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General Counsel and Internal Control Quality

A study into the effect of the presence and tenure of a general counsel on the internal control quality of a firm

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PREFACE AND ACKNOWLEDGEMENTS

This thesis has become a work of which I am incredibly proud and represents precisely what I have learned these past years at the Erasmus School of Economics. However, none of it would have been possible without the help of my supervisor dr. J. Yu, with whom I have not only worked for the last two years but who has also supervised me throughout this process. His guidance, and useful remarks pushed me to the maximum of my abilities and allowed me to produce a work of which I did not think I was capable. Lastly, completing two masters at once is not an easy task but it was made doable with the help of my friends and family, to whom I am very grateful. This thesis is the cherry of my academic career and I am excited to see what the future beholds.

Abstract

This paper examines whether the presence of a general counsel in the top-management of a firm influences the internal control quality. Whereas the traditional role of general counsel had a strong focus on 'gatekeeping', the modern form places emphasis on managerial and advising tasks, decreasing the degree of monitoring. This effect can be directly observed in the internal control quality, which is measured by looking at adverse opinions reported under article 404 of the Sarbanes-Oxley Act as well as by measuring abnormal discretionary accruals. The results indicate a weak but significant relation between the presence of a general counsel and the magnitude of discretionary accruals. However there are no significant results found between the presence of a general counsel and the likelihood of reporting an adverse opinion under article 404. This could either be due to the inability of article 404 to capture the true underlying internal control issues, or because there are underlying effects influencing the relation between a general counsel and the adverse opinions reported. Furthermore the effect of tenure on the relation studied is also included, finding no significant results. Implications of this finding are that neither entrenchment or an increase in ability occur during the tenure of a general counsel.

Keywords:
General counsel, SOX 404, internal control quality, tenure, discretionary abnormal accruals

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1 Introduction

According to the Harvard Business Review (Heineman, 2012), it is a great time to be a lawyer, and specifically to be a chief legal officer or a general counsel (GC). This shift by companies, from using external law firms to inhouse counsel, namely the GC, is a trend which has been occurring in the last two decades. Whereas there are no exact numbers available with regards to the increase in the hiring of GC, one thing is clear, the GC is up and coming.

Whilst companies have various reasons for this shift in preference, there is one commonality, namely the increased complexity in the business environment in which these companies operate (Heineman, 2016). This increasingly complex and ever changing regulatory environment in which businesses have to operate mainly started with the Sarbanes-Oxley Act (SOX) which was passed in 2002 by US Congress (SAS 70, 2018). Part of the SOX was SOX 404 which requires firms to disclose information on the internal control mechanisms which are implemented in their organizations. This was thought to guarantee the reliability of a firms financial statements, and indirectly thought to ensure an ethical code of practice in their day-to-day operations. The SOX 404 was implemented in 2004 and 2007[1], and was split into two sections namely 404(a) and 404(b) to which this thesis both refers (SAS 70, 2018). With the rise in popularity of the GC it seems companies have adjusted to this ever demanding environment by employing someone whose main task is to keep the company in line with regulatory changes. However no research has been done to study whether this increasingly popular function actually has any influence on the compliance of the company with these regulations.

As mentioned by SenGupta (2010) the GC have become the "natural port of call to lead a rebalancing of risk strategies" for management. This risk can be seen in a variety of elements, with one of these being the implementation of SOX and the internal control quality (ICQ). Whereas one might say that the ICQ is the responsibility of the Chief Financial Officer, SenGupta (2010) indicates, in line with many other reports and articles such as KPMG (2012), and Heineman (2016), that the GC is a key-player in helping other executives comply with regulations and the way in which compliance should take place. This role of the GC in relation to the ICQ is also illustrated by Rostain (2018), who interviews several GC on their role with regards to the SOX, and specifically the SOX 404. Many emphasize their task in ensuring compliance, informing management of the task at hand, and making "directors think twice about taking legally aggressive positions" (Rostain, 2018). Whilst the link between the GC and the ICQ in the form of compliance with the SOX 404 might not be the most obvious one, it can be seen that the GC is responsible for educating, informing, and checking whether compliance takes place, taking on the role of oversight, which perhaps is the most important role of all.

For clarity, the relation between the SOX 404 and the ICQ lays in the requirement of the SOX 404 to report on the internal control mechanisms in place to ensure the accuracy of their financial reporting. Hence, strong compliance with SOX 404 should imply a high ICQ, as companies have to implement sufficient controls. This relates further to companies therefore having a higher earnings quality, as there is no possibility to alter financial reports without it triggering

[1]SOX 404 became compulsory for companies with regards to fiscal years ending after November 15, 2004 if companies were classified as 'accelerated filers', this means that the company has to have at least $75 million in public float. For all other publicly listed firms the SOX 404 became compulsory for fiscal years ending after December 15, 2007.

one of the internal control mechanisms in place. This latter relation has been studied extensively in previous literature, with each paper finding that there is indeed a positive relation between compliance with SOX 404, ICQ and the earnings quality (Iliev, 2010; Bédard, 2006).

Referring back to findings by both SenGupta (2010) and Rostain (2018), it must be mentioned that many firms have had a legal department prior to implementing the role of the GC in its current form. Precisely this difference, with the GC being in top-management and having a diverse set of roles which not solely look at resolving conflicts, but also focus on the advising role (Heineman, 2016; SenGupta, 2010; KPMG, 2012), is why the role of the GC is relevant in today's business environment. The legal counsel in its original form, had none of these responsibilities, and was submissive to the role of the other executives. This change is hence the reason why the GC is studied in great amounts in the existing literature.

Ham and Koharki (2016) argue in line with the above, however state that a tension has developed in the current role of the GC. This is due to the increase in responsibilities which imply that the current role of a GC has evolved from 'gatekeeping' to 'facilitating', and therefore potentially causing a reduction in the internal control effectiveness. Precisely this tension, between facilitating and gatekeeping, is what makes the GC of interest to study, and this all comes together in the ICQ as this is where the compliance (gatekeeping) and the implementation in the most favourable way (facilitating) meet. Therefore the research question is:

RQ: What effect does the presence of a general counsel in the top-management of a company have on its internal control quality?

The motivation behind this question is two-fold. Firstly, due to the fact that the SOX 404 was fully implemented a little over ten years ago, there is not a lot of (published) research into the specific requirement of disclosure of the internal control mechanisms as the sample, up to five years ago, would be rather small. Whereas some companies prior to the SOX 404 undoubtedly also had internal control mechanisms, I have chosen to focus on the time period after the implementation of this regulation because companies now had to forcefully implement mechanisms as such and hence have a stronger focus on it. The implication of this is also that all companies had to implement this requirement, ensuring that there would not be an omitted variable with regards to companies voluntarily implementing such mechanisms. Moreover, this shift in the regulatory environment marks an important change in which a GC could be of vital importance. The motivation therefore is firstly to provide some new insights into the implementation of the SOX 404 and the possible influence of the GC on this. This is more so because there is quite some research into the effect of a GC on different aspects of a firm, such as tax avoidance, and credit risk (Goh et al., 2014; and Ham & Koharki, 2016), yet none look at the possible influence of the GC on the implementation of the SOX 404, and therefore the ICQ. This links to the second part of the motivation, namely there is an international debate going on in both society and existing literature whether a GC is of value to a company and if there needs to be an increase in regulation for this position, due to the important role they are fulfilling (ACC, 2018). An answer to the research question could therefore provide valuable input in this debate by providing new insights or further questions which need to be addressed.

The sample will focus on publicly listed companies, obtaining data for these companies from January 1st, 2008. The reason for this is because the SOX 404 had then been implemented for

the all firms at this point. Seeing as the focus is on the SOX 404, as this directly indicates the ICQ, the sole focus will therefore be on firms listed in the United States. Due to the probability of endogeneity, as there might be an underlying omitted variable which influences a company's choice for a GC, such as an environment with increased risk, or history of wrong-doing, several robustness checks will be conducted to ensure the validity of the results. Moreover a GC is solely classified as a GC when they are present in the top-management of a company, as can be seen from the research question. The reason for this is two-fold. The first reason is the fact that members in the top-management can have an influence on the day-to-day operations, and hence the GC is able to exercise its power and fulfil a role greater than sole legal counsel, which is further illustrated in section 2. The second reason originates from the SOX 404 which holds all of management accountable in case there are problems with the ICQ (Sarbanes-Oxley, 2018). If a GC is not in the top-management, then perhaps they are less involved in ensuring the compliance with the SOX 404 takes place. Hence, the distinction between a GC in top-management and a GC who is not in top-management is of importance, and should be taken into account.

The study will measure the ICQ using two methods. The first method refers to the reporting of an adverse opinion under the SOX 404, also referred to as an internal control weakness (ICW). However seeing as this method is prone to incorrect reporting as well as companies not reporting in a timely manner, the choice was made to include another proxy for the ICQ. This proxy is in the form of abnormal discretionary accruals, and has been proven by Schroeder and Shepardson (2016) to suffice with regards to measuring the ICQ. Due to unavailability of data their method was slightly altered by using audited instead of unaudited accruals, which could potentially result in weaker results. Nonetheless the additional value of a relatively objective method is of importance in order to answer the research question.

The results fail to show a significant relation between the presence of a GC and the likelihood of reporting an ICW. Due to the reporting of an ICW under the SOX 404 being prone to subjectivity and personal influences of management, a more objective measure was also used to study the ICQ objectively. This measure referred to the abnormal discretionary accruals reported, and functioned as a proxy for the ICQ. In a highly robust regression, a significant relation can be found between the presence of a GC and the level of abnormal discretionary accruals, implying a lower ICQ. The fact that a relation was found despite the fact that audited accruals instead of unaudited accruals were used implies that perhaps the relation is even stronger when unaudited accruals are used as the auditors will not have had the chance to correct the accounts.

Nevertheless both methods illustrate that there are many factors influencing the likelihood of reporting an ICW, of which not all were included in the present tests. This was for a variety of reasons such as difficulty to collect data, or due to a contradiction in opinions in existing literature. With that being said, these variables could have had an effect on the result, either by weakening it or making it stronger than it actually is. The fact that the robust regression indicates a strong relation between the two, contributes to the idea that the omitted variables weaken the effect found.

However, no true implications can be drawn yet from this study. Nonetheless it does provide an interesting result which requires further study as it could imply that the presence of a GC has implications for the ICQ. This in turn would have implications for companies in the form of

management composition as well as for regulators. However, prior to this all taking place it is essential that the core reason as to why the GC has an influence on the ICQ is discovered.

The thesis further studies the moderating effect of tenure on the relation between the presence of a GC and the ICQ. With tenure having a dual impact, referring to both an increase in ability and entrenchment, the predicted effect is ambiguous. No results were found, which could either indicate that there is no moderating influence of tenure on the prescribed relation, or that the effect cancels each other out. Whilst the results are not significant in any form, it does in theory mean that tenure does not influence a GC positively or negatively. There is therefore no reason to fire a GC when they stay longer at a job, but there is also no reason as to why they should stay as their ability with regards to the ICQ does not increase. A remark must be made however that the tenure sample studied was remarkably small as well as having very short tenures, implying that a more complete dataset would perhaps yield different results. A further study is therefore required before any final conclusions can be drawn regarding the moderating effect of tenure.

Concluding, the main contribution of the paper is the debate it opens up with regards to the GC and the ICQ. From the results it can be seen that the role of the GC has a diverse influence on a firm, stretching far beyond its traditional role of legal counsel. Yet much is undiscovered with regards to this new found role and further research is required on both the aspect of the presence of the GC, as well as the actual role of the GC, and the potential influence tenure could have. Therefore the true contribution of the paper is not factual, but more theoretical as it tries to fill up a void in literature and encourages further research to continue on this topic.

2 Theoretical background

Whereas the topic of the thesis itself has not been studied before, there is a vast amount of existing literature on each of the components of the research question, namely: the effect of the presence of a GC on a company and literature related to the ICQ. Besides these two elements, the SOX404, and the Sarbanes-Oxley Act in general are key elements in this thesis, and hence are also of importance. Therefore the literature review will be split up into these three sections.

2.1 Relevant literature on presence of a general counsel

Existing literature which discusses the effect of the presence of a GC in a company, either by studying its performance or corporate governance, is rather divided. On one hand a GC is seen as a positive influence on a company as they are an insider, with more expertise, and hence they can combat problems more efficiently in comparison to external counsel. This is illustrated in several studies where it is proven that a GC is value-creating and therefore of benefit to a diverse set of stakeholders. However other existing literature indicates that in certain cases a GC seems to be of a negative influence on the overall operations of a company for both shareholders and debtholders. From all studies however it can be obtained that the role of the GC tends to be extensive as it entails many different aspects, making it difficult for the GC to fulfil its main role of 'gatekeeper'. Depending on the scope of the study, a GC is either a positive or a negative influence as illustrated below.

Goh et al. (2014) for example find that firms with a GC in the top-management tend to have a greater amount of tax avoidance. They attribute this to the fact that the increase in legal ability of the management, will result in management's desire to maximize the profits for shareholders by reducing tax liabilities, within the legal boundaries. Seeing as a GC is involved in management and strategy meetings, they tend to have a better insight into the firm, enabling them to take full advantage of their knowledge and apply this in ways which outside counsel would not be able to do (e.g. advising on certain business structures and implementing them). Goh et al. (2014) also reasons that the nature of the position of a GC, being an 'insider' of the firm, makes them more sensitive to the needs of all stakeholders, specifically those of the shareholders and other members of top-management, in maximizing their after-tax income. Likewise, top-management will feel more comfortable with implementing resolutions which enable tax avoidance as they have an expert on their team which can provide them guarantee that their operations are legal. Hence their expectation, which was proven in their results, is that a GC will facilitate the tax planning of a firm by making a judgement of the benefits and risks of implementing some form of tax avoidance. Whereas this is not necessarily negative, as more shareholder value is created, the public opinion tends to find firms with a high tax avoidance unethical and socially immoral (Christensen & Murphy, 2004).

Whereas the results of Goh et al. (2014) illustrate that the boundaries of the law are reached when hiring a GC, Avci and Seyhun (2016) find that a GC in the top-management is often aware of corporate wrongdoing and chooses not to stop it, hence crossing the boundaries. Avci and Seyhun (2016) focus on the 'gatekeeper' role of the GC, which entails that a GC should monitor a company and its employees in order to ensure that they behave conservatively and within the

bounds of the law (Ham & Koharki, 2016, Hamdani, 2003, Jagolinzer et al., 2011, Kim, 2010, Kwak et al., 2012). Seeing as the GC is specialised in law, they should know what is considered to be a violation, and their task is to ensure that any violations are noticed and stopped as soon as possible. However their role as gatekeeper also entails their responsibility to society in ensuring ethical practices are taking place for outside stakeholders. Avci and Seyhun (2016) argue that this complex role, in which a GC is not only a gatekeeper and a whistle-blower, but also a manager and a lawyer, causes some roles to decrease in importance. Their results indicate that the GC is often aware of corporate wrongdoing but chooses not to stop it. Whilst this is partially due to insider trading profits, their results also indicate that a GC tends to be very cautious with insider trading, more so than other individuals in the top-management. Avci and Seyhun (2016) also illustrate that the position of a GC is not always protected to the same degree as other employees as it is unclear whether the whistle-blower regulation also covers a GC. This too could explain their results why a GC chooses not to stop corporate wrongdoing as it could result in them being fired from their job as well as being sued.

Whereas both papers are rather ambiguous, with each indicating that the influence of a GC on a company can be positive and negative, Ham and Koharki (2016) objectively indicate that the presence of a GC in the top-management of a firm increases credit risk. This is an interesting finding as it indicates that bondholders view a company with a GC in top-management as having more risk than companies without a GC in top-management. The increase in specialized knowledge in the management of a company is therefore not viewed as beneficial. Ham and Koharki (2016) explain this finding by stating that once a GC gets promoted from non-senior manager to a senior function in the top-management, he/she will focus more on management tasks such as capital raising, firm restructuring and strategy. Therefore the amount of attention invested in the gatekeeper role will decrease, which is in line with the reasoning of Avci and Seyhun (2016). This change in attention can be viewed by the capital market as a potential increase in risk, indicating that bondholders view a GC as positive, as long as they are ensured that they fulfil their gatekeeper role and are not distracted by other (managerial) tasks.

Another study which looks at the influence of the GC, is that of Kwak et al. (2012) who study the relation between the presence of a GC and corporate disclosure. They find that companies with a GC tend to have more negative yet accurate forecasts to which the stock market tends to react stronger in comparison to forecasts made by companies without a GC in top-management. The reason for this is the high litigation risk in the United States, where shareholders through securities class action suits are in a relatively strong position. Hence, by making more voluntary disclosures the information asymmetry between shareholders and management is kept to a minimum, and the litigation risk is also decreased. Kwak et al. (2012) also argue that GCs tend to monitor managers' opportunistic behavior carefully, as they prefer to keep their reputation high with regards to their role as gatekeeper. This is in contradiction with the findings of Avci and Seyhun (2016), who, as previously stated, find that a GC tends to overlook corporate wrongdoing. This contrast can be explained by the scope of both studies with Avci and Seyhun (2016) look at corporate wrongdoing by studying securities class actions, and focusing on fraud, whilst Kwak et al. (2012) solely study the role of the GC with regards to information disclosure.

The study which is most closely related to the research question in this thesis, is the study by Hopkins et al. (2015) who look at the relation between a GC and the financial reporting quality. They focus on the power of a GC by looking at compensation and measuring financial reporting quality through both earnings management and the standard deviation of Dechow and Dichev (2002). Hopkins et al. (2015) introduce the principle of the GC being either a 'gatekeeper' or a 'facilitator', with the latter meaning that the GC can be seen as a member of the top-management, with an unique skillset, but with similar objectives as the rest of the management. The authors' expectation is that the GC is more of a facilitator than a gatekeeper once they are in the top-management, and are more powerful in terms of being highly compensated. In line with these expectations, Hopkins et al. (2015) find that firms with a powerful GC as part of the top-management tend to have a poorer accounting quality, as well as increase in earnings management. Whereas the results are not very strong or robust, they do not hint at a reverse relation indicating that there is some truth to their findings. This is contradicting to the results found by Kwak et al. (2012), who look at the voluntary disclosure, whilst Hopkins et al. (2015) look at mandatory reporting.

2.2 Relevant literature on determinants of the ICQ

The research question is moreover related to literature regarding possible determinants of the ICQ, more specifically determinants regarding the likelihood of reporting ICW.[2] Whereas the ICQ is (to some extent) a proxy for a GC's ability to adapt to new regulations, it is of additional value to look into existing research on possible influences on the ICQ to ensure that no variables are omitted.

To illustrate, Doyle et al. (2007) study determinants of ICW. They find that smaller, younger, financially weaker, more complex, rapidly growing, or undergoing restructuring firms are more likely to have ICW. Several factors are related to the structure of a company, indicating that these factors could have an impact on the ICQ in general, regardless of whether a GC is present.

Likewise, Ashbaugh-Skaife et al. (2009) find that firms which disclose internal control deficiencies face higher costs of equity, indicating that investors require a premium when investing in firms with ICW. Whereas this is not directly a determinant, the cost of equity could influence results regarding the likelihood of reporting an ICW. In another paper Ashbaugh-Skaife et al. (2007) indicate that firms with recent organizational changes, more complex operations and greater accounting risk have a higher likelihood of reporting an ICW.

