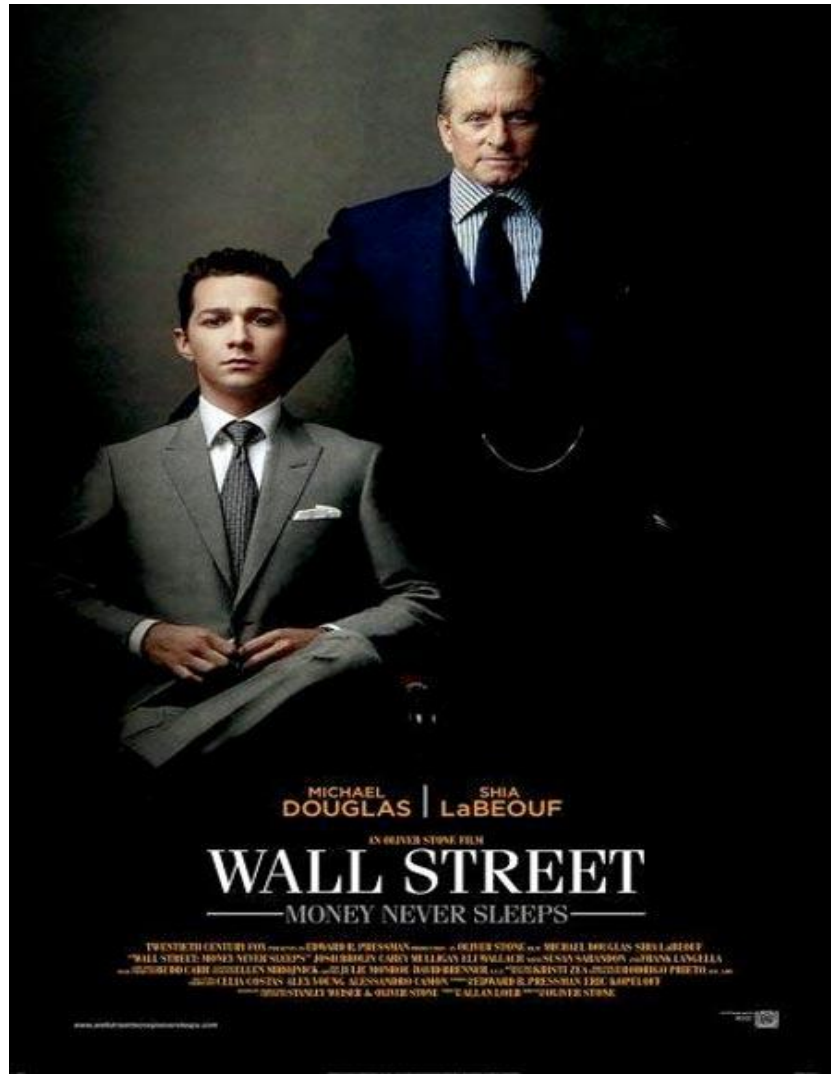


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The impact of IFRS 2 on Employee Stock Option grants



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Abstract

The impact of new accounting standards on economic reality is an interesting subject. Accounting standards should be neutral and not designed to change the way firms do business (CON 2, paragraph 98). In this paper the economic consequences of IFRS 2 and SFAS 123R are researched and discussed. These standards, entered service in 2005, implied that in the U.S. and in the E.U. Employee Stock Options had to be expensed at fair value. In the prior year's expensing at intrinsic value was allowed. Before the eventual introduction of mandatory recognition even the congress in the US tried to stop it. The recognition of employee stock options would lead to decreased earnings, companies would make less use of stock options to avoid this drop in earnings. Research done in this paper indicates that IFRS 2 and Code Tabaksblat, separately, caused a significant decline in the number of granted options in The Netherlands.

Keywords: ESO; employee stock options; IFRS 2, option expensing; economic consequences;



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1. Introduction

Employee Stock Options (ESO's) are call options for the company's stock and are a form of non-cash compensation for employees. The value of the compensation depends on the value of the shares at the exercise date. ESO's have a predetermined vesting period, the transferability can be restricted and the duration can be predetermined. These attributes of ESO's are favorable for shareholders if they want to align their interests with the interests of holders of the options. Start-up firms also benefit from the specific traits of ESO's because no cash is needed for employee compensations. ESO's also attract highly motivated and entrepreneurial employees because of the option to buy shares. Because of the way the stock options are structured employees have to stay with the firm over a longer period so the options also provide retention incentives. Finally, stock options motivate executives to take risks, which mitigate executive risk aversion (Hall & Murphy, 2003). This incentive that is created with the use of ESO's to take risks has been criticized, most recently during the credit crunch (2007-2010) and earlier with the scandals at Enron, WorldCom, Ahold and other companies. The resulting corporate governance codes like for example the Sarbanes-Oxley Act try to curtail the excessive remunerations for executives.

1.2 IFRS 2 & SFAS No. 123R

Before the introduction of International Financial Reporting Standards 2 (IFRS 2) and the US counterpart Statement of Financial Accounting Standards No. 123R (SFAS 123R) firms could choose to expense stock options at intrinsic value or at fair value. The intrinsic value is the difference between the market price of the shares on grant date and the exercise price agreed on in the option. When the market value is the same as the exercise price then there is nothing to expense at grant date. ESO's can be seen as a form of compensation, if valued at intrinsic value, not stated in the income statement. This would imply that earnings were overstated and expenses understated. Discussion exists on whether ESO's are a form of compensation or simply a part of the distribution of profits. The Financial Accounting Standards Board (FASB) defines an expense as follows: 'decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrence's of liabilities that result in decreases in equity, or other than those relating to distributions to



equity participants (F.70)'. This definition implies that ESO's are a form of compensation. Another argument against viewing stock options as profit distribution is that Employee Stock Option (ESO) holders do not incur any risk. Stockholders gain a share of the profit but also risk losing their investment while ESO holders can only profit. The fact that ESO's get re-priced (Carter & Lynch, 2003) also indicates that CEO's and shareholders themselves view stock options as compensation. When the exercise value of stock options is higher than the current stock price firms still want to compensate employees so the options are re-priced. The occurrence of stock option re-pricing thus is evidence that employees and employers, at least a part of them, view ESO's as compensation.

The goal of international standard setters is to produce standards and rules that make sure financial statements represent a true and fair view of the economic reality. From the point of view of international standard setters the changes, that came along with IFRS 2 and SFAS 123R in 2005, were to be expected. Employee compensation has to be recognized in the income statement to provide a true and fair view. From 2005 ESO's have to be expensed at fair value from grant date up until the exercise date. At the time the FASB introduced the first Exposure Draft (1993) the proposed changes generally got criticized. To quote Dechow (1996): "The financial Accounting Standards Board's project on employee stock-based compensation was one of the most controversial in the Board's 20-year history". The US Senate passed a non-binding resolution urging the FASB to drop the idea (Cheney, 1994); the FASB received over 1700 comment letters which mainly contested the concept (Van der Graaff, 2009). The Congress tried to stop the changes with the Stock Option Reform Act of 2004. The argument used was that reported earnings would decrease and that the new regulations would force companies to adjust the structure of compensation packages for employees. Start-up firms, that were using ESO's successfully, would now have to deal with smaller earnings. Chalmers and Godfrey (2005) suspect that this change could 'reduce the efficiency of compensation contracts as an incentive contract to achieve goal alignment'. This claim was based on the expectation that firms would reduce the amount of ESO's in compensation packages so that the negative impact on earnings would be averted. The proposed change would "destroy the engine that fuelled the economic growth in the 1990s" (Hall & Murphy, 2003). What can be noted is that expensing stock options does not change



current or future cash flows, it is a shift from footnote disclosure to recognition in the income statement. The opponents of the change argued that potential investors do not understand the difference and would react negatively to the decrease in reported earnings. This has been studied and rejected by Aboody, Barth and Kasznik (2001) when they examined the relation between share price and stock option compensation contracts. The study concluded that investors viewed stock options as an expense. Hall and Murphy argue that managers and the board need to be educated. They claim the perceived low cost of ESO's by management is the reason for the increase in use of options since the early 1990s. In Hall and Murphy's point of view stock options are not always "fuel for the economy" because ESO's stimulate risk taking and give CEO's the opportunity to hide their exorbitant salaries. Farber et al. (2007) came to the conclusion that not only CEO's but also regular employees are concerned about the recognition of ESO's because of worries that it would negatively impact employee and stockholder wealth.

The opinions on the economic benefits of stock options differ and that makes it interesting to research the economic consequences of IFRS 2 and SFAS 123R. Economic consequences that will be studied are changes in contractual arrangements.

1.3 Problem statement

The use of ESO's for employee compensation has greatly increased, in the US and The Netherlands, during the 1990's for reasons mentioned above. After 2000 this use has declined but was still far greater than in the early nineties. There are different views and explanations for the decline, the implementation of IFRS 2 and SFAS 123R is seen as one of the reasons. If these standards are the reason or part of the reason then this is evidence of economic consequences. The main goal of standard setters is to set standards that result in financial statements that represent a true and fair view of economic reality, not to influence policy and strategy of companies (IFRS & US GAAP). To find out whether IFRS 2 influenced economic reality the following main research question is constructed:

Has IFRS 2 triggered a decline in the number of granted Employee Stock Options?



Prior research on this subject done by Van der Graaff (2009) and Kraakman (2010) concludes that the amount of granted stock options has declined and suggests that the change in standards is the main reason. In prior research by Murphy (2002) a decline was already visible, this decline was attributed to various accounting scandals. These scandals were indirectly caused by the inherent risk that the use of ESO's represents, the incentive to take big risks by top management to raise stock prices and collect a large bonus (Hall & Murphy 2003). Hewitt (2006) concluded that performance shares were replacing ESO's because ESO's stimulate risk taking and provide less retention incentives than performance shares. Research done by Feng and Tian (2009) indicates that the corporate governance code can have an impact on ESO grants. The impact of new corporate governance codes will also be part of the research done in this paper.

1.4 Structure

This thesis consists of eight chapters, the first contains the introduction and main research question. The second chapter provides insight on economic consequences and why different accounting methods have a different impact. The incentives for management to prefer an accounting method is also discussed. Chapter three consists of a brief summary of relevant literature on economic consequences. The fourth chapter describes the institutional setting in the US, France and The Netherlands. This chapter leads to chapter five in which the research design of this thesis is presented. Chapter six presents the results of the regressions based on the research design. The seventh chapter contains additional robustness checks and comparison with prior research. The eight and last chapter is reserved for the conclusions and answering of the problem statement.



2. Economic consequences

2.1 Introduction

The world economy is dynamic and ever changing and accounting standards have to keep up to provide users with relevant financial statements. Changing accounting standards is a process that takes time. The standard setters, for example the FASB, come up with new standards and put these draft standards in an exposure draft. The main goal of this exposure draft is to present the proposed changes to the public and measure the response. The capital markets can react to an exposure draft and this can be measured. Since changes in accounting standards also impact firms that have to prepare financial statements firm management can also lobby for or against proposed changes. New accounting standards should produce accounting numbers that represent economic reality even better. The fact that accounting numbers change is a consequence of changes in standards but these are not economic consequences. Zeff (1978, p. 56) defines economic consequences as: “impact of accounting reports on the decision-making behaviour of business, government, unions, investors and creditors”. When researching the economic consequences of IFRS 2 the decision making behaviour should be measured. Compensation contracts, and changes in these contracts, are a result of decision making. In this chapter the changes in journal entries will be discussed and explained to show why economic consequences were predicted. Furthermore the method of valuation for ESO’s will be discussed. Fair value sounds waterproof in theory but by examining these models a more realistic opinion can be formed. At the end of this chapter the incentives for management to react to changing standards are discussed.

2.2 Journal entries

Several economic consequences that would result from IFRS 2 were predicted and mentioned in the introduction:

- Lower share prices
- Higher cost of capital



- Shortage of managerial talent
- Inadequate motivation

To understand these predictions the change in journal entries when exercising ESO's have to be examined. The changes impact the accounting numbers for the income statement and can thus impact decision making.

Intrinsic value

<u>Debit</u>	<u>Credit</u>
Cash	
	Common stock

This booking is made at grant date and it can be observed that no booking is made when strike price equals market price.

Fair value

every year during the vesting period

When ESO's are exercised

<u>Debit</u>	<u>Credit</u>
Employee benefit expense	
	Issued capital

<u>Debit</u>	<u>Credit</u>
Cash	
Issued capital	
	Common stock

When observing these journal entries it becomes evident why economic consequences were predicted if ESO's have to be recognized. During the vesting period firms have to report expenses when using the fair value method, this was not the case with the intrinsic value method. These expenses can vary because share prices are volatile and this can have a negative impact on the income statement.

For standard setters the goal is to achieve financial statements that represent a true and fair view of the economic reality. This is however only totally true when the fair value of ESO's can be determined precisely.



2.3 Fair value

The future value of stock cannot be predicted without data about future events and the fair value of ESO's can therefore never be determined precisely. This value can however be estimated by using the Black & Scholes model that was developed in 1973 or the binomial option pricing method. These methods are subject of discussion because the variables that are needed to calculate the values are very difficult to estimate and firms that want to undervalue or overvalue options can easily achieve this (Rubinstein, 1994). To illustrate the difficulty of estimating these variables the original Black & Scholes model is presented below:

$$c = S \cdot N(d_1) - K \cdot e^{-rT} \cdot N(d_2)$$

c = Theoretical call premium

S = Current Stock price

T = time until option expiration

K = option striking price

r = risk-free interest rate

N = Cumulative standard normal distribution

e = exponential term (2.7183)

$$d_1 = \frac{\ln\left(\frac{S}{K}\right) + \left(r + \frac{\sigma^2}{2}\right) \cdot T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

σ = annualized standard deviation of stock returns

\ln = natural logarithm

The r is an estimate in this model and is exponential and thus has a big influence on c . Adjusted Black & Scholes models and binominal pricing models contain even more variables that have to be estimated. Rubinstein's binominal option pricing model also



consists of difficult to estimate variables¹. A company seeking to undervalue ESO's can report values almost double those reported by similar companies (Rubinstein, 1994). The drive to value ESO's at fair value should in theory improve comparability of firms. The fact that the fair value is difficult to estimate and the models used are easily manipulated can provide the opposite effect.

2.4 Incentives

Within the positive accounting theory three key hypotheses are used to explain management support or opposition to a certain accounting method. The compensation contracts often depend on accounting numbers. Watts & Zimmerman (1990) examined firm characteristics and came up with these hypotheses:

- Bonus plan hypothesis
- Debt hypothesis
- Political cost hypothesis

The bonus plan hypothesis suggests that managers that have bonus plans that depend on accounting numbers are more likely to use methods that will increase current reported period income. When the current reported income is larger bonuses increase. The increase in expenses with IFRS 2 should provide an incentive for management to protest and change bonus schemes. Increased expenses decrease current reported income and thus decrease bonus pay. A change in bonus structure is an economic consequence.

The debt hypothesis suggests that firm management has the incentive to choose the accounting method that provides the best accounting numbers when keeping up with debt covenants. The performance of a company can positively influence the interest rate for debt and an increase in cost because of IFRS 2 can negatively impact interest rates. This can trigger management to protest against IFRS 2.

¹ Appendix A



The political cost hypothesis suggests that management will choose accounting methods that influence company size because company size is a proxy for political attention. By reducing reported income the chance that people think the organization is exploiting other parties is also reduced. The political cost hypothesis suggests that management of big companies would not protest against IFRS 2.

