**Aalto University
School of Business**

CEO appearance, compensation, and firm performance - Evidence from Sweden

Finance

Master's thesis

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2012

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Title of thesis CEO appearance, compensation, and firm performance – Evidence from Sweden

Degree Master of Science

Degree programme Finance

Thesis advisor(s) Matti Keloharju

Year of approval 2013 | **Number of pages** 52 | **Language** English

Abstract

In my thesis I test the attributes of attractiveness, competence, likability, and trustworthiness, and investigate how these are associated with CEOs. I further analyze if there exists beauty or competence premiums among the sample CEOs, and whether the CEO characteristics explain firm performance. In other words, I analyze if more competent people look more competent and if attractiveness is an asset for CEOs.

My sample consists of 140 CEOs from listed Swedish companies. I collect the primary data on CEO appearance by conducting an Internet based survey. Survey participants are asked to rate the facial photos of CEOs on a scale from 1 to 5 on each trait. Further, a pair-wise comparison is done between a CEO and a non-CEO person as well as between a large company and a small company CEO to test if large company CEOs are seen different from the control group.

The results from the pair-wise comparison indicate that CEOs are seen as more attractive and competent but less likable and less trustworthy than non-CEOs. Also, large company CEOs are seen as more competent than small company CEOs, whereas small company CEOs are deemed more attractive, likable, and trustworthy. These results are not, however, statistically significant and could thus result from chance.

The link between appearance and compensation is analyzed in the light of three different measures of compensation: salary, total cash compensation, and total compensation. The results from both salary and total cash compensation regressions support the existence of a beauty premium among Swedish CEOs. A competence premium exists on the salary level of CEO compensation. The study does not find a link between CEO traits and firm performance.

Keywords physical appearance, beauty premium, competence premium, CEO compensation, firm performance

Tekijä Suvi Lähdevuori	
Työn nimi CEO appearance, compensation, and firm performance – Evidence from Sweden	
Tutkinto Kauppatieteiden maisteri	
Koulutusohjelma Rahoitus	
Työn ohjaaja(t) Matti Keloharju	
Hyväksymisvuosi 2013	**Sivumäärä** 52 **Kieli** Englanti

Tiivistelmä

Tutkielmani tarkoituksena on testata neljää piirrettä (kauneus, pätevyys, miellyttävyys ja luotettavuus) ja miten nämä yhdistetään toimitusjohtajiin. Lisäksi tutkin, esiintyykö otoksen toimitusjohtajien palkitsemisessa niin sanottuja kauneus- tai pätevyyspreemioita sekä onko toimitusjohtajan ulkonäöllä yhteyttä yrityksen tuloksellisuuteen. Tarkoitukseni on tutkia näyttävätkö pätevämmät henkilöt pätevämmiltä ja onko kauneudesta hyötyä toimitusjohtajille.

Otokseni koostuu 140 ruotsalaisen pörssiyhtiön toimitusjohtajista. Kerään arviot kunkin toimitusjohtajan ulkonäöstä sähköisen kyselyn avulla. Kyselyn vastaajat arvioivat toimitusjohtajien kasvokuvia ja antavat arvosanan asteikolla yhdestä viiteen kunkin piirteen suhteen. Lisäksi kysely sisältää niin sanottuja parivertailuja, joissa vastaaja valitsee parista sen, joka kuvastaa paremmin kutakin piirrettä. Parit koostuvat toimitusjohtajasta ja ei-toimitusjohtaja henkilöstä sekä suuren ja pienen yrityksen toimitusjohtajista.

Parivertailussa vastaajat näkivät toimitusjohtajat kauniimpina ja pätevämpinä kuin ei-toimitusjohtajat, jotka puolestaan nähtiin toimitusjohtajia miellyttävämpinä sekä luotettavampina. Suurten ja pienten yritysten välisessä vertailussa suurten yritysten toimitusjohtajat mielettiin pätevämmiksi kuin pienten yritysten toimitusjohtajat kun taas pienten yritysten toimitusjohtajia pidettiin kauniimpina, miellyttävämpinä sekä luotettavampina. Nämä tulokset eivät kuitenkaan ole tilastollisesti merkitseviä, ja voivat täten johtua pelkästä sattumasta.

Tutkin ulkonäön yhteyttä palkkaukseen kolmen eri palkitsemiskomponentin valossa: peruspalkka, peruspalkka plus bonukset sekä kokonaispalkka. Tulosten perusteella kauneuspreemio esiintyy ruotsalaisten toimitusjohtajien peruspalkassa sekä peruspalkan ja bonusten yhdistelmässä. Pätevyyspreemio esiintyy ainoastaan peruspalkanosassa. Tutkimukseni ei löytänyt yhteyttä toimitusjohtajan ulkonäön ja yrityksen tuloksellisuuden välillä.

Avainsanat ulkonäkö, kauneuspreemio, pätevyyspreemio, toimitusjohtajan palkitseminen, yrityksen tuloksellisuus

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1. Introduction

1.1. Background

A chief executive officer (CEO) often is viewed as the embodiment of the company, responsible for both the successes and failures of all aspects of the organization (Ranft et al., 2006). Ranft et al. (2006) further go on in describing the CEO as the "face" of the company. It has been shown that especially in a public relations crisis the face of the company matters (Gorn et al., 2008). Thus an interesting question arises: are there some desirable features that make a good CEO? When a board of directors is facing two good candidates merit-wise, is there something appearance related that would tip the scales in favor of the other, be it an unconscious decision? Or are some people just "born leaders", having their appearance shaping their way through life?

Thin slicing is the art where people make inferences from small amount of cues, and these snap judgments can be strikingly accurate (Gladwell, 2005). It has been shown that one can make accurate assumptions about the electoral winner just by looking at the photos of the competing candidates (see e.g. Todorov et al., 2005; Rosar et al., 2008; Berggren et al., 2010). In a study by Todorov et al. (2005) inferences of competence judged from the faces of the candidates on the U.S. congressional elections are enough to accurately predict the winner. In the military setting, among top hierarchy positions, facial dominance seems to signal the preferential abilities and qualities that are expected from a general (Mueller and Mazur, 1996). So could it be that even leadership abilities can be predicted from the face?

People regularly make trait judgments of others they do not know, but to what extent perceived personality traits are accurate, i.e. could a more competent looking individual really be more competent? Ambady et al. (2000) report that thin slicing nonverbal behavior can result in surprisingly accurate inferences of personality, for example one's sexual orientation. But the conclusion drawn from facial traits can turn out to be inaccurate, as is shown in a study by Zebrowitz et al. (1998) where "baby-faced boys defeated the prophecy

that they would be intellectually weak by showing higher academic achievement than their mature-faced peers". Porter et al. (2008) report mixed results on the accuracy of predicting trustworthiness from people's faces.

If people judge others by looks, then one can expect there to be implications on social intercourse, which in a simple form would manifest themselves as people avoiding interaction with persons deemed threatening, for instance. But it has been shown that looks even have an effect on the job-market outcomes, which is an important part of an individual's life and where people expect to be evaluated according to capabilities and achievements. The academic literature indicates the existence of a beauty premium, where employees are treated unequally based on looks and less attractive employees are discriminated by lower earnings (Hamermesh and Biddle, 1994; French, 2002; Hosoda et al., 2003). Looks might also matter in a hiring situation. In a study by Dipboye et al. (1975) participants rank bogus resumes of applicants for a managerial position and prefer males to females as well as attractive applicants to unattractive ones. Height is also shown to have explanatory power towards higher earnings in the work of Judge and Cable (2004), and Gladwell (2005) reports that on average the CEO of Fortune 500 companies is about 7.5 cm taller than the average American man. It seems that the implications of appearance are quite omnipresent, and can have substantial effects even on occupational outcomes.

To date, an extensive amount of the research on appearance and its labor market effects has been conducted in the USA and to a great extent analyzes the effect of beauty on social outcomes. To my knowledge the facial features and existence of competence or beauty premiums in the context of CEOs has not been studied in the Scandinavia. Since business cultures differ across the world, the results obtained with US data might not hold in other cultures. Thus the study at hand adds to the existing literature by following the lines of previous research and testing the attributes of beauty, competence, likability, and trustworthiness on Swedish CEOs.

1.2. Objectives

Discrimination in the labor markets has generated immense amount of research by economists (Hamermesh and Biddle, 1994) but there is fairly little research conducted about the broader impact of facial traits beyond beauty in the field of economics or corporate finance (Graham et al., 2010). It is not insignificant who leads a company and it is given that the board of directors will carefully examine the merits and suitability of CEO candidates. Yet, it is interesting to study whether looks still play a role when selecting the face of the company.

In my thesis I aim to find answers to the following research questions: 1) Do more competent people also look more competent? 2) Is attractiveness an asset for CEOs? I study the facial traits of CEOs from 140 listed Swedish companies. By conducting an Internet based survey, I test four different attributes (beauty, competence, likability, and trustworthiness) and how these are associated with CEOs. I test whether these features are associated more with CEOs or non-CEO control group members and also if large company CEOs are seen different from small company CEOs. Further, I examine if more competent looking or attractive CEOs earn more, i.e. if there exist competence or beauty premiums. I also test if the facial traits of CEOs are related to the performance of the company.

The analysis is conducted in two ways. First, the pair-wise comparison simply tests if either the picture of large company CEO or control group picture is chosen above chance for any of the characteristics. Previous research suggests that CEOs are seen as more competent and attractive and less likable and trustworthy than non-CEO peers. When comparing CEOs from large companies to those from small companies, large company CEOs appear more competent whereas the small company CEO is chosen to be more attractive, likable, and trustworthy. (Graham et al., 2010.) As for the relationship between CEO facial traits and executive compensation or firm performance, the analysis is conducted by ordinary least square regression, which is a common procedure in similar studies. The traditional compensation determinants, such as CEO age and tenure, firm size and riskiness, performance, and growth opportunities, are used as control variables.

Controls for firm performance include firm size and riskiness, growth opportunities as well as firm age and leverage. In addition, both regressions control for the industry differences by 1-digit SIC codes.