Chen et al. (2016) find that a more gender diverse board is related to less ICW reported. The effect found does not change if the female is not present in the audit committee. The sole presence of a female in a corporate board is enough to decrease the ICW reported, indicating that board diversity is a determinant of the ICQ.

In line with the 'people-determinants' of ICW, is the paper of Guo et al. (2015) which studies the relation between employee treatment policies and the likelihood of reporting an ICW. They

[2]The terms material weaknesses and internal control weaknesses are used interchangeably throughout existing literature. Seeing as material weaknesses refers to those reported under SOX 404, which are also referred to as internal control weaknesses, there is no apparent difference between the two. To enhance the clarity for the reader, the thesis will refer to the latter solely.

find that more favourable employee treatment policies are related with a lower likelihood of reporting ICW. This means that companies who invest in their employees, tend to have less issues implementing internal controls, as well as having a smaller likelihood of financial restatements. Guo et al. (2015) measure employee treatment policies by looking at ownership, benefit and pension plans, as well union relations and health and safety plans.

Furthermore, Rice and Weber (2011) indicate that a large proportion of companies with ICW do not report these in a timely manner. They argue that reasons are the need for external capital, capital market pressures, auditor obedience, and the complexity of the environment in which the controls have to operate. This also links with the findings of Sun (2015) who illustrates that firms with ICW tend to invest less after revelation of their ICW, whilst investing more once investors are aware of the fact that the weakness has been remediated.

Auditor changes also influence the likelihood of reporting ICW. Hermanson et al. (2009) illustrate that firms with a recent auditor change are more likely to report ICW. This finding is also supported in the paper by Zhang et al. (2007), who also illustrate that firms are more likely to be identified with an ICW if their auditors are more independent. Hermanson et al. (2009) hypothesize that this increased likelihood of reporting ICW originates from auditor incentives to avoid having to share the blame for existence of control issues. Relatedly, Rice and Weber (2012) find that firms with losses or previous restatements are more likely to report ICW, due to the extra scrutiny they encounter because of their earlier restatements.

Lastly, an important remark was made in a relatively recent paper by Newton et al. (2016) where it was found that firms tend to do some 'internal control opinion shopping', entailing that not all the internal control opinions are accurate. This term means that firms who will receive an adverse opinion from their auditor regarding the SOX404, will go to another auditor who will not give them an adverse opinion. This is especially relevant, according to Newton et al. (2016) in competitive audit markets, of which the market of the Big 4 auditors is one. Whereas this is not a determinant of the ICQ, it is of relevance for the results as it could indicate that the reporting of an ICW under the SOX404 is not always representative of the true state of the ICQ of a firm.

2.3 Sarbanes-Oxley Act

As mentioned previously, the Sarbanes-Oxley Act, commonly referred to as SOX, is a regulation which has caused a lot of change in the business and regulatory environment. The main idea behind the SOX was to protect investors from fraud in financial reports. Seeing as internal controls have a similar goal, namely guaranteeing the quality of the reports by implementing controls which make fraud (almost) impossible, the two link seamlessly. With the SOX having a large scope, some articles are more relevant than others. With regards to the ICQ the SOX has two main articles which are of relevance namely the SOX302 and SOX404.

Whilst the SOX itself was passed in 2002 (SAS 70, 2018), it took quite some time for the regulation to be fully implemented. This is not uncommon seeing as the regulation was rather rigorous and required companies to make a lot of (costly) changes. The SOX302 was adopted in August, 2003 (Sarbanes-Oxley, 2018), whilst the final regulation for the SOX404 was adopted

in two phases. The first phase referred to companies who were classified as 'accelerated filers'. An accelerated filer is a company which has at least $75 million USD in public float (SAS 70, 2018), and hence a company which has a lot of investors whom the regulation attempts to protect. For these 'accelerated filers' the regulation became mandatory after November 15, 2004 (SAS 70, 2018). The second phase referred to all other publicly listed companies, who did not have a public float larger than $75 million USD. For these companies the regulations had to be implemented for all fiscal years ending after December 15, 2007 (SAS 70, 2018).

The two main articles, as mentioned above, which refer to the requirements with regards to the ICQ are the SOX302 and SOX404. These articles do differ slightly with regards to whom is held responsible when a company does not handle in accordance with the SOX. The SOX302 refers to the internal controls, documentation, and the financial reporting in general. Whilst the requirements are rather broad, the main importance in this article is the fact that it personally holds the CEO and the CFO of a company accountable if the requirements are not met (Sarbanes-Oxley, 2018). By holding these two key-individuals accountable they have a personal motivation to ensure that everything is in accordance with the latest regulations. It is a well-known behavioral theory that individuals only tend to care about their own benefit, which is also reflected in the agency theory. By ensuring that the CEO and CFO have something to loose if they do not comply with the regulations, the agency problem with regards to the accurate reporting of financial information could be decreased.

The SOX404 is split into two subsections, namely the SOX404(a) and the SOX404(b). The former refers to the responsibility of management to collect and maintain proof that there are sufficient internal controls in place to ensure the quality of the financial reports. The latter refers to the responsibility of the external auditor to report on the internal controls and whether these are sufficient (Flynn & Dawson, 2017). Generally speaking the two should be consistent. If management has adequate proof that the internal controls are ensure a high financial reporting quality, the external auditor should find no issues. The potential disagreeance could occur when management has not collected enough proof for the auditor to guarantee the required ICQ. Whilst the standards of both professions differ, it guarantees an extra layer of control to ensure that the internal controls are indeed up to the required standard. In contrast to the SOX302, not only the CEO and CFO are held responsible if the standard of the SOX404 is not met, but the entire management is (SAS 70, 2018).

The difference between the SOX302 and the SOX404 is not remarkably large, however there are some other minor differences when the letter of the law is closely studied. The SOX302 looks at disclosure controls, focusing on the disclosed information. The SOX404 on the other hand focuses on the internal controls, placing emphasis on the input into the financial reports. With the SOX404 focusing on the numbers behind the information disclosed, trying to ensure that the controls filter out fraudulent activity which could cause material misstatements, it is the foundation of existing ICQ regulation. Despite the subtle difference, the SOX404 (both (a) and (b)) is the regulation which caused the largest change in the reporting environment of publicly listed companies. Therefore when studying existing literature, the focus is often placed on this article.

3 Hypothesis development

3.1 Hypothesis 1

As mentioned before the role of a GC stretches far beyond the task of 'gatekeeper', with an emphasizes now being placed on compliance with regulation. This too is confirmed by one of the largest audit firms in the United States, namely EisnerAmper (Goldenberg, 2005). In an article they state that prior to the SOX, a GC would focus on litigation exposure, but now a GC focusses on how to develop compliance frameworks, as well as control structures (Goldenberg, 2005). Hence, the influence of a GC on the ICQ is through the implementation of frameworks and structures which ensure compliance by both other members of top-management as well as other employees.

Yet the task of a GC stretches further than solely implementation, with DeMott (2012) listing the stages of a corporate scandal and the role of the GC in these scandals. Whereas this might seem irrelevant at first, the reporting of an ICW under the SOX404 would be perceived as one of the biggest scandals a firm could experience. This element of scandal, as well as the criminal sanctions which are connected to the SOX, causes, according to DeMott (2012), an empowerment of the GC. She describes the GC as being *"a secretary of the board – crucial to these discussions [regarding the implementation of the SOX404]"*. Furthermore the role of the GC in relation to the SOX 404 is often described, in other literature, as one of compliance, in which emphasis is placed on anticipating and defusing risk (DeMott, 2012; Wilkins, 2012). This definition matches that of the one given by Goldenberg (2005) and supports the connection between the two. The influence of a GC on the ICQ is hence of supplemental value, yet the question which remains is whether the GC tries to avoid scandal, by incorporating proper controls, or tries to defuse the scandal, by ensuring no ICW is reported. Whilst these might seem the same, the latter does not try to solve the underlying problem in the framework of the ICQ, as the focus is solely placed on this one scandal. Therefore the sole defusing of a scandal, is not of benefit to the ICQ of a firm.

Besides the potential of scandals, mandatory compliance with the SOX 404 requires an increased expertise with regards to the ICQ. Earley et al. (2008) illustrate the theory of 'first-' and 'second-movers', applying it to auditors. The theory entails that managers provide information to external auditors, shaping the information they provide, and leaving auditors to move on this information. Yet due to the fact that management has already shaped the information, the auditor can be seen as a 'second-mover', who is subject to knowledge bias. This too can be applied to the GC, as they are 'second-movers' with regards to the ICQ on two grounds. Firstly, the GC gathers information on the ICQ from the CFO, who is responsible for the actual implementation of the internal controls. Hence, the information the GC receives is shaped by the information provided by the CFO. Secondly, a GC is also a 'second-mover' due to the size of the firms studied in the sample. Due to the scale of the operations of each of the companies included, a GC could not possibly gather all the information by themselves and therefore relies on second-hand information. With the information they receive being shaped by others, a GC could suffer from the knowledge bias as described by Earley et al. (2008).

'Second-movers' can be seen as dependent individuals, as they depend on the information

given to them by others, yet it is the independent individuals that have proven to perform worse with regards to the ICQ (Zhang et al., 2007). In their study, Zhang et al. (2007) find a positive relation between auditor independence and the likelihood of reporting an ICW. This is a direct contradiction to the theory of Earley et al. (2008) as 'second-movers', who are dependent, are prone to knowledge bias, which an independent individual is not. The results of Zhang et al. (2007) indicate the value of company-specific knowledge, yet they too mention that too strong of a bond could result in auditors ignoring problems and issuing clean opinions regardless. Therefore it can be seen as a very fine line, between being too independent or being influenced, to a degree, by knowledge bias.

This knowledge bias also links to the research of Avci and Seyhun (2016) who state that a GC does nothing about corporate wrongdoing in some cases because they are not fully aware of it. Perhaps this is one of the most obvious side-effects of knowledge bias as it could imply a GC is blindsided as they are not provided with the information needed to fulfil their task.

Thirdly, research such as that of Ham and Koharki (2016) illustrates that the presence of a GC increases firm credit risk because a GC focusses less on their 'gatekeeper' role. This implies that there is less monitoring when a GC is promoted from a non-senior function to a senior function. With the SOX 404 focussing on monitoring to protect investors, the decrease in the 'gatekeeper' role due to the promotion, would imply less compliance with SOX 404, and a lower ICQ.

The above illustrates a possible contradiction with regards to the results to be found. When simply looking at ICWs, one would expect the presence of a GC to decrease the ICWs reported, as they are meant to defuse corporate scandal (DeMott, 2012; Wilkins, 2012). This would in theory imply a higher ICQ, yet if only scandals are defused, the actual core of the ICQ framework is not altered. Therefore, if the method of looking at discretionary accruals is used, which reflects the core of the ICQ, one would expect, based on the theory of Ham and Koharki (2016) that the presence of a GC decreases the ICQ. Therefore both tests are needed to answer the hypothesis, which is therefore formulated as follows:

H1: Companies with a general counsel in the top-management have a lower internal control quality than those without a general counsel in top-management

3.2 Hypothesis 2

When hiring a GC, or any individual, the aim of a firm is to maximise their productivity and enhance their ability. Not only does this tend to be the most profitable for shareholders, it can also be of interest to management, seeing as they are responsible for the productivity on the work floor. However, not all elements which determine productivity and ability can be influenced by management, with some occurring naturally in the workplace. One of these things is entrenchment. Whilst it depends on the business environment to what degree the entrenchment occurs, there is a form of it in almost every workplace. Various studies have been done with regards to ability and the influence of entrenchment on an individual, using a common objectifiable measure, namely tenure.

Whilst there is, as mentioned, quite some research regarding the influence of tenure on individuals in top-management, none have focussed on the influence of tenure on a GC. With the

GC making a rise in the business scene it is therefore of interest to see what precisely the effect of tenure on a GC is. Moreover the influence of tenure in relation to this study is specifically relevant now that it could explain potential results found. Namely, is there a better ICQ when a GC has a longer tenure due to an increase in ability, or a lower ICQ with a longer tenure due to entrenchment. This is not only of great relevance for firms as it could explain a trend in the performance of a GC, and perhaps how they could combat it, but it is also of relevance for standard setters. If tenure is deemed to be of a significant influence on the ICQ, this should be taken into account with regards to legislation as the internal control system of a firm is meant to be free of human influence.

In the present relation studied, tenure can be seen as a moderating variable. The reason for this is that it possibly influences the performance of a GC with regards to the ICQ. This can be illustrated in the following way:

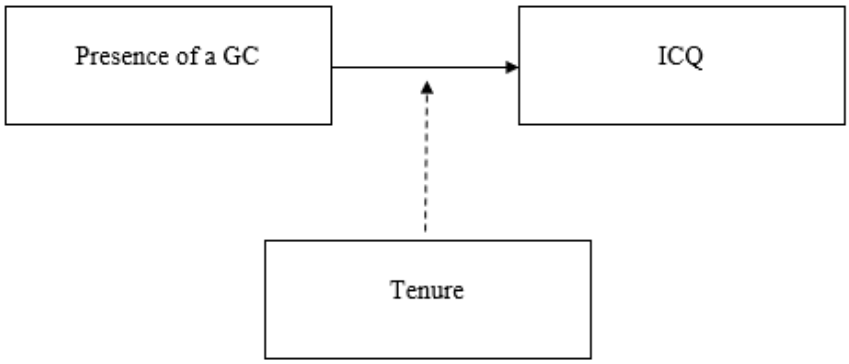


Figure 1
Visual representation of tenure as a moderating variable

As mentioned there is no existing literature on GC tenure, but there are some general theories which could also be applied to the GC. Firstly, Ghosh and Moon (2005) study auditor tenure and audit quality. They state that client-specific knowledge increases with tenure and that this knowledge is essential in detecting material misstatements. Due to this increase in knowledge, auditors do not need to rely as heavily on managerial estimates, increasing the quality of the audits, and hence increasing their ability. Whereas the setting of this thesis is different, a GC and an auditor are rather similar as their roles contain both gatekeeper and advisor elements (Palmrose, 2006; Avci & Seyhun, 2016). This theory of Ghosh and Moon (2005) can therefore also be applied to reason the influence of GC on a company's ICQ and ICW. Namely, a longer tenure could imply more company-specific knowledge in which ICW are more likely to be detected and hence reported, implying a higher ICQ.

On the contrary, Anderson et al. (2004) illustrate that a longer tenure, for the board of directors, is related to a higher level of entrenchment which in turn causes weaker monitoring. This reasoning could too be applied to the GC. With the GC fulfilling the role of gatekeeper, monitoring is one of its key tasks, and a longer tenure could imply that both monitoring and the ICQ decreases. Moreover literature such as that of Ham and Koharki (2016) illustrates that

a GC in a senior position tends to focus less on monitoring in general.

Likewise the research of Cucculelli (2018) and Miller (1991) illustrates that as tenure increases, the innovation and adaptation ability of individuals tends to decrease. With the legal environment requiring continuous innovation and the ability of the GC to adapt to it, tenure could decreases this ability. This would lead to a lower ICQ in which more ICW are reported.

The final aspect regarding GC tenure is highlighted by Wilson et al. (2018) who plead for the addition of auditor trust to research, finding that trust increases with tenure and this increases an employee's intention of whistleblowing. This too can be applied to a GC, as longer tenure could increase trust in a GC, and hence improve the ICQ as employees are more intent on whistleblowing in case of ethical misconduct and inappropriate internal controls.

It is ex ante unclear what the effect of tenure is on the performance of a GC. On the one hand one could argue, based on the theory of Gosh and Moon (2005), that ability increases with tenure and therefore it has a positive effect on the performance of a GC. On the other hand however is the theory of Anderson et al. (2004) which illustrates that monitoring decreases due to entrenchment. This entrenchment, as we know, occurs in turn with a longer tenure. This would imply that tenure has a negative effect on the performance of a GC. Due to this contradiction in research, I formulate hypothesis 2 in the null-form:

H2: General counsel tenure does not have an influence on the internal control quality of a company as well as on its likelihood to report internal control weaknesses

4 Research design

4.1 Sample

To construct the sample, data will be used from publicly listed companies in the United States from January 1, 2008 up to the most recent data available (in this case December 31, 2017). The reason for both the institutional setting and the choice for time period originates from the SOX 404. The SOX 404 became compulsory for companies, classified as 'accelerated filers', with fiscal years ending after November 15, 2004. However, an accelerated filer is a company who has more than $75 million in public float. This implies that not all firms had to comply with the SOX 404 after November 15, 2004. For this reason I have chosen to use data from January 1, 2008 onwards as the SOX 404 became compulsory for all publicly traded companies from December 15, 2007 onwards (SAS 70, 2018). If the time period would have started three years earlier, it would imply a smaller sample which would solely focus on accelerated filers. Seeing as the sample would not be representative for the whole population, the external validity would be low. Hence the choice was made to only look at the time period when the SOX 404 was applicable for all publicly listed firms, therefore increasing the external validity.

Moreover a choice has been made to solely focus on the SOX 404 and not to include the SOX 302 despite the fact that they are rather similar. The reason for this is that the SOX 302 explicitly refers to the responsibility of the CEO and CFO, whilst the SOX 404 refers to the responsibility of management for the adequacy of the ICQ (Sarbanes-Oxley, 2018). Despite the fact that the GC has an influence on the implementation of all regulations within a company, they are more likely to exercise their influence over the parts they are also held responsible for (Sarbanes-Oxley, 2018). As mentioned before, this is also one of the reasons for the requirement that a GC is only classified as a GC if they are in the top-management of a company.

Lastly a distinction can be made between an adverse opinion for SOX 404(a) and SOX 404(b). Whereas there is a slight difference between the two, they each see to the ICQ and hence the distinction is not relevant for this study. Therefore the choice has been made to ignore this distinction and a reported adverse opinion, which is considered an ICW, can either be an adverse opinion under SOX 404(a) or SOX 404(b), or both.

The data with regards to the adverse opinion reported under SOX 404 is retrieved from the database Audit Analytics for the years 2008 up to and including 2017. In order to retrieve all the data required for model 1 and 2, the adverse opinion had to be combined with data from ExecuComp to obtain data about the presence of a GC in a company. The two databases were merged using the CIK code. Some firms do not have any data with regards to the recording of an adverse opinion (ICW), this implies that they did not necessarily receive a 'clean' opinion, but more so that they were not required, or chose not to report on the ICQ under the SOX 404. For this reason, any firm with missing data for the ICW during the years 2008-2017 will be excluded from the sample as it cannot be said with certainty that they would not report an ICW. The precise steps taken in the sample selection are described in table 1 below.

With regards to the data on tenure, this is also retrieved from ExecuComp by focusing on executive ID as well as the title of the executive to identify the GC. There are however two issues with the tenure data. Firstly due to the fact that the tenure is GC specific, seeing as the main

focus of the models 3 and 4 is to look at the contradiction between ability and entrenchment, a switch between a GC in a firm must be noted. However, as both ability and entrenchment are linked to the GC and not to the firm, a switch in GC within a firm means a double entry for the firm. For example if GC 1 worked between 2008 and 2012 and GC 2 from 2013 till 2017 then two entries will be made for the firm, with one being 5 years and the other also being 5 years.