2.5 Overview

Changes in journal entries that result from IFRS 2 show the influence that expensing ESO's can have on the income statement. This change should however provide financial statements that show a truer and fairer view of the economic reality. A critical note can be placed when examining the models used for determining the fair value of ESO's. The models include variables that have to be estimated and this opens the possibility for earnings management. There are firm characteristics like bonus arrangements and debt covenants that provide an incentive for management to prefer the pre IFRS 2 situation. These characteristics also provide incentives for earnings management. In the next chapter relevant literature will be further examined.



3. Relevant empirical literature on Employee Stock Options

3.1 Introduction

The usage of ESO's has declined since 2002 and previous studies presented various explanations. The introduction of IFRS 2 and the US counterpart SFAS 123 R is seen as a reason but also the incentive that ESO's provide for management to take big risks and the scandals that resulted from this. In the first part studies and papers that discuss the economic consequences before recognition was mandatory are presented. In the second part alternative reasons for the drop in usage of ESO's are discussed and in the last part the most recent, conducted after the introduction of mandatory recognition, studies are examined. These recent studies will also be used as a base for the research conducted in this paper.

3.2 Predictions of the economic consequences

The Financial Accounting Standards Board's (FASB) project on ESO's lead to the Exposure Draft in 1993. As mentioned in the introduction the Draft was heavily criticized and this triggered a research by Dechow et al. (1996) in the United States. In this research the nature and extent of the predicted economic consequences were evaluated. Dechow examined the characteristics of the firms that lobbied against the Exposure Draft, the characteristics of the firms using ESO's and finally examined stock price reactions to announcements concerning new financial reporting rules. The top five executives of the group of companies that protested against the Exposure Draft have significantly higher ESO compensation than the control group (mean: 27,9% against 21,0%). Dechow explains this result by stating that top five executives want to hide their compensation from the annual statements. The number of ESO's granted to top five executives for every ESO granted to other employees is also examined by Dechow. The companies that protested against the Exposure draft had 709 (mean) granted ESO's to top five executives for every ESO granted to other employees while the control group had a significantly lower mean of 438. Dechow stated that this result indicates that top five executives are overpaid in the sample that commented the Exposure Draft. According to Dechow the protests have nothing to do with a decrease in income but are a result of CEO's being overpaid and wanting to hide this fact.



Cooper and Lybrand (1993) on the other hand predicted a decrease in 10% of net income when stock options are recognized in the income statement. This decrease in earnings can get firms that have debt covenants based on retained earnings in danger of paying higher interest rates. The expected negative stock market reaction, based on the decrease in net income, has been researched by Aboody et al. (2003). In this event study the market reaction of 148 firms that started recognizing stock options voluntarily was examined. Company characteristics and control variables were combined in a multiple regression with a control group consisting of 1090 firms from the S&P 500, S&P 600 and S&P 400. Firms that recognized stock options voluntarily had positive abnormal stock market returns. Furthermore this research supports Dechow because bonus pay was negatively correlated with voluntary recognition. Aboody explains this positive correlation by stating that investors would rather invest in a transparent company. This is supported by Warren Buffet, CEO of Berkshire & Hathaway Inc. He says that these companies will develop a reputation for being believable. This concludes that voluntary adopters do not experience a loss in stock prices but this conclusion cannot apply to mandatory adopters. There can be argued that the adoption was voluntary because the firm predicted that there would not be a negative impact.

Predictions about the impact of the recognition of stock options varied, this suggests that the amount of granted ESO's would not have to decline because of changes in standards. This also implies that different opinions existed, pré IFRS 2 and pré SFAS 123 R, about the economic consequences. Today it is evident that the decline in granted ESO's that began after the nineties went on to this day. To determine the main contributing factor to the decline, and thus assessing the extent to which changes in standards affect the economic reality, other views and research on the decline have to be reviewed.

3.3 Alternative views

Dechow et al. (1996) examined the letters of comment directed to the FASB. The evidence found supports the hypothesis that the opposition came from top CEO's that wanted to keep their compensation hidden from public. This is substantiated by empirical research done by Murphy (2002). The S&P 500 CEO's median pay over the period of 1992-2000 was



compared and dissected in salary, bonus, options (valued with Black & Scholes at grant date) and other. The proportion of ESO's increased by more than 300 percent². A large increase in total pay and pay in ESO's was also found at smaller firms (S&P Midcap 400 and SmallCap 600). Murphy explains the increase in use of stock options by making two assumptions: (1) companies erroneously perceive the cost of granting options to be far below their economic cost, and (2) risk-averse option recipients perceive the value of options to be below the company's economic cost of granting options. This suggests that CEO's underestimate the value of stock options and thus demand more. This also suggests that companies underestimate the value of options and this leads them to grant more ESO's. The CEO's wanted to retain the high pay (Dechow et al. 1996) and were afraid that recognition will lead to smaller bonuses, hence the protest against the Exposure Draft. The fact that CEO's protest because of pay indicates that a reduction in earnings, because of recognition, is not the only reason for the opposition. The fact that the research done by Dechow et al. is public could in itself lead to a decline in granted stock options. Hall & Murphy (2003) observe that option grants at the S&P 500 were 11 billion US dollars at grant date in 1992, this amount increased to 119 billion US dollars by 2000. Taking Van der Graaff (2009) in account it would be expected that this amount would increase up until 2005. The contrary is true, Hall & Murphy found that by 2002 this amount declined to 71 billion dollars. This decline in granted stock options can be linked to the scandals (Enron, WorldCom, Global Crossing and other companies) that occurred in that period. Cassidy (2002) and Madrick (2003) suggest that this excessive risk taking that caused these scandals resulted from the escalation in the amount of granted options. Hewitt (2006) did research on CEO pay in The Netherlands after the introduction of Code Tabaksblat in 2005. Code Tabaksblat forced companies in The Netherlands to give more information on CEO pay. Hewitt concludes that stock options were steadily being replaced by stocks, in 2005 the relative amount of stocks surpassed the amount of granted options. It seems that companies started to take long-term incentives over short-term incentives.

² Appendix B



This research implies that not only the changes in standards but also stock options got criticized. There is empirical evidence that the amount of granted ESO's was already declining years before mandatory recognition.

3.4 Introduction of mandatory recognition

Choudhary (2008) researched the amount of granted ESO's after mandatory adoption and found that 52% of the US firms in the sample reduced the amount of granted ESO's after the change in 2005. Choudhary admits that the reduction in usage does not have to be fully driven by mandatory recognition. Recognition became mandatory in the same year for all companies so it is impossible to have a control group. This research was done by computing a multiple regression with the following equation:

$$\begin{aligned} \Delta \text{Log}(\# \text{Option grant})_{it} &= \delta_0 + \delta_1 \Delta \text{Log}(\text{Sales})_{it} + \delta_2 \Delta \text{ROA}_{it} + \delta_3 \text{Return}_{it} \\ &+ \delta_4 \text{Post Voluntary}_{it} + \delta_5 \text{Mandatory}_{it} + \delta_6 \Delta \text{Volatility}_{it} \\ &+ \delta_7 \text{Dependent Variable}_{it-1} + \sum \delta_j (\text{Year})_{it} + \epsilon_{it} \end{aligned}$$

Variables 1-3 are control variables for company growth and earnings, these can positively affect issued ESO's. The dummy variables 4 and 5 are put in place to see whether a significant difference in granted ESO's exists between mandatory and voluntary adopters. The expectation is that mandatory adopters make more use of ESO's and would decrease the usage more than voluntary adopters will. The volatility is expected to be negatively correlated with ESO's usage because very volatile prices make the future value of stock options very unpredictable and thus less attractive as compensation. The Dependant Variable is decomposed into three parts: CEO, non- CEO and rank and file employees.

Van der Graaff (2009) researched the decline in amount of granted ESO's of companies in de EU after the introduction of IFRS 2. The amount of ESO's decreased with 18,2% at French and Dutch companies, British companies decreased the amount of granted ESO's



with 30,5%. The weak point in this research is that the research was done in the period (2004-2005) around the issuance of IFRS 2, this does not take into account the decline that was visible around 2000. Also the impact of Code Tabaksblat was not taken into account by Van der Graaff. The hypothesis was tested with the following two equations:

$$\begin{aligned} \Delta\text{Log}(\#\text{option grant}) &= \delta_1 \text{Voluntary IFRS} + \delta_2 \Delta\text{Log}(\text{Sales})_{it} + \delta_3 \Delta\text{ROA}_{it} + \delta_4 \Delta\text{Return}_{it} \\ &+ \delta_5 \Delta\text{Log}(\text{Total Assets})_{it} + \delta_6 \Delta(\text{Price Volatility})_{it} + \delta_7(\text{Year}) + \epsilon_{it} \end{aligned}$$

$$\begin{aligned} \Delta\text{Log}(\#\text{option grant}) &= \delta_1 \text{Mandatory IFRS} + \delta_2 \text{Voluntary IFRS} + \delta_3 \Delta\text{Log}(\text{Sales})_{it} + \delta_4 \Delta\text{ROA}_{it} \\ &+ \delta_5 \Delta\text{Return}_{it} + \delta_6 \Delta(\text{Price Volatility})_{it-1} + \delta_7(\text{Year}) + \epsilon_{it} \end{aligned}$$

The dummy variable *VoluntaryIFRS* shows if there is a significant difference between voluntary and mandatory adopters. Van der Graaff expected a larger reduction in usage of ESO's with mandatory adopters. Variables 2-5 in the first equation and 3-5 in the second equation are put in place to control for company growth and earnings. The price volatility should negatively impact the amount of granted ESO's because the very volatile stock prices make stock options unattractive. Volatile prices make it very hard to determine future value and make it more probable that the options become worthless when the vesting period is over. When observing these equations it is evident that Van der Graaff based his research design on Choudhary (2008).

Feng and Tian (2009) researched the same subject, their research was US based like Choudhary. The observed drop in issued stock options (Murphy, 2002) from 2000 until now was found to be triggered by mandatory adoption. Other factors like the Sarbanes-Oxley act in 2002, the option backdating scandal and the 2000 stock market crash were also contributing but not fully explaining the drop in usage. The following equation was used:

$$\text{Comp}_t = \delta_0 + \delta_1 \text{TL1}_t + \delta_2 \text{TL2}_t + (\text{Control variables}) + \epsilon_{it}$$

The dependent variable *Comp* is the total equity incentive for CEO's in cash while *t* is a year index. *TL1* is equal to 1 in 2001 and equal to 0 after 2001, *TL2* is equal to 1 in 2002



and equal to 0 before 2002. These dummies are put into place to check whether the year 2002 was significant (Sarbanes-Oxley act and several scandals). The control variables resemble those of the above mentioned papers. The company size, because larger companies tend to be more challenging to manage and thus more equity incentives are provided. The market-to-book ratio to control for growth opportunities, companies with more growth opportunities tend to be more difficult to manage. The debt-asset ratio to control for the incentive to state higher earnings so to not breach debt covenants. The cash flow is used because companies that are short of cash tend to make more use of equity incentives. Equity incentives provide compensation without the need of cash. The tax rate should negatively impact the amount of granted ESO's because of the vesting period. With long vesting periods the deferred tax liability can be a significant amount. The volatility is also used, the reason why has already been explained. The past performance of stock has the opposite effect with regard to the volatility and therefore a positive effect is expected. The CEO experience should have a positive effect on ESO grants and is measured in years as CEO. The governance index is used to control for corporate governance efficiency, less efficient boards tend to grant more stock options (Ishii and Metrick, 2003; Core, Holthausen, and Larcker, 1999).

Research by Kraakman (2010) with a Dutch sample was based on Feng and Tian and provided similar results. The results indicated that IFRS 2 influenced contractual arrangements as ESO grants were reduced. Additional factors that influence ESO grants were the total assets, market to book and the firm performance. This research also looked at the impact of IFRS 2 on the value of granted options and the results provided additional evidence that accounting standards have economic consequences.

Carter, Lynch and Tuna (2007) examined the role that accounting concerns play when firms choose different equity compensation packages. The outcome of the research was that accounting concerns, financial reporting concerns, are positively correlated with stock option and negatively correlated with restricted stock (performance shares). Financial reporting concerns are also positively correlated with the total bonus amount. Carter, Lynch and Tuna suggest, based on the results, that stock options were used excessively compared



to restricted stock because of favorable accounting treatment. Before mandatory recognition firms could expense stock options at intrinsic value, which is a value of zero when the exercise price is equal or larger than current stock price. Restricted stock on the other hand always has intrinsic value and this was the big difference. The equations used are similar to those mentioned above except for the proxy made for accounting concerns.

3.5 Overview

When the FASB first indicated that ESO's should be expensed at fair value a large number of firms protested. The argument used by the protesting firms was that earnings would decrease because of the use of fair value. To avoid these firms would stop using ESO's as an equity incentive and this would be particularly harmful for start-up firms. When taking the efficient market hypothesis into account this argument is false because recognition would only mean that information moves from the footnote to the income statement. Dechow (1996) researched the subject and concluded that CEO's were protesting because their generous stock option compensation packages would become too visible. The usage of ESO's as an incentive also pushed CEO's to take on big risks in order to cash in (Murphy, 2003). Eventually after 2000 the amount of granted ESO's started to decline. Various studies (Feng & Tian 2009, Hewitt 2006) have concluded that this is only partially explained by the introduction of mandatory recognition. Other crucial events like the stock market crash in 2000, the introduction of new corporate governance codes and various scandals (Enron) also could have contributed to the reduction in usage. Also an increase in restricted stock used as equity compensation is been observed by Carter, Lynch & Tuna (2009) in the US and Hewitt (2006) in the Netherlands. In the next chapter a short overview is presented with the relevant literature.

Literature overview

Author	Object of study	Sample size and period	Methodology	Outcome
Aboody, Barth and Kasznik 2003	Firm specific traits of companies that started recognizing ESO's voluntarily.	148 companies 2002-2003 U.S.	Market based event study	The market reacts positively to voluntary ESO recognition. Factor such as CEO and company board private incentives, participation in capital markets, information asymmetry and political cost influence the decision to voluntarily adopt or not. A large abnormal return was observed for early adopters that stated that earnings transparency was the motive.
Carter, Lynch & Tuna 2007	The relation between accounting concerns and equity packages.	824 companies 1995-2001 U.S.	Multivariate analysis	Concerns about financial reporting are positively related to stock options and negatively to restricted stock. Accounting concerns are also positively related to total CEO compensation. Restricted stock is replacing ESO's.
Choudhary 2008	The reasons for the decline in use of ESO's.	783 companies 2003-2005 U.S.	Cross sectional Regression.	52% of sample firms reduced the use of ESO's after the introduction of mandatory recognition.



Author	Object of study	Sample size and period	Methodology	Outcome
Dechow, Hutton & Sloan 1996	The characteristics of companies that lobbied against the exposure draft in 1993, the characteristics of companies that make use of ESO's and the market reaction to new financial reporting rules announcements.	347 comment letter firms 589 ESO using firms 1993 U.S.	Multivariate analysis.	Companies with CEO's that receive high pay criticize the exposure draft. The recognition of stock options would not have significant economic consequences for company debt. Also no indication was found that stock markets would react negatively.
Feng & Tian 2009	The reasons for the declining usage of ESO's from 2002 and on. The year 2002 is important because new rules and announcements that took place.	2704 companies 2002 U.S.	Multivariate analysis	Median CEO option incentives increase 25% a year before 2002 but decrease 18% a year after 2001. The conclusion is that mandatory recognition is the main reason for the reduction. The reduction is larger with companies that had excessive use of stock options as equity incentives. The reductions that place proportionately in all layers of the companies. Other important market and regulatory changes also contribute but do not fully explain the reduction.