1.3. Main findings

To some extent, the results of my study support the existence of a beauty premium in the context of Swedish CEOs. When using salary and salary plus bonus as measures of compensation, the regressions give statistically significant coefficients for CEO attractiveness. One unit increase on the five-point estimation scale of attractiveness increases salary by 14.4 per cent and salary plus bonus by 20.2 per cent. However, when looking at total compensation, the coefficient is no longer significant. Also, a competence premium is found when salary is the dependent variable. When a CEO's competence score rises by one unit his salary increases by 23.2 per cent. The salary plus bonus and total compensation regressions do not yield statistically significant results. When measuring the effects of CEO traits on firm performance, the regression coefficients are rather small and insignificant for all four traits.

The results from the pair-wise comparisons imply that CEOs are seen as more competent and attractive but less likable and less trustworthy than non-CEOs. When comparing large company CEOs to small company CEOs, it appears that large company CEOs look more competent, and small company CEOs are seen as more attractive, likable, and trustworthy. However, these results are not statistically significantly different from the assumption that each trait would be equally commonly associated with either person of the pair and thus the effect of chance cannot be ruled out. Thus the study does not find any features that would distinguish a person as a CEO.

1.4. Limitations of the study

There are some limitations to this study. First, the sample size is relatively small, comprising of only 140 CEOs, which is further decreased in the regression analysis to 127 due to data unavailability. This reduces the possibility to make generalizations to broader groups and the results might have been statistically more significant had the sample been larger. Also, the sample consists of only male CEOs, which rules out the possibility to make generalizations across gender. Secondly, the group making the assessments of the CEOs' facial traits is quite homogenous, comprising mainly of students from Aalto University. Thus the average assessments of CEOs do not tell the universal truth of the whole population's average. However, this might not be a severe problem, since Berggren et al. (2010) report in their study about the appearance of political candidates that the assessments of university students and other respondents are remarkably similar. Hosoda et al. (2003) come to a similar conclusion and find in their meta-analytic review on physical attractiveness's effect on job-related outcomes that the magnitude of attractiveness bias is similar for student and professional study participants. Lastly, when computing the CEO and control person pairs, the most unbiased result would have been achieved if a person who was not aware of the purpose of the study had constructed the pairs. This way the possibility of any subconscious favoring of the CEO, i.e. matching with a less competent looking pair, could have been eliminated. I have, however, made the best effort as in not to favor the CEO picture and matching the pairs solely according to appearance similarities.

1.5. Structure of the study

My thesis will proceed as follows. Section two introduces the relevant academic research on appearance and its relation to social and labor market outcomes. Hypotheses are developed in section three, followed by the survey description in section four. Data and methodology are described in section five and results presented in section six. Finally, section seven concludes the study and presents suggestions for future research.

2. Literature review

In the following section I am going to go through the relevant literature on how appearance affects our judgments of others and how looks play a role in the labor and corporate markets. I start with a general glance at the literature concerning inferring character from the face, and then discuss the main features of interest, attractiveness and competence, and their implications to social and economic outcomes.

2.1. Inferring character from facial traits

In order for appearance to have a meaningful and consistent effect on social interactions, people need to hold similar ideas of how certain features are judged. Langlois et al. (2000) show that "beauty is not in the eye of the beholder", but rather people do agree on what is considered beautiful and what is not. Another important finding of their analyses is that people do judge and treat others according to their appearance. Willis and Todorov (2006) show that people need only a tenth of a second to make a specific trait inference from facial appearance.

According to Hosoda et al. (2003) available physical cues play an important role in categorizing others. By employing our subconscious impressions of others we are guiding our actions towards them. This can be observed, for instance, in studies concerning baby-facedness. A babyish face evokes an impression of warmth, and can be an advantage as such, as is shown by Livingston and Pearce (2009), who document that the success of a black CEO is related to baby-facedness since it reduces the perception of threat that is usually related to blacks. Further, it has been shown that baby-faced plaintiffs are more likely to win cases that involve intentional actions, as this behavior is judged to conflict with their character (Zebrowitz and McDonald, 1991). Also impressions of trustworthiness have been documented to affect actions in social circumstances. In the context of hedge fund management, those managers deemed trustworthy by appearance are able to attract greater flows to their funds than similar managers with less trustworthy appearance (Pareek and Zuckerman, 2011) and in peer-to-peer lending situations less trustworthy

looking borrowers are less likely to obtain a loan than borrowers perceived trustworthy (Duarte, Siegel, and Young, 2010).

However, it could also be that the expectations other people hold of us are self-fulfilling prophecies. Rosenthal and Jacobson (1968) find that a teacher's expectations of a student's greater intellectual development actually result in that particular student showing greater intellectual development, when the teacher pays more attention to the "talented" one.

2.2. Attractiveness and beauty premium

Dion et al. (1972) find evidence for the "What is beautiful is good" thesis, when results of their experiment show that physically more attractive persons are assumed to possess more socially desirable personalities as well as lead happier and more successful lives. But more attractive people are not just *expected* to fare better in life; they actually *do* fare better, at least to some extent. Beauty premiums and plainness penalties have been studied widely. Hamermesh and Biddle (1994) report that plain people earn from seven to nine per cent less than average-looking individuals, who in turn earn approximately five per cent less than good-looking individuals, a result holding for both American and Canadian men and women. French (2002) finds that women with above average attractiveness earn approximately eight per cent more than their average looking peers. Biddle and Hamermesh (1998) study the graduates from one prestigious law school and find that among one cohort of students a significant beauty premium exists among the lawyers after five years of graduation.

It has also been studied how the effect of attractiveness differs across sex. Heilman and Stopeck (1985) investigate how an individual's attractiveness is seen to influence his or her occupational success. Their results show that attractive men's success is more deemed to depend on their skills and abilities, whereas for attractive women the advancement on the corporate ladder is deemed to depend on other factors than capabilities. Hosoda et al. (2003) report that "physical attractiveness is always an asset for both male and female

targets, regardless of the sex-type of the job for which they applied or held". Further they state that the effect size of attractiveness is similar for men and women.

Good looks have been shown to be a competitive advantage also in the field of politics. Berggren, Jordahl, and Poutvaara (2010) study the Finnish parliamentary and municipal elections to examine if good looks work in favor of the candidate. They ask survey participants both in and outside of Finland to rate the images of political candidates, judging their beauty, competence, intelligence, likability and trustworthiness. Among the non-incumbent candidates beauty is found to have significant explanatory power to the candidate's relative success in the election, a result that holds for both men and women candidates. When the beauty of the candidate increases by one standard error, this translates into a 20 per cent or 17 per cent increase in the number of votes the candidate receives in the parliamentary or municipality elections, respectively. The results of Berggren et al. (2010) hold cross-culturally, as both Finnish and non-Finnish respondents' answers yield similar conclusions. Rosar et al. (2008) come to a similar conclusion of the importance of beauty to political candidates. They study the German state elections of North Rhine-Westphalia and find that the candidate has the most advantage of attractiveness if the average candidate attractiveness is low in his or her constituency.

As there are a number of studies with evidence to support that individuals do benefit from attractiveness, an interesting question is whether beauty premiums are only discrimination of the less-attractive or if there exists productivity differences, which would justify the pay premiums? Beauty may be productive in situations where clients have substantial interactions with employees, making discrimination consumer driven. Customers might choose to interact with more attractive workers, giving them a competitive advantage (Hamermesh and Biddle, 1994). Appearance might also affect confidence and communication, which further affects productivity (Engemann and Owyang, 2005). Pfann et al. (2000) link executives' attractiveness to firm performance by studying the Dutch advertising industry. The photographs of the executives are rated on attractiveness from 1 to 5 and then matched to company revenues. Their findings suggest that advertising

agencies with more attractive CEOs have higher revenues, and the benefits from higher sales exceed the possible cost of higher wages to more attractive executives. However, when Graham et al. (2010) match CEO attractiveness ratings to firm performance they find no evidence to support that more attractive CEOs are more productive and would add to firm performance. Mobius and Rosenblat (2006) find that attractiveness increases self-confidence which in turn increases wages and employer's (false) perception of ability. Table I below summarizes the key papers on beauty and its social outcomes. One can conclude that attractiveness can have profound implications on labor market outcomes but it remains uncertain what the extent of productivity differences is, and whether the effect is present regardless of culture, industry, organization, or occupation. The paper at hand aims to study whether attractiveness is an asset for Swedish CEOs, and whether it affects productivity.

Table I Summary of key papers on beauty and social / labor market outcomes

This table summarizes the main papers referenced in this study of the relationship between beauty and social / labor market outcomes.

Study	Sample	Method	Key findings
Berggren, Jordahl, and Poutvaara (2010)	1 929 Finnish political candidates	10 011 respondents rate campaign photos for: beauty, competence, trustworthiness, likability, intelligence. 5-point scale	Beauty strongly and significantly related to electoral success. Also some evidence to support the positive effect of competence on electoral success. Holds for both men and women candidates.
Rosar, Klein, and Beckers (2008)	512 German political candidates	903 respondents rate campaign photos for: attractiveness. 7-point scale	The candidate is found to gain most from attractiveness when the average score or range of attractiveness of candidates in the same constituency is low. Also, the higher the average attractiveness of candidates, the higher the turnout in a constituency.
Hosoda, Stone-Romero, and Coats (2003)	27 papers on physical attractiveness and job-related outcomes	A meta-analytic review	Physical attractiveness is always an assets for individuals; students and professionals both susceptible to attractiveness bias in decision making; the attractiveness bias seems to be decreasing over time; availability of job-relevant information does not decrease attractiveness bias.
French (2002)	1 692 employees from a non-profit hospital and a school district	Self-assessment of attractiveness on 1) above average, 2) average, 3) below average appearance	Female employees who judged themselves with above average appearance earn on average 8% more than females with average appearance.
Pfann, Biddle, Hamermesh, and Bosman (2000)	1 282 executives of Dutch advertising agencies.	Two men and one woman >40 yrs. old and two men and one woman <40 yrs. old rate facial photos for: attractiveness. 5-point scale	Executives' beauty raises firms' sales.
Biddle and Hamermesh (1998)	Over 4 400 matriculants from law school "X"	A male <35, a female <35, a male >35 and a female >35 yrs. old rate facial photos for: attractiveness. 5-point scale	More attractive attorneys earn more than others after 5 yrs. of practice, and this effect grows with experience. Attorneys in private sector are better-looking than the ones in public sector.
Hamermesh and Biddle (1994)	3 662 American and Canadian workers	Interviewer rates for attractiveness. 5-point scale	A beauty premium and plainness penalty among both men and women.