The second issue with the tenure data is that a GC does not necessarily start working at a firm at the start of the sample period, implying that perhaps they have worked at the company since 2000, but due to the fact that the sample period starts in 2008, the tenure calculation in theory would also start from this point. This implies that some GCs are possibly marked as 'new', whilst they have been there for multiple years. In these cases, the tenure is calculated from the beginning of the database, which is 1999. Therefore, companies with a GC who has worked prior to the start of the sample period will be included from their start in the database till when they finished. This is solely the case however for a GC who works until the start of the sample period. This means that if GC 1 worked from 2002 till 2006 he will not be included as the sample period starts from January 1, 2008. However if GC 2 works from 2002 till 2009 he will have a tenure of 8 years. Hence the sample period for this variable is from 1999 up to and including 2017.

With regards to the control variables, all data was derived from Compustat North America, with the exception of variables regarding *Audit Fees* as well as *Dummy Big 4 Auditor*. These variables were collected from Audit Analytics, and can be integrated in the dataset using CIK codes. For the control variable which refers to the number of business segments a company has, data was obtained from Compustat – Capital IQ Historical Segments database, and collected based on the GVKEYs of the GC dataset which was obtained first. Table 1 illustrates the composition of the sample and the adjustments made after the collection process to obtain the final sample for every test. As illustrated panel A corresponds with panel C and panel B corresponds with panel D, based on the ICQ proxies. The ICW refers to the reporting of a material weakness under SOX 404(a) and/or 404(b). The DISC_AQ method refers to the abnormal accruals method of Schroeder and Shepardson (2016).

Upon merging the databases with all control variables and the dataset with GC information, the data was matched on either GVKEYs or CIK codes, depending on the original database, as well as years. After merging, observations which had a missing observations for the presence of a GC, were removed from the sample. This was especially relevant after merging the control variables obtained from Compustat North America as many firms did not have any information on the presence of a GC. The reason for this is that the control variables were obtained for all companies listed in North America, whilst the GC sample consisted of firms who already provided this information.

Table 1
Sample collection process

	Firms	***N***
Panel A: Primary sample for influence GC on ICW *(model 1)*		
Beginning sample of firms obtained when merging datasets from ExecuComp, Audit Analytics and control variables	2,375	18,328
Delete firms without observations for presence of GC	(0)	(0)
Delete firms and observations with missing values for their SOX404 (a) or (b) opinion	(124)	(1,641)
Delete firms who are in the financial sector (SIC Codes 6000-6999)	(441)	(3,064)
Delete firms with missing observations for *Audit Fees*, *Big 4 Dummy*, and *Size*	(17)	(299)
Remove identical duplicates from the sample	(0)	(286)
Delete firms with missing observations for *Age*	(869)	(6,520)
Sample of firms and observations for influence GC on ICW	**924**	**6,518**
Panel B: Primary sample for influence GC on DISC_AQ *(model 2)*		
Beginning sample of firms obtained when merging datasets from ExecuComp, dataset of DISC_AQ, and control variables	2,756	39,733
Delete firms without observations for DISC_AQ (discretionary accruals)	(308)	(17,035)
Delete firms without observations for presence of GC	(197)	(3,781)
Delete firms who are in the financial sector (SIC Codes 6000-6999)	(275)	(4,138)
Delete firms with missing observations for *Audit Fees*, *Big 4 Dummy*, and *Size*	(188)	(1,598)
Remove identical duplicates from the sample	(0)	(279)
Delete firms with missing observations for *Age*	(863)	(6,417)
Sample of firms and observations for influence GC fon DISC_AQ	**925**	**6,485**
Panel C: Sample for GC tenure on ICW *(model 3)*		
Sample from panel A	924	6,518
Collapse sample by GVKEY and EXECID	(0)	(5,439)
Delete firms who have not had a GC during the 2008-2017	(308)	(405)
Delete firms with missing observations for tenure	(0)	(0)
Sample of firms and observations for influence GC tenure on ICW	**616**	**764**
Panel D: Sample for GC tenure on DISC_AQ *(model 4)*		
Sample from panel B	925	6,485
Collapse sample by GVKEY and EXECID	(0)	(5,314)
Delete firms who have not hired a GC during the period 2008-2017	(311)	(409)
Delete firms who have missing observations for tenure	(0)	(0)
Sample of firms and observations for influence GC tenure on DISC_AQ	**614**	**762**

A tabular representation of the sample collection process undergone to reach the final sample. Each panel refers to a separate test as disclosed in chapter 4. *N* refers to the number of observations in the sample. *Audit Fees, Big 4 Dummy* and *Size* refer to the control variables as disclosed in appendix D. *EXECID* refers to the Executive IDs as obtained from ExecuComp. DISC_AQ refers to the discretionary accruals as obtained from the abnormal accruals method of Schroeder and Shepardson (2016).

This is also the reason as to why in model 2 companies were deleted based upon lacking an observation for GC, which was unnecessary in model 1. The ICW was collected based on the GVKEYs derived from the GC sample. However, to calculate the DISC_AQ, all companies listed in the Compustat North America database were downloaded. Therefore, when merging

the samples, several firms for which the DISC_AQ was calculated did not have an observation for the presence of a GC and hence were eliminated.

With regards to the elimination process, the choice was made to delete any firm who did not report whether or not they had a material weakness under SOX 404, as this does not automatically imply that they do not have an ICW. Combining these firms into the sample would create noise as well as incorrect results. Due to the large size of the sample, this elimination was not an issue as most firms do consistently report under the SOX 404. This elimination could perhaps result in a certain bias as it is possible that only firms with specific characteristics tend to publish under the SOX404, resulting in a decrease in the external validity. However it is very difficult to obtain information as to why some firms in certain years do not report under the SOX404. To combat this possible bias an extensive list of control variables has been included, yet it should be considered when interpreting the results.

Moreover, firms who did not have an observation for the DISC_AQ were also removed from the sample per year. Therefore it is possible that some firms lost observations for only a couple of years, whilst remaining in the sample for the other years.

Financial firms were removed from the sample due to their extensive regulation which cannot easily be compared to other firms. Hence this too would disrupt the sample. Likewise, the sample size remained appropriate and therefore this choice could be made.

Furthermore, observations which had missing values for *Audit Fees, Big 4 Dummy*, and *Size*, were also removed from the sample. The reason for this is that if these observations were filled with a 0, the sample would be distorted. When looking at *Audit Fees*, for example, it is highly unlikely that a publicly listed firm does not have any audit fees. Hence, changing a missing observation to 0 would not be logical. Besides that, given the large amount of observations, the missing observations were not deemed to be an issue as there are enough observations for the control variable to function properly. A similar reasoning can be applied to the *Big 4 Dummy*. It can be said that it is more likely that these firms do have a Big 4 auditor, yet placing all missing variables to 1 would imply a distortion in the average. Contrary to this, it could also be argued that if they did have a Big 4 auditor, perhaps more of their information would be public. This unclarity as to whether a 1 or a 0 should replace the missing observation is the reason as to why the observation was not altered. The reasoning with regards to *Size* is also similar, and therefore observations with missing data for this variable were also removed from the sample.

Moreover, the choice was made to separately illustrate the removal of all observations which did not have any data for the variable *Age*. The reason for this is that this removal had quite a large impact on the sample size, which is of importance to note. Whereas the reasoning behind the removal of firms missing observations for *Audit Fees, Big 4 Dummy*, and *Size*, was based on the fact that filling in a zero would not be logical, the removal of *Age* has further reasoning. Not only would it not be logical to fill in a zero if the observation was missing, but *Age* is not often used as a control variable in similar regressions. The reason for this could perhaps be the lack of data, however Doyle et al. (2007) do illustrate that *Age* is an important variable in the reporting of ICW. As mentioned in appendix D, *Age* refers to the years a company has been publicly listed. Unfortunately Compustat does not have the data for every firm, and hence the choice was made to remove those firms which did not have data. Whilst it has a large impact

on the sample size, the remaining sample remains of sufficient size to run tests and draw conclusions.

Lastly the choice was made to winsorize each of the non-dummy and non-log variables at the 1% and the 99%. The winsorizing did not influence all variables, but increasing the level could perhaps remove important, non-outlier, observations which are of influence on the results. Therefore only the most extreme outliers were removed using this process.

For the tenure variable which is a moderating variable in the relation between the presence of a GC and the ICQ, a rather large amount of observations was dropped as tenure can solely be studied for firms with a GC. Due to the prior process of obtaining the sample for model 1, no further processing was required with regards to the companies to obtain the sample for model 3. The GCs were however identified by their Executive ID, with 750 unique Executive IDs existing in the sample. If the databases were simply merged, certain tenure observations would occur several times without them being unique. Hence, if a firm had observations for being a GC firm for the years 2008-2017, and one executive, the observation for tenure would occur 10 times in the dataset. To avoid this problem the choice was made to 'collapse' the dataset, calculating the averages for each of the control variables over the observed years, and matching this with the Executive ID(s) of the firm.

There are several executives which occur twice in the sample, but for different firms. This occurs for precisely 14 GCs, indicating that they tend to switch between firms. These GCs are included twice in the sample, as they work at a different company, and therefore have a different tenure in different environments. The total non-unique Executive IDs in the sample for model 3 are therefore 764.

Seeing as the beginning sample differs slightly between model 3 and 4, the sample also differs slightly. For model 4 there are a total of 762 Executive IDs, of which 744 are unique. This is a minor decrease in the sample size between the two, which most likely originates from the beginning sample, caused by the difference in the proxies for the ICQ.

Table 2
Yearly distribution table illustrating the presence of GCs in firms

Year	**Firms w/o GC**		**Firms w/ GC**		**Total**
2008	535	70%	231	30%	766
2009	444	59%	311	41%	750
2010	450	60%	300	40%	750
2011	430	60%	296	41%	726
2012	402	56%	311	44%	713
2013	373	53%	332	47%	705
2014	356	52%	328	48%	684
2015	360	53%	320	47%	680
2016	334	52%	306	48%	640
2017	51	52%	48	48%	99
Total	3,735	57%	2,783	43%	6,518

Tabular representation of the yearly distribution of the presence of a GC in firms. The table too illustrates the composition of the sample in both absolute numbers as well as percentages. The sample used is panel A from table 1.

Table 2 gives a representation of the trend in the sample with regards to the hiring of a GC. Due to the small sample difference between panel A and B (table 1), it is almost irrelevant which set is used as panel B illustrates a similar trend. From table 2 it can clearly be seen that there is consistent rise in the amounts of GCs being hired, and it illustrates that the GC is becoming increasingly important for firms as almost half of the firms in the sample currently have a GC. With that being said, not all firms publish information in the ExecuComp database on whether they have a GC or not, implying that this number could vary in the actual business environment.

Moreover there is a decreasing amount of firms in the sample for the most recent years. This could be because there is a certain delay in incorporating the information of firms into the database. A potential issue with this is that there could again be underlying characteristics which influence the pace with which information is incorporated into the database, resulting in a bias. However the choice has been made to include the year 2017 for two reasons. Firstly the division between GC and non-GC firms is in line with the trend, indicating that the results are still equally divided and this does not result in a distortion. Secondly, the inclusion of 2017 is of importance as it is recent data which is not yet commonly used in comparable studies. Therefore the inclusion could perhaps provide new insights despite the lack of sample size.

Table 3
Yearly distribution table illustrating the reporting of ICWs by firms

Year	**Firms w/o ICW**		**Firms w/ ICW**		**Total**
2008	742	97%	24	3%	766
2009	739	98%	16	2%	755
2010	738	98%	12	2%	750
2011	706	97%	20	3%	726
2012	687	96%	26	4%	713
2013	681	97%	24	3%	705
2014	660	96%	24	4%	684
2015	650	96%	30	4%	680
2016	590	92%	50	8%	640
2017	52	53%	47	47%	99
Total	6,245	96%	273	4%	13,038

Tabular representation of the yearly distribution of the reporting of an ICW by firms. The table too illustrates the composition of the sample with regards to the ICW in both absolute numbers as well as percentages.

Table 3 illustrates the yearly distribution of the ICW reported by firms. Here too a clear positive trend can be seen in the ICW reported. Whilst this is a remarkable and interesting trend to be found, the reason for it could be due to numerous factors. Firstly, an explanation for this positive trend could be the increase in regulation causing prior ICW which were not classified as an ICW under the SOX404, to now fall under the reach of the regulation. Secondly, it could also be that due to the increase in complexity of operations, with more international operations occurring, and firms growing larger than ever, it is simply increasingly difficult to keep the ICQ up to the desired level. Lastly, it could also be that there is indeed a connection between the presence of a GC and the likelihood of reporting an ICW, as over the years the percentual

presence of a GC increases, whilst the number of ICW reported also increases. However this must be said with caution, as it could also be a spurious correlation. Nonetheless, it is an interesting trend which demands further study.

Similar to table 2, the sample size decreases in 2017, which is most likely caused by a delay in information processing. Whilst this, as mentioned before, is important to note, it should not cause any issue as the sample size is large enough to combat the effect. Remarkably enough though, the number of ICW reported in absolute numbers increases dramatically in 2017. This change can be observed even though the sample size for the entire year is notably smaller. This could indicate that a certain change in regulation, business environment, or other cause has a large effect on the data originating from 2017. This too could be of interest for further study.

4.2 Empirical model

The empirical model will be split into two main parts, the first measuring the influence of the GC on ICQ, and the second part studying the effect of GC tenure on the ICQ. Within each part there will be two ways of measuring the ICQ. The most common way of measuring the ICQ is through the usage of the ICW. This method refers to the creation of a dummy variable which takes the value of 1 if an adverse opinion (or material weakness) is reported under the SOX 404. The issue with this is that it is a dummy variable, making the accuracy remarkably low. In the present sample approximately 5% of the sample reports an ICW and hence qualifies as having a low ICQ. This could cause results to show little information on the actual influence of a GC on the ICQ as the method of measuring is rather 'all-or-nothing'. Moreover as illustrated in literature, some GCs fail to report an ICW due to the litigation risk and their fear of it. Besides that 'internal control opinion shopping' as shown by Newton et al. (2016) is also a trend in the current audit-environment, which too makes the ICW an unreliable measures as it is subject to bias and is therefore not objective. This causes the need to measure the ICQ using a method which is less subjectable to manipulation.

Whereas the measurement method described above is common in literature, it is however unable to capture a potentially subtle influence of a GC on the ICQ. In order to guarantee the robustness of the results, another measurement method will be used to measure the ICQ. This method is far less common than the ICW method, but has been proven to capture the desired effects, as shown in Schroeder and Shepardson (2016). This measurement entails using a proxy to measure the ICQ, in the form of absolute value of the discretionary working capital accruals (DISC_AQ). Schroeder and Shepardson (2016) make use of unaudited discretionary accruals, however the unaudited data is difficult to obtain. Therefore the data used to calculate the DISC_AQ is audited data. This could have several implications with the foremost being a decrease in the magnitude of the accruals.

To estimate the discretionary accruals the quarterly modified Jones model will be used. From this the residuals can be obtained which will illustrate the discretionary working capital accruals. High discretionary working capital accruals (WCA) imply a lower accrual quality and hence a lower ICQ. The advantage of this method is also that there is hardly any influence of the willingness of the top-management to report an ICW as this is not taken into account (Rice & Weber, 2011). Moreover the ICQ is directly derived from the financial statements, making

it less subject to bias. The intuition behind this model also differs due to the fact that it is an indirect measure of the ICQ, and focusses on accruals which tend to refer to the ICQ.

The model therefore focusses on the functionality of the internal control systems by looking at the difference in the financial reports, and drawing conclusions on the ICQ from this (Schroeder & Shepardson, 2016). The direct relevance of this is that many studies have illustrated that a higher ICQ results in a better earnings quality and therefore lower accruals (Iliev, 2010; Bédard, 2006). Therefore the intuition behind measuring the ICQ by using an accrual proxy is established in existing literature, and allows for a more precise measure of the ICQ than the reporting of the material weakness under the SOX 404 or not.

The model is:

$$WCA_{it} = \alpha_1 Q1_{it} + \alpha_2 Q2_{it} + \alpha_3 Q3_{it} + \alpha_4 Q4_{it} + \alpha_5 (\frac{1}{Assets_{it}}) + \alpha_6 (\Delta REV_{it} - \Delta AR_{it}) + \alpha_7 WCA_{it-4} + \alpha_8 ROA_{it-4} + \alpha_9 SGROWTH_{it} + \alpha_{10} CFO_{it} + \alpha_{11} DCFO_{it} + \alpha DCFO \cdot CFO_{it} + \varepsilon_{it} \quad (1)$$

The alterations to the original Jones Model are adapted from Schroeder and Shepardson (2016). The formula controls for quarterly effects *(Q1, Q2, Q3, Q4)*, as well as controlling for performance *(ROA)* and firm growth *(SGROWTH)*. The latter two both originate from Collins et al. (2012). Another addition which Schroeder and Shepardson (2016) included, but which originates from Ball and Shivakumar (2016) is the inclusion of *CFO, DCFO* and *CFO*DCFO* which represent the asymmetric timeliness of gains and losses. The reason for this is that it refers to the quality of the accruals as well as possible manipulation by management. Detailed definitions of the variables are disclosed in appendix A.

Moreover quarterly data is used as it tends to be able to capture more effects and possible manipulation than annual accruals, and hence in order to fully capture minor manipulations, the choice is made to use quarterly data. Furthermore, it is likely that a GC will not allow a very obvious manipulation of the accruals, and hence a minor manipulation would seem more in line with the existing research. Seeing as the purpose of this method is to capture precisely small manipulations, it is of importance to use quarterly data.

Lastly, the WCA are scaled by average total assets. This average is taken over the period of the sample period, namely 2008-2017. The reason to scale by assets is to control for firm size in this formula. Larger firms tend to have larger working capital accruals when looking at the total. However relatively, their working capital accruals should not be significantly larger than those of smaller firms.

4.2.1 Model 1 and 2

Model 1 and 2 look at the influence of a GC on the ICQ, and are related to hypothesis 1. The ICQ, as mentioned above is measured either by looking at the ICW (which is a dummy variable, taking the value of 1 if an ICW has been reported during the year, and taking the value of 0 if not), or by measuring the DISC_AQ through the method of Schroeder and Shepardson (2016) as explained in formula 1. These two methods of measuring hence make the theoretical relation into a construct. The construct to measure the presence of a GC is a dummy variable which

takes 1 if a firm has a Chief Legal Officer or a GC, and 0 otherwise. The sole requirement for the GC is that they occupy a position in the top-management, and not necessarily the board. The reason for this requirement is that it ensures the GC has an influence on the day-to-day operations, whilst keeping the sample an appropriate size as only a small part of GCs occupy a board position (KPMG, 2012). This can be visualized using Libby boxes, as illustrated in appendix B.