Author	Object of study	Sample size and period	Methodology	Outcome
Hewitt 2006	CEO and CFO pay in the EU after Code Tabaksblat.	Dutch stock exchange listed firms	Median comparison, table comparison	Proportion of stock options in CEO pay declined while the proportion of restricted stock increased. Restricted stock is seen as a better incentive for CEO's to think more about the long term and companies are realizing this. CFO earn larger bonuses probably because financial statements and accounting is of increasing importance.
Kraakman 2010	Impact of IFRS 2 on amount and value granted ESO's	Dutch stock exchange listed firms	Multiple regression analysis	The amount and value of granted ESO's declined significantly and IFRS 2 was identified as a contributing factor.
Murphy 2002	The proportion of ESO's in total bonus pay.	S&P 500 companies 1992-2002 U.S.	Table comparison	The proportion of stock options in CEO pay increased up until 2000 and started to decline after that year. The usage of ESO's increased, according to Murphy, because board members erroneously perceive the cost of stock options as low. CEO's on the other hand demand more because they underestimate or undervalue the eventual bonus.
Van der Graaff 2009	The amount of ESO grants during implementation of IFRS 2.	894 companies 2004-2005 E.U.	Multiple regression	Significant decline in ESO grants in 2005 (IFRS 2). The only explanation Van der Graaff offers is mandatory recognition.

4. Institutional background

4.1 Introduction

The countries named in this paper have similar but slightly different institutional backgrounds. This is of importance when constructing a research design on economic consequences because these differences can have a material impact on research. Differences in corporate governance codes can influence the outcome of statistical research if for example under one of the codes recognition is mandatory and the other has a comply or explain character. Furthermore Feng and Tian (2009) found that SOX had economic consequences and triggered firms to grant less ESO's. When corporate governance codes become mandatory by law and contain recommendations on remuneration an impact on ESO's grants can be expected. This chapter will contain an analysis of the institutional backgrounds of the US, France and the Netherlands for the period up until 2005. In 2005 IFRS 2 became mandatory in the EU and listed firms had to comply or explain with Code Tabaksblat by law. The rules and recommendations on remuneration policy will be the main focus. Information on accounting standards will be presented briefly because they have been discussed in prior chapters.

4.2 The Netherlands

The Netherlands are part of the European Union and therefore stock exchange listed companies have to report and comply with IFRS. The Netherlands do however, like other EU countries, have their own set of corporate governance codes.

4.2.1 Accounting Rules

The EEG rules and recommendations left room for EU countries to define their own set of accounting standards. In 2005 Dutch listed firms have to report based on IFRS and non-listed firms can choose between Dutch GAAP and IFRS. Prior to IFRS 2 listed firms did not have to expense the fair value of ESO's. The annual report had to contain information about the ESO plan and the way the ESO were going to be expensed. The method used under



Dutch GAAP was that of the intrinsic value. This method often leads to no expenses as showed in chapter 2. After the introduction of IFRS 2 listed firms had to expense ESO's based on the fair value as calculated by the Black & Scholes model.

4.2.2 Corporate governance

This term is used to describe the way the company board of directors should lead the organization and be accountable for the decisions and results. A big part of corporate governance codes are constructed to provide extra protection, besides accounting rules, for stakeholders. The Enron scandal was a catalyst for governments to create corporate governance codes and make companies comply by law. In some European countries, like The Netherlands, the government uses the comply or explain concept. Firms have to either comply with the code or explain why there is no compliance. The first real corporate governance code in The Netherlands was a report presented by the Commissie Peters. The report recommended more transparency and shareholder power. One of the recommendations was to include the use of ESO's in the annual statements and to use them diligently. These recommendations were not mandatory. The second corporate governance code was finished in December 2003 and was called Code Tabaksblat. From December 2004 Stock Exchange listed companies by law have to either comply with the code or explain why there is no compliance. This code has the impact to change the way companies design the corporate governance structure. The code includes some guidelines on remuneration. When a new contract is concluded between an executive and the company the most important details have to be presented immediately and the company should not wait for the annual statements to disclose this information. The variable part of remuneration should also only exist and be handed when an executive performs beyond expectations. Also the exercise price cannot be lower than the existing price and the conditions that are set cannot be modified during the vesting period. These recommendations should curtail excessive pay provided with ESO's and this would be an economic consequence.



4.3 France

France is also part of the EU and French listed firms have to comply with IFRS 2 since 2005. Before that under French GAAP ESO's did not have to be expensed at grant date. The costs of the granted options were recognized at exercise date. The accounting rules are very similar to The Netherlands and the interesting part is the potential difference in corporate governance codes between France and The Netherlands.

4.3.1 Corporate governance

With the emergence of more and more non-resident investors and an increasing privatization the need for corporate governance codes increased. The first one in France dates to 1995 when a commission was set up to review listed companies. This was called the Vienot I report and it advises against appointing executives from other firms to remuneration committee. This is advised because executives from other firms will be inclined to suggest a high pay and then expect the favor to be returned. The Vienot II report (1999) advises firms to create a chapter with details about the remuneration policy. In 2002 the president of the Societe Generale Bank Daniel Bouton presented the Bouton report. This report advises against discounts in ESO prices and that options are granted at fixed intervals to contain opportunistic grants at certain periods. It has to be noted that by French law only the shareholders have the power to grant ESO to employees. In 2003 The Corporate Governance of Listed Corporations came into effect. This code was based on earlier reports by Vienot and Bouton and listed firms are advised but are not forced by law to "comply or explain". This corporate governance code holds the same advice that the earlier reports contained. The corporate governance code provides recommendations that should curtail excessive pay and influence the way firms grant ESO's. The fact that the code is not supported by law makes it a bit weaker than Code Tabaksblat. When comparing the Dutch and French corporate governance codes there can be concluded that the Dutch code should have a bigger impact on remuneration because it is supported by law.



4.4 United States

The US has its own set of accounting standards, the US GAAP, and its own corporate governance codes. The US based standards and codes are more rules based than principle based like in the EU.

4.4.1 Accounting rules

Under US GAAP both the intrinsic value and the fair value could be used to expense ESO's. If firms opted for the intrinsic value approach the fair value had to be included in the footnote statement. It was in 2005 when SFAS 123R came into effect that fair value recognition became mandatory for listed companies. The history behind SFAS 123 R has already been discussed in previous chapters.

4.4.2 Corporate governance

The most influential corporate governance code in the US is the Sarbanes-Oxley Act (2002) and firms have to comply by law. This code was already in the making before the scandals with firms like Enron and Worldcom but had trouble passing the Senate. The scandals changed the opinions in the Senate and the tough measures were passed. The most important and distinct part is the obligation to provide an "in control statement" together with the annual statement. To be in control an auditor has to test the controls and confirm that they work properly. Furthermore under Sarbanes Oxley firms have to disclose all information on executive compensation on a timely basis. The fact that listed firms have to comply and make the remuneration policy more transparent lead to the inclusion of corporate governance codes as an explaining factor for ESO grants by Feng and Tian (2009).

4.5 Overview

Both in the US and in EU stock options have to be expensed at fair value since 2005. The main difference is that in the US stock options could already be expensed at fair value. The significant differences exist between the corporate governance codes. In the US the measures the toughest while in France firms do not have to "comply or explain" by law. In

The logo for Erasmus, featuring a stylized, handwritten-style script of the word "Erasmus" in black ink.

The Netherlands listed firms have to comply or explain by law. The main goal of corporate governance codes is to provide more transparency about the remuneration policy and to provide guidelines for granting ESO's so to prevent excessive pay. This chapter shows that corporate governance codes can also have economic consequences. This fact is important when examining accounting standard economic consequences because, as stated in the introduction, more factors have economic consequences and it is vital to compare the various effects. Literature by Murphy (2002) and Dechow (1996) suggests that board members want to hide excessive pay and IFRS 2 but also corporate governance codes provide more transparency on remuneration.



5. Research design

5.1 Introduction

The economic consequences of IFRS 2, the EU counterpart of SFAS 123 R, have been studied by Van der Graaff (2009) and Kraakman (2010). The outcome of the studies was that IFRS 2 had economic consequences, this could be concluded by observing the amount and value of granted ESO's. The amount of granted ESO's declined significantly in the period of the introduction of mandatory recognition and this was in part explained by the introduction. The methodology used by Van der Graaff has been elaborated in chapter 3. The question that arises, after studying other literature, is whether a decline was already visible and if there were other factors driving a decline before the introduction. Research based in the U.S. by Feng and Tian (2009) found that a new corporate governance code also contributed. When observing the corporate governance codes in The Netherlands and France this could also be expected for these countries. The influence of corporate governance codes is important because it is not only interesting if there are economic consequences but also how great or small these consequences are when compared. In this chapter the research design will be constructed. In the first part the hypothesis will be elaborated. The second part will contain information about the sample.

5.2 Hypothesis

The main goal in this paper is to find if there are economic consequences when new accounting standards come into effect. The focus in the research will be the impact of IFRS 2 on the number of granted ESO's and thus contractual arrangements. The economic consequences of Code Tabaksblat will also be examined to provide a more complete explanation. To test whether IFRS 2 and Code Tabaksblat have contributed to a decline in the number of granted ESO's the following hypothesis have been constructed:

H1: The number of granted ESO's at Dutch firms has declined significantly because of the introduction of IFRS 2 (2005).



If this hypothesis is not rejected then this will give a strong indication that IFRS 2 indeed has economic consequences. The answer to this hypothesis will also be the answer to the main problem statement. The next number of hypotheses will provide an extra insight in the other factors that could negatively impact ESO grants. This insight is needed to try and uncover how much IFRS 2 is impacting ESO grants.

In U.S. based research by Feng and Tian (2009) the results indicated that new corporate governance codes contributed to the decline in granted ESO's. This can also be expected for The Netherlands because Dutch firms have to "comply or explain". The Code Tabaksblat forces firms to provide more transparency on remuneration and to grant ESO's diligently. The fact that Code Tabaksblat and IFRS 2 came into effect around the same time presents a problem. This problem, that the event year has more events that have to be separated, was solved by Feng & Tian by creating a control group within the sample. Firms that were already scrutinized by analysts were expected to have no significant response to the Sarbanes-Oxley Act. This is assumed because data on bonus pay was probably already available to analysts before the Sarbanes-Oxley Act. For The Netherlands a control group can be created by looking at other E.U. countries. A country that did not have any major corporate governance code changes in 2005 is ideal for comparing. In this sample a French group of firms will be used to create a control group because the last new code in France before IFRS 2 was introduced. The comparison becomes even better because in The Netherlands the corporate governance code is supported by law and this not the case in France. For this hypothesis two groups are thus created, both applying IFRS 2 in 2005, but only the Dutch sample also has a second significant effect caused by Code Tabaksblat while this effect could be presumed small for the French sample. To test if the new corporate governance code in The Netherlands caused declining numbers of granted ESO's and thus impacted contractual arrangements the following hypotheses have been constructed.

H2: The number of granted ESO's at French firms has declined significantly because of the introduction of IFRS 2 (2005).

H3: The number of granted ESO's at Dutch and French firms has declined significantly because of the introduction of IFRS 2 (2005).



H4: The number of granted ESO's at Dutch firms has declined significantly because of the introduction of Code Tabaksblat (2005).

Hypothesis H2 and H3 are constructed to determine whether IFRS 2 also impacted the ESO grants in France. Without a positive answer to these hypotheses the last hypothesis cannot be answered. Only if IFRS 2 has economic consequences in both countries then the effect of a corporate governance code can be researched.

A multiple regression analysis will be performed to find out whether IFRS 2 and Code Tabaksblat caused a significant decline in the number of granted ESO's. This statistical method is used when the influence of several factors is researched on a dependent variable over a period of time. The first hypothesis will be tested with the following equation:

$$\text{ESO} = \delta_1 \text{TotalAssets}_{it} + \delta_2 \text{DebtAssets}_{it} + \delta_3 \text{MarketBook}_{it} + \delta_4 \text{ROA}_{it} + \delta_5 \text{Volatility}_{it} + \delta_7 \text{IFRS2} + \epsilon_{it}$$

The second hypothesis will be tested with the same equation but with a French firm sample. The dummy variable IFRS2 turns 1 in the years 2005, 2006, 2007 and 2008. The effect of a new corporate governance code or a new accounting standard impact all years from the effective date. For this reason all following years turn 1 in the dummy, contrary to Choudhary (2008) and Van der Graaff (2009). The third hypothesis will be answered by using the same equation as for H2 but the sample will include Dutch and French firms. The fourth hypothesis will be answered again using the same equation except IFRS2 will change into CODE for Dutch firms and the sample will include both French and Dutch firms. The corporate governance code should have a similar impact and therefore CODE has the value 1 from 2005 to 2008 and 0 in the period before and only for the Dutch firms because French firms compose the control group.

The variable ESO stands for the number of ESO's granted to all employees. The total amount of granted ESO's to all employees is used because IFRS 2 impacts the valuation of all ESO's. To correct for outliers the natural logarithm has been computed.



5.3 Control variables

The dummy variable IFRS2 represents the years that IFRS 2 was enacted. Previous studies and literature indicate that this variable should have a negative impact on the number of granted ESO's.

The dummy variable CODE represents the years that firms have to “comply or explain” with Code Tabaksblat. This dummy should represent a negative value when taking previous studies into account.

The amount of total assets (TotalAssets) is used as a control variable because larger firms are simply more challenging to manage and thus more ESOs will probably be offered. Large firms will also have the benefit that the relative size of equity incentives compared to total equity will be smaller than with firms that have less equity. This indicates a positive relation with the number of granted ESO's. To correct for outliers the natural logarithm has been computed.

The financial leverage, represented by the debt-to-assets ratio (DebtAssets), is used to control for shareholder and bondholder conflict. It is computed by dividing average total debt with average total assets. When management receives large amounts of ESO's than management will act in line with their interests, and shareholder interest, by trying to increase share prices. This will probably slowdown repayment to bondholders and will be accompanied by extra risk. A firm with a large debt to assets ratio has bondholders with more power so the equity incentive for management should be smaller. This indicates a negative relation with the number of granted ESO's. To correct for outliers the natural logarithm has been computed.

The market to book ratio (MarketBook) is used to control for growth opportunities. It is computed by dividing the market value of firm with the book value. The larger the market-to-book ratio the bigger the room for investment. Firms with high stock prices, relative to book value, will be able raise more capital. This makes for a difficult job for management and it is expected that more ESO's will be used to motivate management. This indicates a positive relation with the number of granted ESO's.



The return-on-assets (ROA) is used to control for performance. It is computed by dividing net returns with average total assets. Firms that are performing very well will be inclined to look after the best executives. The variable part of remuneration is a way to attract the best personnel because it is a way to share the firm's profits. This indicates a positive relation with the number of granted ESO's.

The stock price volatility (Volatility) is used as a control variable because volatile stock prices make stock option less attractive. This is computed by calculating the standard deviation of prices over a certain period. With high volatility the future value is very hard predict and stock options become a risky investment. This indicates a negative relation with the number of granted ESO's.

Summary:

Variable	Effect
TotalAssets	Positive
DebtAssets	Negative
MarketBook	Positive
ROA	Positive
Volatility	Negative
IFRS2	Negative
CODE	Negative

5.4 Sample

The sample to test the first hypothesis consists of Dutch firms that are listed on the AEX, the AMX or the AScX. These firms are publicly held and therefore have to comply with IFRS and Code Tabaksblat. For the other hypothesis a French sample of listed firms is included. The firms are listed on the CAC 40 en the CAC Next 20. In The Netherlands 75 firms are publicly owned and listed on the Amsterdam Stock Exchange. In France the CAC 40 consists of 40 firms and the CAC Next 20 of 20 firms. The control variables were collected from the Worldscope database using Thomson One Banker. The number of



granted ESO's had to be collected from annual financial statements using the database on www.company.info. Data was collected from 2002 up until 2008. After collecting the data required a sample of 35 Dutch firms was left and a sample of 32 French firms.. Below a table is constructed with an overview of the reasons why firms were excluded and the amount per index.