2.3. CEO characteristics, compensation, and firm performance

In an exploratory study by Wood and Vilkinas (2005) CEOs assess the characteristics they believe make them good leaders, and achievement orientation as well as humanistic approach are identified as playing an important role in being a good leader. Since there can be identified some features that make one a good leader, recent academic research has studied if these abilities and competencies are communicated also through non-verbal channels, such as facial appearance. In a study by Graham et al. (2010) the authors have participants choose from a pair of pictures, including the faces of a CEO and a non-CEO, the one that looks more competent. Further they differentiate with large firm CEOs and small firm CEOs. The results show that CEOs from larger companies are actually perceived more competent than their non-CEO peers or small company CEOs. Sczesny et al. (2006) study how gender-stereotypical physical appearance influences the perceived leadership ability and find that stimulus persons with a masculine appearance as opposed to feminine appearance are judged to possess higher leadership abilities. The results apply to both male and female stimulus persons. Thus it could be that there is something in the human face that the public reads as leadership ability.

When looking at the implications of these perceived competencies, these judgments are even shown to benefit the CEOs by translating into higher compensation. In a paper by Rule and Ambady (2009), where they ask a group of naïve college students to rate the faces of female CEOs from Fortune 1,000 companies, the female CEO's perceived dominance has predictive power towards her compensation. Graham et al. (2010) also have participants rate the faces of CEOs on a 5-point scale, and the competence ratings of CEOs are matched with executive compensation. They find evidence that supports the existence of a competence premium.

If a CEO is awarded for more competent looks by higher compensation, it is just to ask whether the competence is only a perceived ability by the outsiders or if it actually depicts true character and yields results to the organization. Rule and Ambady (2008 & 2009) conduct two studies to separately analyze both male and female CEOs' facial traits and

their predictive power towards company performance. In both studies a group of naïve college students rate the faces of Fortune 1,000 companies' executives. The results show that the perception of leadership ability and competence predicts the amount of profits the company makes. Graham et al. (2010), on the other hand, report the opposite results. In their study, the more competent looking CEO does not seem to yield any additional payoffs to the firm since there is no link found between a more competent looking CEO and better firm performance. The results of similar research on charismatic CEO's influence on firm performance are somewhat vague and mixed. In the work of Agle et al. (2006) the authors find association between organizational performance and subsequent perceptions of CEO charisma but no evidence supports the association the other way around, i.e. CEO charisma and subsequent organizational performance. Waldman et al.'s (2001) results link CEO charisma to firm performance only under uncertain environmental conditions. Tosi et al. (2004) do not find any evidence on the relationship between CEO charisma and any measure of firm performance. Thus it seems that more research is needed in the field of CEO characteristics and firm performance to form a better understanding on this relationship. Table II summarizes the key papers on perceived CEO competence in relation to compensation and firm performance. In my thesis I aim to add to the existing literature by investigating the existence of competence premiums among Swedish CEOs and by studying whether more competent looking CEOs are performing better.

Table II Summary of key papers on CEO appearance and firm performance/executive compensation

This table summarizes the main referenced papers of the relationship between appearance and perceived competence as well as company performance/executive compensation

Study	Sample	Method	Key findings
Graham, Harvey, and Puri (2010)	87 CEO-non-CEO pairs, 61 large-small company CEO pairs, 138 individual CEOs	1 527 university students rate facial photos for: competence, attractiveness, likeability, trustworthiness; facial maturity. 5-point scale	CEOs are perceived more competent and attractive but less likable and trustworthy than non-CEOs. Large company CEOs perceived more competent but less likable, attractive and trustworthy than small company CEOs. Also a competence premium was found. Babyfacedness negatively correlated with competence and positively with likability.
Rule and Ambady (2009)	20 female CEOs of U.S. Fortune 1,000:2006	170 university students rate facial photos for: competence, dominance, likeability, facial maturity, trustworthiness; global assessment of leadership ability ("How successful would she be in leading a company?"). 7-point scale	Perceptions of competence and leadership ability significantly positively correlated with company profits. Perceptions of dominance significantly related to CEO cash and total compensation.
Rule and Ambady (2008)	25 highest and 25 lowest ranked companies of U.S. Fortune 500:2006	100 university students rate facial photos for: competence, dominance, likeability, facial maturity, trustworthiness; global assessment of leadership ability ("How successful would he be in leading a company?"). 7-point scale	Power (competence, dominance, facial maturity) and leadership significantly related to company profits. CEOs from more versus less successful companies could be distinguished via naive judgements based on facial appearance.
Sczesny, Spreeman, and Stahlberg (2006)	A masculine and a feminine male and female stimulus person	72 university students assess each photo on several aspects, incl. leadership characteristics (e.g. "Do you consider this person dominant?")	More masculine looking persons are perceived to possess higher leadership abilities.

3. Hypotheses

In this section I will develop my hypotheses, which I derive from the literature presented in section two. The purpose of my thesis is to study how attractiveness, competence, likability and trustworthiness are associated with Swedish CEOs and whether these traits are linked to executive compensation or firm performance.

CEO is ultimately the person responsible for the management of an organization, and it is given that they are individuals with high abilities and competencies. One could also argue that a larger organization brings with it a more complex ensemble, thus requiring even more from the CEO. One of the research questions of my thesis is whether more competent people also look more competent? In their work Graham et al. (2010) find that CEOs from large companies are perceived to be more competent than non-CEOs or CEOs from small companies. Thus I hypothesize the following.

> *Hypothesis 1*: CEOs look more competent than non-CEOs

> *Hypothesis 2*: Large company CEOs look more competent than small company CEOs

The importance of attractiveness on job-related success has been documented widely (see e.g. Biddle and Hamermesh, 1998; French, 2002). A person who has become a CEO can be considered having succeeded in his career, and could be expected to have gained from attractiveness. Thus I hypothesize that good looks are also related to the success of CEOs, and that they are perceived more attractive than non-CEOs.

> *Hypothesis 3*: CEOs are perceived to be more attractive than non-CEOs

Apart from influencing how other people perceive us, appearance communicates something that translates even into our wages. The academic literature has documented the existence of a beauty premium (Hamermesh and Biddle, 1994; French, 2002; Hosoda et al., 2003), and Tosi et al. (2004) link CEO charisma with higher total compensation packages. Most close to the study at hand is the paper of Graham et al. (2010) whose

results show a relationship between CEO competence rating and higher executive compensation. Deriving from these I expect the CEOs ranked more competent or attractive to have higher compensation.

> *Hypothesis 4*: CEOs with higher competence ratings have higher compensation

> *Hypothesis 5*: CEOs with higher attractiveness ratings have higher compensation

The evidence concerning the link between CEO's perceived character and firm performance is more controversial. Graham et al. (2010) find no evidence that CEO's perceived competence would result in higher firm performance and Tosi et al. (2004) do not find evidence that CEO charisma would be positively related to firm performance. A study by Pfann et al. (2000), however, reports that firms with more attractive executives generate higher revenues, and Rule and Ambady's (2008 & 2009) papers give similar results, showing that judgments of competence predict company profits. As long as the competence rating tells only about the perceived competence and not about the true competence, the looks of the CEO should be irrelevant to the performance of the company. Thus I hypothesize the following.

> *Hypothesis 6*: The perceived CEO competence does not affect firm performance

> *Hypothesis 7*: The perceived CEO attractiveness does not affect firm performance

4. Survey

To test my hypotheses I conduct an experiment where I do pair-wise comparisons of photographs of CEOs and control persons on the attributes of attractiveness, competence, likability, and trustworthiness. I further collect personal ratings for each CEO on these four attributes. This is a common approach utilized in similar studies, and college students are used widely as a target group to answer the survey (see e.g. Rule and Ambady, 2008 & 2009; Graham et al., 2010). I will next go through the process of conducting the survey, from collecting the pictures of CEOs and control group to matching the pairs and executing the survey.

4.1. CEO sample

Since it is critical that the survey participants do not recognize the persons they are rating, I cannot use Finnish companies as my sample group as their CEOs are expected to be fairly commonly known to the students of Aalto University, who are the target participants of my survey. It is good, however, that the appearance or "race" does not differ greatly from that of the respondent so that the respondent can easily make judgments according to competence, attractiveness, trustworthiness, and likability. For that reason I choose Swedish CEOs, who share the Scandinavian appearance, to be my sample group.

I start by retrieving a list of all listed Swedish companies from Thomson ONE Banker and obtain 449 companies with financial observations. I sort the companies from smallest to largest according to sales. I choose companies from as different ends of the size spectrum as possible in order to emphasize the effect of size difference, and in the end a company is defined small if its yearly sales fall below SEK 630 million. The sales of large companies range between SEK 1.5 billion and SEK 265 billion. I use data from 2010 to make sure I have the necessary financial statement information available for all firms. In case the fiscal year of any company differs from the calendar year, then the one overlapping most with year 2010 is chosen. I look for the picture of the CEO from the company's website or annual report from 2010. In case I do not find a usable picture I use the Google Image

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search engine. I eliminate those cases where the CEO was replaced during the observation year 2010. Also, there are only a few companies with a female CEO and since they are not enough to make generalizations I decide to concentrate only on male CEOs to preserve homogeneity in the sample.

4.2. Control group sample

In order to focus on the facial trait differences, the control group pictures need to be as similar as possible to the pictures of the CEOs. That is, both pictures are business-like, having a conventional pose, the persons have similar hair styles, both use glasses, both are bearded, belong to the same ethnic group and so on. I find that Swedish universities, law firms and consulting firms publish photos of their employees on their websites that serve the purpose of a control picture. Even though persons from these groups undoubtedly are successful and competent, it is worthwhile to study whether the qualities and characters they possess differ from those a CEO possesses. Here I also employ the Google Image search engine.