The regression models to be tested are:

$$\begin{gathered}\textbf{logit(ICW)} = \beta_0 + \beta_1 GC + \beta_2 LNBSEG_{i,t} + \beta_3 Foreign_{i,t} + \beta_4 Growth_{i,t} + \beta_5 ARINV_{i,t} + \\ \beta_6 M\&A_{i,t} + \beta_7 RESTRUCTURE_{i,t} + \beta_8 CAP\_INTENSITY_{i,t} + \beta_9 SIZE_{i,t} + \beta_{10} MBR_{i,t} + \\ \beta_{11} AGE_{i,t} + \beta_{12} BIGN_{i,t} + \beta_{13} LNFEES_{i,t} + YearFixedEffects + \\ IndustryFixedEffects\end{gathered} \tag{2}$$

$$\textbf{DISC\_AQ} = \beta_0 + \beta_1 GC + controls + \varepsilon \tag{3}$$

In model 1 both the independent and the dependent variable are dummies, and hence a linear regression model does not fit. Therefore, as both variables are binary, a logit regression will be used. Model 2 however contains a continuous dependent variable, making a linear regression appropriate.

With regards to model 2, robust standard errors will be used as well as two different types of regressions. The first regression will be a linear regression, whilst the second regression conducted is a robust regression as developed by Verardi and Croux (2009). The reason for this is that it is possible that outliers are of influence in the sample, which could create noise in the results. By using a robust regression the influence of these outliers is filtered out, which could possibly lead to different results.

With regards to the hypothesis, seeing as the ICQ is measured in two ways, the sign of the coefficient has to be explained differently for each measure. The coefficient of ß$_1$ is predicted to be negative for model 1 whilst positive for model 2, both fitting hypothesis 1, but with a different reasoning. For model 1, which looks at ICW, a negative ß$_1$ implies that the presence of a GC causes less ICWs to be reported, and should in theory imply a higher ICQ. However the decrease in ICW could also be due to the increased litigation risk as illustrated by Kwak et al. (2012), and not because of a higher ICQ. Moreover the reporting of an ICW has many negative effects, such as a higher cost of equity. With a GC taking on a facilitating role where they become more of a manager than a gatekeeper, they intent to report as little ICWs as possible (Ashbaugh-Skaife et al., 2009; Rice and Weber, 2011). Therefore, whilst the predicted sign would imply a higher ICQ, the actual prediction is that the lower frequency in reporting an ICW causes a lower ICQ.

On the other hand when measuring the ICQ by looking at DISC_AQ, the positive coefficient of ß$_1$ implies that the presence of a GC increases the DISC_AQ, implying more discretionary accruals and therefore a lower ICQ.

4.2.2 Model 3 and 4

Model 3 and 4 look at the influence of a GC's tenure on the ICQ. Due to the fact that the ICQ is again measured in two different ways, the models differ. Whereas the construct for the ICQ remains the same, the GC tenure has to be transformed from a theoretical relation into a construct. The GC tenure variable will be the amount of years a GC has fulfilled the position in top-management, therefore being a continuous variable. This has the preference over splitting the sample into two groups, using dummy variables, as the influence of tenure on the performance of the GC in a company can be studied more closely. The operationalization of the construct can be visualized using the Libby boxes as illustrated in appendix C.

As mentioned before, the control variables will remain the same as in model 1 in order to ensure that an alteration in control variables does not result in a change of the coefficient. The regression models are:

$$\textbf{logit(ICW)} = \beta_0 + \beta_1 GC + \beta_2 Tenure + \beta_3 GC * Tenure + controls \tag{4}$$

$$\textbf{DISC\_AQ} = \beta_0 + \beta_1 GC + \beta_2 Tenure + \beta_3 GC * Tenure + controls + \varepsilon \tag{5}$$

The coefficient of interest is ß$_3$ as this is the interaction term which will refer to the moderating influence of GC tenure on the ICQ. Model 3 (formula 4) remains to be a logit regression as the dependent variable is binary.

With regards to model 4 (formula 5), a linear as well as a robust regression will be performed for similar reasons as described above. Due to the fact that hypothesis 2 was written in the null-form due to conflicting literature, no prediction can be made about the sign of the ß$_1$ coefficient.

4.2.3 Control variables

The control variables are based on the paper by Schroeder and Shepardson (2016). They have based these variables on other research papers which have proven that these variables are determinants of discretionary accruals and accrual estimation. Therefore they are relevant for the DISC_AQ models.[3] Besides that, all control variables included also influence the ICW as shown by Doyle et al. (2007).

LNBSEG and *FOREIGN* are to control for the complexity of operations by looking at the number of business segments and whether foreign operations take place. Firms with more complex operations tend to report more ICWs (Doyle et al., 2007), whilst the effect on the ICQ is ambiguous (Schroeder and Shepardson, 2016). *GROWTH* and *ARINV* are used to control for growth, as this could have an impact on both accruals as well as the likelihood of reporting an ICW (Doyle et al., 2007).

Moreover the variables *M&A* and *RESTRUCTURE* are included as changes in the structure of a company will influence the size accruals. Besides that Doyle et al. (2007) also indicate that

[3]Schroeder and Shepardson (2016) have based their controls on the studies of Dechow, Sloan, and Sweeney 1995; Becker, DeFond, Jiambalvo, and Subramanyam 1998; Dechow and Dichev 2002; Francis, LaFond, Olsson, and Schipper 2004, 2005; Kothari, Leone, and Wasley 2005; Ge and McVay 2005; Ashbaugh-Skaife et al. 2008.

these changes influence the likelihood of reporting an ICW.

CAP_INTENSITY refers to a firm's capital intensity and therefore to its capital structure which could influence both the accruals as well as the likelihood of reporting an ICW. This is because firms with a lot of debt might be under stricter supervision by for example banks, making them less likely to manipulate their earnings. On the other hand it could also be that they try to meet debt covenants by managing earnings. Therefore the effect is ambiguous, yet of importance on the DISC_AQ. *SIZE* is added to control for firm size which is relevant for both calculations, and the market-to-book ratio *(MBR)* to take into account firm value.

AGE is an addition which is not included in Schroeder and Shepardson (2016), but is of relevance for the ICW as illustrated by Doyle et al. (2007) and should therefore not be omitted as it refers to the years a firm has been publicly listed.

The variables *BIGN* and *LNFEES* refer to the auditor characteristics, as it could be of influence for both accruals and the likelihood of reporting an ICW whether the auditor originates from a Big 4 firm [4]. Moreover the size of their fee could indicate the complexity of the accounts as well as the risk involved, as the fees tend to reflect the risk paired with abnormally large accruals (Hogan and Wilkins, 2008). The precise definitions of each of these variables is listed in appendix D.

Lastly, with regards to the fixed effects, before adding the year and industry fixed effects a Hausman test will be conducted to see whether the fixed or the random effects model is more suitable for the regression. If the null hypothesis *(difference in coefficients not systematic)* is rejected, the fixed effects will be added.

4.2.4 Robustness checks

Besides a few general tests, such as a correlation matrix to see if there is no issue of multicollinearity in the data, one other main robustness checks will be done to prove the validity of the results. This robustness check involves the re-running of the models but this time using the propensity score matching method (PSM). As shown by Rosenbaum and Rubin (1983) PSM mitigates the possibility of an omitted variable. This is of importance because of the likelihood of endogeneity in this study due to firm-specific reasons for hiring a GC. Kwak et al. (2012) have also used this method in similar research, for similar endogeneity concerns.

Moreover another robustness check will be added, namely repeating the regressions of models 1-4 without the inclusion of the variable *Age*. The reason for this is that *Age* has a rather large influence on the sample size, decreasing it by approximately half. The choice was made to include *Age* based on prior research, however it is of interest to see if a larger sample size will alter the results. Therefore the test will be repeated to see if this would change the conclusion.

[4] Ernst & Young, PricewaterhouseCoopers, Deloitte, and KPMG.

5 Results

Before starting the empirical analysis in the form of the regressions, the sample will be analysed in two groups, namely model 1 & 2 and model 3 & 4.

5.1 The influence of the presence of a GC on the ICQ

5.1.1 Descriptive statistics for models 1 and 2

Table 4
Descriptive statistics for control variables

Variables	***N***	**Mean**	**Median**	**Std. Dev.**	**25th P**	**75th P**
M&A dummy	6,518	0.31	0.00	0.46	0.00	1.00
Foreign dummy	6,518	0.66	1.00	0.47	0.00	1.00
Restructure dummy	6,518	0.38	0.00	0.49	0.00	1.00
Receivables & Inventory	6,518	0.10	0.06	0.13	0.00	0.16
Size	6,518	7.21	7.11	1.40	6.19	8.12
Capital Intensity	6,518	0.23	0.07	0.22	0.01	0.34
Growth	6,518	0.09	0.05	0.25	-0.03	0.16
Log of Business Segments	6,518	1.46	1.61	0.74	1.10	1.95
Market to Book ratio	6,518	2.79	2.51	15.00	0.79	5.44
Log of Audit Fees	6,518	14.28	14.25	0.87	13.68	14.84
Big 4 auditor dummy	6,518	0.89	1.00	0.31	1.00	1.00
Firm Age	6,518	21.69	22.00	7.01	18.00	26.00
ICW	6,518	0.04	0.00	0.20	0.00	1.00
DISC_AQ	6,485	0.01	0.02	0.01	0.00	0.02

Descriptive statistics for each of the control variables incorporated in models 1-4 as well as descriptive statistics on both the dependent variables of *ICW* and *DISC_AQ*. With *P* representing the percentiles. Variable definitions along with the methods of calculating these are included in appendix D. All non-logarithmic continuous variables are winsorized at 1% and 99%, to limit the influence of outliers. All decimals are rounded to 2 d.p. The sample used to calculate the descriptive statistics is that of panel A in table 1, with the exception of *DISC_AQ* which is calculated using the sample of panel B from table 1.

Table 4 illustrates the descriptive statistics of the control variables for all models as well as both methods of calculation for the ICQ. Most of the control variables were available for all firms, as can be seen in the column which refers to the number of observations *(N)*. With regards to *Log of Business Segments*, firms who did not list any segments were given a 0 for this variable. There were only 14 observations which did not list any segments, therefore this did not have a large effect on the results. Moreover the variable *Growth* was also given a 0 in those cases where there was a missing value, as it can be the case that there was zero growth in a specific year. This treatment only had to be applied to 10 observations. As mentioned, observations with missing entries for *Audit Fees, Big 4 Dummy,* and *Size* were removed from the sample. From the table it can be seen that the standard deviation for *Audit Fees* is rather small, implying that the fees are very similar across firms and that the removal of these observations has not caused a distorting effect. Likewise, the standard deviation of *Size* is also not too large, implying that the size of firms is rather consistent over the sample.

The *Market to Book ratio* has remarkably large standard deviations despite being winsorized, namely 15.00. This could indicate that there are still some outliers present, however they are not removed from the sample due to it possibly resulting in the removal of 'normal' observations. In order to combat this problem a robust regression will be done, as mentioned previously, as it reduces the influence of possible remaining outliers and high leverage points without the need to winsorize further (Verardi & Croux, 2009). This robust regression will only be done for models 2 and 4, as the logit regression solves the issues with potential outliers already.

With regards to *DISC_AQ* it can be seen that there are slightly less observations. This is due to the fact that not all companies publish all the required information needed to calculate the discretionary accruals. The discretionary accruals found are rather small, yet comparable to discretionary accruals found by other papers (Schroeder & Shepardson, 2016). With that being said, it could be that the discretionary accruals found in the sample are slightly smaller than those found by other papers as this sample solely contains firms under supervision by the SOX. Hence, it would be understandable that these firms do less extreme earnings management as the chance of getting caught is higher. Moreover this relatively small size could also be due to the use of audited instead of unaudited data to calculate the discretionary accruals.

Table 5 illustrates the results for the independent t-test comparing the means for each of the dependent and control variables for firms without a GC to firms with a GC. The most interesting result is that of *ICW*, as this indicates that there is a significant difference (p=0.05) in the means between the reporting of an ICW under the SOX 404 when there is no GC compared to when there is (-0.012). This illustrates that companies with a GC are more likely to report an ICW. This result is in accordance with hypothesis 1 as this implies that they have a lower ICQ. However the prediction in hypothesis 1 was that perhaps firms would report less ICW when having a GC due to litigation risk. From table 5 this can however not be observed.

Another result which is in line with the expectations as listed by hypothesis 1 are those for the variable *DISC_AQ*. As illustrated in table 5 there is a significant difference of -0.001 (p=0.01) in the means between the amount of discretionary accruals when comparing the presence of a GC. With a GC, the amount of discretionary accruals is higher (0.014 vs. 0.013). Hence, it shows that the presence of a GC lowers the ICQ as there is more earnings management taking place. With that being said, the difference is minor, which could indicate that it could also be due to something different.

With regards to the other variables, firms with a GC tend to undertake more M&A activity as well as restructuring activity. An explanation for this could be that due to the 'inhouse' legal knowledge they are less afraid of undertaking activities which tend to be legally demanding. Firms with a GC also tend to be more complex as they have more business segments (difference of -0.087, p=0.01), and more capital intense (difference of -0.019, p=0.01). Remarkably firms with a GC also have higher audit fees, and are more likely to have a Big 4 auditor, perhaps because of the more complex business or because they are more aware of the risk. On the other hand, Hogan and Wilkins (2008) state that companies who report more ICWs tend to have higher audit fees which could also be an explanation for the result found.

Table 5

Comparison between the means of firms by GC using an independent t-test

Variables	***N***	**GC=0**	***N***	**GC=1**	**Mean Difference**	***t-stat***
M&A dummy	3,735	0.287	2,783	0.329	-0.042***	-3.657
Foreign dummy	3,735	0.653	2,783	0.669	-0.017	-1.4058
Restructure dummy	3,735	0.353	2,783	0.422	-0.069***	-5.688
Receivables & Inventory	3,735	0.110	2,783	0.096	0.015***	4.669
Size	3,735	7.108	2,783	7.338	-0.230***	-6.602
Capital Intensity	3,735	0.224	2,783	0.243	-0.019***	-3.493
Growth	3,735	0.097	2,783	0.088	0.009	1.386
Log of Business Segments	3,735	1.422	2,783	1.509	-0.087***	-4.706
Market to Book ratio	3,735	3.008	2,783	2.505	0.503	1.339
Log of Audit Fees	3,735	14.198	2,783	14.394	-0.196***	-9.065
Big 4 auditor dummy	3,735	0.878	2,783	0.906	-0.029***	-3.648
Firm Age	3,735	21.905	2,783	21.405	0.500***	2.852
ICW	3,735	0.037	2,783	0.049	-0.012**	-2.430
DISC_AQ	3,715	0.013	2,770	0.014	-0.001***	-3.454

Independent t-test comparing the means of firms without a GC to those with a GC. The comparison is carried out for each control variable as well as for both proxies of the ICQ. The sample used is that of model 1, as illustrated in panel A of table 1, with the exception of *DISC_AQ*, which originates from the sample of panel B of that same table. Definitions and methods of calculation for each of the control variables can be found in appendix D. All decimals are rounded to 3 d.p.

* implies statistical significance at 0.10

** implies statistical significance at 0.05

*** implies statistical significance at 0.01

Table 6

Comparison between the means of firms by ICW using an independent t-test

Variables	***N***	**ICW=0**	***N***	**ICW=1**	**Mean Difference**	***t-stat***
M&A dummy	6,245	0.303	273	0.359	-0.056**	-1.979
Foreign dummy	6,245	0.656	273	0.747	-0.091***	-3.116
Restructure dummy	6,245	0.376	273	0.524	-0.147***	-4.911
Receivables & Inventory	6,245	0.104	273	0.104	-0.000	-0.048
Size	6,245	7.212	273	7.071	0.141	1.638
Capital Intensity	6,245	0.234	273	0.191	0.042***	3.144
Growth	6,245	0.095	273	0.049	0.046***	3.004
Log of Business Segments	6,245	1.453	273	1.610	-0.157***	-3.433
Market to Book ratio	6,245	2.883	273	0.754	2.129**	2.300
Log of Audit Fees	6,245	14.265	273	14.661	-0.396***	-7.396
Big 4 auditor dummy	6,245	0.892	273	0.832	0.061***	3.147
Firm Age	6,245	21.692	273	21.663	0.030	0.069
GC	6,245	0.424	273	0.498	-0.074**	-2.430

Independent t-test comparing the means of firms who do not report an ICW under the SOX 404 with firms who do report a ICW under the SOX 404. The comparison is carried out for each control variable as well as for both proxies of the ICQ. The sample is used is that of model 1, as illustrated in panel A of table 1. Definitions and methods of calculation for each of the control variables can be found in appendix D. All decimals are rounded to 3 d.p.

* implies statistical significance at 0.10

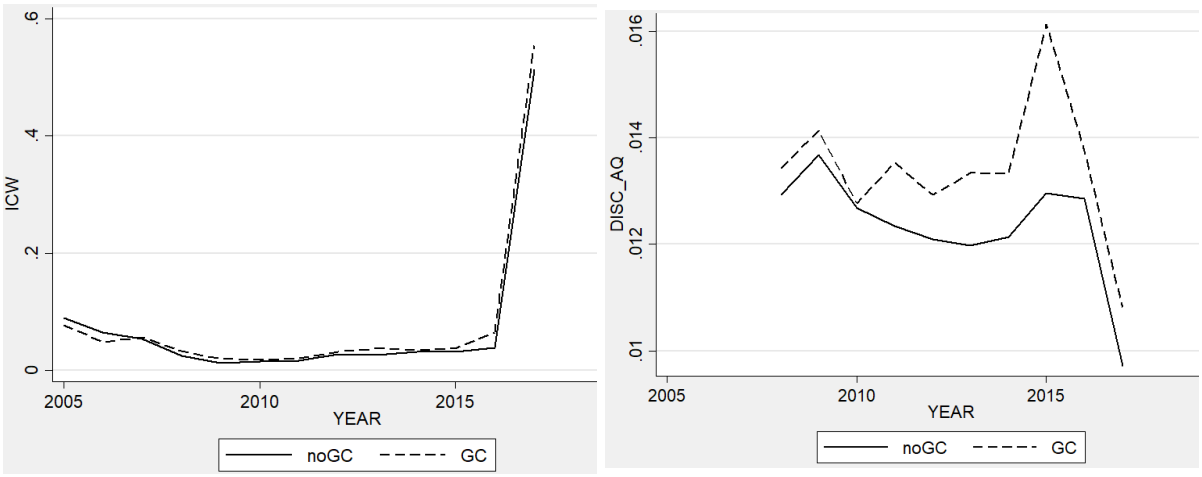
** implies statistical significance at 0.05

*** implies statistical significance at 0.01

Table 6 illustrates the results for the independent t-test comparing the means between each

of the variables for firms reporting an ICW under the SOX 404 and for firms who do not. Due to the clear distinction in the ICW variable a comparison can be made between the two groups. This can however not be done for the DISC_AQ as there is no clear distinction when there is a 'low' ICQ and when there is a 'high' ICQ. The results are rather similar to table 4 as they also illustrate that the presence of a GC tends to result in a higher likelihood of reporting an ICW (difference of -0.074, p=0.05).

