, Charlotte Ostergaard and Ibolya Schindele:**
            Liquidity and Shareholder Activism
            Revised April 2010

2010

1/2010   **Roland E. Kidwell and Arne Nygaard:**
            The Dual-Agency Problem Reconsidered: A Strategic Deviance Perspective
            on the Franchise Form of Organizing
            Revised September 2010

2/2010   **Ole-Kristian Hope, John Christian Langli and Wayne B. Thomas:**
            Agency Conflicts and Auditing in Private Firms
            March 2010
            Revised December 2011

3/2010   **Mohammad Abdolmohammadi, Erlend Kvaal and John Christian Langli:**
            Earnings Management Priorities of Private Family Firms
            November 2010

4/2010   **Sturla Lyngnes Fjesme, Roni Michaely and Øyvind Norli:**
            Using Brokerage Commissions to Secure IPO Allocations
            November 2010

Centre for Corporate Governance Research

The Centre for Corporate Governance Research (CCGR) conducts research on the relationship between corporate governance, firm behavior, and stakeholder welfare. Our projects pay particular attention to the governance of closely held firms and family firms, and the research teams come from different disciplines in several countries. Financing is provided by private sponsors and the Research Council of Norway.

The CCGR is organized by the Department of Financial Economics at BI Norwegian Business School in Oslo, Norway (http://www.bi.edu)

Centre for Corporate Governance Research
BI Norwegian Business School
Nydalsveien 37
N-0442 OSLO
Norway
http://www.bi.edu/ccgr

BI NORWEGIAN
BUSINESS SCHOOL