4.3. Matching pairs and survey composition

I match the pairs according to age, facial expressions (smile/neutral), facial hair (beard/no beard) etc. Further, I use Adobe Photoshop to cut out the background from the pictures and crop them to facial shots, in order to minimize any bias or noise and assure that the viewer is able to concentrate on facial trait differences. Further, I adjust the photo sizes of each pair (keeping it so that the picture qualities are similar) to make them proportionally as close to each other as possible, that neither of their heads would appear bigger, which could create a bias.

I am able to match 83 CEO–non-CEO pairs and 74 large company CEO–small company CEO pairs. I also collect personal ratings for 87 large company CEOs and 53 small company CEOs. I divide the questions into five different surveys so that the amount of questions is limited to approximately 60 and the survey is not too exhausting. Each survey

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has approximately 32 pair-wise comparisons, both CEO–non-CEO pairs and large company CEO–small company CEO pairs, and 28 personal rating questions. All questions appear on their own page. In the pair-wise comparisons, the respondent is asked to choose the picture of the person who he/she feels is more a) attractive, b) competent, c) likable, and d) trustworthy. Figure I illustrates a pair-wise comparison question.

Figure I Example of a pair-wise comparison question

Facial traits and character
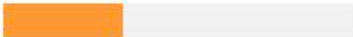
Which person is more:

	A	B
Attractive	○	○
Competent	○	○
Likable	○	○
Trustworthy	○	○

I recognize either of these persons
☐ yes

<-- Previous   Next -->

I randomly assign the order in which the (large company) CEO appears, i.e. is he A or B in the pair comparison. Since I have five different surveys, I am able use the same control picture more than once, but keeping it so that each control photo appears only in one pair in each survey. In the personal rating questions, the respondent is asked to rate the person on a scale from 1 to 5, 5 being the highest score, according to attractiveness, competence, likability, and trustworthiness. Figure II shows an example of personal rating question.

Figure II Example of a personal rating question

Facial traits and character

How would you rate this person?

	1	2	3	4	5	
Not attractive	○	○	○	○	○	Very attractive
Not competent	○	○	○	○	○	Very competent
Not likable	○	○	○	○	○	Very likable
Not trustworthy	○	○	○	○	○	Very trustworthy

I recognize this person
☐ yes

<-- Previous   Next -->

4.4. Survey execution

I conduct an Internet based survey using the Webropol-tool. I contact the students of Aalto University by email asking them to participate in the survey. Each email includes a link to one of the five surveys. Later on I post the link to the survey that has received least answers on my Facebook page. Altogether the surveys generate 887 usable answers. If someone had checked the box stating they recognize either of the persons, that observation is removed. The start page of the survey asked a few background questions from the respondents, and it can be seen from Appendix 1. Table III summarizes the respondent demographics according to the background questions. 54 % of the respondents are women and about half belong to the age group of 21-25 years old.

Table III Summary statistics of surveys

This table summarizes the demographics of survey respondents. The questions were divided into five different Webropol surveys. Survey participants are mainly students of Aalto University, who were contacted by email. Answers were collected in March-April 2012.

	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5	Total
Female	92	99	88	115	83	477
Male	73	84	79	93	81	410
Age						
-20	20	17	17	27	23	104
21-25	80	97	91	109	76	453
26-30	45	41	42	50	39	217
31-35	9	11	7	14	10	51
36-	11	17	10	8	16	62
Finnish	161	182	165	207	160	875
Other	4	1	2	1	4	12
N	165	183	167	208	164	887

5. Data and methodology

I will start this section by describing the methodology and then move on to the description of the variables used in the regression analyses as well as their descriptive statistics. Finally I go through some basic assumptions of linear regression models and how they hold in the current study.

5.1. Regression analyses

To study whether CEO's facial traits affect CEO compensation or firm performance I conduct two different regression analyses. The linear regression analysis is a commonly used method to analyze the predictive power one variable has on the other, and its results are fairly easily interpreted. I use the ordinary least square (OLS) regression method to analyze the relationship between CEO's facial traits and both compensation and firm performance. I conduct the following two regression models:

$$Ln(Compensation)$$
$$= \beta_0 + \beta_1(CEO\ facial\ trait\ variables) + \beta_2(CEO\ variables) + \beta_3(firm\ variables)$$
$$+ \beta_4(industry\ dummy) + \varepsilon$$

Where

β_0 = intercept coefficient

β_1(CEO facial trait variables) = the average rating for each CEO on attractiveness, competence, likability, and trustworthiness

β_2(CEO variables) = control variables for CEO age and tenure

β_3(firm variables) = control variables for size, riskiness, growth opportunities, and performance

β_4(industry dummy) = one-digit SIC code industry dummy

ε = disturbance term

$Performance$

$$= \beta_0 + \beta_1 (CEO\ facial\ trait\ variables) + \beta_2 (firm\ variables)$$
$$+ \beta_3 (industry\ dummy) + \varepsilon$$

Where

β_0 = intercept coefficient

β_1(CEO facial trait variables) = the average rating for each CEO on attractiveness, competence, likability, and trustworthiness

β_2(firm variables) = control variables for size, riskiness, growth opportunities, leverage, and firm age

β_3(industry dummy) = one-digit SIC code industry dummy

ε = disturbance term

5.2. Dependent variables

Compensation research usually analyzes the effect a certain variable has on compensation in the light of three different measures of compensation that are salary, total cash compensation (sum of salary and annual bonus) and total compensation (see e.g. Core et al., 1999; Carter et al., 2010). Thomson ONE Banker reports executive level remuneration data, which I used to obtain the figures for total fiscal compensation. This includes base salary, possible bonuses and other compensations as well as pension costs and restricted stock awards. Since Thomson ONE Banker does not report the breakdown to different components of pay for all executives, I refer to the company's annual report from 2010 for the salary and cash compensation figures. I take the natural logarithm of the compensation measures to be used in the regression analysis in order to reduce the skewness of the size distribution.

As for firm performance, Tobin's Q and return on assets (ROA) are widely used in academic research as a proxy for performance (see e.g. Mehran, 1995; Anderson and Reeb, 2003; Barontini and Caprio, 2006). Graham et al. (2010) use ROA as a performance measure in their study, so it is used as a proxy for performance in my thesis as well. I

employ Thomson ONE Banker's Worldscope Fundamentals figures, which are calculated as (net income + interest expense) / total assets. To be exact, I use the industry-adjusted ROA, which I calculate for each firm by subtracting the mean ROA for the industry from the firm's ROA. Industry mean ROA is the weighted average of all firms with the same two-digit SIC code. For those cases where there are only one or two firms representing a specific industry on a two-digit SIC code level, I use one-digit SIC codes to calculate the industry average. Table IV presents the dependent variables.

Table IV Description of dependent variables and their source

Compensation measure		Source
Salary	Fixed and noncontingent pay component	Annual report for 2010
Total cash compensation	Salary plus bonus	Annual report for 2010
Total compensation	Salary, bonus, other compensation, LTIP, restricted stock awards	Thomson ONE Banker
Performance measure		
ROA_{Adj}	Company ROA minus industry average ROA, measured at two-digit or one-digit SIC code level	Thomson ONE Banker

5.3. Control variables

CEO compensation is shown to depend on several executive-level and firm-level characteristics. *CEO's age* and *CEO's tenure* in the current firm are widely used as control variables (see e.g. Fich, Starks, and Yore, 2010; Custódio, Ferreira, and Matos, 2010). Custódio et al. (2010) argue that more recently hired CEOs will have their compensations adjusted to recent market conditions, and thus a negative relationship should exist between tenure and compensation. As for the firm characteristics, executive pay should be tied to *performance* in order to mitigate the agency problem. A positive relationship between performance and executive pay has been documented for example by Murphy (1985) and different proxies for performance, such as return on assets and stock return, both contemporaneous and lagged, are widely used (see e.g. Custódio, Ferreira, and Matos, 2010; Carter, Franco, and Tuna, 2010). One of the well documented relationships is the positive relationship between *firm size* and executive compensation (see e.g. Baker, Jensen,

and Murphy, 1988), and proxies such as total assets and sales are used to estimate firm size. The ideology behind the size and compensation relationship is that the executive should be rewarded for being in charge of a larger and more complex organization. Larger companies may also attract better qualified and better paid CEOs (Baker, Jensen, and Murphy, 1988). Smith and Watts (1992) document a positive relation between *growth opportunities* and compensation policies. Market-to-book ratio, research and development-to-sales ratio as well as the ratio of capital expenditures to firm value are widely used as proxies for growth/investment opportunities (e.g. Harvey and Shrieves, 2001; Core, Holthausen, and Larcker, 1999; Smith and Watts, 1992). Lastly, I include *firm risk* as a control variable, as it is argued that managers should be compensated for bearing the non-diversifiable compensation risk which increases with firm risk (see e.g. Smith and Watts, 1992). Carter, Franco, and Tuna (2010) use the standard deviation of a firm's stock returns over the prior two years, and even though longer periods (5 years) are also used to account for risk (see e.g. Anderson and Reeb, 2003), I use the two-year period to avoid my sample shrinking too much. There are companies that do not have this data available, and even the use of a two-year time period eliminates 13 companies from my sample. I also employ one-digit SIC codes as industry dummies.

In the literature on firm performance, vastly the same firm-level control variables occur as on executive compensation. Barontini and Caprio (2006) control for *size*, *growth*, and *leverage* whereas Anderson and Reeb (2003) add a few variables, controlling for firm *size*, *growth opportunities*, *risk*, *leverage*, and *firm age*. Both studies control for the industry effects by a dummy. Table V summarizes the control variables used in this study. For all variables a logarithmic transformation is applied when it is meaningful.