The results for the control variables however are different to that of table 5 as firms who do not report an ICW tend to be larger, grow more, and have a higher market to book ratio. On the other hand firms who do report an ICW tend to undertake more M&A activity, are more active abroad, restructure more and pay higher audit fees. This is contradicting with table 5, as companies with a GC tend to report more ICW, yet they also undertake more M&A activity, restructure more and pay higher audit fees. With that being said, the above results are however in line with existing research as the increase in audit fees is in accordance with the research of Hogan and Wilkins (2008). Moreover, the variables regarding M&A activity, restructuring and foreign operations are in agreeance with Schroeder and Shepardson (2016). The independent t-tests therefore illustrate a contradiction which the regression models should be able to clarify. Graphically, the difference between the two groups is the following:



(a) ICW reported

(b) Discretionary accruals reported

Figure 2
Graphical representation illustrating the differences between firms with and without a GC, with regards to the two proxies for the ICQ (*ICW* and *DISC_AQ*).

The graphical representation as seen in figure 2a and figure 2b, illustrates that there is a rather large difference between firms with a GC and those without when referring to abnormal discretionary accruals. However, when looking at the likelihood of reporting an ICW, the difference between the two groups is minor. This too illustrates that perhaps the proxy of the ICW does not capture everything the DISC_AQ proxy captures, or perhaps the DISC_AQ proxy captures undesired effects. Hence the regression models are essential before any conclusion can be drawn.

Table 7 illustrates the correlation between all control variables and both methods of calculating the ICQ. Firstly, it should be noted that there is a very weak correlation between the ICW

and the presence of a GC (0.030) which is of interest, as it indicates that these two variables are not necessarily related. With that being said, tables 5 and 6, illustrated that firms with a GC tend to have a higher likelihood of a lower ICQ (both with regards to the ICW and the DISC_AQ) compared to firms who do not have a GC. Interestingly enough the *DISC_AQ* variable is correlated slightly stronger with the GC (0.043) compared to the ICW. Not much can be concluded from this except that the presence of a GC does not seem to strongly influence either variables. Therefore it could indicate that there might only be a weak connection between the ICQ and the presence of a GC.

However *DISC_AQ* and *ICW* have a very weak correlation of -0.007, which could imply that they do not capture the same effects. This would mean that whilst they are both proxies for the ICW, they both capture something different. Hence, both methods of calculation are required in order to give an impression of the influence of a GC on the ICQ.

Most of the correlations above can be considered weak as they are smaller than 0.3, yet there are some correlations, such as between *Audit Fees* and *Size*, that are very strong (0.765). These correlations are not deemed to be an issue as they are logical, namely it is common knowledge that a larger firm takes longer to audit, and hence the audit fees are higher. Seeing as there are only high correlations between control variables, and not between the coefficients of interest (*GC, ICW,* and *DISC_AQ*), multicollinearity is not an issue.

Table 7
Correlation matrix

	M&A	**Foreign**	**Restr.**	**R& I**	**Size**	**C.I.**	**Growth**	**L. BS**	**Big 4**	**L. Fees**	**M/B**	**Age**	**GC**	**ICW**	**DA**
M&A	1														
Foreign	0.156	1													
Restr.	0.154	0.278	1												
R & I	-0.121	-0.024	-0.039	1											
Size	0.146	0.166	0.146	-0.076	1										
C.I.	-0.162	-0.336	-0.110	-0.068	0.182	1									
Growth	0.213	-0.036	-0.139	-0.079	0.082	-0.082	1								
L.BS	0.136	0.544	0.267	-0.010	0.258	-0.160	-0.079	1							
Big 4	0.046	0.026	0.076	-0.025	0.295	0.052	-0.025	0.029	1						
L. Fees	0.188	0.373	0.322	-0.085	0.765	-0.054	-0.021	0.432	0.298	1					
M/B	-0.021	0.023	-0.049	0.015	-0.038	-0.009	0.012	-0.020	0.021	-0.035	1				
Age	-0.024	0.060	0.102	0.119	0.131	0.030	-0.105	0.207	0.011	0.086	-0.027	1			
GC	0.045	0.017	0.070	-0.058	0.082	0.043	-0.017	0.058	0.045	0.112	-0.017	-0.035	1		
ICW	0.025	0.039	0.061	0.001	-0.020	-0.039	-0.037	0.043	-0.039	0.091	-0.028	-0.001	0.030	1	
DA	-0.091	-0.162	-0.039	-0.071	-0.073	0.121	-0.048	-0.138	-0.043	-0.102	-0.007	-0.055	0.043	-0.007	1

A correlation matrix between all control variables as well as between the two proxies of the ICQ. The sample used is that of model 1, as illustrated in panel A of table 1, with the exception of *DISC_AQ*, which originates from the sample of panel B of that same table. *M&A, Foreign*, and *Restructure* represent the dummies. *R&I* is the variable *Receivables & Inventory*, *C.I.* is an abbreviation for *Capital Intensity*, and *L.BS* and *L.Fees* represent the *Log of Business Segments* and *Log of Audit Fees*. *M/B* is an abbreviation for the *Market-to-Book ratio*, and *DA* is an abbreviation for *DISC_AQ*. Definitions and methods of calculation for each of the control variables can be found in appendix D. All decimals are rounded to 3 d.p.

5.1.2 Results model 1

Before running the model, the Hausman test was conducted to see whether the fixed effect model is appropriate for the data. The test illustrated that the null hypothesis had to be rejected (p=0.000), and the fixed effects model is appropriate.

Table 8
Relation between presence GC and ICW (full sample)

	ICW (1)	**ICW (2)**	**ICW (3)**
GC	0.144	0.173	0.092
	(0.90)	(1.16)	(0.57)
Log of Business Segments	-0.027	-0.007	0.021
	(-0.18)	(-0.05)	(0.13)
Foreign dummy	-0.297	-0.146	-0.182
	(-1.26)	(-0.63)	(-0.72)
Growth	-0.233	-0.274	-0.252
	(-0.72)	(-0.92)	(-0.79)
Receivables & Inventory	-0.177	-1.575	-1.748
	(-0.24)	(-1.43)	(-1.47)
M&A dummy	-0.130	0.205	-0.130
	(-0.73)	(1.27)	(-0.72)
Restructure dummy	0.187	0.151	0.233
	(1.10)	(0.94)	(1.35)
Capital Intensity	0.375	-0.400	-0.264
	(0.76)	(-0.66)	(-0.41)
Size	-0.988***	-0.900***	-1.071***
	(-9.07)	(-8.54)	(-9.25)
Market to book ratio	-0.006	-0.005	-0.005
	(-1.49)	(-1.29)	(-1.31)
Age	0.003	-0.005	-0.002
	(0.24)	(-0.43)	(-0.17)
Big 4 auditor dummy	-1.023***	-1.118***	-1.052***
	(-3.94)	(-4.58)	(-4.04)
Log of Audit Fees	1.854***	1.892***	1.933***
	(10.04)	(10.80)	(10.18)
Year Fixed Effects	YES	NO	YES
Industry Fixed Effects	NO	YES	YES
Observations	6,518	6,518	6,518
Adjusted R^2 McFadden	0.086	0.075	0.100

The table examines the relation between the presence of a GC and the reporting of ICW. Column (1) illustrates the relation without industry fixed effects, whilst column (2) includes industry fixed effects but no yearly fixed effects. Column (3) is the full fixed effects model. The sample used is that of panel A (table 1). Below each coefficient, the z-score is reported. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

The first model, as illustrated in table 8, studies the influence of the presence of a GC on the ICQ by looking at the ICW, which consists of the reported material weaknesses under the SOX 404. Table 8 illustrates in column (3) the results upon including the year and industry fixed effects. Remarkably, there is no significant relation to be found between the presence of a GC and the likelihood of reporting an ICW. The variables regarding auditors and their fees *(Big 4 auditor and Log of Audit Fees)* as well as the coefficient referring to a firm's size *(Size)* are all highly significant (p=0.01). Due to the model being a logit regression, the coefficients remain to be coefficients and not odds ratios, and therefore should be interpreted as such.

Prior to interpreting, a comment must be made regarding the sample size which has approximately halved in size. The reason as to why this has happened is due to the variable of *Age*, which is included in all three columns. With *Age* having far less observations than other variables, the sample size is suppressed. Whilst this is unfortunate, the variable of *Age* is deemed to be of importance in literature and can therefore not be left out. Further analysis also indicates this, such as in table 9.

Nonetheless, some results can be derived from table 8. Firstly, having a big 4 auditor reduces the reporting of an ICW with -1.052 units, which has an odds ratio of 0.349.[5] This implies that the odds of reporting an ICW are lower, namely 0.349, when a firm has a big 4 auditor. From the table it can also be seen that when the fees paid to the auditor increase by 1%, the likelihood of reporting an ICW increases by 0.009, which has an odds ratio of 1.009. The meaning of this is that companies who pay a higher audit fee, tend to report more ICWs, which is in line with the predictions of Hogan and Wilkins (2008).

Secondly, the variable of *Size* is also highly significant and illustrates that an increase of 1% in size leads to an decrease in ICWs reported by 0.005 (as the variable Size is calculated by taking the logarithm of total assets), having an odds ratio of 0.995. This indicates that there is a negative relation between size and reporting an ICW, which is in line with Doyle et al. (2007).

With regards to the fit of the models, the adjusted R^2 of McFadden was used, which illustrates that the addition of the industry and year effects allows for a better fit. Whereas the use of a pseudo-R^2 is highly debated in literature, with many different possibilities as to what Psuedo-R^2 to use, the choice was made to add in the McFadden R^2 due to its common use in existing literature. The R^2 however remains very small in all models indicating that there are perhaps other influences which impact the results.

To further analyse the relation between the presence of a GC and the reporting of an ICW, table 9 can be used. Remarkably the *GC* coefficient remains significant up to column 11, when the control variable of *Age* is added. Up to that point there is a positive relation between the presence of a GC and the reporting of an ICW, more specifically (taking the coefficient in column 10), the presence of a GC increases the reporting of an ICW with 0.244, having an odds ratio of 1.276. This means that a firm with a GC would be 1.276 times more likely to report an ICW than a firm without a GC. With that being said, the McFadden R^2 is also notably low up to the point that the *Age* coefficient is added indicating that a large amount of explanatory variables with regards to the ICW are not yet included in the model.

[5]The odds ratio can be calculated by taking the exponential of the coefficient.

Table 9
Relation between presence of GC and ICW

	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW
GC	0.250**	0.250**	0.249**	0.250**	0.249**	0.249**	0.244*	0.246*	0.243*	0.244*	0.242	0.256	0.092
	(1.98)	(1.98)	(1.97)	(1.97)	(1.97)	(1.96)	(1.93)	(1.95)	(1.93)	(1.94)	(1.46)	(1.54)	(0.57)
L. BS		-0.011	-0.063	-0.074	-0.076	-0.079	-0.094	-0.082	0.132	0.13	0.366**	0.353**	0.021
		(-0.09)	(-0.51)	(-0.59)	(-0.61)	(-0.63)	(-0.75)	(-0.66)	(1.04)	(1.02)	(2.19)	(2.11)	(0.13)
Foreign			0.207	0.191	0.196	0.192	0.171	0.126	0.322	0.329	0.043	0.031	-0.182
			(1.03)	(0.95)	(0.98)	(0.96)	(0.85)	(0.62)	(1.61)	(1.64)	(0.17)	(0.12)	(-0.72)
Growth				-0.649**	-0.635**	-0.654**	-0.617**	-0.655**	-0.497*	-0.500**	-0.684	-0.747**	-0.252
				(-2.56)	(-2.49)	(-2.53)	(-2.38)	(-2.52)	(-1.94)	(-1.96)	(-2.04)	(-2.22)	(-0.79)
R & I					0.681	0.718	0.758	0.788	-0.316	-0.298	-0.626	-0.667	-1.748
					(0.73)	(0.76)	(0.80)	(0.84)	(-0.34)	(-0.32)	(-0.52)	(-0.55)	(-1.47)
M&A						0.056	0.04	0.021	0.078	0.079	-0.166	-0.152	-0.130
						(0.41)	(0.30)	(0.16)	(0.58)	(0.58)	(-0.91)	(-0.83)	(-0.72)
Restr.							0.151	0.147	0.258	0.249*	0.511***	0.529***	0.233
							(1.14)	(1.11)	(1.95)	(1.88)	(2.96)	(3.05)	(1.35)
C.I.								-0.969*	-0.826	-0.799	-1.232*	-1.246*	-0.264
								(-1.80)	(-1.59)	(-1.54)	(-1.80)	(-1.81)	(-0.41)
Size									-0.357***	-0.361***	-0.272***	-0.211**	-1.071***
									(-6.39)	(-6.45)	(-3.39)	(-2.52)	(-9.25)
M/B										-0.007**	-0.007*	-0.007	-0.005
										(-2.18)	(-1.66)	(-1.56)	(-1.31)
Age											-0.013	-0.014	-0.002
											(-0.89)	(-1.01)	(-0.17)
Big 4												-0.655**	-1.052***
												(-2.41)	(-4.04)
L. Fees													1.933***
													(10.18)
Year F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ind. F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj.R_2MF	0.001	0.001	0.001	0.004	0.004	0.004	0.004	0.005	0.017	0.019	0.092	0.097	0.100
Obs.	13,038	13,038	13,038	13,038	13,038	13,038	13,038	13,038	13,038	13,038	6,518	6,518	6,518

This table further examines the relation between the presence of a GC and the reporting of ICW, by analysing the regression step by step. Each column contains industry and year fixed effects. The sample used is that of panel A (table 1). Below each coefficient, the z-score is reported. *M&A, Foreign*, and *Restructure* represent the dummies. *R&I* is the variable *Receivables & Inventory*, *C.I.* is an abbreviation for *Capital Intensity*, and *L.BS* and *L.Fees* represent the *Log of Business Segments* and *Log of Audit Fees*. *M/B* is an abbreviation for the *Market-to-Book ratio*. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.

* implies statistical significance at 0.10

** implies statistical significance at 0.05

*** implies statistical significance at 0.01

The fact that *Age* has such a large effect on the regression is in line with Doyle et al. (2007) who found that younger firms are more likely to report ICW. There is however no significant *Age* coefficient, and therefore this relation can not be confirmed or denied. Nevertheless a large degree of the coefficient of *GC* is taken away when *Age* is added and hence it is likely that the relation found by Doyle et al. (2007) also exists in this context.

However it must also be mentioned that as soon as *Age* is added, the sample size decreases by about half, as mentioned before. This too could have an effect on the results, which could also explain the loss in significance. However as soon as *Age* is added, the explanatory power of the model increases quite remarkably, as can be seen by the Adjusted R^2 of McFadden. This illustrates that *Age* indeed plays an important role in the reporting of ICW, and for that reason should not be left out.

Based upon the above results no conclusions can be drawn about the relation between the GC and the ICW, and therefore hypothesis 1, which is: *Companies with a general counsel in the top-management have a lower internal control quality than those without a general counsel in top-management*, can neither be accepted nor rejected due to the insignificance of the results.

5.1.3 Results model 2

Similar to model 1, prior to running the regression the Hausman test was conducted to see whether the fixed or random effect model is appropriate. With a probability of 0.000, the null-hypothesis was rejected and the fixed effect model was deemed to be most appropriate.

Similar to table 8, table 10 illustrates the results found for model 2. The sole addition compared to table 8, is column 4 which illustrates the robust regression. As mentioned previously, this regression has the purpose of eliminating the effects of potential outliers. As can be seen from the table, this robust regression has a large influence on the results compared to a normal linear regression with robust standard errors. Column 4 finds significant results for the relation between the presence of a GC and the discretionary accruals. The coefficient of 0.001, which is significant at the 5% level, is small yet indicates that the presence of a GC leads to more discretionary accruals. This increase in discretionary accruals in turn leads to a decrease in the ICQ. Therefore, based on the results of the robust regression in which ß$_1$ is positive, hypothesis 1 is correct.

The results of the standard linear regression with robust errors are not significant, with the exception of the coefficients of *Restructure, Capital Intensity, Growth, Size*, and *Log of Audit Fees*. When looking at column 3 it can be seen that both restructuring and having a higher capital intensity positively influences the absolute amount of discretionary accruals. As predicted in previous literature, these two variables are known to influence discretionary accruals. With *Restructure* being a dummy variable, the coefficient can be interpreted as: when a firm undergoes restructuring, the discretionary accruals increase by 0.0008. However, for *Capital Intensity* the coefficient indicates that an increase in the capital intensity by 1, increases the discretionary accruals reported by 0.0205. Remarkably by paying higher audit fees, the *DISC_AQ* increases. An increase in 1% of the audit fees hence implies an increase of 0.001 in the discretionary accruals reported. However this sign is altered when running a robust regression, as illustrated

Table 10
Relation between presence GC and discretionary accruals (full sample)

	DISC_AQ (1)	DISC_AQ (2)	DISC_AQ (3)	MMREGRESS DISC_AQ (4)
GC	0.000	0.000	0.000	0.001**
	(0.39)	(0.72)	(0.22)	(2.37)
Log of Business Segments	0.000	0.000	0.000	-0.000***
	(0.46)	(0.56)	(0.55)	(-2.68)
Foreign dummy	-0.001	-0.001	-0.001	-0.001***
	(-1.37)	(-0.95)	(-1.22)	(-3.95)
Growth	-0.002***	-0.002***	-0.002***	0.000
	(-2.82)	(-3.07)	(-2.63)	(-0.31)
Receivables & Inventory	-0.004	-0.002	-0.002	-0.002
	(-0.89)	(-0.30)	(-0.37)	(-1.62)
M&A dummy	0.000	0.000	0.000	-0.001***
	(-0.53)	(0.17)	(-0.55)	(-5.27)
Restructure dummy	0.001**	0.001**	0.001**	-0.001***
	(2.41)	(2.51)	(2.32)	(-3.04)
Capital Intensity	0.020***	0.021***	0.021***	-0.006***
	(4.27)	(3.45)	(3.48)	(-9.07)
Size	-0.003***	-0.002***	-0.003***	0.000**
	(-5.03)	(-4.88)	(-5.04)	(2.08)
Market to Book ratio	0.000	0.000	0.000	0.000
	(-0.95)	(-0.98)	(-0.90)	(0.36)
Age	0.000	0.000**	0.000	0.000
	(-1.28)	(-2.04)	(-1.42)	(-0.76)
Big 4 auditor dummy	0.001	0.001	0.001	0.000
	(0.67)	(0.5)	(0.86)	(1.11)
Log of Audit Fees	0.001*	0.001**	0.001*	-0.001***
	(1.89)	(2.23)	(1.94)	(-3.66)
Year Fixed Effects	YES	NO	YES	NO
Industry Fixed Effects	NO	YES	YES	NO
Observations	6,485	6,485	6,485	6,417
Adjusted R^2	0.026	0.199	0.197	N.A.

This table examines the relation between the presence of a GC and the reporting of discretionary accruals (*DISC_AQ*). Column (1) illustrates the relation without industry fixed effects, whilst column (2) includes industry fixed effects but no yearly fixed effects. Column (3) is the full fixed effects model. Column (4) is an robust regression in the form advised by Verardi & Croux (2009). The sample used is that of panel B (table 1). Below each coefficient, the z-score is reported. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

in column (4). This implies that there are other influences present in column (3), which could contribute to the relatively low significance, and not too much can be derived from the sign found.

Nonetheless all the effects are marginal, therefore despite there being an effect, it unfortunately is almost negligible in all cases. With that being said, the adjusted R^2, is also very small in all instances. Hence, it could also imply that there are other influences which cause these

results, either weakening or strengthening them.