The Netherlands³

	AEX	AMX	AScX
Total amount of firms	25	25	25
Required data unavailable	6	8	7
ESO's no part of remuneration	5	5	9
Data available	14	12	9
			Total sample= 35

France⁴

	CAC 40	CAC Next 20
Total amount of firms	40	20
Required data unavailable	13	6

³ Appendix C contains a more detailed table.

⁴ Appendix D contains a more detailed table.



ESO's no part of remuneration	7	2
Data available	20	12
		Total Sample= 32

Appendix D contains an overview of the total sample including all the control variables. This can be used to recalculate the findings.

5.5 Overview

The sample firms were required to be listed public companies because then they have to comply with IFRS and corporate governance codes and ESO's had to be part of the remuneration policy before the introduction of IFRS 2. The amount of listed firms in The Netherlands is 75 and in the French sample the initial number of companies was 60. After searching for all required data a sample was created of 35 Dutch companies and 32 French companies. In the next chapter the results of several multiple regressions with the above mentioned equations and sample will be discussed.



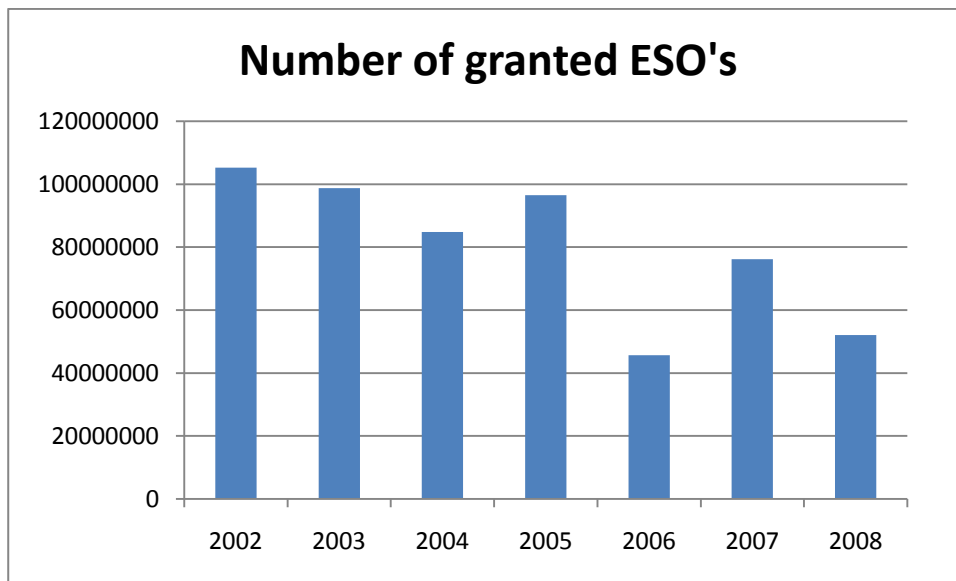
6. Results

6.1 Introduction

In this chapter descriptive statistics and the results of the multiple regression will be provided and discussed. When observing the descriptive statistics a decline in ESO grants should already be visible and the multiple regression will be provide an explanation. The independent variables will also be summarized to compare the different groups.

6.2 Descriptive statistics

When the total amount of granted ESO's in The Netherlands is observed during the sample period a decline in usage can be seen. The graph below shows the total amount of granted ESO's during 2002-2008 at the Dutch sample firms.

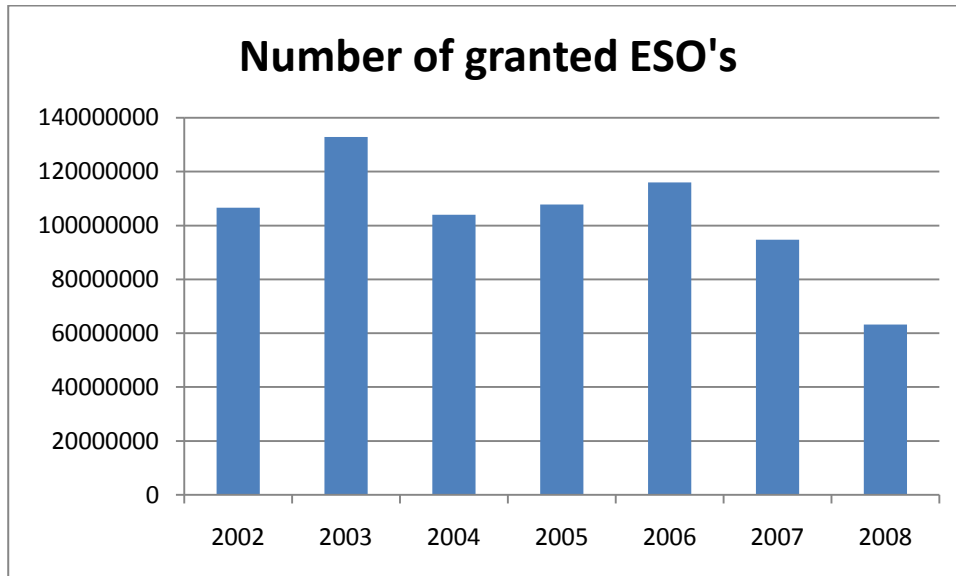


Year	2002	2003	2004	2005	2006	2007	2008
Number of granted ESO's	105277426	98698839	84837355	96518791	45680023	76205675	52078069

This already indicates that there is a possibility of a significant decline in granted ESO's after 2005. This graph also shows that the amount of granted ESO's was already declining



before 2005. The next graph shows the amount of granted ESO's in the French sample firms.



Year	2002	2003	2004	2005	2006	2007	2008
Number of granted ESO's	106616059	132916189	103956249	107784719	115990868	94662863	63249828

In the French sample a decline is visible but not as obvious as in the Dutch sample. This can be attributed to different institutional setting or a different economic setting. When observing the Mean, Median, Max and Min it can be concluded that there are not very large outliers in the sample data. This is in part accomplished by computing the natural logarithm of some of the independent variables. The statistics, when compared, for France and The Netherlands do show some differences and an additional robustness check will be performed in the next chapter to compare both countries. The table compares the French and Dutch sample⁵.

Statistic	Total assets (LN)		Debt to assets (LN)		Market to book	
	France	The Netherlands	France	The Netherlands	France	The Netherlands
Mean	8.994243	7.634443	3.066291	2.825134	2.757209	2.836587

⁵ Appendix G contains a more detailed table.



Median	9.050852	7.460087	3.218254	3.163973	2.051590	2.263900
Maximum	13.22413	14.09150	3.982094	4.165992	71.76669	13.06118
Minimum	4.833023	1.700192	0.000000	0.000000	0.209720	0.338890
Std. Dev.	1.247641	2.240412	0.644804	1.094366	4.886006	2.169133
	Return on assets		Volatility		Granted ESO's (LN)	
	France	The Netherlands	France	The Netherlands	France	The Netherlands
Mean	4.797916	7.357517	26.58366	30.18481	12.43310	10.72433
Median	4.442390	7.038380	24.90972	28.43773	14.17824	12.54328
Maximum	24.40056	62.35039	59.94080	62.26009	16.80129	17.38697
Minimum	-21	-7.319.349	13.23539	15.26321	0.000000	0.000000
Std. Dev.	5.231370	10.54430	7.900803	9.698381	4.948633	5.617014

6.3.1 Multiple regression The Netherlands

To find an answer to the first hypothesis a multiple regression was performed. The equation was estimated by using the statistical computer program Eviews 7.

$$\text{ESO} = \delta_1 \text{TotalAssets}_{it} + \delta_2 \text{DebtAssets}_{it} + \delta_3 \text{MarketBook}_{it} + \delta_4 \text{ROA}_{it} + \delta_5 \text{Volatility}_{it} + \delta_7 \text{IFRS2} + \epsilon_{it}$$

The expected relation based on previous literature (Choudhary 2008, Feng and Tian 2009, Van der Graaff 2009 and Kraakman 2010) has previously been discussed. The next table shows the result⁶. (The signs ***, **, * indicate significance at a 1%, 5% and 10% level respectively).

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.973244	6.347532	0.0000*
Debt to Assets	-0.763002	-2.490212	0.0135**
Market to book	0.175307	1.133750	0.2580
Return on assets	-0.013642	-0.375811	0.7074

⁶ Appendix H contains a more detailed table.



Volatility	0.070049	1.901882	0.0584***
IFRS 2	-3.455741	-5.155713	0.0000*
Adjusted R-squared	0.220495	Durbin-Watson stat.	0.997293

To start the analysis the adjusted R-squared is examined, with a value of 0,220495 there can be concluded that more than 22% of the variance is explained by the independent variables. The Durbin-Watson statistic is 0,997293 and this indicates that the regression is valid. In the following table actual results are compared to the expected results.

Variable	Expected	Actual
MarketBook	Positive	0.175307 (not significant)
ROA	Positive	-0.013642 (not significant)
DebtAssets	Negative	-0.763002
TotalAssets	Positive	0.973244
Volatility	Negative	0.070049
IFRS2	Negative	-3.455741

The market to book ratio is as observed insignificant together with the return on assets. Debt to assets has a significant and negative influence, this was expected. Total assets and the dummy variable IFRS2 have the expected influence on the amount of granted ESO's. The variable stock price volatility has a significant influence but a positive instead of the expected negative effect. These results lead to the acceptance of the first hypothesis:

H1: The number of granted ESO's at Dutch firms has declined significantly because of the introduction of IFRS 2 (2005).

The year dummy is negative and significant and this indicates that the usage of ESO's declined significantly in 2005, 2006, 2007 and 2008 because of IFRS 2.



6.3.2 Multiple regression France

To find an answer to the second hypothesis the same equation was estimated but with a French sample. The table shows the result⁷.

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.541937	1.845289	0.0664***
Debt to Assets	-0.086935	-0.155420	0.8766
Market to book	0.058813	0.844609	0.3993
Return on assets	0.036396	0.492001	0.6232
Volatility	-0.007918	-0.159321	0.8736
IFRS 2	-1.184570	-1.687584	0.0929***
Adjusted R-squared	0.001557	Durbin-Watson stat.	1.554550

The adjusted R-squared is small compared to the Dutch sample with a value of 0,001557. The used equation is thus far less suited for the French sample. The Durbin-Watson statistic is 1,554550 and this indicates that the regression is valid. The fact that the dummy variable IFRS 2 is significant leads to the acceptance of hypothesis 2.

H2: The number of granted ESO's at French firms has declined significantly because of the introduction of IFRS 2 (2005).

6.3.3 Multiple regression The Netherlands and France

To find an answer to hypothesis 3 and 4 the sample of French and Dutch firms is combined. The next table shows the result when the total sample is used with the same equation⁸.

⁷ Appendix H contains a more detailed table.

⁸ Appendix H contains a more detailed table.

Ezra

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.895220	6.832197	0.0000***
Debt to Assets	-0.550302	-2.051643	0.0408**
Market to book	0.073676	1.164383	0.2449
Return on assets	-0.013040	-0.414303	0.6788
Volatility	0.027148	0.935350	0.3501
IFRS 2	-2.362143	-4.852205	0.0000*
Adjusted R-squared	0.132512	Durbin-Watson stat.	1.230800

With a value of 0,132512 there can be concluded that more than 13% of the variance is explained by the independent variables. The Durbin-Watson statistic is 1.230800 and this indicates that the regression is valid. The fact that the dummy variable IFRS 2 is significant leads to the acceptance of hypothesis 3.

H3: The number of granted ESO's at Dutch and French firms has declined significantly because of the introduction of IFRS 2 (2005).

To find an answer to hypothesis 4 the dummy variable IFRS 2 is changed into CODE. The dummy variable turns 1 for the Dutch sample in the years 2005 up until 2008. The table shows the result⁹.

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.773618	5.927086	0.0000***
Debt to Assets	-0.584859	-2.193433	0.0288**

⁹ Appendix H contains a more detailed table.



Market to book	0.074925	1.189760	0.2348
Return on assets	-0.006627	-0.210436	0.8334
Volatility	0.043534	1.504030	0.1333
CODE	-2.788871	-5.283176	0.0000***
Adjusted R-squared	0.140262	Durbin-Watson stat.	1.229335

The Adjusted R-squared has a value of 0.140262 and there can be concluded that more than 14% of the variance is explained by the independent variables. The Durbin-Watson statistic is 1.229335 and this indicates that the regression is valid. The fact that the dummy variable CODE is significant leads to the acceptance of hypothesis 4.

H4: The number of granted ESO's at Dutch firms has declined significantly because of the introduction of Code Tabaksblat (2005).

6.4 overview

The equation used as model was estimated with Eviews 7 and resulted in an adjusted R-square of 0,22 for the Dutch sample. This indicates that the model explains roughly 22% of the variance in granted ESO's. Eventually four variables were found to have a significant influence on granted ESO's: Total Assets, Debt to Assets, Stock price volatility and the dummy for IFRS 2. The outcome leads to the acceptance of hypothesis 1. Hypothesis 2, 3 and 4 were also accepted based on the results. This indicates that Code Tabaksblat contributed to the observed decline in granted ESO's. In the next chapter the results will be compared to previous studies and additional robustness tests will performed.



7. Further analysis and robustness check

7.1 Introduction

First a table that shows the correlation between variables will be discussed. A set of regressions will be performed to check whether small changes in the set up can lead to rejecting one or more of the hypotheses. These actions are performed to determine the robustness of the results. The results will also be compared with previous research on this subject (Van der Graaff 2009, Kraakman 2010, Choudhary 2008 and Feng and Tian 2009).

7.2 Multicollinearity

In the table presented below the variables can be checked for multicollinearity. This table is created for the Dutch sample.

	TotalAssets	DebtAssets	MarketBook	ROA	Volatility	ESO
TotalAssets	1.000000	0.173359	-0.032762	-0.113297	-0.280710	0.305581
DebtAssets		1.000000	-0.129407	-0.271955	0.016055	-0.088933
MarketBook			1.000000	0.300563	-0.018491	0.061962
ROA				1.000000	-0.316458	-0.123871
Volatility					1.000000	0.064321
ESO						1.000000

The values can vary between 1 and 0 and a value of 1 indicates that variables correlate with each other. When comparing total assets and debt to equity a small sign of colinearity can be observed. This is expected because both variables are based on total assets. This can also be observed between total assets and price volatility, probably because financials are included in the sample. When held for trading stocks are part of total assets these will correlate with the volatility. Overall the values are nearer to 0 then to 1 and there can be concluded that there is no indication of multicollinearity. The next table shows the French sample.

	TotalAssets	DebtAssets	MarketBook	ROA	Volatility	ESO
TotalAssets	1.000000	0.126943	-0.129204	-0.249805	-0.232520	0.110272
DebtAssets		1.000000	-0.012277	-0.142040	-0.310990	0.001756
MarketBook			1.000000	-0.025269	0.194035	0.042650
ROA				1.000000	-0.256548	-0.021947
Volatility					1.000000	-0.021943
ESO						1.000000

These values also show no sign of multicollinearity and there can be concluded that there is no correlation in the total sample control variables.