Table V Description of control variables and their source

Compensation specific		Source
CEO age	CEO's age in years	Thomson ONE Banker, Google search engine
CEO tenure	CEO's tenure in years in current company	Thomson ONE Banker, company's webpage, Google search engine
Performance	ROA, ROA_{t-1}	Thomson ONE Banker
	Stock return, stock return$_{t-1}$, calculated as the buy and hold stock return	Datastream
Performance specific		
Leverage	Long-term debt / total assets	Thomson ONE Banker
Firm age	Number of years since the firm's incorporation	Orbis database
Common		
Firm size	Total assets	Thomson ONE Banker
Risk	Standard deviation of monthly stock returns for prior 24 months	Datastream
Growth opportunities	Market value of equity / book value of equity	Thomson ONE Banker

5.4. Descriptive statistics

The facial traits of the CEOs were rated by survey participants on a scale from 1 to 5, which gives an average score of 3 for the estimation scale. From table VII it can be observed that the respondents have been most strict when assigning scores on attractiveness. Attractiveness trait has the lowest independent score of all four traits at 1.48 and also the lowest mean score at 2.54, which is lower than the estimation scale average. This can be expected since the respondents are from a different demographic group than the CEOs, and individuals in their twenties might not see males in their plus forties so attractive. On average, the CEOs received a competence rate of 3.32, which is the highest mean score of all four traits and competence trait received also the highest independent rating of 4.08. The ratings of likability and trustworthiness are distributed close to the estimation scale average. The inter-rater reliability is tested by calculating Cronbach's alphas for all traits, which are reported below in table VI. Commonly used rules of thumb for interpreting the values of alphas are that when $0.8 \leq \alpha \leq 0.9$ the internal consistency is considered good and when $\alpha \geq 0.9$ the consistency is considered excellent (see e.g. George and Mallery, 2000). Thus the respondents in my study seem to agree to a great extent about the traits of each CEO, most about the attractiveness, which has an alpha of 0.9.

Table VI Inter-rater reliability, Cronbach's alphas

	Cronbach's alpha
Attractiveness	0.9049
Competence	0.8109
Likability	0.8201
Trustworthiness	0.8034

As for the descriptive statistics of the control variables, the CEOs in the sample are on average 52 years old and have been on the executive position for 6 years, on average. The average salary and total compensation of sample CEOs in 2010 were SEK 4 million and SEK 7.6 million, respectively. There are quite a few companies in the sample that have their roots date back to the early stages of industrialization (one company even as early as 1413), thus raising the average age of the companies to 58 years. The sizes of company assets range between SEK 11.8 million and SEK 306 billion.

Table VII Descriptive statistics of regression variables

This table presents the data used in this study across 127 Swedish companies. The trait ratings for CEO's attractiveness-trustworthiness were collected through an Internet-based survey (altogether 887 respondents), and they take a value between 1 and 5. Other executive and firm level data were gathered from different data-bases, and observation year t is 2010. Total compensation includes salary, bonus, long-term incentive plan, pension expenses as well as other remuneration. ROA_{Adj} is calculated by subtracting the industry mean ROA from the firm's ROA. Stock return is the buy and hold return over the year. Volatility is the standard deviation of monthly stock returns for the prior 24 months.

	Mean	St. Dev.	Min	Max
Attractive	2.5352	0.5261	1.4802	3.7835
Competent	3.3184	0.3232	2.5625	4.0847
Likable	3.1194	0.3667	2.2475	3.8509
Trustworthy	3.0593	0.3523	2.1910	3.7640
Total compensation ('000 SEK)	7 613	7 726	470	42 200
Salary + bonus ('000 SEK)	5 619	5 388	605	25 300
Salary ('000 SEK)	4 037	3 088	605	14 000
CEO age (years)	52.6299	7.1490	34	70
CEO tenure (years)	6.4331	5.6084	1	34
ROA_{Adj}	-0.0481	0.1737	-1.1480	0.2326
ROA	0.0234	0.1762	-1.1357	0.3398
ROA_{t-1}	0.0028	0.1812	-0.7018	0.6324
Stock return	0.1884	0.4274	-0.9412	1.3660
Stock return$_{t-1}$	0.7992	0.8714	-0.7018	5.6835
Firm age (years)	58.1417	81.0949	4	597
LT debt / total assets	0.1559	0.1611	0	0.8039
Market / book	2.2432	9.2541	-86.4070	51.3523
Market / book$_{t-1}$	2.8010	4.2268	0.4295	40.3682
Volatility	0.1746	0.1825	0.0566	2.0692
Total assets ('000 000 SEK)	20 300	46 300	11.800	306 000
Nr of observations	127			

In order to analyze if female and male respondents perceive the CEOs similarly, I employ the independent samples t-test and find that only in the assessment of attractiveness the mean scores are statistically different for male and female respondents (p-value <0.001). In other words, on average, male respondents assign a statistically higher score for attractiveness of the CEOs. I further test the statistical differences in mean scores for large and small company CEOs. The only statistically significant difference is found among the

competence ratings, where large company CEOs have a statistically significantly higher mean score (p=0.0135). Table VIII below presents the descriptive statistics for trait ratings according to respondent gender and company size.

Table VIII Descriptive statistics of CEO traits by sub-groups

This table presents the CEO facial trait ratings data grouped according to different company or respondent criteria. Panels A and B make a difference by the respondent's sex, panel A reporting the data obtained from female respondents and panel B the ratings from male respondents. In panels C and D the CEO facial trait ratings are differentiated by company size, panel C depicting the ratings for large company CEOs and panel D for small company CEOs. The ratings were collected from 887 survey participants and take a value between 1 and 5.

Panel A	Female respondents, all CEOs			
	Mean	St. Dev.	Min	Max
Attractive	2.4317	0.5570	1.4433	3.8349
Competent	3.3149	0.3323	2.5747	4.1122
Likable	3.1355	0.4053	2.0909	4.0241
Trustworthy	3.0608	0.3844	2.1000	3.8276
Nr of observations	127			

Panel B	Male respondents, all CEOs			
	Mean	St. Dev.	Min	Max
Attractive	2.6557	0.5042	1.5250	3.9014
Competent	3.3160	0.3264	2.4810	4.0704
Likable	3.0951	0.3370	2.3667	3.7179
Trustworthy	3.0523	0.3327	2.2747	3.7722
Nr of observations	127			

Panel C	Large company CEOs, all respondents			
	Mean	St. Dev.	Min	Max
Attractive	2.5290	0.4873	1.6477	3.7835
Competent	3.3668	0.3067	2.7657	4.0847
Likable	3.1327	0.3281	2.3116	3.7550
Trustworthy	3.0850	0.3401	2.3030	3.7640
Nr of observations	80			

Panel D	Small company CEOs, all respondents			
	Mean	St. Dev.	Min	Max
Attractive	2.5457	0.5918	1.4802	3.7600
Competent	3.2360	0.3369	2.5625	3.9444
Likable	3.0968	0.4274	2.2475	3.8509
Trustworthy	3.0156	0.3718	2.1910	3.6625
Nr of observations	47			

5.5. Assumptions of OLS

An important assumption behind the efficiency of OLS estimators is homoscedasticity, meaning that the variance of the disturbance terms is constant across all observations. Should heteroscedasticity be present in the model, one cannot draw reliable conclusions from the hypothesis testing procedures (Gujarati and Porter, 2010). A starting point for analyzing the heteroscedasticity of the model is to plot the residuals versus the fitted values, and look for a pattern in the plots. The scatterplots for performance regressions (not reported here) show a nonrandom pattern, thus implying that heteroscedasticity might be present. For further analyses, White's general test for heteroscedasticity is a commonly employed way for detecting heteroscedasticity in a model, and the test results I obtain for all compensation regressions indicate that the models are not subject to heteroscedasticity (p-values > 0.4). However, the low p-values of the tests on performance regressions indicate the possibility of heteroscedasticity. For this reason I will employ robust standard errors in the regressions in order to mitigate the issue of heteroscedasticity.

Another assumption behind linear regression analysis is that there is no perfect multicollinearity, meaning no exact linear relationship among explanatory variables. If multicollinearity was present, one could not obtain unique estimates of all parameters, and hence would fail to draw any statistical inferences about the results (Gujarati and Porter, 2010). Practically, the multicollinearity is rarely perfect, and thus the degree of multicollinearity is usually tested and were it on a high enough level, one would expect multicollinearity to be an issue. The variance inflation factor (VIF) is a widely used measure for testing the degree of multicollinearity. A common rule of thumb is that VIF values greater than 5 indicate severe multicollinearity among variables (Studenmund, 2006). From table IX it can be seen that the VIFs for the explanatory variables used in my analyses stay well below 5. Another sign of multicollinearity can also be the high pairwise correlation among explanatory variables. Gujarati and Porter (2010) state that with a pairwise correlation in excess of 0.8 the possibility of severe multicollinearity exists. Table XI reports the correlation coefficients for all regression variables used in this study, and the

Table IX Variance inflation factors (VIF) for explanatory variables

This table presents the variance inflation factors for the independent variables used in regressions

	Ln(Salary)				Ln(Salary+Bonus)				Ln(Total compensation)				ROA$_{Adj}$			
Attractive	1.53				1.53				1.53				1.09			
Competent		1.21				1.21				1.21				1.17		
Likable			1.25				1.25				1.25				1.12	
Trustworthy				1.15				1.15				1.15				1.10
Ln(CEO age)	1.86	1.39	1.40	1.40	1.86	1.39	1.40	1.40	1.86	1.39	1.40	1.40				
Ln(CEO tenure)	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32				
ROA	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76				
ROA$_{t-1}$	2.59	2.59	2.69	2.65	2.59	2.59	2.69	2.65	2.59	2.59	2.69	2.65				
Stock return	1.31	1.31	1.33	1.32	1.31	1.31	1.33	1.32	1.31	1.31	1.33	1.32				
Stock return$_{t-1}$	1.85	1.89	1.86	1.86	1.85	1.89	1.86	1.86	1.85	1.89	1.86	1.86				
Market / book $_{t-1}$	1.10	1.10	1.12	1.12	1.10	1.10	1.12	1.12	1.10	1.10	1.12	1.12				
Volatility	2.52	2.49	2.49	2.49	2.52	2.49	2.49	2.49	2.52	2.49	2.49	2.49	1.30	1.31	1.32	1.31
Ln(Total assets)	1.86	1.88	1.85	1.85	1.86	1.88	1.85	1.85	1.86	1.88	1.85	1.85	1.70	1.73	1.71	1.71
Ln(Firm age)													1.41	1.43	1.41	1.41
LT debt / total assets													1.56	1.53	1.53	1.55
Market / book													1.25	1.24	1.26	1.24

6. Results

The results of my study are presented in the following section. I start by going through the results of the pair-wise comparisons between (large company) CEOs and (small company CEO) control group and then I move on to the results concerning the relationship between CEO appearance and both compensation and firm performance.