Further analysis as shown in table 11, illustrates that for the linear regression the coefficient of GC remains significant up to column 10, losing its significance when the variable *Age* is added. This is similar to model 1, where the significance was also lost when the variable of *Age* was added as illustrated in table 9. One explanation as to why this might happen, could be the decrease in observations which occurs when the variable *Age* is added. In the above regression the number of observations decreases from 12,902 to 6,485 when *Age* is added. The reason for this decrease is the fact that not all observations had an entry for firm age, and a regression is only run on those observations which have complete entries for all variables.

In their study, Schroeder and Shepardson (2016) have not added the control variable of *Age* for unknown reasons. However, various studies such as that of Doyle et al. (2007) indicate that age can have an influence on the ICQ. Based on previous reasoning, *Age* should therefore also have an influence on the discretionary accruals. The explanatory power of the model also increases when *Age* is added (from 0.169 to 0.196), indicating that it is of relevance in the study. However, *Age* does disrupt the results and decreases the significance of the effect studied. Moreover, the correlation between *Age* and $DISC\_AQ$ was weak (-0.055), and does not explain the found results.

The magnitude of the control variables also differs when different controls are added, with *Age* having an influence on the significance of many. *M&A* and *Restructure* are two variables which lose or decrease in significance once *Age* is added. Remarkably enough, as illustrated in column 4 of table 10, *M&A* is highly significant when run in a robust regression.

Table 11
Relation between presence of GC and discretionary accruals

	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
GC	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.000	0.000	0.000
	(1.73)	(1.81)	(1.83)	(1.83)	(1.83)	(1.84)	(1.79)	(1.75)	(1.72)	(1.73)	(0.28)	(0.24)	(0.22)
L.BS		-0.002***	-0.002**	-0.002**	-0.002**	-0.002**	-0.002**	-0.002**	-0.001	-0.001	0.000	0.000	0.000
		(-2.86)	(-2.49)	(-2.50)	(-2.53)	(-2.50)	(-2.55)	(-2.50)	(-1.39)	(-1.39)	(0.75)	(0.74)	(0.55)
For.			-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001	-0.001	-0.001	-0.001	-0.001
			(-2.91)	(-3.12)	(-3.11)	(-3.01)	(-3.15)	(-2.94)	(-1.59)	(-1.59)	(-1.15)	(-1.16)	(-1.22)
Gr.				-0.006***	-0.006***	-0.005***	-0.005***	-0.005***	-0.004***	-0.004***	-0.002***	-0.002***	-0.002***
				(-5.17)	(-5.10)	(-5.07)	(-5.16)	(-4.56)	(-4.29)	(-4.29)	(-2.90)	(-2.83)	(-2.63)
R&I					-0.004	-0.004	-0.004	-0.004	-0.010	-0.010	-0.001	-0.002	-0.002
					(-0.67)	(-0.73)	(-0.73)	(-0.72)	(-1.61)	(-1.61)	(-0.27)	(-0.29)	(-0.37)
M&A						-0.001***	-0.001***	-0.001***	-0.001**	-0.001**	0.000	0.000	0.000
						(-2.80)	(-2.90)	(-2.57)	(-2.06)	(-2.06)	(-0.49)	(-0.49)	(-0.55)
Restr.							0.001***	0.001***	0.002***	0.002***	0.001**	0.001**	0.001**
							(2.82)	(2.78)	(3.03)	(3.02)	(2.51)	(2.48)	(2.32)
C.I.								0.011*	0.012**	0.012**	0.021***	0.021***	0.021***
								(1.88)	(1.98)	(1.98)	(3.46)	(3.47)	(3.48)
Size									-0.002***	-0.002***	-0.003***	-0.003***	-0.003***
									(-5.05)	(-5.04)	(-5.17)	(-5.10)	(-5.04)
M/B										0.000	0.000	0.000	0.000
										(-0.47)	(-0.86)	(-0.88)	(-0.90)
Age											0.000	0.000	0.000
											(-1.52)	(-1.46)	(-1.42)
Big 4												0.001	0.001
												(1.05)	(0.86)
L.Fees													0.001*
													(1.94)
Y. F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ind.F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj.R^2	0.151	0.159	0.163	0.167	0.168	0.169	0.168	0.170	0.169	0.169	0.196	0.196	0.197
Obs.	12,902	12,902	12,902	12,902	12,902	12,902	12,902	12,902	12,902	12,902	6,485	6,485	6,485

This table further examines the relation between the presence of a GC and the reporting of discretionary accruals (*DISC_AQ*), by analysing the regression step by step. Each column contains industry and year fixed effects. The sample used is that of panel B (table 1). Below each coefficient, the *z*-score is reported. *DA* is an abbreviation for DISC_AQ. *M&A, For.*, and *Restr.* represent the dummies, being abbreviations for *Foreign* and *Restructure*. *R&I* is the variable *Receivables & Inventory*, *C.I.* is an abbreviation for *Capital Intensity*, and *L.BS* and *L.Fees* represent the *Log of Business Segments* and *Log of Audit Fees*. *M/B* is an abbreviation for the *Market-to-Book ratio*. *Gr.* is shorthand for *Growth*. Likewise *Y. F.E.* and *Ind.F.E.* represent *Year* and *Industry Fixed Effects*. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.

* implies statistical significance at 0.10

** implies statistical significance at 0.05

*** implies statistical significance at 0.01

5.1.4 Conclusion

With regards to the overall results found for models 1 and 2 it must firstly be mentioned that the added value of measuring the ICQ using *DISC_AQ* is proven. Whereas model 1 looks at the dummy of *ICW* which is subject to manipulation by top-management due to fear of litigation risk, model 2 looks at the *DISC_AQ*. As mentioned the *ICW* takes a value of 1 or 0, allowing no grey area which could be of interest to the results. Hence it is understandable that the results came back insignificant as the effect of a GC on the reporting of an ICW is indirect and therefore most likely not very obvious in the results. Furthermore it could also be that a GC avoids the reporting of an ICW as this could negatively influence their reputation (Rice & Weber, 2011). The *DISC_AQ* on the other hand allows for this grey area to be studied, providing a more detailed insight into the relation between the presence of the GC and the ICQ. With that being said, model 2 has a very low adjusted R^2, indicating that there are quite some variables which are omitted from the regression. Therefore the results of the normal linear regression cannot be seen as accurate as they are subject to possible influences from external variables. When suppressing all the influences from outliers and possible omitted variables, the results indicate a positive, yet weak, relation. Therefore, when studying the ICQ, the sole reliance on the ICW is unjust as there are more accurate measures developed in literature.

Secondly it must be mentioned that the weakness in results could also originate from the fact that audited accruals are used. As mentioned Schroeder and Shepardson (2016) make use of unaudited accruals which generally contain larger discretionary accruals. Due to a lack in the availability of data, the choice was made to use the audited data to calculate the accruals. The result is that the discretionary accruals found are smaller, and therefore the results found weaker. Moreover the fact that the firms in the sample are under strict supervision by the government could also contribute to the smaller discretionary accruals as mentioned previously.

Lastly, the disruptive factor of the control variable *Age* remains a puzzling factor which perhaps provides noise to the results as the sample size decreases by about 50%. When this factor is taken out, the results yet again indicate a weak yet significant relation between the presence of a GC and the DISC_AQ reported, implying a lower ICQ (appendix **??**).

Based on the above it can therefore be concluded that, although supported by a weak result, hypothesis 1 is correct and firms with a GC tend to have a lower ICQ.

5.2 The influence of tenure on the relation between the presence of a GC and the ICQ

5.2.1 Descriptive statistics for model 3 and 4

Due to models 3 and 4 solely referring to companies with a GC, the descriptive statistics differ slightly, yet the general descriptive statistics as in table 4 reimain applicable. For this reason, the descriptive statistics with regards to tenure are kept to a minimum.

Table 12
Descriptive statistics *Tenure*

Variables	***N***	**Mean**	**Median**	**Std. Dev.**	**25th P**	**75th P**
Tenure (3)	764	4.80	4.00	3.46	2.00	7.00
Tenure (4)	762	4.77	4.00	3.47	2.00	7.00

Descriptive statistics of the tenure variable in addition to the previous descriptive statistics of the control variables. Tenure (3) refers to the sample as illustrated in panel C of table 1, whilst Tenure (4) refers to the sample as illustrated in panel D of table 1. All decimals are rounded to 2 d.p.

Table 12 illustrates the descriptive statistics for the tenure variable. As mentioned before there are 764 observations in the sample for model 3 and 762 for model 4. From the table it can be seen that a GC does not tend to work for a very long time in one place, with the average tenure being 4.80 for model 3. For tenure, the time span 1999-2017 was used, with the exception of GCs who stopped working before 2008 as this is when the sample period for the ICQ starts. The standard deviation is moderately large, indicating that there is quite a difference between the tenure of a GC, yet the median remains to be 4 indicating that it is a rarity for individuals to work at a firm for a long time.

Table 13 represents the correlation between each of the control variables and the methods of calculation for the ICQ and *Tenure*. There are no remarkable and notably large correlations which should cause any concern. It is interesting to notice however that there is a negative correlation of -0.068 between the presence of an ICW and tenure, implying that a longer tenure leads to a higher ICQ, as less ICW are reported. Likewise, $DISC\_AQ$ also has a negative correlation with *Tenure* (-0.039), which too indicates that a longer tenure implies a higher ICQ. This could in theory mean that the entrenchment effect has a smaller influence than ability when it comes to the influence of tenure on a GC. However these results are preliminary and solely provide an indication for the results of the regressions.

5.2.2 Results model 3

Due to the model solely having data per Executive ID, and not per year, the dataset was altered slightly, removing the time setting, and instead focussing on the executives, their firms, and the years worked. This results in an altered model compared to model 1. Nonetheless, the Hausman test was performed again to study whether a fixed effects model was suitable. At a probability of 0.000, the null hypothesis was rejected and a fixed effects model deemed to be appropriate.

Table 13
Correlation between tenure and all other variables

	Tenure
M&A dummy	-0.032
Foreign dummy	0.018
Restructure dummy	-0.037
Receivables & Inventory	0.030
Size	0.020
Capital Intensity	0.032
Growth	-0.059
Log of Business Segments	0.004
Market to Book ratio	-0.021
Age	0.118
Big 4 auditor dummy	-0.012
Log of Audit Fees	-0.005
ICW	-0.068
DISC_AQ	-0.039

Correlation between *Tenure* and each of the control variables and methods of calculation for the ICQ. The sample used to calculate the correlations is that from panel C in table 1, with the exception of *DISC_AQ* for which panel D was used. Definitions and methods of calculation for each of the control variables can be found in appendix D. All decimals are rounded to 3 d.p.

The main alteration in this model compared to previous models, lies in the fact that the GC variable (which refers to the presence of a GC) became, instead of a binary variable, a continuous variable with a range between 0.1-1. The reason for this is that the dataset has been collapsed to illustrate the time a GC was present at a certain company, matching this with tenure. Collapsing the dataset implies that the average time a GC was at the company is the new GC variable, with some firms having a GC for 50% over the 8 years, implying 4 years, and therefore having a coefficient of 0.5. However, as the dependent variable remains binary, a logit regression is still applicable.

The third model, as illustrated in tables 14 and 15 study the possible moderating effect of tenure on the relation between the presence of a GC and the reporting of ICWs under the SOX 404. The coefficient of interest is the interaction term *GC*Tenure*, which contains the moderating effect. Similar to model 1 (table 9), the results are insignificant for this coefficient, and therefore no conclusion can be drawn regarding the influence of tenure. Moreover, it is therefore not possible to conclude on the latter part of hypothesis 2: *H2: general counsel tenure does not have an influence on the internal control quality of a company as well as on its likelihood to report internal control weaknesses.*

Table 14
Relation between GC tenure and ICW (full sample)

	ICW	**ICW**	**ICW**
GC	-0.673	-0.713*	-0.700
	(-1.46)	(-1.67)	(-1.41)
Tenure	-0.021	-0.079	-0.057
	(-0.18)	(-0.99)	(-0.43)
GC*Tenure	0.080	0.113	0.126
	(0.75)	(1.18)	(1.11)
L. BS	0.140	0.200	0.185
	(0.79)	(1.03)	(0.93)
Foreign	-0.091	-0.261	-0.262
	(-0.34)	(-0.85)	(-0.83)
Growth	-0.166	0.102	0.003
	(-0.34)	(0.20)	(0.00)
R & I	1.145	0.126	-0.102
	(1.32)	(0.09)	(-0.07)
M&A	0.806***	0.895***	0.879***
	(2.66)	(2.83)	(2.71)
Restr.	-0.236	-0.248	-0.262
	(-0.89)	(-0.87)	(-0.90)
Cap. Int.	0.507	0.941	0.874
	(0.95)	(1.28)	(1.16)
Size	-0.588***	-0.766***	-0.762***
	(-4.44)	(-4.98)	(-4.89)
M/B	0.008	0.010	0.011
	(0.72)	(0.82)	(0.83)
Age	0.005	0.004	0.009
	(0.40)	(0.32)	(0.61)
Big 4	-0.930***	-0.972***	-0.923***
	(-2.82)	(-2.84)	(-2.67)
L. Fees	1.150***	1.495***	1.471***
	(4.71)	(5.45)	(5.26)
Year F.E.	YES	NO	YES
Industry F.E.	NO	YES	YES
R^2 McFadden	0.082	0.106	0.120
Obs.	764	764	764

The table examines the relation between GC tenure and the reporting of ICW. Column (1) illustrates the relation without industry fixed effects, whilst column (2) includes industry fixed effects but no yearly fixed effects. Column (3) is the full fixed effects model. The sample used is that of panel C (table 1). Below each coefficient, the z-score is reported. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

The fact that the results are insignificant can have two possible explanations. The first explanation could be the contradicting influence of tenure. As previously explained, a longer

Table 15
Relation between GC tenure and ICW

	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW
GC	-0.332	-0.332	-0.429	-0.420	-0.419	-0.417	-0.400	-0.443	-0.434	-0.444	-0.479	-0.482	-0.475	-0.448	-0.700
	(-1.64)	(-1.64)	(-1.28)	(-1.25)	(-1.25)	(-1.25)	(-1.19)	(-1.31)	(-1.28)	(-1.31)	(-1.41)	(-1.41)	(-1.00)	(-0.94)	(-1.41)
Tenure		0.102*	0.079	0.078	0.077	0.076	0.083	0.080	0.081	0.081	0.082	0.081	0.011	0.016	-0.057
		(1.80)	(0.92)	(0.92)	(0.90)	(0.89)	(0.97)	(0.93)	(0.94)	(0.94)	(0.95)	(0.93)	(0.09)	(0.12)	(-0.43)
GC*Tenure			0.026	0.026	0.027	0.027	0.021	0.030	0.029	0.031	0.020	0.022	0.064	0.058	0.126
			(0.37)	(0.36)	(0.37)	(0.38)	(0.29)	(0.41)	(0.39)	(0.42)	(0.27)	(0.30)	(0.57)	(0.52)	(1.11)
L. BS				0.099	0.124	0.126	0.121	0.110	0.119	0.120	0.274**	0.278**	0.402**	0.419**	0.185
				(0.89)	(0.98)	(1.00)	(0.96)	(0.87)	(0.93)	(0.94)	(2.05)	(2.08)	(2.16)	(2.22)	(0.93)
Foreign					-0.089	-0.089	-0.110	-0.129	-0.115	-0.123	0.047	0.040	-0.110	-0.125	-0.262
					(-0.42)	(-0.42)	(-0.52)	(-0.60)	(-0.53)	(-0.57)	(0.21)	(0.18)	(-0.36)	(-0.41)	(-0.83)
Growth						0.088	0.167	-0.089	-0.124	0.136	-0.030	-0.057	-0.238	-0.303	0.003
						(0.25)	(0.47)	(-0.24)	(-0.32)	(-0.35)	(-0.08)	(-0.15)	(-0.46)	(-0.58)	(0.00)
R & I							2.013**	2.273***	2.245**	2.239**	1.450	1.431	0.922	1.018	-0.102
							(2.09)	(2.33)	(2.30)	(2.30)	(1.46)	(1.44)	(0.68)	(0.75)	(-0.07)
M&A								0.564***	0.582***	0.572***	0.714***	0.718***	0.771**	0.786**	0.879***
								(2.69)	(2.74)	(2.67)	(3.26)	(3.27)	(2.45)	(2.49)	(2.71)
Restr.									-0.095	-0.099	0.038	0.044	0.197	0.215	-0.262
									(-0.50)	(-0.52)	(0.19)	(0.23)	(0.73)	(0.79)	(-0.90)
Cap. Int.										-0.277	-0.143	-0.153	0.304	0.192	0.874
										(-0.53)	(-0.27)	(-0.29)	(0.43)	(0.27)	(1.16)
Size											-0.251***	-0.248***	-0.160*	-0.105	-0.762***
											(-4.48)	(-4.42)	(-1.86)	(-1.17)	(-4.89)
M/B												0.006	0.007	0.010	0.011
												(0.73)	(0.58)	(0.78)	(0.83)
Age													0.003	0.001	0.009
													(0.2)	(0.09)	(0.61)
Big 4														-0.724**	-0.923***
														(-2.15)	(-2.67)
L. Fees															1.471***
															(5.26)
Year F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ind. F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj.R^2M.F.	0.002	0.002	0.002	0.002	0.003	0.003	0.006	0.010	0.011	0.011	0.025	0.025	0.114	0.116	0.120
Obs.	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846	764	764	764

This table examines the relation between GC tenure and the reporting of ICW. The coefficient of interest is *GC*Tenure*. Each column contains industry and year fixed effects. The sample used is that of panel C (table 1). Below each coefficient, the z-score is reported. *M&A, Foreign*, and *Restructure* represent the dummies. *R&I* is the variable *Receivables & Inventory*, *Cap. Int.* is an abbreviation for *Capital Intensity*, and *L.BS* and *L.Fees* represent the *Log of Business Segments* and *Log of Audit Fees*. *M/B* is an abbreviation for the *Market-to-Book ratio*. Likewise *Ind.F.E.* represents *Industry Fixed Effects*. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p. * implies statistical significance at 0.10. ** implies statistical significance at 0.05. *** implies statistical significance at 0.01

tenure could imply an increase in ability of the GC which would decrease the reporting of ICW. On the other hand tenure is also often explained as having an influence on entrenchment, which has the implication that a GC with a long tenure would report more ICW. This twofold effect of tenure could be the reason as to why the results are insignificant, as it is possible that both ability and entrenchment play a role in the sample, diminishing the effects of both and resulting in insignificant findings.

Another explanation as to why the results of model 3 are insignificant could link to why the results of model 1 are also insignificant. The proxy for ICQ in these two models is the reporting of an adverse opinion under the SOX 404. As mentioned by existing literature, some firms are hesitant to report ICWs for a multitude of reasons such as the need for external capital or because of litigation risk (Rice & Weber, 2011). Therefore it could be that the ICW does not capture the subtle effect a GC has on the ICQ as the proxy is a dummy variable.