7.3 Additional regressions

To check whether outcomes are robust the following regressions will be computed. First the countries will be compared. This is necessary to make sure the French control sample is comparable with the Dutch sample. To achieve this, a dummy variable will be added for the French companies. The expectation is that the dummy will not be significant. The table shows the outcome¹⁰

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.779953	5.645252	0.0000***
Debt to Assets	-0.646403	-2.361258	0.0186**
Market to book	0.082002	1.267813	0.2055
Return on assets	-0.042403	-1.345005	0.1793
Volatility	0.039623	1.323256	0.1864
Country	-0.844744	-1.646943	0.1003

¹⁰ Appendix H contains a more detailed table.

Adjusted R-squared	0.001557	Durbin-Watson stat.	1.554550
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The results indicate that the two samples are comparable since the COUNTRY dummy is not significant. This means that previous conclusions can be kept intact. The next regression will be run with two dummies. Both represent the years 2005-2008 and correspond with the introduction of IFRS 2. One dummy will be for the Dutch sample and one for the French sample. By observing the coefficients the difference between the impact on contractual arrangements in the two countries can be observed. If this coefficient is larger for the Dutch sample than the larger effect could be accounted to Code Tabaksblat. The table shows the result.

Variable	Coefficient	T-Statistic	Probability
Total Assets	0.825054	6.259426	0.0000***
Debt to Assets	-0.551972	-2.076808	0.0384**
Market to book	0.071074	1.133498	0.2576
Return on assets	0.001347	0.042727	0.9659
Volatility	0.037158	1.283903	0.1998
The Netherlands	-3.310010	-5.788303	0.0000***
France	-1.347720	-2.308889	0.0214**
Adjusted R-squared	0.148264	Durbin-Watson stat.	1.234983

This outcome supports previous findings because an additional effect is observed within the Dutch sample. The Dutch coefficient is more than double that of the French firm sample.



7.4 Comparison with previous research

7.4.1 Dutch based research

Compared to a previous study by Van der Graaff (2009) these regressions provided a better explanation for the variance of granted ESO's. The model used in this research paper with the Dutch and French sample computed an adjusted R-square of 0,13 while the model used by Van der Graaff (2009) with the same sample yielded an adjusted R-square of 0,055. While the total assets proved to be significant in both regressions in this paper debt to assets was also significant while Van der Graaff (2009) found the return on assets to be significant. This difference can be attributed to the use of different models. The final conclusion is the same as in this paper; there was a significant relation between IFRS 2 and a decline in number of granted ESO's.

The latest Dutch based research on this subject on a Dutch sample was performed by Kraakman (2010) but the adjusted R-square was not included so this part cannot be compared. The most important addition in the paper by Kraakman (2010) was the computation of ESO values with the Black and Scholes model. US based research (Feng and Tian 2009 and Choudhary 2008) provided similar results. When comparing the significance of control variables the model used found total assets, debt to assets and volatility to be significant. Kraakman (2010) found total assets, market to book and performance to be significant. This can also be attributed to the difference in model. Kraakman (2009) also concluded that there was a significant decline in the number of granted ESO's because of IFRS 2.

7.4.2 U.S. based research

The model used by Van der Graaff (2009) was based on the model used by Choudhary (2008). The outcome of this research by Choudhary (2008) yielded similar results, the amount of granted ESO's declined significantly in 2005.

Research done by Kraakman (2010) was based on Feng and Tian (2009). The research done by Feng and Tian (2009) chose 2002 as event year. This research was based on the fact firms already knew that SFAS 123R was going to be implemented. The scandals that

A handwritten signature in black ink, appearing to read 'Erasmus', is centered at the top of the page.

resulted in SOX also happened in that period. The outcome indicated that SFAS 123R had an impact but so did the other factors like the scandals and the new corporate governance code SOX. This result is comparable with the result of the research done in this paper.

7.5 Overview

The additional robustness check did not result in rejecting the prior accepted hypotheses. The outcomes of the regressions were also found to be similar to that of other Dutch and U.S. based research papers.



8. Conclusion

8.1 Introduction

In this chapter the problem statement will be answered based on the literature review and the result of the multiple regression and descriptive statistics. The limitations that presented themselves when performing the research will also be discussed. Furthermore suggestions will be done for future research.

8.2 Problem statement

To answer the problem statement and find out whether IFRS 2 triggered a decline in the number of granted Employee Stock Options previous literature has been reviewed and a statistical analysis has been performed. The efficient market hypothesis suggests that moving financial data from footnote to income statement should not affect investors' perception of the financial statements. Mandatory expensing of ESO's should therefore not imply that the usage should be lowered. Previous literature and research (Choudhary 2008, Feng and Tian 2009, Kraakman 2010 and Van der Graaff 2009) indicated that mandatory expensing (IFRS 2) had economic consequences and led to a lower use of ESO's and thus a change in contractual arrangements. The Descriptive statistics and a multiple regression performed in this paper also indicate, but do not fully explain, that IFRS 2 caused firms in the Netherlands to grant less ESO's. Furthermore a regression computed for a French sample indicated that French firms also granted less ESO's because of IFRS 2. The French sample however indicated a smaller relation and this can be explained by institutional differences. By comparing the two samples the effect of the new corporate governance code in The Netherlands, Code Tabaksblat, was also examined. The results indicated that the institutional setting also triggered part of the decline. The total amount of assets and the debt to assets ratio was also influencing the number of granted ESO's. This indicates that firm size and the bondholder shareholder conflict play an important role when explaining ESO grants. The explanation is a combination of effects. The institutional setting has economic consequences as was proved by this paper and that of Feng and Tian (2009). This



indicates that a change in contractual arrangements, ESO grants, cannot be solely accounted to new accounting standards. ESO's were losing popularity in the US (Hall and Murphy 2002) because of the incentive provided to take risks to accomplish short term gains. Furthermore board members had an ideal instrument to hide excessive pay (Dechow 1996) and the general public was slowly recognizing this fact. In the Netherlands this was supported by Hewitt (2006). The scandals at firms like Parmalat, Enron and Worldcom and the recent credit crunch were connected to excessive bonuses and short term thinking. A philosophical question that arises is whether the accounting standards and corporate governance codes influenced a change in the contractual arrangements or the already existing information that is now being provided more efficiently.

8.3 Limitations

This study has several limitations and the first and foremost is that statistical methods have the inherent limitation that they simply provide indications that can be interpreted in many different ways. The fact that neither the model used in this paper but also the models used in previous literature came close to fully explain the movement in granted ESO's is proof of this statement. To fully explain the consequences of IFRS 2 the researcher should be able to understand what goes on in the mind of all people involved with the remuneration policy and this is impossible. With these limitations the combination of qualitative and quantitative research done in this paper did provide insight in the matter. It is hard to argue against the proposed influence of other factors than accounting standards like institutional setting and firms' specific characteristics when researching economic consequences.

8.4 Suggestions for future research

The conclusions in this paper and that of previous research indicates that to find a better fitting equation and a more comprehensive explanation a different approach is needed. By following the footsteps of researchers mentioned in this paper and the research done in this paper no new insights will be obtained.



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Appendix

A. Black & Scholes variables

(1) stock price on grant date [\$100]

(2) stock volatility [25% - 35%]

(3) stock payout rate [2.5% - 4.5%]

(4) stock expected return [10% - 20%]

(5) interest rate [8%]

(6) option striking price [\$100]

(7) option years-to-expiration [10]

(8) option years-to-vesting [3]

(9) expected forfeiture rate [3.5% - 6.5%]

(10) minimum forfeiture rate multiplier [.25 - 1.00]

(11) maximum forfeiture rate multiplier [1 - 4]

(12) employee's non-option wealth per owned option [\$30 - \$120]

(13) employee's risk aversion [0.5 - 4.0]

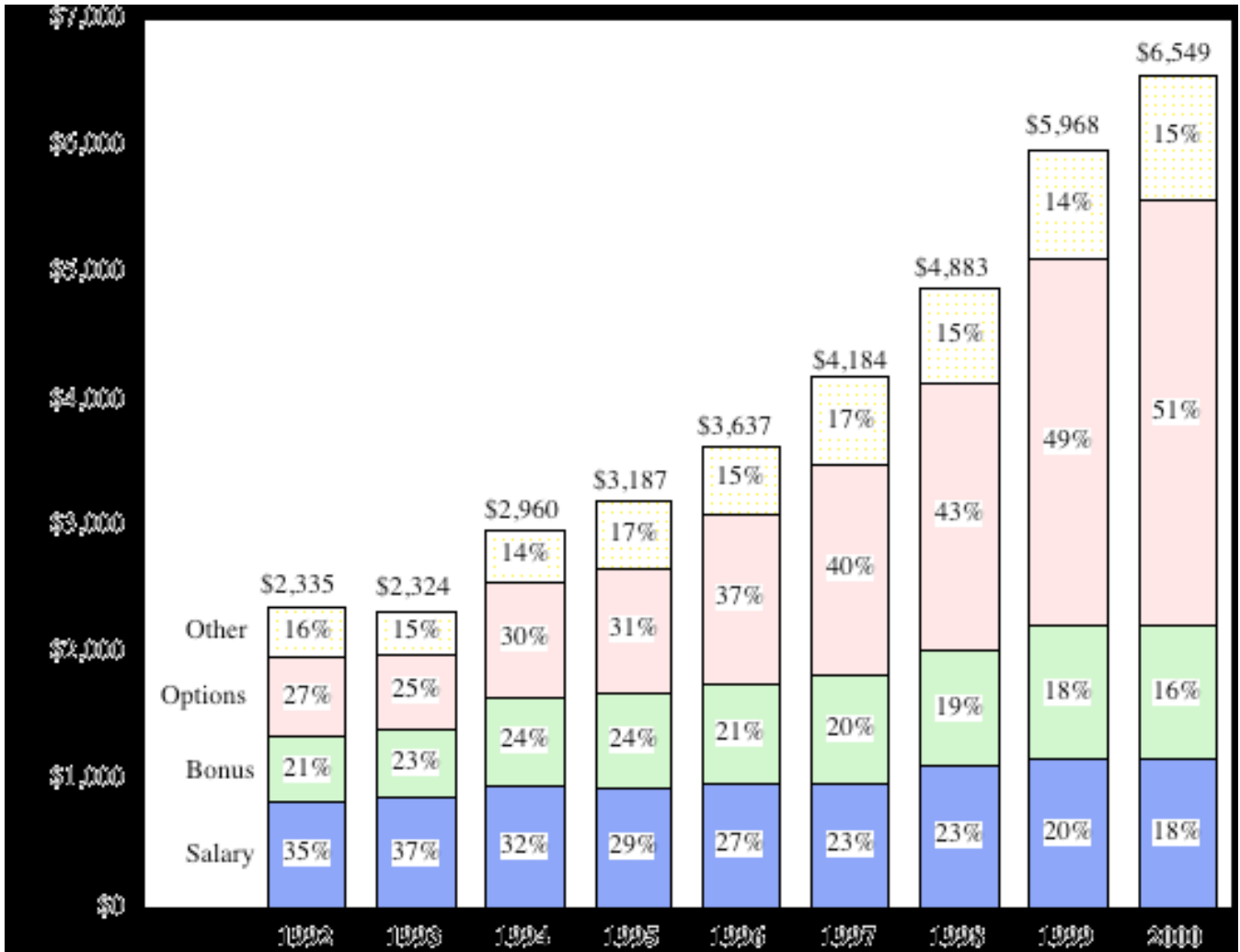
(14) employee's tax rate [25%]

(15) percentage dilution [10%]

(16) number of steps in binomial tree [200]



B. Proportion of CEO pay





C. Sample the Netherlands

AEX	Sample	Reason
Aegon	Yes	
Ahold	Yes	
Air-France KLM	No	Company merger
Akzo Nobel	Yes	
Arcellor Mittal	No	Company merger
Asml	Yes	
BAM	No	ESO's not a part of remuneration
Boskalis	No	ESO's not a part of remuneration
Corio	No	ESO's not a part of remuneration
Dsm	Yes	
Fugro	Yes	
Heineken	No	ESO's not a part of remuneration
Ing	Yes	
Kpn	Yes	
Philips	Yes	
Randstad	Yes	
Reed Elsevier	Yes	
SBM Offshore	No	Data unavailable
Royal Dutch Shell	No	Data unavailable
Tomtom	No	listed in 2006
Tnt	Yes	
Unibail-Rodamco	No	Company merger
Unilever	Yes	
Wereldhave	No	ESO's not a part of remuneration
Wolters Kluwer	Yes	
AMX	Sample	Reason
Aalberts	No	Data unavailable
AMG	No	Data unavailable
Arcadis	Yes	
ASMI	Yes	
Binckbanck	No	Data unavailable
Crucell	No	Data unavailable
CSM	Yes	
Delta Llyod Groep	No	Data unavailable
Draka	Yes	
Eurocom Prop	No	ESO's not a part of remuneration
Heijmans	No	ESO's not a part of remuneration
Imtech	Yes	



Logica	Yes	
Mediq	No	ESO's not a part of remuneration
Nutreco	Yes	
Oce	Yes	
Ordina	Yes	
SNS Reaal	No	ESO's not a part of remuneration
Ten Cate	Yes	
USG People	Yes	
VastNed Retail	No	ESO's not a part of remuneration
Vopak	No	Data unavailable
Wavin	No	Data unavailable
Wessanen	Yes	
Dockwise Ltd	No	Data unavailable
AScX	Sample	Reason
Accel	Yes	
Antonov	No	Data unavailable
Arseus	No	Data unavailable
Ballast Nedam	No	ESO's not a part of remuneration
Beter Bed	Yes	
Brunell	No	Data unavailable
Exact	No	ESO's not a part of remuneration
Fornix Biosciences	Yes	
Gamma Holding	Yes	
Grontmij	No	ESO's not a part of remuneration
Homburg	No	Data unavailable
Innoconcepts	No	ESO's not a part of remuneration
Kardan	No	Data unavailable
Kas Bank	Yes	
Macintosh	Yes	
Nieuwe Steen	No	ESO's not a part of remuneration
Pearl	No	Data unavailable
Pharming Group	No	ESO's not a part of remuneration
Prologis	No	Data unavailable
Qurius	Yes	
Sligro	Yes	
Telegraaf Media Groep	No	ESO's not a part of remuneration
TKH Group	No	ESO's not a part of remuneration
Unit 4 Agresso	Yes	
VastNed Offices	No	ESO's not a part of remuneration



D. Sample France

CAC40	Sample	Reason
Accor	Yes	
Air France Klm	No	Company merger
Air Liquide	Yes	
Alcatel Lucent	No	Company merger
ALSTOM	Yes	
Arcelor Mittal	No	Company merger
AXA	Yes	
BNP PARIBAS ACT.A	Yes	
Bouygues	Yes	
Cap Gemini	Yes	
Carrefour	No	Data unavailable
Credit Agricole	Yes	
Danone	Yes	
Dexia	No	Company merger
EADS	No	Data unavailable
EDF	No	ESO's no part of remuneration
Essilor Intl	Yes	
France Telecom	No	Company merger
GDF Suez	Yes	Company merger
Lafarge	Yes	
Lagardere	Yes	
LVMH	Yes	Data unavailable
Michelin B	Yes	
Oreal (L)	Yes	



PERNOD RICARD	No	Company merger
Peugeot	Yes	
PPR	Yes	
Renault	No	Data unavailable
Saint-Gobain	Yes	
Sanofi-Aventis	Yes	
Schneider Electric	Yes	
Societe Generale	Yes	
STMicroelectronics	No	Data unavailable
Suez		
Environnement	No	Data unavailable
Total	Yes	
Unibail-Rodamco	Yes	
Vallourec	Yes	
Veolia		
Environnement	Yes	
Vinci	Yes	
Vivendi	Yes	
CAC Next 20	Sample	Reason
Casino Guichard	No	Data unavailable
CGGVeritas	Yes	
Dassault Systems	Yes	
Eiffage	Yes	
Eramet	No	ESO's no part of remuneration
Hermes		
International	No	Data unavailable
Klepierre	No	ESO's no part of remuneration
Natixis	Yes	