6.1. Pair-wise comparisons

I matched CEOs from large companies into pairs with non-CEOs and CEOs from small companies. I asked survey participants to choose between the two pictures the one they felt was more attractive, competent, likable, and trustworthy. The purpose was to find out if (large company) CEOs are seen different from the control group. In a similar study by Graham et al. (2010) the authors found that survey respondents picked the CEO to be more competent and attractive and less likable and less trustworthy than their non-CEO pair. Between large company CEOs and small company CEOs, the large company CEO was perceived more competent whereas the small company CEO was chosen more often for the other attributes.

Table X reports the results from the pair-wise comparisons. From panel A, which depicts the comparisons between CEOs and non-CEOs, it can be seen that the CEO was chosen 52.6 percentage of time to be more attractive and 51.9 percentage of time as more competent of the pair. The characteristics of likability and trustworthiness were more often associated with the non-CEO control person, and the respondents picked the CEO 48.3 percentage of time for being more likable and 49.2 percentage of time for more trustworthy. When comparing large and small company CEOs, the large company CEO was seen as more competent 53.1 percentage of time. The small company CEO was chosen more often to be the more attractive, likable and trustworthy one of the two. My results imply a similar pattern as is found by Graham et al. (2010), but unlike their results mine fail to report any statistically significant deviation from the null hypothesis that the probability of picking the (large company) CEO would be 0.5. There does not seem to be

any facial characteristics that would be common to the CEOs and the assignment of each

trait between the CEO and control person is subject to chance.

Table X Results of pair-wise comparisons

This table presents the results of the pair-wise comparisons. Facial pictures of a large company CEO and a non-CEO control person were paired and survey participants were asked to choose between the pictures the one they felt was more a) attractive, b) competent, c) likable, and d) trustworthy. Panel A illustrates the percentage of times the CEO was chosen for each trait. The same comparison was conducted with large company CEO and small company CEO, and Panel B reports the percentage of times the large company CEO was chosen for each trait. T-values, which test the hypothesis that the probability of picking the (large company) CEO is 50 %, are reported in parentheses.

Panel A: CEO vs. non-CEO	Attractive	Competent	Likable	Trustworthy
Straight average %	52.5576	51.8804	48.2917	49.1748
	(0.8995)	(1.0656)	(-0.9899)	(-0.4791)
Nr of pairs	83	83	83	83
Nr of respondents	887	887	887	887

Panel B: Large vs. small	Attractive	Competent	Likable	Trustworthy
Straight average %	46.4631	53.1069	48.4960	49.9344
	(-1.2053)	(1.4787)	(-0.6455)	(-0.0275)
Nr of pairs	74	74	74	74
Nr of respondents	887	887	887	887

6.2. Correlation coefficients

I will start the analysis on the relationship between executive compensation, firm performance and CEO characteristics by looking at the correlations between the variables. Table XI reports the Pearson's correlation coefficients for the variables used in this study. From the table it can be observed a moderate yet positive and significant relationship between competence and all three measures of compensation. Salary, total cash compensation, and total compensation have a correlation coefficient with competence of 0.27, 0.24, and 0.25, respectively. The correlation coefficients between the rest of the traits and compensation measures are low and insignificant. As for the relationships between firm performance and CEO facial traits, likability and trustworthiness show significantly positive correlation with the industry adjusted ROA. The coefficients are, however, quite

low at 0.22 for attractiveness and 0.18 for trustworthiness. Among the control variables a few well documented relationships can be observed: the positive and strong correlation between firm size and CEO compensation and the positive relationship between performance measures and compensation. The correlations between volatility and compensation as well as tenure and compensation are significant, but the opposite of what is expected. With regard to the significant correlations between firm performance and control variables, size correlates positively with performance while measures of risk as well as growth opportunities correlate negatively with performance, as expected. Firm age shows a positive association to firm performance, which is the opposite of that suggested by previous research.

Table XI Correlation coefficients

This table shows the Pearson's correlation coefficients among each regression's variables. *, **, *** denote the statistical significance at $p<0.05$, $p<0.025$, and $p<0.001$ significance level, respectively.

	Ln(Salary)	Ln(Salary+Bonus)	Ln(Total compensation)	ROA$_{Adj}$	Attractive	Competent	Likable	Trustworthy	Ln(CEO age)	Ln(CEO tenure)	ROA	ROA$_{t-1}$	Stock return	Stock return$_{t-1}$	Market/book$_{t-1}$	Volatility	Ln(Total assets)	Ln(Firm age)	LT debt/total assets
Ln(Salary)																			
Ln(Salary+Bonus)	0.97***																		
Ln(Total compensation)	0.96***	0.98***																	
ROA$_{Adj}$																			
Attractive	0.09	0.11	0.08	0.15															
Competent	0.27**	0.24**	0.25**	0.17	0.41***														
Likable	0.09	0.09	0.11	0.22**	0.44***	0.18*													
Trustworthy	0.14	0.12	0.15	0.18*	0.15	0.48***	0.75***												
Ln(CEO age)	0.10	0.10	0.13		-0.55***	-0.05	-0.17	-0.04											
Ln(CEO tenure)	0.14	0.20**	0.22**		-0.10	-0.06	0.05	0.01	0.28**										
ROA	0.46***	0.48***	0.49***		0.15	0.15	0.23**	0.16	-0.12	0.20**									
ROA$_{t-1}$	0.34***	0.34***	0.38***		0.24**	0.15	0.35***	0.26**	-0.18*	0.19*	0.72***								
Stock return	0.26**	0.30***	0.30***		-0.04	0.04	-0.04	-0.03	0.04	0.28**	0.29***	0.16							
Stock return$_{t-1}$	0.06	0.06	0.03		-0.07	0.12	-0.12	-0.13	0.18*	-0.05	0.00	-0.08	0.04						
Market/book$_{t-1}$	-0.00	0.05	0.03		0.07	-0.04	0.10	0.11	-0.14	0.04	-0.06	-0.04	0.02	-0.08					
Volatility	-0.18*	-0.20*	-0.23**	-0.41***	-0.08	0.03	-0.19*	-0.18*	0.17	-0.22**	-0.40***	-0.45***	-0.22**	0.55***	-0.04				
Ln(Total assets)	0.87***	0.86***	0.87***	0.53***	0.03	0.21	0.11	0.16	0.15	0.26**	0.56***	0.47***	0.27**	0.00	-0.07	-0.26**			
Ln(Firm age)				0.33*	0.06	0.22**	0.04	0.10								-0.20**	0.48***		
LT debt/total assets				0.03	-0.10	0.07	0.01	0.14								0.04	0.29***	0.05	
Market/book				-0.32***	-0.12	-0.12	-0.17	-0.16								0.05	-0.14	-0.11	-0.32***

6.3. Regression results

The following subsections will present the results from the multivariate regression analyses that are used to analyze the effect of CEO facial traits on compensation and firm performance. Effects on compensation are analyzed through three different measures of compensation, and the results from each regression are reported in their own subsection. Final subsection presents the results from firm performance regressions.

6.3.1. Salary

Table XII reports the results from the regressions that analyze the effects of CEO's facial traits on compensation, as measured by salary. From the four tested appearance attributes, beauty and competence are found to have a significant effect on CEO's salary. On the five-point estimation scale, an increase of one unit on attractiveness rating translates into 14.4 per cent ($100*(e^{0.1341}-1)$) increase in salary, whereas one unit increase in competence rating translates into 23.2 per cent ($100*(e^{0.2086}-1)$) increase in salary. Both are significant at the 10 per cent significance level. These results support the existence of a beauty and competence premium among Swedish CEOs that were hypothesized earlier in section three. The effects of likability and trustworthiness on compensation are extremely small and insignificant. When including all traits to the same regression, competence seems to hold strongest explanatory power, yet all trait coefficients are insignificant. However, as there are some high pair-wise correlations among the traits (see table XI), including all attributes to the same regression might skew the results.

With regard to the control variables, only total assets seem to have a highly significant effect on compensation; a one per cent increase in total assets increases CEO salary by approximately 0.32 per cent. This result is significant at the 1 per cent level. Both market-to-book ratio and volatility have a positive relation to salary, as expected by previous research, but their effects are insignificant. Stock market and accounting measures of performance show somewhat mixed results on the relationship to salary, which is expected to be positive, but here again the results are insignificant.

Table XII Results on CEO's facial traits' effect on salary

This table presents the OLS regression results from the sample of 127 Swedish companies and their CEOs. The dependent variable is the natural logarithm of CEO salary. The variables attractiveness-trustworthiness are the average scores assigned to each CEO by survey participants, taking a value between 1 and 5. ROA is the return on assets ratio as reported by Thomson ONE Banker. Stock return is the buy and hold return over the fiscal year. Volatility is the standard deviation of monthly stock returns for the prior 24 months. Industry effects are depicted by a one-digit SIC code industry dummy. T-values are reported below each coefficient in parenthesis. *, **, and *** represent the statistical significance at the 10%, 5%, and 1 % significance levels, respectively.