Similar to model 1 however, *Size, Big 4 auditor* and *Audit Fees* are significant and have coefficients with the same sign as in model 1. This is not surprising as the model did not alter to a great extent seeing as only the variable of tenure as well as the interaction effect was added. The explanatory power of the model is slightly higher than model 1 (0.513 vs. 0.488). With regards to the magnitude of the pseudo R^2, not much can be said as this is highly dependent on the type of pseudo R^2 used. Seeing as the same pseudo R^2 has been used in model 1 and 3, the comparison can be made between the two.

Another commonality between model 1 and 3, is the influence *Age* has on the results. The reason for this effect is perhaps two-fold, as here too the sample size approximately halves when the control variable of *Age* is added. The other reason as to why *Age* can have such a large impact is as explained by Doyle et al. (2007), indicating that perhaps 'experience' can influence the likelihood of reporting an ICW. Nonetheless, the explanatory power of the model also increases remarkably, indicating that *Age* has an important influence on the relation between the presence of GC tenure and the reporting of discretionary accruals. Whilst *Age* itself is not significant, it does have a large impact on the results, which is of interest for further study.

5.2.3 Results model 4

Similar to tables 14 and 15, the coefficient of interest in 16 is *GC*Tenure*. Here too the fixed effects model was deemed to be the most appropriate by the Hausman test. The coefficient *GC*Tenure* studies the moderating effect of *Tenure* on the reporting of discretionary accruals. All regressions, normal linear and robust, provide insignificant results. This implies that no significant moderating influence of *Tenure* on the relation between the presence of a GC and the ICQ can be found.

When further analysing the results, as illustrated in table 17, there is no significant effect found for *GC*Tenure* in all of the regressions. This indicates that there might not be an effect at all, or that the effect is cancelled out by something else. The adjusted R^2 is slightly higher than that in model 2, however it remains low which could mean that there are variables omitted.

Likewise, there could be some influence as audited and not unaudited DISC_AQ are used. However, as no significant results are found in either the robust regression or the regression as il-

Table 16
Relation between GC tenure and discretionary accruals (full sample)

	DISC_AQ (1)	**DISC_AQ (2)**	**DISC_AQ (3)**	**MMREGRESS DISC_AQ (2)**
GC	0.003	0.004*	0.003	-0.001
	(1.02)	(1.71)	(1.30)	(-0.55)
Tenure	0.000	0.001	0.001	0.000
	(0.28)	(0.99)	(0.74)	(0.30)
GC*Tenure	-0.001	-0.001	-0.001	0.000
	(-0.77)	(-1.50)	(-1.19)	(-0.30)
Log of Business Segments	-0.002*	-0.002	-0.001	-0.002***
	(-1.89)	(-1.41)	(-1.34)	(-3.41)
Foreign dummy	-0.005**	-0.005**	-0.005**	-0.001
	(-2.22)	(-2.18)	(-2.16)	(-1.03)
Growth	-0.005	-0.003	-0.003	0.001
	(-1.52)	(-1.11)	(-0.97)	(0.50)
Receivables & Inventory	-0.005	0.009	0.008	-0.001
	(-0.88)	(0.82)	(0.70)	(-0.25)
M&A dummy	-0.004**	-0.004**	-0.004**	-0.002**
	(-2.02)	(-2.22)	(-2.20)	(-2.47)
Restructure	0.002	0.002	0.002	0.000
	(1.35)	(0.89)	(0.92)	(0.12)
Capital Intensity	0.001	0.001	0.001	-0.003*
	(0.28)	(0.18)	(0.19)	(-1.84)
Size	0.000	0.000	0.000	-0.001
	(0.25)	(0.37)	(0.31)	(-1.33)
Market to Book ratio	0.000	0.000	0.000	0.000
	(-0.11)	(0.08)	(0.15)	(-0.10)
Age	0.000	-0.000**	-0.000*	0.000
	(-1.37)	(-2.01)	(-1.89)	(-0.82)
Big 4 auditor dummy	-0.005*	-0.005*	-0.005*	-0.001
	(-1.93)	(-1.85)	(-1.90)	(-0.77)
Log of Audit Fees	0.000	-0.001	-0.001	0.000
	(-0.25)	(-0.45)	(-0.46)	(0.03)
Year Fixed Effects	YES	NO	YES	NO
Industry Fixed Effects	NO	YES	YES	NO
Observations	762	762	762	741
Adjusted R^2	0.081	0.241	0.253	N.A.

This table examines the relation between GC tenure and the reporting of discretionary accruals (*DISC_AQ*). Column (1) illustrates the relation without industry fixed effects, whilst column (2) includes industry fixed effects but no yearly fixed effects. Column (3) is the full fixed effects model. Column (4) is an robust regression in the form advised by Verardi & Croux (2009). The sample used is that of panel D (table 1). Below each coefficient, the *t*-score is reported. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

lustrated in table 17, it is highly unlikely that results will be obtained from unaudited DISC_AQ.

Table 17

Relation between GC tenure and discretionary accruals

	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
GC	0.000	0.000	0.004**	0.004**	0.004**	0.004**	0.004**	0.004**	0.003*	0.003*	0.003*	0.003*	0.003	0.003	0.003
	(0.26)	(0.26)	(2.13)	(2.00)	(2.08)	(2.02)	(2.01)	(2.03)	(1.87)	(1.93)	(1.81)	(1.81)	(1.25)	(1.30)	(1.30)
Tenure		0.000	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.000	0.001	0.001
		(-1.28)	(1.97)	(2.16)	(2.11)	(2.12)	(2.10)	(2.07)	(2.11)	(2.12)	(2.07)	(2.07)	(0.63)	(0.74)	(0.74)
GC*			-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001	-0.001	-0.001
Tenure			(-2.30)	(-2.29)	(-2.32)	(-2.36)	(-2.35)	(-2.37)	(-2.31)	(-2.37)	(-2.36)	(-2.36)	(-1.12)	(-1.21)	(-1.19)
L. BS				-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.002**	-0.002**	-0.002	-0.002	-0.001
				(-5.42)	(-2.87)	(-3.05)	(-3.03)	(-2.91)	(-3.04)	(-2.99)	(-2.54)	(-2.55)	-1.56	(-1.50)	(-1.34)
Foreign					-0.003	-0.003	-0.003	-0.003	-0.003*	-0.003*	-0.003	-0.002	-0.005**	-0.005**	-0.005**
					(-1.50)	(-1.52)	(-1.52)	(-1.48)	(-1.77)	(-1.73)	(-1.45)	(-1.44)	(-2.11)	(-2.14)	(-2.16)
Growth						-0.007***	-0.007***	-0.006**	-0.005*	-0.005*	-0.004*	-0.004*	-0.002	-0.002	-0.003
						(-2.84)	(-2.81)	(-2.24)	(-1.94)	(-1.84)	(-1.78)	(-1.78)	(-0.80)	(-0.93)	(-0.97)
R & I							-0.002	-0.003	0.002	0.002	0.005	-0.005	-0.007	0.007	0.008
							(-0.29)	(-0.50)	(-0.42)	(-0.35)	(-0.78)	(-0.78)	-0.64	(0.68)	(0.70)
M&A								-0.003***	-0.004***	-0.004***	-0.003**	-0.003**	-0.004**	-0.004**	-0.004**
								(-2.87)	(-3.22)	(-2.80)	(-2.45)	(-2.45)	(-2.18)	(-2.20)	(-2.20)
Restr.									0.003**	0.003**	0.003***	0.003***	0.001	0.001	0.002
									(2.35)	(2.38)	(2.64)	(2.62)	(0.77)	(0.83)	(0.92)
C.I.										0.006	0.006	0.007	0.002	0.002	0.001
										(1.10)	(1.21)	(1.22)	(0.31)	(0.22)	(0.19)
Size											-0.001***	-0.001***	0.000	0.000	0.000
											(-2.64)	(-2.63)	(-0.61)	(0.06)	(0.31)
M/B												0.000	0.000	0.000	0.000
												(-0.39)	(0.02)	(0.17)	(0.15)
Age													-0.000*	-0.000*	-0.000*
													(-1.72)	(-1.87)	(-1.89)
Big 4														-0.005*	-0.005*
														(-1.86)	(-1.90)
L. Fees															-0.001
															(-0.46)
Year F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ind. F.E.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	1,836	1,836	1,836	1,836	1,836	1,836	1,836	1,836	1,836	1,836	1,836	1,836	762	762	762
Adj.R^2	0.144	0.144	0.146	0.159	0.161	0.167	0.167	0.169	0.172	0.174	0.177	0.177	0.248	0.253	0.253

This table further examines the relation between GC tenure and the reporting of discretionary accruals (*DISC_AQ*). Each column contains industry and year fixed effects. The sample used is that of panel D (table 1). Below each coefficient, the *t*-score is reported. *M&A*, and *Restr.* represent the dummies, being an abbreviation for *Restructure*. *R&I* is the variable *Receivables & Inventory*, *C.I.* is an abbreviation for *Capital Intensity*, and *L.BS* and *L.Fees* represent the *Log of Business Segments* and *Log of Audit Fees*. *M/B* is an abbreviation for the *Market-to-Book ratio*. *Gr.* is shorthand for *Growth*. Likewise *Ind.F.E.* represents *Industry Fixed Effects*. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p. * implies statistical significance at 0.10. ** implies statistical significance at 0.05. *** implies statistical significance at 0.01.

5.2.4 Conclusion

The hypothesis of models 3 and 4 was stated in the null form as the effect of tenure could be both positive and negative (ability vs. entrenchment). Due to the fact that there were no significant results found in either model, the hypothesis cannot be rejected.

An explanation as to why no significant effect was found, could be the dual effect of tenure. This positive and the negative effect could cancel each other out, resulting in insignificant results and therefore a lack of effect found. This would imply that in the business environment, a GC would be prone to both an increase in entrenchment and an increase in ability. This in turn results in no effect in general when a GC has a longer tenure. Whilst this is not negative per se, as their ability does not decrease, it also implies that the possible effect of entrenchment cancels out the benefits an increase of ability could bring. However further research would be required to determine the precise effects of each of these aspects of tenure.

Another explanation as to why these results might not be significant originates from the composition of the sample as illustrated in table 12. Whereas the sample size is not large, there is little variation in the tenure of the GCs with the means being 4.72 and 4.73. In some papers a tenure of this length would be considered relatively short, whilst this is the average of the sample. The median of 4 also indicates that the GC works for relatively short periods of time at a firm. On the other hand, the GC is up and coming, implying that some GCs might only have started recently, but are currently still working at the firm. In those cases the GC is also added to the sample as having a tenure up to and including 2017. Perhaps the results would differ if a similar study would be repeated in ten years, as this would possibly provide a more diverse sample.

Therefore no conclusion can be drawn on these results as further research is required to study the precise effect of tenure, as well as whether the sample composition has any influence.

5.3 Robustness checks

To ensure the results found are robust, two robustness checks will be performed as mentioned previously, namely the propensity score matching method, as well as performing the regressions of models 1-4 without the variable *Age*.

5.3.1 Propensity score matching

As illustrated in table 5, there are some characteristics which differ significantly for firms with a GC and firms without a GC. Therefore it is possible that the presence of a GC can be indicative of the firm's business structure, characteristics and the complexity of their operations. Hence the results could indicate, instead of reflecting the influence of the presence of a GC, the effect of these firm characteristics on the ICQ. The reason for this is the possible spurious relation between the presence of a GC and the variables used to control for the ICQ. To test the robustness of the results a propensity-score matching method will be used (PSM).

The use of the PSM has been increasing in research, with its ability to evaluate a certain treatment on an outcome of interest, without being influenced by confounding variables which could bias the result. In this case the treatment is the presence of a GC, with its effect on the outcome of interest, namely the ICQ. The study however is an observational study, seeing as the assignment into the group with a GC and the group without a GC is most likely not random.

Kwak et al. (2012) have used this method when studying the influence of the presence of a GC on the voluntary information disclosure. Due to this, similar matching criteria to match a GC firm with a non-GC firm will be used as Kwak et al. (2012). The first matching criteria, similar to that of Kwak et al. (2012), is that matching will be based on industry, namely the matched firms must reside in the same industry, based on the two-digit SIC Code. The second matching criteria, which is also in accordance with Kwak et al. (2012), is that the variables of *Size* and *Market to Book ratio* of the non-GC firm, but be between 90% and 110% of the GC firm's *Size* and *Market to Book ratio*.

Whilst Kwak et al. (2012) focus on governance variables, the matching criteria will differ on this point, as governance variables are not included in the current sample. Therefore the third matching criteria is that the matched firms must also match on the *Big 4 auditor dummy*, as an auditor could have a large influence on the ICQ. This also links with the 4^{th} matching criteria, namely the *Log of Audit Fees* of the non-GC firm, must be between 90% and 110% of the GC firm's *Log of Audit Fees*. The final matching criteria is basaed on *Age*. Whilst it is difficult to match, as *Age* represents the number of years publicly listed, and not the actual age, the variable has proven to be of great influence, and therefore should be included. Whilst there is no clear indication of what boundary to use, age classes can be formed upon the paper by Grazzi and Moschella (2018). Therefore the final matching criteria is that the matched firms must reside in the same *Age* class.[6] This process yields 1,036 pairs, and model 1 and 2 are rerun using these pairs. The results are illustrated in table 18.

As can be seen, the robustness test of PSM, where matching is done on the above criteria does not seem to influence the ICW to a great extent as similar results are yielded as before. With that being said, the results do differ quite a bit for the *DISC_AQ*, indicating that the

[6]These classes are: (1) ¡5, (2) 5-10, (3) 11-20, and (4) 21+.

Table 18
Model 1 and 2 using Propensity Score Matching

	ICW (1)	**DISC_AQ (2)**
GC	0.013	0.002***
	(3.00)	(2.71)
Log of Business Segments	-0.015**	-0.001*
	(-2.03)	(-1.72)
Foreign dummy	-0.010	-0.004***
	(-0.73)	(-3.64)
Growth	0.004	-0.004***
	(0.23)	(-2.88)
Receivables & Inventory	0.002	-0.010***
	(0.15)	(-3.55)
M&A dummy	0.006	-0.002***
	(0.79)	(-2.70)
Restructure	0.015*	0.000***
	(2.24)	(-5.01)
Capital Intensity	0.024	0.006***
	(0.81)	(3.27)
Size	-0.032***	0.001**
	(-15.10)	(-2.05)
Market-to-book ratio	0.000	0.000
	(-1.20)	(-1.58)
Firm Age	0.000	0.000
	(-0.42)	(-0.86)
Big 4 auditor dummy	-0.032**	-0.004***
	(-2.10)	(-3.01)
Log of Audit Fees	0.074***	0.000
	(4.25)	(0.82)
Number of Observations	2,124	2,106

This table illustrates the results when using the PSM-method for models 1 and 2. Column 1 represents model 1, where the *ICW* is used as a proxy for the ICQ. Column 2 represents model 2, where *DISC_AQ* represents audited discretionary accruals, and functions as a proxy for the ICQ. In both samples firms were matched using the same criteria as listed under section 5.3.1. Numbers are rounded to 3 d.p. Below each coefficient the z-score is reported. Variable definitions are listed in appendix D.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

matching criteria were of previous influence on the results. As illustrated almost all variables are now significant, indicating that the matching of a GC firm with a similar non-GC firm managed to omit a certain bias which was present in the previous test. Whilst the coefficient for the influence of the presence of a GC on the amount of absolute discretionary accruals is small, it is positive. Hence the above test supports the previous conclusion that the presence of a GC has a, marginal, yet negative effect on the ICQ.

With the PSM method providing similar results for the ICW as before, another version of the PSM method is used. This method matches based on the propensity scores which this minimizes

the selection bias that could originate from all firm characteristics. This is done because the above factors on which matching takes place, might not capture all the differences in characteristics between GC firms and non-GC firms. This method contains an logit estimation in which the probability of a firm choosing a GC which is conditional on a vector of firm characteristics, is estimated. The variables used above for the matching are also included in this logit regression. The choice was made for the Radius Matching Method of 0.1, as this is the most suitable for the sample.

When running this test the results indicate that at a significance of p=0.05, there is a difference of 0.013 between GC firms and matching non-GC firms in the reporting of *ICW*. When running this test for the *DISC_AQ*, the results indicate that at a p=0.01 significance, the discretionary accruals are 0.002 higher for firms with a GC than non-GC firms with similar firm characteristics. Whilst the coefficients remain very small, the results are significant and support the previously found relation. This too indicates that there are influences of firm characteristics on the results found, which, in the case of the ICW mostly, bias the results and decrease the significance and magnitude.

Whilst the significance and magnitude of the coefficient do not differ for the DISC_AQ, the coefficient of the ICW is significant relatively large. This means that the matching criteria did not suffice in removing possible bias from the results, and that the bias originates from other variables which are not in the model. Perhaps the likelihood of reporting an ICW is also highly influenced by governance variables which are not included in the present dataset.

Therefore in conclusion it can be said that both robustness checks support and strengthen the previously found results, indicating that there are omitted variables in play which influenced prior results. Nonetheless, there is a negative relation between the presence of a GC and the ICQ, which is in support of hypothesis 1.

5.4 Models 1-4 without *Age*

As mentioned previously the variable *Age* has a rather large impact on the regression for unexplained reasons. To see if the results differ if *Age* is omitted, the regressions of models 1-4 are repeated. For models 1 and 2 the results are provided in table 19. For models 3 and 4 the results are provided in table 20.

When comparing the results in table 19 with those in tables 8 and 10, there is hardly any difference when *Age* is omitted. The variable which is of the greatest importance is *GC* as this refers to the presence of a GC. Whilst for the *ICW* there is no difference, for the *DISC_AQ* there is, namely there is now a significant relation between the presence of a GC and the reporting of discretionary accruals. The significance is however rather small (p=0.1) which would explain why it diminishes when the sample size decreases by half. Whilst there are several variables significant when *Age* is omitted, these are not the essential variables in the regression. Therefore table 19 indicates that the results are robust, regardless of whether *Age* is omitted or not.

When looking at table 20 there too is no change compared to tables 14 and 16. This yet again indicates that the addition or exclusion of *Age*, and the corresponding sample decrease, does not have a remarkably large effect. The results found in the original regression where *Age*

has been added are therefore highly robust. Seeing as *Age* has been found in existing literature as a variable which influences the ICW (Doyle et al., 2008), it should not be left out, specifically so as it does not seem to influence the results significantly.