Neopost	Yes	
Nexans	No	Data unavailable
NYSE EURONEXT	No	Data unavailable
Publicis Groupe	Yes	
Safran	Yes	
SCOR	Yes	
SES	Yes	
Sodexo	Yes	
Technip	Yes	
TF1	No	Data unavailable
Thales	Yes	



E. Sample data the Netherlands

Firm	ln(ESO)	ROA	ln(DebtAssets)	ln(TotalAssets)	Volatility	MarketBook	IFRS2
Aegon	16,26269	0,800	1,390941049	12,44427425	31,362	1,222	0
	16,25326	0,904	1,292620841	12,41864047	33,667	1,239	0
	16,26435	0,870	1,284156425	12,43572298	32,952	1,067	0
	16,13414	1,040	1,129732977	12,64797254	31,100	1,438	1
	12,40615	0,986	1,492616414	12,65972456	28,309	1,475	1
	12,64271	0,936	1,252660106	12,65752399	26,650	1,150	1
	12,61254	(0,185)	1,53307941	12,56308953	32,390	0,495	1
Ahold	16,00375	(0,782)	3,973245848	10,09744943	28,377	4,264	0
	16,16259	4,210	3,825376944	10,03854278	36,514	1,902	0
	15,94125	1,633	3,831432715	9,908276069	34,831	1,965	0
	16,18336	4,042	3,599156039	9,871325866	32,143	2,117	1
	11,81303	7,578	3,508509791	9,793337809	29,871	2,493	1
	0	20,841	3,582569043	9,515911477	27,032	2,913	1
	0	9,992	3,342535603	9,490544555	26,392	2,222	1
Akzo Nobel	13,87752	7,386	3,458895057	9,382695764	25,065	4,117	0
	13,99599	6,370	3,342414708	9,320449595	26,843	3,494	0
	13,92998	8,415	3,228064281	9,367344121	25,572	2,954	0
	13,61643	9,454	3,278305945	9,352707613	24,028	3,276	1
	13,45085	11,424	3,219889311	9,378563004	22,452	3,201	1
	13,15609	62,350	2,959183428	9,83161554	21,830	1,303	1
	0	(4,164)	3,026143625	9,789422596	24,985	0,914	1
Asml	15,31582	(4,392)	3,592047192	8,001988996	53,838	2,918	0
	14,73857	(3,276)	3,521073928	7,841104091	53,492	6,642	0
	14,7261	9,455	3,300132073	8,020489384	49,380	4,105	0
	14,73782	10,591	3,209393409	8,174460318	45,204	4,785	1
	13,98598	18,109	2,338648905	8,229686304	41,217	4,168	1
	14,17883	18,852	2,731895626	8,275559751	35,830	4,946	1
	13,80599	9,640	2,837139743	8,24045396	34,962	2,770	1
Dsm	14,39267	14,327	3,077274011	9,096275416	19,632	0,826	0
	14,42865	2,356	3,02465738	9,123256265	19,309	0,771	0
	14,32885	3,618	2,918677888	9,056722883	18,551	0,963	0
	15,00467	6,349	2,889529737	9,159888828	19,400	1,218	1
	15,14051	6,358	2,758683111	9,168997408	19,346	1,210	1
	15,18163	5,136	2,916532669	9,157150543	18,202	1,029	1
	15,21046	6,854	3,209219351	9,133567313	22,720	0,651	1
Fugro	13,80202	9,107	3,611324587	6,676132127	32,690	2,397	0
	13,81811	5,177	3,797987863	6,937299518	33,655	2,470	0
	13,8783	7,055	3,855841996	6,865602191	32,958	4,151	0
	13,95961	11,178	3,407623357	7,018534288	31,621	3,957	1
	13,94698	12,609	3,464814228	7,231407836	28,791	4,431	1
	13,94698	15,509	3,459381066	7,42779413	28,337	5,271	1
	13,9482	16,295	3,380874599	7,648271138	31,637	1,655	1
Ing	16,86177	1,949	3,384380094	13,48195207	28,845	1,727	0
	16,81042	1,395	3,308656198	13,56547232	30,721	1,819	0
	16,42325	1,500	3,247534028	13,67187226	28,709	1,880	0



	16,57134	1,453	3,040291596	13,96092692	27,346	2,264	1
	16,44545	0,717	2,958270253	14,01264355	25,308	2,359	1
	16,31197	0,808	3,024337223	14,0808803	23,996	1,695	1
	16,51722	(0,024)	3,079661113	14,09149852	30,921	0,541	1
Kpn	15,22049	(24,843)	4,091164678	10,1303442	42,193	3,424	0
	15,22688	15,407	3,820020429	10,01126514	37,323	2,109	0
	15,5302	9,650	3,78140166	9,976691545	32,698	2,363	0
	15,67744	8,622	3,769419038	9,968994355	30,854	3,553	1
	12,27969	9,842	3,80226104	9,915416123	29,615	4,907	1
	13,53857	14,916	3,950968104	10,02623602	27,316	5,072	1
	0	8,017	3,994296761	10,00694626	26,582	4,729	1
Philips	16,16801	(8,181)	3,12813503	10,3461521	36,337	1,531	0
	15,1597	3,597	3,058846969	10,22495492	36,012	2,323	0
	15,08912	10,844	2,735911123	10,28397667	33,907	1,683	0
	15,17294	9,959	2,630111722	10,38399829	31,767	1,892	1
	15,23817	16,312	2,337753375	10,52816851	29,502	1,375	1
	15,23936	12,122	2,308167482	10,47367583	25,741	1,450	1
	15,56436	0,177	2,549333446	10,38862607	28,096	0,786	1
Randstad	14,02658	4,979	3,399014	7,237562496	39,728	5,860	0
	13,75894	6,416	2,74105613	7,181744024	41,930	11,813	0
	13,68654	14,230	2,621611024	7,380816728	39,350	9,773	0
	13,11433	14,343	2,536174694	7,581617698	34,708	7,908	1
	12,82933	17,887	1,453448209	7,71815202	32,648	7,695	1
	13,01031	14,981	2,856966635	8,017867852	34,637	3,084	1
	12,05525	2,587	3,522213703	8,89573921	36,450	1,096	1
Reed Elsevier	15,98715	5,888	-1,328855986	7,725771442	21,520	4,497	0
	16,22622	11,434	-1,033189783	7,584264818	21,333	4,470	0
	16,72365	11,694	-0,970245459	7,52131798	20,140	4,916	0
	16,75948	24,537	-0,768776309	7,31986493	18,211	6,426	1
	16,04724	30,062	0	7,337587744	17,121	6,933	1
	15,95898	47,159	0	7,644440762	16,544	5,396	1
	15,97168	22,139	0	6,340359304	19,362	11,832	1
Tnt	14,80123	8,441	3,105202632	8,973604867	29,591	2,582	0
	15,04296	4,440	2,996380563	8,950273467	28,438	2,972	0
	15,11306	9,296	2,939401576	8,972971113	25,040	3,379	0
	0	8,683	2,750040793	9,012864567	23,424	3,616	1
	0	10,967	3,24589782	8,715552126	21,291	6,444	1
	0	17,201	3,409577834	8,838116598	20,674	5,421	1
	0	10,090	3,469043551	8,850804196	23,470	2,850	1
Unilever	15,58375	6,294	3,854568454	10,67604647	19,869	13,061	0
	15,24746	8,683	3,751665268	10,52757936	19,267	11,371	0
	15,08381	6,826	3,618467988	10,40128873	18,856	11,787	0
	15,40148	11,576	3,489860671	10,54815327	18,116	6,718	1
	15,28713	13,929	3,163970541	10,50813133	17,081	5,327	1
	14,78117	11,782	3,253103323	10,51374214	16,418	5,793	1
	0	14,964	3,443520968	10,47463658	17,215	4,862	1
Wolters Kluwer	14,88444	6,017	3,953026551	8,690978417	24,627	3,800	0



	14,83742	1,445	3,951465809	8,486115236	26,237	4,206	0
	10,59663	4,289	3,970312291	8,437067147	24,551	5,612	0
	0	6,782	3,683418822	8,597297436	23,144	4,702	1
	0	7,516	3,659968017	8,629986019	21,760	5,585	1
	0	18,522	3,619872833	8,562931083	20,055	5,365	1
	0	7,038	3,71107236	8,756210092	21,899	2,739	1
Arcadis	12,48029	8,506	2,540384717	5,840094996	17,316	1,271	0
	13,16356	7,198	2,410074441	5,850056501	19,000	1,370	0
	11,41937	6,382	2,385993822	5,967338337	19,780	1,909	0
	13,19593	7,044	2,959108745	6,456626788	22,765	3,083	1
	12,75708	7,612	2,978921257	6,590546897	23,661	5,020	1
	13,46204	7,984	3,216590415	6,810803753	24,398	5,082	1
	13,83374	7,492	3,292410261	6,952860567	27,629	2,721	1
CSM	10,39818	8,595	3,499759239	7,773257852	15,308	2,859	0
	11,79509	7,105	3,739618908	7,904334842	15,263	1,917	0
	0	6,389	3,620209745	7,848972742	15,826	2,400	0
	0	19,473	3,011679931	7,665612841	16,146	1,737	1
	0	6,078	3,181561422	7,681468107	16,268	2,277	1
	0	10,929	3,0183217	7,603249703	16,037	1,491	1
	0	5,959	3,205373477	7,622174595	21,431	0,756	1
Draka	11,12958	1,037	3,853712516	7,203033428	36,503	0,519	0
	11,47117	3,546	3,782482268	7,153833802	41,080	0,905	0
	11,43377	1,633	3,321230949	7,377508877	41,282	0,794	0
	11,7764	3,929	3,343567563	7,368402776	38,616	1,306	1
	12,00392	3,599	3,453780028	7,433843829	39,393	2,162	1
	11,7458	8,272	3,579224732	7,442023954	39,432	1,972	1
	11,97172	6,930	3,605578005	7,377508877	43,458	0,603	1
Imtech	13,4702	6,094	0,76885744	6,791588811	25,171	1,099	0
	13,16542	5,690	0,480578765	6,815020281	26,935	1,712	0
	13,2213	4,747	0,033405762	6,858935764	25,348	2,088	0
	13,25602	4,949	1,513023924	7,164058133	23,847	2,490	1
	13,42469	5,514	1,908850414	7,354907287	24,463	3,839	1
	13,49013	6,287	2,437511013	7,53941262	24,082	3,621	1
	13,99236	6,148	3,103340611	7,805217461	25,016	2,348	1
Logica	16,38163	(73,193)	2,985798598	7,101675972	48,644	2,163	0
	16,51083	(2,432)	3,269225154	7,079268637	50,883	4,606	0
	14,9467	1,740	3,255748013	7,056864702	50,574	3,752	0
	16,45117	5,573	2,965553954	7,472671282	46,101	2,477	1
	14,73781	3,963	3,066769787	8,137454308	41,540	1,876	1
	17,38697	6,035	2,889470241	8,099037902	39,794	1,075	1
	15,93672	2,036	2,626551601	8,315444137	39,896	0,536	1
Nutreco	12,90176	5,029	3,142261268	7,605591449	30,830	0,886	0
	12,88334	(5,700)	3,21322348	7,440264114	31,779	1,553	0
	12,17947	5,887	3,229337708	7,472557594	31,143	1,282	0
	12,08813	8,832	3,077858194	7,460087463	31,076	1,845	1
	0	29,814	2,748872196	7,469426097	29,191	2,251	1
	0	7,349	3,088521551	7,579270159	28,919	2,144	1
	0	6,811	3,219939259	7,678465171	31,169	1,231	1



Oce	13,48144	5,139	3,409809193	7,932857007	33,091	1,064	0
	13,58358	3,311	3,156409608	7,757248727	34,007	1,415	0
	13,94478	4,357	3,119332578	7,662226601	32,340	1,335	0
	13,8304	4,056	3,494773331	7,908703286	29,473	1,315	1
	0	4,181	3,341717334	7,83257791	27,115	1,568	1
	0	5,276	3,216896668	7,784984965	27,131	1,574	1
	0	2,213	3,219521217	7,800911254	33,039	0,462	1
Ordina	14,20107	10,924	0	5,108644858	43,635	2,396	0
	0	6,850	0	5,041048101	47,532	3,487	0
	13,40621	7,971	0	5,413323216	43,490	2,642	0
	0	11,246	0,751600034	5,650483662	41,057	3,532	1
	0	7,545	2,946953709	6,111225625	36,506	3,367	1
	0	6,956	2,916029758	6,26757619	34,886	1,974	1
	0	(15,390)	3,195672293	6,117802	41,431	0,724	1
Ten Cate	11,28978	10,524	3,464597755	5,893300298	17,985	0,785	0
	11,38736	7,307	3,331089603	5,846727751	19,312	1,105	0
	11,46793	7,657	3,235383618	5,936216073	19,607	1,558	0
	11,93426	7,880	3,481860205	6,18146488	21,683	2,434	1
	12,21205	16,932	2,979464671	6,16793569	20,846	1,999	1
	12,23077	9,357	3,502738714	6,562867733	21,948	1,578	1
	12,495	8,100	3,649544374	6,774223886	24,829	1,025	1
USG People	12,00092	6,491	3,303949058	6,353503579	39,138	1,262	0
	12,13713	3,548	3,609949606	6,346220401	38,436	2,117	0
	12,55517	4,029	3,421064386	6,24280092	37,793	1,951	0
	0	2,707	3,904708117	7,58720305	37,581	2,387	1
	0	7,098	3,561934892	7,521343968	36,205	3,638	1
	0	8,699	3,482977656	7,559238444	37,225	1,726	1
	0	1,443	3,52015839	7,559382305	39,194	0,912	1
Wessanen	13,34351	9,611	2,646998571	7,032094553	23,659	0,760	0
	13,78509	(2,116)	3,061832231	6,911647694	27,140	1,265	0
	13,19101	1,454	2,744661101	6,780489928	25,843	1,371	0
	11,0021	3,466	2,83359974	6,782872097	25,579	1,874	1
	10,22922	4,827	2,945892133	6,754254388	24,739	1,563	1
	12,30288	7,591	3,24863616	6,714534541	22,892	1,795	1
	12,13742	5,206	3,471333644	6,692207804	26,079	0,864	1
Accel	10,02127	7,931	3,799679499	4,698432816	18,321	0,998	0
	10,1346	9,077	3,729958056	4,868741414	21,332	1,415	0
	10,7364	10,424	3,775976452	5,036569412	24,011	2,299	0
	10,51719	10,255	3,342222024	5,16712039	23,533	2,376	1
	10,19242	10,242	3,606438164	5,467532576	23,139	2,617	1
	10,22919	9,384	3,588323489	5,604819967	22,937	2,195	1
	0	11,188	3,407622033	5,799132048	24,910	1,332	1
Beter Bed	0	1,045	3,574369712	4,183194526	38,807	3,206	0
	11,28978	4,441	3,418213778	4,146335946	40,437	3,834	0
	11,35041	13,887	3,009167614	4,240189415	37,824	4,735	0
	11,4721	22,979	1,61762828	4,279800092	38,161	8,183	1
	12,2667	31,977	0,535387496	4,418322401	36,448	9,782	1
	12,28535	31,457	2,693299949	4,555559685	34,744	8,504	1