	Pred. Sign	Ln(Salary)				
Attractive	(+)	0.1341				0.0493
		(1.81)*				(0.39)
Competent	(+)		0.2086			0.2518
			(1.94)*			(1.36)
Likable	(?)			0.0092		0.0658
				(0.09)		(0.29)
Trustworthy	(?)				-0.0047	-0.1693
					(-0.05)	(-0.70)
Ln(CEO age)	(+)	0.0402	-0.2307	-0.2380	-0.2393	-0.0809
		(0.13)	(-0.86)	(-0.87)	(-0.87)	(-0.24)
Ln(CEO tenure)	(-)	-0.0612	-0.0497	-0.0576	-0.0576	-0.0558
		(-1.37)	(-1.12)	(-1.27)	(-1.27)	(-1.24)
ROA	(+)	0.0025	0.0176	-0.0027	-0.0035	-0.0041
		(0.01)	(0.06)	(-0.01)	(-0.01)	(-0.01)
ROA$_{t-1}$	(+)	-0.2375	-0.2300	-0.1821	-0.1724	-0.2093
		(-0.85)	(-0.82)	(-0.63)	(-0.60)	(-0.73)
Stock return	(+)	-0.1264	-0.1290	-0.1306	-0.1298	-0.1248
		(-1.42)	(-1.45)	(-1.44)	(-1.43)	(-1.39)
Stock return$_{t-1}$	(+)	0.0618	0.0456	0.0603	0.0598	0.0414
		(1.24)	(0.90)	(1.19)	(1.18)	(0.80)
Market / book $_{t-1}$	(+)	0.0062	0.0067	0.0062	0.0063	0.0079
		(0.79)	(0.85)	(0.77)	(0.79)	(0.98)
Volatility	(+)	0.0140	0.0696	0.0984	0.0698	0.0331
		(0.05)	(0.25)	(0.24)	(0.25)	(0.12)
Ln(Total assets)	(+)	0.3185	0.3159	0.3211	0.3212	0.3158
		(17.58)***	(17.34)***	(17.52)***	(17.49)***	(17.21)***
Industry dummy		Yes	Yes	Yes	Yes	Yes
R^2		0.8185	0.8193	0.8131	0.8131	0.8228
N		127	127	127	127	127

CEO's age has a positive effect only when regressed with attractiveness, and otherwise seems to hold a negative association to salary. However, the results are insignificant. Lastly CEO tenure shows somewhat small, negative, yet insignificant association to salary.

The R^2 is relatively high in all regressions, around 0.81, implying that the variables jointly explain a high amount of compensation variance. However, since only a few independent variables are significant, this could be a symptom of multicollinearity. Yet in section 5.5 the regressions were tested for multicollinearity and according to the tests this phenomenon should not be a severe issue.

To test the robustness of the results, I replace a few of the control variables with an alternative measure. Size is measured by sales rather than total assets, and capital expenditures over total assets depict the growth opportunities. Tobin's Q assesses the firm performance. I re-run the regressions and the size of the attractiveness coefficient remains on the same level, but becomes insignificant (0.1194, t=1.10). Competence coefficient increases both in size and significance (0.3593, t=2.38). Likability coefficient becomes larger but remains insignificant (0.1098, t=0.82). A major change occurs on the trustworthiness coefficient, when the coefficient becomes positive and gains both in size and significance (0.1953, t=1.45). CEO age and tenure as well as performance measure have signs as expected by previous research, but are all insignificant. Both CAPEX/Total assets and Ln(sales) have positive and significant coefficients at the one per cent significance level. Volatility is now negatively associated with compensation, but the result is insignificant. All in all, the robustness check gives support to the hypothesis that there is a link between appearance and compensation, albeit that now only the existence of a competence premium is supported rather than both beauty and competence premiums as was the case in the original regression.

6.3.2. Total cash compensation

Table XIII shows the regression results of facial traits' effect on compensation when the dependent variable is salary plus bonus payments. Now only the coefficient of attractiveness is significant of the four tested facial trait attributes, and one unit increase in attractiveness rating translates into 20.2 per cent ($100*(e^{0.1842}-1)$) increase in total cash compensation. The result is significant at the five per cent significance level and supports the existence of a beauty premium among sample CEOs. The effect of competence on compensation is now somewhat smaller than when regressed on salary, and is now also insignificant. The coefficients of likability and trustworthiness imply a negative association to compensation, yet their effects remain insignificant. The inclusion of all attributes in to the same regression yields insignificant coefficients for all traits. As stated before, due to the relatively high pair-wise correlations between trait variables, the inclusion of all traits might give skewed results.

Among the control variables, total assets is still showing a strong, positive and significant relation to compensation, and a one per cent increase in total assets increases total cash compensation by approximately 0.36 per cent. Market-to-book ratio also has a positive effect on compensation, with coefficient values that range between 0.019 and 0.021 and are statistically significant at the five per cent level. The effects of size and growth opportunities are in line with previous research. The coefficient of volatility is positive as expected, yet insignificant. Here again the effects of stock market and accounting measures of performance on compensation are mixed and insignificant. CEO age and tenure coefficients are somewhat mixed but highly insignificant. Again the variables jointly explain a high amount of compensation variance, with R^2 values of around 0.81.

Table XIII Results on CEO's facials traits' effect on total cash compensation

This table presents the OLS regression results from the sample of 127 Swedish companies and their CEOs. The dependent variable is the natural logarithm of CEO total cash compensation, which is the sum of salary and annual bonus. The variables attractiveness-trustworthiness are the average scores assigned to each CEO by survey participants, taking a value between 1 and 5. ROA is the return on assets ratio as reported by Thomson ONE Banker. Stock return is the buy and hold return over the fiscal year. Volatility is the standard deviation of monthly stock returns for the prior 24 months. Industry effects are depicted by a one-digit SIC code industry dummy. T-values are reported below each coefficient in parenthesis. *, **, and *** represent the statistical significance at the 10%, 5%, and 1 % significance levels, respectively.

	Pred. Sign	Ln(Salary+Bonus)				
Attractive	(+)	0.1842				0.1607
		(2.09)**				(1.08)
Competent	(+)		0.1379			0.1257
			(1.06)			(0.57)
Likable	(?)			-0.0253		-0.0009
				(-0.22)		(-0.00)
Trustworthy	(?)				-0.0980	-0.1748
					(-0.85)	(-0.61)
Ln(CEO age)	(+)	0.1661	-0.2126	-0.2246	-0.2016	0.1533
		(0.45)	(-0.66)	(-0.69)	(-0.62)	(0.38)
Ln(CEO tenure)	(-)	-0.0034	0.0068	0.0020	-0.0015	-0.0039
		(-0.06)	(0.13)	(0.04)	(-0.03)	(-0.07)
ROA	(+)	0.2659	0.2721	0.2587	0.2426	0.2484
		(0.75)	(0.76)	(0.72)	(0.68)	(0.70)
ROA$_{t-1}$	(+)	-0.4266	-0.3773	-0.3223	-0.2810	-0.3407
		(-1.29)	(-1.12)	(-0.93)	(-0.82)	(-1.00)
Stock return	(+)	-0.0367	-0.0410	-0.0401	-0.0377	-0.0297
		(-0.35)	(-0.38)	(-0.37)	(-0.35)	(-0.28)
Stock return$_{t-1}$	(+)	0.0657	0.0536	0.0620	0.0604	0.0518
		(1.11)	(0.88)	(1.02)	(1.00)	(0.84)
Market / book$_{t-1}$	(+)	0.0194	0.0198	0.0198	0.0205	0.0215
		(2.09)**	(2.09)**	(2.07)**	(2.15)**	(2.26)**
Volatility	(+)	0.1339	0.2105	0.2149	0.2078	0.1386
		(0.41)	(0.64)	(0.65)	(0.63)	(0.42)
Ln(Total assets)	(+)	0.3588	0.3590	0.3624	0.3635	0.3580
		(16.72)***	(16.36)***	(16.61)***	(16.69)***	(16.42)***
Industry dummy		Yes	Yes	Yes	Yes	Yes
R^2		0.8147	0.8093	0.8074	0.8085	0.8178
N		127	127	127	127	127

The robustness check includes the same variable replacements as described in the previous subsection and all regressions are re-run with these alternative control variables. The attractiveness coefficient remains again on same level but falls in significance (0.1752, t=1.39). The results suggest a greater competence premium, which is now also significant at the 10 per cent significance level (0.3152, t=1.78). Likability and trustworthiness coefficients are now positive but still insignificant (0.1263, t=0.82; 0.1612, t=1.03). Size and growth opportunities are always positively and significantly related to compensation. CEO age and tenure and firm performance measures behave as expected but do not always reach statistical significance. The coefficient of volatility is negative and insignificant. The overall results from the robustness checks support the link between appearance and compensation. However, different from the original regression, the pay premium seems to derive from competent looks rather than attractiveness.

6.3.3. Total compensation

When using the total compensation as the dependent variable, all four facial trait coefficients are now insignificant, as can be seen from table XIV. However, the coefficients of attractiveness and competence are still implying a positive association to compensation and their t-values (1.56 for attractiveness and 1.53 for competence) are significant at the 20 per cent significance level. The coefficients of likability and trustworthiness are implying a small, negative effect on compensation but the coefficients are highly insignificant. When including all traits to the same regression, competence has the largest coefficient, but all trait coefficients are still insignificant.

Total assets is the only control variable having a significant coefficient in all regressions. A company that is ten per cent larger as measured by total assets will pay its executive approximately 3.9 per cent more in total compensation, a result that is significant at the 1 per cent significance level.

Table XIV Results on CEO's facial traits' effect on total compensation

This table presents the OLS regression results from the sample of 127 Swedish companies and their CEOs. The dependent variable is the natural logarithm of CEO total compensation, which is the sum of salary, annual bonus, long-term incentive plans, pension expenses and other remuneration. The variables attractiveness-trustworthiness are the average scores assigned to each CEO by survey participants, taking a value between 1 and 5. ROA is the return on assets ratio as reported by Thomson ONE Banker. Stock return is the buy and hold return over the fiscal year. Volatility is the standard deviation of monthly stock returns for the prior 24 months. Industry effects are depicted by a one-digit SIC code industry dummy. T-values are reported below each coefficient in parenthesis. *, **, and *** represent the statistical significance at the 10%, 5%, and 1 % significance levels, respectively.