	12,00334	23,765	2,82957792	4,569024739	37,019	4,243	1
Fornix Biosciences	11,37883	18,731	0,208297898	2,923004041	34,565	4,126	0
	11,86289	22,819	-0,254260191	3,306590138	34,821	4,541	0
	11,30707	22,885	-0,488330546	3,454903885	30,856	3,874	0
	0	26,040	0,578527262	3,764571171	30,034	4,082	1
	0	25,034	0	4,040714663	28,724	3,627	1
	0	24,121	0	4,078536944	26,599	2,654	1
	0	17,198	0	4,099630567	31,940	0,997	1
Gamma Holding	10,42228	5,992	3,756772187	6,535827456	19,099	1,033	0
	10,58658	6,544	3,650291421	6,512822016	20,927	1,330	0
	10,64542	4,447	3,620287663	6,50353939	20,805	1,214	0
	10,64542	(2,228)	3,694124176	6,542616042	18,746	1,560	1
	10,43412	5,412	3,550550285	6,49617149	18,501	1,782	1
	10,22194	6,542	3,612125292	6,443654195	19,475	2,065	1
	9,991956	(2,482)	3,838685137	6,505634572	29,426	0,339	1
Kas Bank	12,27778	2,483	2,165044532	8,773888185	27,391	1,055	0
	12,24804	0,950	2,086198661	8,990035787	24,611	1,040	0
	12,23466	0,663	1,492683847	9,374891126	22,100	1,028	0
	12,42676	1,846	2,838114256	8,957156082	20,836	1,326	1
	12,33435	2,470	2,431904001	8,770077431	19,025	1,428	1
	12,36143	3,727	3,170887799	9,031579548	18,348	1,468	1
	12,78564	(0,508)	2,805957007	8,903464743	23,306	0,861	1
Macintosh	11,50288	10,739	2,735161999	5,604911964	27,636	0,665	0
	11,53762	5,699	1,82785672	5,497950706	27,881	0,925	0
	11,52288	8,164	2,164670393	5,519009917	27,476	1,345	0
	11,49781	13,074	0,995966603	5,595981948	28,211	2,261	1
	12,67451	13,936	3,100254438	6,141536205	30,547	3,243	1
	12,58108	13,409	3,116993254	5,998311056	30,948	2,503	1
	12,562	8,028	3,605938781	6,44028444	36,154	0,718	1
Quirius	13,14119	(50,185)	2,652769318	2,307274082	56,134	1,637	0
	0	(5,721)	4,165992439	1,700192276	62,260	3,381	0
	12,89922	7,810	2,828501673	2,556451817	56,080	2,375	0
	0	11,729	2,322122979	2,958030406	49,600	2,662	1
	0	6,852	3,431535168	4,383026135	47,062	1,886	1
	12,61154	3,402	2,348528351	4,877317212	47,817	1,032	1
	14,01845	(15,957)	2,867228223	4,725944299	51,630	0,521	1
Sligro	10,79958	12,509	3,422689105	5,907308182	18,489	2,989	0
	11,62625	12,480	3,114256368	5,995755329	19,599	2,805	0
	0	12,509	3,323724369	6,234522484	20,864	3,396	0
	0	10,201	3,26067053	6,281387856	19,810	2,791	1
	0	10,773	3,559149968	6,578231248	19,883	3,491	1
	0	10,574	3,403944605	6,75457263	21,013	2,991	1
	0	9,324	3,163973077	6,774398728	23,672	1,510	1
Unit 4 Agresso	12,54328	7,876	2,259810151	4,921097091	50,866	1,771	0
	12,82126	10,190	2,265593254	4,992396643	53,770	3,015	0
	0	7,700	2,359821393	5,314471188	46,320	3,333	0

Ezra

	11,91839	9,072	1,960182104	5,504213024	40,146	2,871	1
	12,77776	6,068	2,894059395	5,902521305	36,589	3,538	1
	0	8,197	2,419697682	5,887589039	33,031	3,733	1
	12,57764	6,558	3,773531905	6,139356396	34,861	2,128	1
ASMI	11,9544	(2,874)	3,117388687	6,478601804	52,450	2,185	0
	12,19349	(2,664)	3,430390421	6,510503846	49,117	3,785	0
	12,52707	4,668	3,586732104	6,713021812	47,124	2,490	0
	11,05089	(4,782)	3,456581945	6,699219513	44,043	3,131	1
	12,08673	5,442	3,313781923	6,722924577	42,172	3,111	1
	11,18442	8,310	3,103270566	6,732665907	37,850	2,826	1
	12,52816	3,079	2,99950963	6,640546197	41,339	1,001	1



F. Sample data France

Firm	ln(ESO)	ROA	ln(DebtAssets)	ln(TotalAssets)	Volatility	MarketBook	IFRS2
Accor	15,05064	4,247	3,491726	8,091321	24,081	1,477	0,000
	11,91103	2,858	3,525007	8,158516	23,866	1,979	0,000
	14,20951	2,570	3,493528	8,335671	21,680	1,760	0,000
	14,07707	3,635	3,403202	8,509161	21,819	2,330	1,000
	14,45639	4,759	2,820033	8,248267	21,291	3,030	1,000
	14,27789	8,863	2,588856	8,291797	20,395	3,283	1,000
	14,21052	5,910	3,055058	8,283999	23,240	2,336	1,000
Air Liquide	14,36047	6,920	3,076386	8,04719	14,323	2,386	0,000
	0	7,311	2,980828	8,16089	14,518	2,700	0,000
	13,19074	6,973	3,45688	8,340528	13,515	2,728	0,000
	12,96688	6,945	3,321048	8,346571	13,573	2,986	1,000
	13,00358	7,182	3,307966	8,413498	13,742	3,444	1,000
	12,98345	7,553	3,398214	8,483078	13,235	3,804	1,000
	13,14879	7,360	3,516292	8,648257	15,271	2,477	1,000
ALSTOM	12,71707	0,702	2,903931	9,671707	43,587	1,884	0,000
	11,45982	(4,890)	3,308249	9,510297	45,473	0,493	0,000
	15,53219	(7,917)	3,261591	9,193906	47,143	71,767	0,000
	14,8462	(3,927)	2,909463	9,14249	50,824	3,069	1,000
	15,02968	1,540	2,694024	9,080801	59,941	5,366	1,000
	14,34449	2,837	2,723707	9,315781	54,175	6,042	1,000
	13,53355	4,655	2,249147	9,471781	49,355	8,799	1,000
Bouygues	15,09592	3,807	3,061193	9,348971	31,585	1,793	0,000
	12,6102	2,541	3,098751	9,416297	31,335	1,800	0,000
	12,67216	4,098	3,004768	9,522666	28,848	2,840	0,000
	14,94772	4,081	3,139384	9,440658	27,821	3,003	1,000
	15,12384	5,132	3,292588	9,59499	26,338	3,031	1,000
	15,28569	4,894	3,139977	9,669473	24,880	2,833	1,000
	15,29484	5,249	3,212557	9,730205	27,429	1,363	1,000
Cap Gemini	14,71201	(8,763)	2,037512	7,98956	43,824	0,779	0,000
	14,15626	(3,019)	2,880162	7,990238	44,103	1,376	0,000
	15,25071	(5,831)	2,780241	7,959975	44,355	1,032	0,000
	15,19742	2,950	2,963727	8,359135	41,790	1,486	1,000
	14,54161	4,892	2,785138	8,552367	37,960	1,852	1,000
	14,66245	6,273	2,78828	8,503905	35,608	1,622	1,000
	12,29683	6,212	2,552647	8,4362	35,644	1,002	1,000
Danone	14,94575	9,008	3,594505	8,682538	17,993	3,258	0,000
	15,15306	6,566	3,561173	8,371705	17,596	3,395	0,000
	15,16097	2,743	3,423841	8,439664	15,961	3,723	0,000



	14,66097	9,842	3,684469	8,718991	16,420	4,087	1,000
	14,49052	9,266	3,612748	8,724858	16,884	4,740	1,000
	14,85218	20,216	3,820318	8,387995	15,704	3,237	1,000
	14,78484	6,289	3,830549	8,493515	16,757	2,387	1,000
Lafarge	13,72094	2,842	3,749807	8,607217	21,681	1,347	0,000
	14,29582	4,215	3,558527	8,651025	22,533	1,439	0,000
	13,44559	4,932	3,496509	8,707814	20,597	1,428	0,000
	14,06093	5,687	3,4564	8,902728	19,129	1,357	1,000
	13,61349	6,279	3,593536	9,144948	19,925	1,899	1,000
	13,19942	8,153	3,568185	8,827321	19,276	1,946	1,000
	13,47119	7,079	3,829962	8,946375	25,731	0,654	1,000
Lagardere	14,07711	(0,898)	3,218254	8,974643	29,355	1,417	0,000
	14,17824	2,220	3,160554	9,02709	28,341	1,594	0,000
	14,26579	2,449	3,155171	9,170445	25,771	1,782	0,000
	14,33659	4,513	2,854536	9,051696	23,409	2,086	1,000
	14,42783	2,501	3,076614	9,235813	21,298	1,748	1,000
	0	5,697	3,305623	8,363809	20,045	1,459	1,000
	0	6,223	3,382499	8,417815	22,882	0,845	1,000
Michelin B	13,48227	4,242	3,430694	9,152911	32,053	1,077	0,000
	13,05878	2,695	3,47376	9,156327	30,504	1,206	0,000
	12,6411	3,943	3,406862	9,139647	28,463	1,470	0,000
	14,20234	6,914	3,41027	8,981682	26,431	1,509	1,000
	14,76556	4,609	3,428608	8,972337	26,683	2,227	1,000
	13,98798	6,116	3,26649	8,893435	26,291	2,140	1,000
	12,64433	3,428	3,431028	8,921858	29,007	1,066	1,000
Oreal (L)	15,42495	9,778	2,978795	8,543543	19,328	7,978	0,000
	15,42495	11,322	2,666039	8,549118	19,561	6,389	0,000
	15,60727	24,122	2,557408	8,535406	19,003	3,860	0,000
	15,67181	9,407	2,507712	8,556433	17,870	2,657	1,000
	15,83041	9,091	2,826027	8,635438	17,113	3,144	1,000
	15,2018	11,934	2,720309	8,735638	16,710	4,283	1,000
	0	9,282	3,054195	8,802101	18,490	3,072	1,000
Peugeot	13,6648	3,624	3,755505	10,58489	24,084	0,872	0,000
	13,812	3,231	3,750974	10,62818	22,293	0,824	0,000
	13,8195	2,856	3,742383	10,64328	21,895	0,869	0,000
	13,76737	1,938	3,835249	10,71817	20,631	0,804	1,000
	13,79887	0,408	3,830293	10,72496	19,898	0,837	1,000
	13,95961	1,600	3,804601	10,74052	19,406	0,831	1,000
	14,1119	(0,051)	3,8211	10,58681	26,649	0,210	1,000
PPR	13,6513	6,047	3,734166	9,6336	30,625	1,330	0,000
	13,18838	3,549	3,560955	9,249244	31,144	1,363	0,000



	13,2463	5,121	3,71053	9,180572	29,143	1,178	0,000
	12,94744	3,130	3,423881	8,91355	27,143	1,433	1,000
	12,90773	4,001	3,222001	8,865199	24,913	1,620	1,000
	12,91608	4,826	3,381284	8,980625	23,059	1,514	1,000
	12,15212	4,344	3,259404	8,89812	28,875	0,625	1,000
Saint-Gobain	15,14669	4,303	3,37073	9,333266	24,256	0,830	0,000
	15,12862	4,376	3,386975	9,461721	25,248	1,177	0,000
	15,17181	4,511	3,338617	9,500918	23,003	1,285	0,000
	15,18218	4,418	3,608575	9,579902	20,980	1,380	1,000
	15,20823	5,061	3,45372	9,642253	19,901	1,625	1,000
	15,11652	4,692	3,314119	9,622251	19,455	1,593	1,000
	15,08299	4,569	3,457824	9,640108	23,960	0,890	1,000
Sanofi-Aventis	16,37655	20,235	1,551264	8,603921	#N/A	7,556	0,000
	16,60238	24,401	1,40187	8,691483	23,668	7,140	0,000
	0	(8,314)	3,072538	9,384378	21,050	2,245	0,000
	16,53868	3,142	2,593248	9,481969	19,838	2,131	1,000
	16,28124	5,466	2,235327	9,405907	18,003	2,072	1,000
	16,2995	7,712	2,152913	9,437715	16,962	1,878	1,000
	0	5,960	2,162852	9,642318	19,214	1,321	1,000
Schneider Electric	0	3,941	2,837646	8,952774	26,274	1,315	0,000
	14,56267	3,817	2,953366	8,892405	24,754	1,544	0,000
	14,58918	4,822	2,473332	8,666561	21,778	1,512	0,000
	15,13918	7,836	2,94505	8,739024	21,516	1,998	1,000
	14,04433	8,469	3,156604	9,050852	20,097	2,131	1,000
	13,8432	9,105	3,297508	9,017932	18,845	2,175	1,000
	0	8,466	3,240463	9,034438	22,207	1,166	1,000
Total	14,87012	7,299	2,903664	10,35198	19,453	2,714	0,000
	14,89232	9,059	2,853987	10,29259	18,521	3,019	0,000
	15,02913	12,420	2,775359	10,3618	17,522	3,116	0,000
	14,23824	13,497	2,827873	10,68632	17,875	3,033	1,000
	15,56074	11,870	2,954109	10,66399	16,820	3,069	1,000
	15,57805	12,764	2,8499	10,7839	15,824	2,843	1,000
	15,30837	9,484	3,014858	10,75914	18,274	1,770	1,000
Vallourec	0	3,886	2,781812	7,183793	28,418	0,829	0,000
	13,77988	2,604	3,121809	7,288678	27,033	1,010	0,000
	0	6,302	2,818151	7,531949	27,658	1,445	0,000
	0	15,589	3,046435	7,794559	34,125	3,454	1,000
	0	23,378	2,932593	8,05016	36,164	5,342	1,000
	11,90023	21,523	2,615176	8,140536	33,910	3,594	1,000
	11,18164	18,866	2,722445	8,13218	37,199	1,380	1,000



Veolia	15,30007	1,582	3,685189	9,639431	22,679	1,410	0,000
Environnement	15,46275	(3,544)	3,744039	9,655661	22,546	2,420	0,000
	15,02196	1,471	3,789659	9,650683	22,652	3,162	0,000
	0	3,238	3,839949	9,513404	22,421	3,941	1,000
	15,21297	3,548	3,801842	9,612895	22,561	5,322	1,000
	14,72795	3,960	3,704199	9,753478	20,945	3,746	1,000
	0	2,145	3,775972	9,856621	27,863	1,451	1,000
Vinci	16,80129	3,082	3,380668	9,268628	21,829	1,753	0,000
	15,5397	3,150	3,448691	9,388771	20,434	1,901	0,000
	15,66302	3,724	3,424827	9,462709	20,585	2,630	0,000
	15,44105	4,351	3,350373	9,597513	19,899	2,967	1,000
	15,60954	4,778	3,791214	9,723206	19,596	2,546	1,000
	0	4,442	3,76946	9,729235	18,889	3,110	1,000
	0	4,558	3,698473	9,799254	22,088	1,686	1,000
Vivendi	14,9744	(21,281)	3,343958	9,942708	34,080	1,176	0,000
	16,3386	(0,717)	3,268135	9,571854	33,755	1,732	0,000
	15,92781	2,274	2,676941	9,36666	30,215	1,850	0,000
	15,80127	8,063	2,762017	9,16262	27,241	1,623	1,000
	15,53181	10,251	2,867863	9,163144	24,879	1,719	1,000
	15,57747	6,750	2,827038	9,171184	22,474	1,797	1,000
	15,65657	6,020	3,06109	9,434124	23,827	1,203	1,000
CGGVeritas	14	3,86618	3,626856	4,881619	36,815	2,523	0
	14	-8,8491	3,76203	4,867634	33,095	6,072	0
	0	6,20863	3,690968	4,833023	30,053	5,495	0
	0	6,89649	3,417986	4,893854	27,935	5,244	1
	14	7,85732	3,581128	4,915188	30,223	4,882	1
	14	6,33978	3,419329	4,971666	27,371	3,303	1
	14	-1,99448	3,767896	5,018927	26,327	6,198	1
Dassault Systems	14	12,76337	1,433202	6,756765	40,396	4,000	0
	15	13,21593	1,344404	6,792377	39,290	6,774	0
	0	15,21684	1,134439	6,921892	35,242	6,030	0
	14	13,25791	0	7,175962	32,627	6,192	1
	14	12,16779	2,511121	7,392367	30,805	4,593	1
	14	10,54403	2,395246	7,508242	28,454	4,263	1
	15	10,48902	2,252014	7,651473	28,180	2,949	1
Eiffage	14	2,33847	2,688481	8,700015	24,910	1,153	0
	15	2,37318	2,49202	8,679822	23,569	1,369	0
	14	2,93605	1,858482	8,728102	24,398	2,195	0
	12	4,74807	2,371984	8,907748	24,746	2,836	1