	Pred. Sign	Ln(Total compensation)				
Attractive	(+)	0.1450				0.0757
		(1.56)				(0.48)
Competent	(+)		0.2060			0.2362
			(1.53)			(1.02)
Likable	(?)			-0.0098		0.0305
				(-0.08)		(0.11)
Trustworthy	(?)				-0.0275	-0.1626
					(-0.23)	(-0.54)
Ln(CEO age)	(+)	0.2476	-0.0462	-0.0577	-0.0506	0.1490
		(0.64)	(-0.14)	(-0.17)	(-0.15)	(0.35)
Ln(CEO tenure)	(-)	-0.0066	0.0051	-0.0024	-0.0035	-0.0016
		(-0.12)	(0.09)	(-0.04)	(-0.06)	(-0.03)
ROA	(+)	0.0826	0.0970	0.0769	0.0724	0.0761
		(0.22)	(0.26)	(0.20)	(0.19)	(0.20)
ROA_{t-1}	(+)	-0.0889	-0.0756	-0.0144	-0.0047	-0.0416
		(-0.25)	(-0.22)	(-0.04)	(-0.01)	(-0.12)
Stock return	(+)	0.0099	0.0070	0.0066	0.0071	0.0138
		(0.09)	(0.06)	(0.06)	(0.06)	(0.12)
Stock return$_{t-1}$	(+)	0.0260	0.0098	0.0236	0.0232	0.0056
		(0.42)	(0.15)	(0.37)	(0.37)	(0.09)
Market / book $_{t-1}$	(+)	0.0154	0.0159	0.0156	0.0158	0.0173
		(1.57)	(1.62)	(1.56)	(1.58)	(1.73)*
Volatility	(+)	0.1787	0.2389	0.2408	0.2384	0.1974
		(0.52)	(0.69)	(0.69)	(0.69)	(0.57)
Ln(Total assets)	(+)	0.3871	0.3848	0.3899	0.3902	0.3844
		(17.09)***	(16.85)***	(17.08)***	(17.07)***	(16.70)***
Industry dummy		Yes	Yes	Yes	Yes	Yes
R^2		0.8230	0.8228	0.8190	0.8191	0.8259
N		127	127	127	127	127

The coefficients of market-to-book ratio, volatility, and stock market and accounting measures of performance (except for the previous year's ROA) are positive as expected by previous research. These results are, however, insignificant apart from the effect of market-to-book ratio in the last column of table XIV. The effects of CEO age and tenure are somewhat mixed but again highly insignificant. The R^2 is relatively high in all regressions, and the independent variables jointly explain about 82 per cent of the total variance in the compensation variable.

Robustness check is done in the same manner as explained earlier, with a few variable changes. The coefficient of attractiveness does not really change in size but becomes insignificant (0.1436, t=1.08). Competence coefficient doubles in size and is significant at the five per cent significance level (0.3913, t=2.11). Likability and trustworthiness are now positively associated to compensation, and trustworthiness is close to becoming significant at the 10 per cent significance level (0.1750, t=1.07; 0.2636, t=1.61). Firm size and growth opportunities are positively linked to compensation, and significant at the one per cent significance level. CEO age has a positive and significant effect on compensation at the 10 per cent significance level, while firm performance has a positive, yet insignificant coefficient. The effects of volatility and CEO tenure are negative and insignificant. The robustness tests indicate that some facial features do explain compensation and give support to the existence of a competence premium.

6.3.4. Firm performance

The effects of CEO's facial traits on firm performance are tested by regression analysis, which employs robust standard errors to mitigate the problem of heteroscedasticity, and the results are reported in table XV. All facial traits have a small, positive, yet insignificant effect on firm performance, which is measured by industry adjusted ROA. These results support the hypotheses that more competent or attractive looking CEOs do not actually add to the performance of their companies when compared to less competent or attractive looking CEOs.

Table XV Results on CEO's facials traits' effect on firm performance

This table presents the OLS regression results with robust standard errors from the sample of 127 Swedish companies and their CEOs. The dependent variable is the industry adjusted return on assets, which is obtained by subtracting the industry average ROA from the company ROA. The variables attractiveness-trustworthiness are the average scores assigned to each CEO by survey participants, taking a value between 1 and 5. Firm age is measured as the time in years since the company's inception. Volatility is the standard deviation of monthly stock returns for the prior 24 months. Industry effects are depicted by a one-digit SIC code industry dummy. T-values are reported below each coefficient. *, **, and *** represent the statistical significance at the 10%, 5%, and 1 % significance levels, respectively.

	Pred. Sign	ROA_{Adj}				
Attractive	(?)	0.02365				-0.0134
		(1.14)				(-0.40)
Competent	(?)		0.0389			0.0645
			(0.88)			(0.88)
Likable	(?)			0.0416		0.0931
				(1.18)		(1.06)
Trustworthy	(?)				0.0245	-0.0737
					(0.73)	(-0.81)
Ln(Firm age)	(-)	0.0065	0.0052	0.0073	0.0067	0.0057
		(0.67)	(0.54)	(0.76)	(0.69)	(0.57)
LT debt / total assets	(-)	-0.2129	-0.2273	-0.2221	-0.2327	-0.2065
		(-2.37)**	(-2.50)**	(-2.48)**	(-2.55)**	(-2.29)**
Market / book	(-)	-0.0058	-0.0059	-0.0058	-0.0059	-0.0057
		(-1.40)	(-1.43)	(-1.39)	(-1.41)	(-1.40)
Volatility	(-)	-0.2275	-0.2365	-0.2186	-0.2237	-0.2355
		(-4.69)***	(-4.97)***	(-4.56)***	(-4.68)***	(-4.77)***
Ln(Total assets)	(+)	0.0325	0.0317	0.0318	0.0321	0.0308
		(4.50)***	(4.42)***	(4.49)***	(4.43)***	(4.53)***
Industry dummy		Yes	Yes	Yes	Yes	Yes
R^2		0.4782	0.4780	0.4804	0.4757	0.4870
N		127	127	127	127	127

Apart from firm age and market-to-book ratio, the control variables are significant and their effects are as expected by previous research. Volatility is negatively associated with performance and the coefficients are around -0.22 and -0.23, while the coefficients of firm size are about 0.03 and show a positive relation to performance. Both are significant at the one per cent significance level. Long-term debt / total assets ratio has a negative effect on firm performance and the coefficient values vary around -0.21 and -0.23. The models explain a bit less than 50% of the variance in the dependent variable, as measured by R^2.

The robustness of these results is tested by replacing the dependent variable ROA_{Adj} by Tobin's Q. Tobin's Q is calculated as follows:

$$Tobin's\ Q = \frac{(total\ assets - book\ value\ of\ equity + market\ value\ of\ equity)}{total\ assets}$$

The replacement changes the coefficients of all CEO traits from positive to negative but they are still statistically insignificant, which supports the hypothesis that CEO appearance does not explain firm performance. However, now the control variables, that were significantly explaining the firm performance as measured by the industry adjusted ROA, are no longer significant.

7. Conclusion

On the one hand, my thesis aimed to study the effects of CEO appearance on CEO compensation and firm performance. The analysis was carried out with OLS regressions, with salary, total cash compensation, total compensation and industry-adjusted return on assets as dependent variables and the tested CEO appearance attributes were attractiveness, competence, likability, and trustworthiness. My sample consisted of Swedish CEOs and primary data on CEOs' appearance attributes were collected through an Internet based survey. On the other hand, I investigated whether the looks of (large company) CEOs differed from those of the control group. This was analyzed by comparing facial pictures of CEOs and non-CEOs as well as large and small company CEOs on the same four appearance attributes. The pair-wise comparisons data were also collected through the surveys. Altogether the surveys generated 887 answers.

According to the pair-wise comparisons, the CEO picture is chosen more often than the picture of a non-CEO when judging attractiveness and competence, whereas the non-CEO is chosen more often for being more likable and trustworthy. When comparing large and small company CEOs, large company CEO is picked 53 percentage of time when the competence is judged, while small company CEO is chosen 54 percentage of time for attractiveness. The small company CEO is also more often judged as more likable and more trustworthy. The results of my study are parallel to the results of a similar study by Graham et al. (2010) but unlike their results, mine are not statistically significantly different from chance. Thus the results from my study do not suggest that there would be some facial traits that are common for CEOs or that more competent people would look more competent.

Academic research has found evidence for both beauty and competence premium phenomena (e.g. Hamermesh and Biddle, 1994; French, 2002; Graham et al., 2010). The results from my regression analyses support to some extent the existence of beauty and competence premiums among Swedish CEOs. When the dependent variable is salary or total cash compensation, the attractiveness explains significantly the compensation of the

CEO. Competence rating, on the other hand, has a significant effect on CEO salary. When regressed with total compensation, both attractiveness and competence coefficients are significant only at the 20 per cent significance level. Thus it seems that the compensation committee, who sets the executive compensation, is most subject to the attractiveness and competence biases when setting the level of executive base salary. Table XVI summarizes the hypotheses and how the results support them.

Table XVI Summary of hypotheses and results

This table summarizes how the results support the hypotheses

Hypothesis	Empirical evidence
Hypothesis 1 : CEOs look more competent than non-CEOs	No support. The results do not reach statistical significance
Hypothesis 2 : Large company CEOs look more competent than small company CEOs	No support. The results do not reach statistical significance
Hypothesis 3 : CEOs are perceived to be more attractive than non-CEOs	No support. The results do not reach statistical significance
Hypothesis 4 : CEOs with higher competence ratings have higher compensation	Moderate support. When compensation is measured by salary, a competence premium exists
Hypothesis 5 : CEOs with higher attractiveness ratings have higher compensation	Moderate support. When compensation is measured by salary or total cash compensation, a beauty premium exists
Hypothesis 6 : The perceived CEO competence does not affect firm performance	Strong support. Trait coefficient is highly insignificant
Hypothesis 7 : The perceived CEO attractiveness does not affect firm performance	Strong support. Trait coefficient is highly insignificant

As the current study focused only on male CEOs it would be interesting to study whether the results remain the same for female CEOs. Since the number of female CEOs can be rather small in just one country, as was the case for Swedish companies, one could consider a larger geographic area to obtain a large enough sample. Additionally, since the pair-wise comparisons did not yield significant results, it could be that the control sample used in my study did not differ enough from the CEOs. To analyze more thoroughly if looks guide our way through life, and specifically, if looks affect occupational success, a control group consisting of people without a university degree would give more room for analysis. Here, however, a challenge is in obtaining business-like photos of Joe Averages to be used in the comparisons.

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Appendix

Appendix 1. Start page of the survey

Facial traits and character

The purpose of this survey is to study how appearance affects judgements of character. You are first asked to make judgements between two photos, and then rate individual photos according to four character traits. In case you recognize any of the persons, please indicate this by checking the box at the bottom of the page in question.

It should take approx. 20 min to complete, and a gift card of 50 Eur to Stockmann will be drawn between those who leave their contact information.

What is your gender? *
◯ Female ◯ Male

What is your age? *
[–20 ⬍]

What is your nationality? *
◯ Finnish ◯ Other

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