	0	4,46237	3,982094	10,05608	24,445	3,532	1
	12	5,98423	3,915271	10,12242	25,728	2,167	1
	14	2,71765	3,959708	10,1469	29,324	1,220	1
Natixis	15	0,09178	3,925432	11,79952	20,770	1,003	0
	15	0,19867	3,849025	11,81771	19,580	1,089	0
	16	0,2979	3,827893	11,84216	18,358	1,165	0
	16	0,53702	3,848456	12,03095	17,738	1,243	1
	0	0,35845	3,668927	13,03486	18,716	1,485	1
	17	0,32179	3,626236	13,15979	21,543	0,945	1
	16	-0,41841	3,288091	13,22413	30,535	0,233	1
Neopost	13	5,82414	3,721433	6,891321	35,245	4,353	0
	13	7,91021	3,784395	7,157424	37,089	2,776	0
	13	8,32381	3,592362	7,091825	36,062	3,125	0
	13	9,78278	3,158872	7,160691	32,790	3,600	1
	13	10,8701	3,343839	7,253046	29,829	5,130	1
	12	11,62109	3,462312	7,341743	26,307	5,771	1
	13	9,80865	3,595677	7,392155	27,413	4,255	1
Publicis Groupe	13	2,08639	3,404934	9,284798	35,995	3,680	0
	16	1,6494	3,542747	9,269552	35,903	6,456	0
	14	2,34221	3,254925	9,151227	33,612	4,929	0
	14	4,52282	2,919794	9,352534	31,421	2,596	1
	16	4,57003	2,916549	9,344959	28,168	2,820	1
	14	4,56226	2,859931	9,40063	27,926	2,237	1
	0	4,39905	2,563006	9,373224	27,492	1,418	1
Safran	14	3,11366	1,852619	7,950843	36,936	1,946	0
	14	4,44764	2,038707	7,94983	35,374	2,849	0
	14	4,92124	0,82794	7,966796	33,475	2,361	0
	0	-2,38406	2,206758	9,647627	31,698	1,808	1
	0	0,08013	2,392776	9,668271	31,206	1,661	1
	0	0,38243	2,224912	9,681406	30,275	1,330	1
	0	-0,92758	2,608479	9,713597	30,260	1,030	1
SCOR	14	-3,13966	1,834896	9,56374	33,385	0,644	0
	15	-2,32722	1,880826	9,452973	36,176	0,639	0
	16	0,54571	2,155823	9,436838	35,762	0,850	0
	16	1,17985	2,034272	9,431562	32,671	1,016	1
	14	2,16407	1,926761	9,757594	31,240	1,153	1
	14	2,00442	1,319257	10,09274	40,285	0,875	1
	14	1,32642	1,326696	10,12009	38,976	0,861	1
SES	0	3,23216	3,605262	8,994979	37,512	1,348	0
	14	3,68937	3,410991	8,803695	37,266	1,882	0
	14	4,72393	3,439143	8,809654	33,563	2,361	0

Ezra

	14	6,30482	3,471557	8,875972	31,882	2,870	1
	14	7,53256	3,715064	8,990753	29,895	2,869	1
	14	7,48775	3,912155	8,828948	27,786	5,906	1
	14	7,6117	3,952991	8,923804	24,290	4,303	1
Sodexo	15	3,41304	3,464622	9,038959	24,688	2,052	0
	15	3,08374	3,434836	8,989569	25,625	1,933	0
	14	3,52124	3,337746	8,930362	24,537	1,601	0
	14	2,98939	3,206071	8,969542	23,908	2,152	1
	14	4,88187	3,18767	8,996157	22,837	3,010	1
	0	4,88261	3,142564	9,054972	22,458	3,313	1
	8	4,76802	3,255258	9,192584	21,885	3,315	1
Technip	15	-0,11889	2,534854	9,268873	30,236	0,787	0
	10	-0,07165	2,307396	9,393337	29,884	1,045	0
	0	0,04577	2,535359	9,455105	30,353	1,807	0
	14	2,22455	3,032578	8,882808	30,309	2,530	1
	14	3,15655	2,361657	8,981191	29,800	2,269	1
	14	1,92462	2,148426	8,976629	27,976	2,609	1
	14	5,99843	2,23389	8,978471	32,766	0,937	1
Thales	15	1,21508	2,568574	9,809644	24,207	1,914	0
	15	1,43188	2,452287	9,817418	24,265	2,147	0
	15	1,92195	2,578136	9,709563	22,843	2,785	0
	15	3,28035	2,651863	9,505492	20,744	3,135	1
	15	3,31254	2,796542	9,587468	20,685	2,790	1
	14	6,10991	2,369057	9,754721	19,635	2,052	1
	14	3,72391	2,456675	9,770082	19,797	1,473	1



G. Descriptive statistics

Dutch sample:

	ln(TotalAssets)	ln(DebtAssets)	MarketBook	ROA	Volatility	LN(ESO)
Mean	7.634443	2.825134	2.836587	7.357517	30.18481	10.72433
Median	7.460087	3.163973	2.263900	7.038380	28.43773	12.54328
Maximum	14.09150	4.165992	13.06118	62.35039	62.26009	17.38697
Minimum	1.700192	0.000000	0.338890	-73.19349	15.26321	0.000000
Std. Dev.	2.240412	1.094366	2.169133	10.54430	9.698381	5.617014
Skewness	0.490989	-1.814378	2.093608	-1.600246	0.722208	-1.186720
Kurtosis	3.744200	5.790551	8.578326	22.89604	2.997260	2.864827
Jarque-Bera Probability	15.49739 0.000431	213.9161 0.000000	496.6406 0.000000	4145.558 0.000000	21.29811 0.000024	57.69233 0.000000
Sum	1870.438	692.1578	694.9638	1802.592	7395.279	2627.460
Sum Sq. Dev.	1224.745	292.2232	1148.054	27128.47	22950.30	7698.406
Observations	245	245	245	245	245	245

French sample:

	ln(TotalAssets)	ln(DebtAssets)	MarketBook	ROA	Volatility	LN(ESO)
Mean	8.994243	3.066291	2.757209	4.797916	26.58366	12.43310
Median	9.050852	3.218254	2.051590	4.442390	24.90972	14.17824
Maximum	13.22413	3.982094	71.76669	24.40056	59.94080	16.80129
Minimum	4.833023	0.000000	0.209720	- 21.28094	13.23539	0.000000
Std. Dev.	1.247641	0.644804	4.886006	5.231370	7.900803	4.948633
Skewness	-0.479276	-1.268366	12.74387	0.219300	1.026263	-1.985527

Ezra

Kurtosis	6.423602	5.387474	180.0997	7.874197	4.540012	5.289446
Jarque-Bera	117.4455	112.7548	297462.8	222.5370	61.18100	195.2256
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	2005.716	683.7828	614.8576	1069.935	5928.155	2772.582
Sum Sq. Dev.	345.5671	92.30137	5299.818	6075.526	13857.84	5436.552
Observations	223	223	223	223	223	223



H. Results multiple regression analysis Dutch Sample

The Netherlands regression analysis (H1)

Dependent Variable: Y
Method: Least Squares
Date: 09/20/10 Time: 14:15
Sample: 1 245
Included observations: 245
ESO=C(1)+C(2)*TotalAssets+C(3)*DebtAssets+C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)*IFRS2

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	4.913109	2.158190	2.276495	0.0237
C(2)	0.973244	0.153326	6.347532	0.0000***
C(3)	-0.763002	0.306400	-2.490212	0.0135**
C(4)	0.175307	0.154626	1.133750	0.2580
C(5)	-0.013642	0.036300	-0.375811	0.7074
C(6)	0.070049	0.036832	1.901882	0.0584*
C(7)	-3.455741	0.670274	-5.155713	0.0000***
R-squared	0.239663	Mean dependent var		10.72433
Adjusted R-squared	0.220495	S.D. dependent var		5.617014
S.E. of regression	4.959238	Akaike info criterion		6.068537
Sum squared resid	5853.383	Schwarz criterion		6.168573
Log likelihood	-736.3958	Hannan-Quinn criter.		6.108821
F-statistic	12.50318	Durbin-Watson stat		0.997293
Prob(F-statistic)	0.000000			



France regression analysis (H2)

Dependent Variable: Y				
Method: Least Squares				
Date: 10/05/10 Time: 20:36				
Sample: 1 224				
Included observations: 223				
ESO=C(1)+C(2)*TotalAssets+C(3)*DebtAssets+C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)*IFRS2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	8.379.003	4.085.542	2.050.891	0.0415
C(2)	0.541937	0.293687	1.845.289	0.0664*
C(3)	-0.086935	0.559355	-0.155420	0.8766
C(4)	0.058813	0.069634	0.844609	0.3993
C(5)	0.036396	0.073977	0.492001	0.6232
C(6)	-0.007918	0.049700	-0.159321	0.8736
C(7)	-1.184.570	0.701932	-1.687.584	0.0929*
R-squared	0.028542	Mean dependent var		1.243.310
Adjusted R-squared	0.001557	S.D. dependent var		4.948.633
S.E. of regression	4.944.779	Akaike info criterion		6.065.429
Sum squared resid	5.281.382	Schwarz criterion		6.172.380
Log likelihood	-6.692.953	Hannan-Quinn criter.		6.108.604
F-statistic	1.057.697	Durbin-Watson stat		1.554.550
Prob(F-statistic)	0.389126			



France and The Netherlands combined sample regression analysis (H3)

Dependent Variable: Y				
Method: Least Squares				
Date: 10/05/10 Time: 20:48				
Sample: 1 469				
Included observations: 468				
ESO=C(1)+C(2)*TotalAssets+C(3)*DebtAssets+C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)*IFRS2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.195.560	1.869.216	3.314.524	0.0010
C(2)	0.895220	0.131030	6.832.197	0.0000***
C(3)	-0.550302	0.268225	-2.051.643	0.0408**
C(4)	0.073676	0.063275	1.164.383	0.2449
C(5)	-0.013040	0.031475	-0.414303	0.6788
C(6)	0.027148	0.029024	0.935350	0.3501
C(7)	-2.362.143	0.486819	-4.852.205	0.0000***
R-squared	0.143657	Mean dependent var		1.153.855
Adjusted R-squared	0.132512	S.D. dependent var		5.371794
S.E. of regression	5.003238	Akaike info criterion		6.072892
Sum squared resid	11539.93	Schwarz criterion		6.134942
Log likelihood	-1.414057	Hannan-Quinn criter.		6.097308
F-statistic	1.288929	Durbin-Watson stat		1.230800
Prob(F-statistic)	0.000000			



France and The Netherlands combined sample regression analysis (H4)

Dependent Variable: Y				
Method: Least Squares				
Date: 10/05/10 Time: 20:44				
Sample: 1 469				
Included observations: 468				
ESO=C(1)+C(2)*TotalAssets+C(3)*DebtAssets+C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)*CODE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.276.566	1.861.231	3.372.265	0.0008
C(2)	0.773618	0.130523	5.927.086	0.0000***
C(3)	-0.584859	0.266641	-2.193.433	0.0288**
C(4)	0.074925	0.062975	1.189.760	0.2348
C(5)	-0.006627	0.031491	-0.210436	0.8334
C(6)	0.043534	0.028945	1.504.030	0.1333
C(7)	-2.788.871	0.527878	-5.283.176	0.0000***
R-squared	0.151308	Mean dependent var		1.153.855
Adjusted R-squared	0.140262	S.D. dependent var		5.371.794
S.E. of regression	4.980.838	Akaike info criterion		6.063.918
Sum squared resid	11436.83	Schwarz criterion		6.125.967
Log likelihood	-1.411.957	Hannan-Quinn criter.		6.088.334
F-statistic	1.369.812	Durbin-Watson stat		1.229.335
Prob(F-statistic)	0.000000			



France and The Netherlands combined sample regression analysis (robustness check)

Dependent Variable: Y				
Method: Least Squares				
Date: 10/05/10 Time: 20:41				
Sample: 1 469				
Included observations: 468				
ESO=C(1)+C(2)*TotalAssets+C(3)*DebtAssets+C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)*Country				
Y				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.324.105	1.959.316	3.227.710	0.0013
C(2)	0.779953	0.138161	5.645.252	0.0000***
C(3)	-0.646403	0.273754	-2.361.258	0.0186**
C(4)	0.082002	0.064680	1.267.813	0.2055
C(5)	-0.042403	0.031526	-1.345.005	0.1793
C(6)	0.039623	0.029943	1.323.256	0.1864
C(7)	-0.844744	0.512916	-1.646.943	0.1003
R-squared	0.105187	Mean dependent var		1.153.855
Adjusted R-squared	0.093541	S.D. dependent var		5.371.794
S.E. of regression	5.114.385	Akaike info criterion		6.116.836
Sum squared resid	12058.35	Schwarz criterion		6.178.885
Log likelihood	-1.424.340	Hannan-Quinn criter.		6.141.252
F-statistic	9.031.945	Durbin-Watson stat		1.238.172
Prob(F-statistic)	0.000000			

Ezra

**France and The Netherlands combined sample regression analysis with two dummy's
(robustness check)**

Dependent Variable: Y				
Method: Least Squares				
Date: 10/05/10 Time: 20:46				
Sample: 1 469				
Included observations: 468				
ESO=C(1)+C(2)* TotalAssets +C(3)* DebtAssets +C(4)*MarketBook+C(5)*ROA+C(6)*Volatility+C(7)* NL +C(8)* FR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.421.697	1.853.616	3.464.417	0.0006
C(2)	0.825054	0.131810	6.259.426	0.0000***
C(3)	-0.551972	0.265779	-2.076.808	0.0384**
C(4)	0.071074	0.062703	1.133.498	0.2576
C(5)	0.001347	0.031534	0.042727	0.9659
C(6)	0.037158	0.028942	1.283.903	0.1998
C(7)	-3.310.010	0.571845	-5.788.303	0.0000***
C(8)	-1.347.720	0.583709	-2.308.889	0.0214**
R-squared	0.161031	Mean dependent var		1.153855
Adjusted R-squared	0.148264	S.D. dependent var		5.371794
S.E. of regression	4.957605	Akaike info criterion		6.056669
Sum squared resid	1130581	Schwarz criterion		6.127583
Log likelihood	-1.409261	Hannan-Quinn criter.		6.084573
F-statistic	1.261312	Durbin-Watson stat		1.234983
Prob(F-statistic)	0.000000			