Table 19
Relation between presence of a GC and the ICQ without *Age*

	ICW	**DISC_AQ**
GC	0.151	0.001*
	(1.23)	(1.65)
Log of Business Segments	-0.134	-0.001*
	(-1.09)	(-1.70)
Foreign	0.091	-0.001*
	(0.47)	(-1.85)
Growth	-0.058	-0.004***
	(-0.24)	(-4.17)
Receivables & Inventory	-0.905	-0.011*
	(-1.00)	(-1.72)
M&A dummy	0.057	-0.001**
	(0.43)	(-2.17)
Restructure	0.055	0.001***
	(0.42)	(2.90)
Capital Intensity	0.092	0.012**
	(0.18)	(2.07)
Size	-1.163***	-0.003***
	(-13.38)	(-5.39)
Market to book ratio	-0.006*	0.000
	(-1.79)	(-0.39)
Big 4 auditor dummy	-0.717***	0.001
	(-3.37)	(0.76)
Log of Audit Fees	1.736***	0.002***
	(12.34)	(3.94)
Year Fixed Effects	YES	YES
Industry Fixed Effects	YES	YES
Adjusted R^2	0.068	0.170
Obs.	13,038	12,902

This table examines the relation between the presence of a GC and the ICQ by looking at *ICW* and (*DISC_AQ*), without the addition of the control variable *Age*. The sample used is that of panel A for the *ICW* and panel B for *DISC_AQ* (table 1). Below each coefficient, the z-score is reported. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

Table 20
Relation between GC tenure and ICQ without *Age*

	ICW	**DISC_AQ**
GC	-0.700	0.002
	(-1.42)	(1.33)
Tenure	-0.054	0.000
	(-0.41)	(1.20)
GC*Tenure	0.124	-0.001*
	(1.10)	(-1.93)
Log of Business Segments	0.212	-0.002***
	(1.10)	(-2.56)
Foreign dummy	-0.275	-0.002
	(-0.88)	(-1.49)
Growth	-0.037	-0.005**
	(-0.07)	(-1.94)
Receivables & Inventory	-0.064	-0.003
	(-0.04)	(-0.49)
M&A dummy	0.867***	-0.003
	(2.68)	(-2.29)
Restructure	-0.246	0.004***
	(-0.85)	(2.68)
Capital Intensity	0.876	0.006
	(1.16)	(1.03)
Size	-0.752***	-0.0001
	(-4.86)	(-0.92)
Market to Book ratio	0.010	0.000
	(0.81)	(-0.33)
Big 4 auditor dummy	-0.934***	-0.001
	(-2.70)	(-0.62)
Log of Audit Fees	1.453***	0.000
	(5.24)	(-0.24)
Year Fixed Effects	YES	YES
Industry Fixed Effects	YES	YES
Observations	1,846	1,836
Adjusted R^2	0.116	0.169

This table examines the relation between GC tenure and the ICQ (*DISC_AQ*), without the addition of the control variable *Age*. The sample used is that of panel A for *ICW* and panel B for *DISC_AQ* (table 1). Below each coefficient, the z-score is reported for *ICW* and the t-score is reported under *DISC_AQ*. Variable definitions and methods of calculation are included in appendix D. All decimals are rounded to 3 d.p.
* implies statistical significance at 0.10
** implies statistical significance at 0.05
*** implies statistical significance at 0.01

6 Conclusion

When referring back to the research question: 'what effect does the presence of a general counsel in the top-management of a company have on its internal control quality?' no clear, simple answer can be given. As illustrated in chapter 5, most of the results turned out insignificant when testing the relation between the GC and the ICQ. However, one test, which eliminated all possible influences of outliers, illustrated a significant positive result when testing the relation between the presence of a GC and audited discretionary accruals. This in turn implies a worse ICQ, as discretionary accruals are negatively related to earnings quality (Iliev, 2010; Bédard, 2006). Nonetheless the effect found was still very weak, and therefore no true answer can be given to the research question.

Whereas one might think the results indicate that there is no influence of the GC on the ICQ, I do not believe that that is accurate. The tests do indicate that there is some negative influence of a GC on the ICQ, yet further research is required. Due to the large void in literature with regards to the topic of the GC and even more so in relation to the ICQ, it is not yet clear which control variables should all be added. More so, the proxy of the ICQ in the form of studying ICWs is highly prone to bias, as some firms chose to report an ICW, whilst others delay or do not report at all. The method of estimating discretionary accruals and using this as a proxy for the ICQ seems more appropriate and less prone to bias, however it would be of additional value to rerun these tests but this time with unaudited accruals. It would seem logical that a stronger effect would appear from the use of unaudited accruals, as no auditor has had the chance to correct the reports. This in turn could lead to a stronger result found between the presence of a GC on the ICQ.

Nonetheless the results do have some implications for existing research as it opens up a new field which requires further study. The results found above indicate that there is something there, yet it is unclear what precisely the effect is. For stakeholders these results are not yet of interest, yet they too would benefit from a further study as it could illustrate effects of which they were not yet aware. Stakeholders such as regulators would perhaps benefit most from further research as they try to objectify the ICQ. Yet if a GC would have a notable and significant effect on the ICQ, there is perhaps something wrong with regulations. Furthermore investors, would also benefit from further research as it could tell them an easy 'check' with regards to the ICQ of a firm they invested in, or are hoping to invest in. If further research indicates that the presence of a GC is negative for the ICQ of a firm, an investor could simply check if a firm has a GC, and could draw conclusions from there. Whilst this is not the most accurate way of forming one's opinion, collecting information is costly for investors, and this method would provide an easy, quick, and cheap first impression.

However, the results do indicate two main issues which are of relevance for stakeholders. Firstly, the issue with bias and manipulation in the reporting under the SOX 404. This issue with present regulation in the form that the reporting of an ICW is subject to bias and manipulation, making it an inaccurate measure when looking at the ICQ, contradicts the whole purpose of the SOX 404. The original objective was namely to make it an accurate measure for investors to judge the ICQ of a firm. The fact that such an apparently objective measure, is prone to so much bias, with firms for example 'shopping for a clean-opinion' (Newton et al., 2016), should

encourage regulators to undertake action. Moreover it also illustrates for investors that they should not solely base their judgement with regards to the ICQ on the SOX 404. Whereas this is not a new finding in literature, it does support existing findings, and illustrates that regulators over the years have not undertaken any action as the bias is still present.

The second issue which became apparent from this study and which of relevance for stakeholders, is the fact that there is an upward trend to be seen in the number of ICWs reported, as illustrated in table 3. With the main aim of regulation being the improvement of the ICQ, the fact that this seems to be decreasing in an overall trend should cause concern to regulators. Perhaps their regulations are not as effective as thought, or there are other influences which cause this trend to occur. Nonetheless, it is of importance and interest for further research to find out why precisely this increase in the reporting of ICWs is occurring, and what can be done to stop it.

With regards to the results on tenure, it can be concluded that tenure has no influence on the relation between the presence of a GC and the ICQ. However, the result is not this clear-cut. Whilst there is no apparent effect, it could also be that the two joint effects of either an improvement in ability (positive effect of tenure) or an increase in entrenchment (negative effect of tenure) cancel each other out. Therefore it could be of interest to further study different aspects of tenure, by looking at ability and entrenchment specifically and including this as variables in the regression. This way it could be definitively concluded whether they cancel each other out, or that there is simply no effect of either on a GC.

Despite the results indicating that tenure has no influence on a GC in relation to the ICQ, this is still of interest to stakeholders. For firms, and in specific management, this indicates that tenure is not something they should keep in mind when evaluating the performance of a GC. Moreover, it can at the same time also be of interest to see why the enhanced ability element does not seem to occur with a longer tenure for the GC. For firms, and also shareholders, efficiency and enhancing ability is important, so why does a GCs ability not improve, and how can it be facilitated that it does?

The study above does however have some limitations. As mentioned, the sample with regards to tenure is very small, as well having a rather limited tenure range. This could influence the results as there is no real distinction between a couple of years, whilst a long range could indicate larger differences. Another limitation which is applicable for both tests is the fact that it is possible that there are some variables omitted. As mentioned in chapter 2, board diversity impacts the likelihood of reporting an ICW, and was for one not included in the control variables. By omitting the variables, the result could be suppressed, or made to seem stronger than they actually are.

Moreover, the fact that the control variable of *Age*, which refers to the years a company has been publicly listed, had such a large influence on the regression results, is of interest for further studies. The question as to why *Age* has a large impact on the likelihood of reporting an ICW, as well as on discretionary abnormal accruals in general, is unanswered in current literature and would be of interest to stakeholders. For investors it would yet again be a quick, easy, and cheap insight into a firm, but for regulators it would be interesting to see why this has such an impact on companies following their regulation. What characteristics do firms who have been listed for

a longer time have, which perhaps would be of interest for younger firms, and how does *Age* influence other variables?

Lastly a remark must be made with regards to the results, as it could also be that the effect found between the presence of a GC and the ICQ, or lack thereof could indicate that there is no direct effect. Perhaps the explanation as provided, with the GC maintaining the oversight with regards to regulation and implementation, causes them not to be involved to the expected degree. This would imply that for example the CFO would have a direct effect on the ICQ, and that regardless of whether a firm has a GC, this does not affect the performance of a ICQ. This would provide a whole new field of study, in the form of a direct effect, namely what is the effect of the presence of a GC on the performance of other individuals in top-management, such as a CFO.

Therefore, whilst the results are not significant in most cases, they do still tell a lot about the question studied as well as providing insight into further interesting fields of research. Nonetheless, one cannot draw clear-cut conclusion based on the results found, and further research is required before stakeholders can benefit from the work done. With that being said, someone has to start somewhere, and perhaps these results provide the stepping stone for further, more definitive, research.

References

Anderson, R. C., S. A. Mansi, and D. M. Reeb. 2004. Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics* 37(3): 315–42.

Arya, A., J. Glover, and S. Sunder. 1998. Earnings management and the revelation principle. *Review of Accounting Studies* 3(1-2): 7-34.

Ashbaugh-Skaife, H., D. Collins, W. Kinney Jr. 2007. The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics* 44: 166–192.

Ashbaugh-Skaife, H., D. Collins, W. Kinney, and R. LaFond. 2009. The effect of SOX ICD on firm risk and cost of equity. *Journal of Accounting Research* 47: 1–43.

Association of Corporate Counsel. Research and Benchmarking. Retrieved from https://www.acc.com/legalresources/research/.

Avci, S.B., and H.N. Seyhun. 2016. Why Don't General Counsels Stop Corporate Crime?. *Ross School of Business Working Paper Series* WP(1326): 1-46.

Bacon, J., and J. K. Brown. 1973. *Corporate directorship prices, role, selection and legal status of the board*. New York: Conference Board.

Ball, R, and L. Shivakumar. 2006. The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition. *Journal of Accounting Research* 44: 207-242.

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33: 173-204.

Beasley, M. S. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71(4): 443–65.

Bebchuk, L. A., K.M. Cremers, and U.C. Peyer. 2011. The CEO pay slice. *Journal of Financial Economics* 102(1): 199-221.

Bédard, J. 2006. Sarbanes Oxley Internal Control Requirements and Earnings Quality. Available at SSRN: https://ssrn.com/abstract=926271.

Chen, Y., J.D. Eshleman, and J.S. Soileau. 2016. Board gender diversity and internal control weaknesses. *Advances in Accounting* 33: 11-19.

Christensen, J., and R. Murphy. 2004. The social irresponsibility of corporate tax avoidance: Taking CSR to the bottom line. *Development* 47(3): 37-44.

Collins, D., R. Pungaliya, and A. Vijh. 2012. The Effects of Firm Growth and Model Specification Choices on Tests of Earnings Management in Quarterly Settings. Working Paper, University of Iowa.

Cucculelli, M. 2018. Firm age and the probability of product innovation. Do CEO tenure and product tenure matter?. *Journal of Evolutionary Economics* 28(1): 153-179.

Dechow, P., D. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77: 35-59.

DeMott, D.A. 2012. The stages of scandal and the roles of general counsel. *Wisconsin Law Review* 464-490.

Doyle, J., W. Ge, and S. McVay. 2007. Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics* 44(1-2): 193-223.

Earley C.E., V.B. Hoffman, and J.R. Joe. 2008. Reducing Management's Influence on Auditors'

Judgments: An Experimental Investigation of SOX 404 Assessments. *The Accounting Review* 83(6): 1461-1485.

Flynn, J., and B. Dawson. 2017, August 31. What Is the Impact of SOX 404(b) over SOX 404(a)?. *AC Lordi*. Retrieved from http://www.aclordi.com/what-is-the-impact-of-sox-404b-over-sox-404a/.

Goh, B.W., J. Lee, and J. Ng. 2014. The Inclusion of General Counsel in Top-management and Tax Avoidance. *Research Collection School of Accountancy – Singapore Management University* 12(13): 1-63.

Ghosh, A., and D. Moon. 2005. Audit tenure and perceptions of audit quality. *The Accounting Review* 80: 585-612.

Goldenberg, N. 2005. Corporate Counsels' Role In Internal Controls - The Auditors' Perspective. *Corporate Counsel Business Journal* 1: 29, 53.

Grazzi, M, and M. Moschella. 2018. Small, young, and exporters: New evidence on the determinants of firm growth. *Journal of Evolutionary Economics* 28: 125-152.

Guo J., P. Huang, Y. Zhang, and N. Zhou. 2016. The Effect of Employee Treatment Policies on Internal Control Weaknesses and Financial Restatements. *The Accounting Review* 91(4): 1167-1194.

Ham, C., and K. Koharki. 2016. The association between corporate general counsel and firm credit risk. *Journal of Accounting and Economics* 61(2-3): 274-293.

Hamdani, A. 2003. Gatekeeper liability. *Southern California Law Review* 77: 53-122.

Heineman, B.W. 2012, September 27. The Rise of the General Counsel. *Harvard Business Review*. Retrieved from https://hbr.org/2012/09/the-rise-of-the-general-counsel.

Heineman, B.W. 2016, July 25. How the CFO and General Counsel can partner more effectively. *Harvard Business Review*. Retrieved from https://hbr.org/2016/07/how-the-cfo-and-general-counsel-can-partner-more-effectively.

Hermanson, D., J. Krishnan, and Z. Ye. 2009. Adverse Section 404 Opinions and Shareholder Dissatisfaction toward Auditors. *Accounting Horizons* 23: 391–409.

Hogan, C. E., and Wilkins, M. S. 2008. Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies? *Contemporary Accounting Research* 25 (1), 6.

Hopkins, J.J., E.L. Maydew, and M. Venkatachalam. 2015. Corporate General Counsel and Financial Reporting Quality. *Management Science* 61(1): 129-145.

Iliev, P. 2010. The Effect of SOX Section 404: Costs, Earnings Quality, and Stock Prices. *Journal of Finance* 65(3): 1163-1196.

Jagolinzer A., D. Larcker, and D. Taylor. 2011. Corporate governance and the information content of insider sales. *Journal of Accounting Research* 49: 1249-1274.

Janis, I. L. 1982. *Groupthink: Psychological studies of policy decisions and fiascoes*. Boston: Houghton Mifflin.

Kim, S. 2010. Lawyer exceptionalism in the gatekeeping wars. SMU Law Review 63: 73-136.

KPMG. 2012. *Beyond the Law: KPMG's global study of how General Counsel are turning risk to advantage*. Switzerland: RR Donnelley. Retrieved from https://assets.kpmg.com/content/dam/kpmg/pdf/2013/01/general-counsel-survey-v5.pdf.

Kwak, B., B. Ro, and I. Suk. 2012. The composition of top-management with general counsel and voluntary information disclosure. *Journal of Accounting and Economics* 54(1): 19-41.
Lee, H.Y., V. Mande, and M. Son. 2009. Do lengthy auditor tenure and the provision of non-audit services by external auditor reduce audit report lags?. *International Journal of Accounting* 13(2): 87-104.
Li, D. 2010. Does auditor tenure affect accounting conservatism? Further evidence. *Journal of Accounting and Public Policy* 29(3): 226-241.
Li-Chin, J. Ho, L. Chao-Shin, and T. Schaefer. 2010. Audit tenure and earnings surprise management. *Review of Accounting and Finance* 9(2): 116-138.
Miller, D. 1991. Stale in the saddle: CEO tenure and the match between organization and environment. *Management science* 37(1): 34-52.
Nelson, R. L., and L.B. Nielsen. 2000. Cops, counsel, and entrepreneurs: Constructing the role of inside counsel in large corporations. *Law and Society Review* 34(2): 457-494.
Newton, N. J., J.S. Persellin, D. Wang, and M.S. Wilkins. 2016. Internal control opinion shopping and audit market competition. *The Accounting Review* 91: 603-623.
Palmrose, Z. V. 2006. Maintaining the value and viability of independent auditors as gatekeepers under SOX: An auditing master proposal. *Financial gatekeepers: Can they protect investors*: 103-135.
Rice, S.C., and D.P. Weber. 2012. How effective is internal control reporting under SOX 404? Determinants of the (non-)disclosure of existing material weaknesses. *Journal of Accounting Research* 50(3): 811-843.
Rostain, T. 2008. General Counsel in the Age of Compliance: Preliminary Findings and New Research Questions. The Georgetown *Journal of Legal Ethics* 21: 465-490.
SAS 70. Sarbanes-Oxley Act 404 (SOX 404). Retrieved from
http://sas70.com/sas70_SOX404.html on 8 November 2018.
Sarbanes Oxley. Section 302: Corporate Responsibility for Financial Reports. Retrieved from http://www.sarbanes-oxley-101.com/SOX-302.htm on 30 December 2018.
Schroeder, J. H., and M.L. Shepardson. 2016. Do SOX 404 control audits and management assessments improve overall internal control system quality?. *The Accounting Review* 91(5): 1513-1541.
SenGupta R. 2010, March 17. Rise of the in-house lawyers. *The Financial Times*. Retrieved from https://www.ft.com/content/0004a038-3201-11df-a8d1-00144feabdc0.
Stevens, J. M., J. M. Beyer, and H. M. Trice. 1978. Assessing personal, role, and organizational predictors of managerial commitment. *The Academy of Management Journal* 21(3): 380–96.
Sun, Y. 2016. Internal control weakness disclosure and firm investment. *Journal of Accounting, Auditing & Finance* 31(2): 277-307.
Verardi, V., and C. Croux. 2009. Robust regression in Stata. *Stata Journal* 9(3): 439-453.
Wilkins, D.B. 2012. Is the In-house Counsel Movement Going Global? Assessing the Role of Internal Counsel in Emerging Economies. *Wisconsin Law Review* 251-302.
Wilson A.B., C. McNellis, C.K. Latham. 2018. Audit firm tenure, auditor familiarity, and trust: Effect on auditee whistleblowing reporting intentions. *International Journal of Accounting* 22(12): 113-130.

Zhang, Y., Zhou, J., and Zhou, N. 2007. Audit committee quality, auditor independence, and internal control weaknesses. *Journal of Accounting and Public Policy* 26(3): 300-327.

A Variable definitions *DISC_AQ* calculation

Table 21
List of variable definitions for Schroeder & Shepardson (2016) discretionary accruals calculation

Variable	Definition
WCA	Working capital accruals calculated as net income before extraordinary items plus depreciation expense less operating cash flows scaled by assets
Q_x	Dummy variable that takes 1 if the observation is from that specific quarter and takes 0 otherwise
ASSETS	Total assets at the beginning of the quarter
Δ REV	Change in revenue from quarter *t–1* to quarter *t* scaled by assets of quarter t-1
Δ AR	Change in accounts receivable from quarter *t–1* to quarter *t* scaled by total assets of quarter *t–1*
WCA(it-4)	Working capital accruals from 1 year prior, calculated as net income before extraordinary items plus depreciation expense minus operating cash flows, scaled by assets
ROA	Earnings before extraordinary items scaled by assets
SGROWTH	Firm Growth (change in revenue from revenue from quarter *t-4* to quarter *t* scaled by revenue in quarter *t-4*)
CFO	Cash flow from operations scaled by assets
DCFO	Dummy variable of CFO which takes 1 if CFO is < 0 and takes 0 otherwise
DCFO*CFO	Interaction effect between DCFO and CFO

B Predictive validity framework model 1 and 2

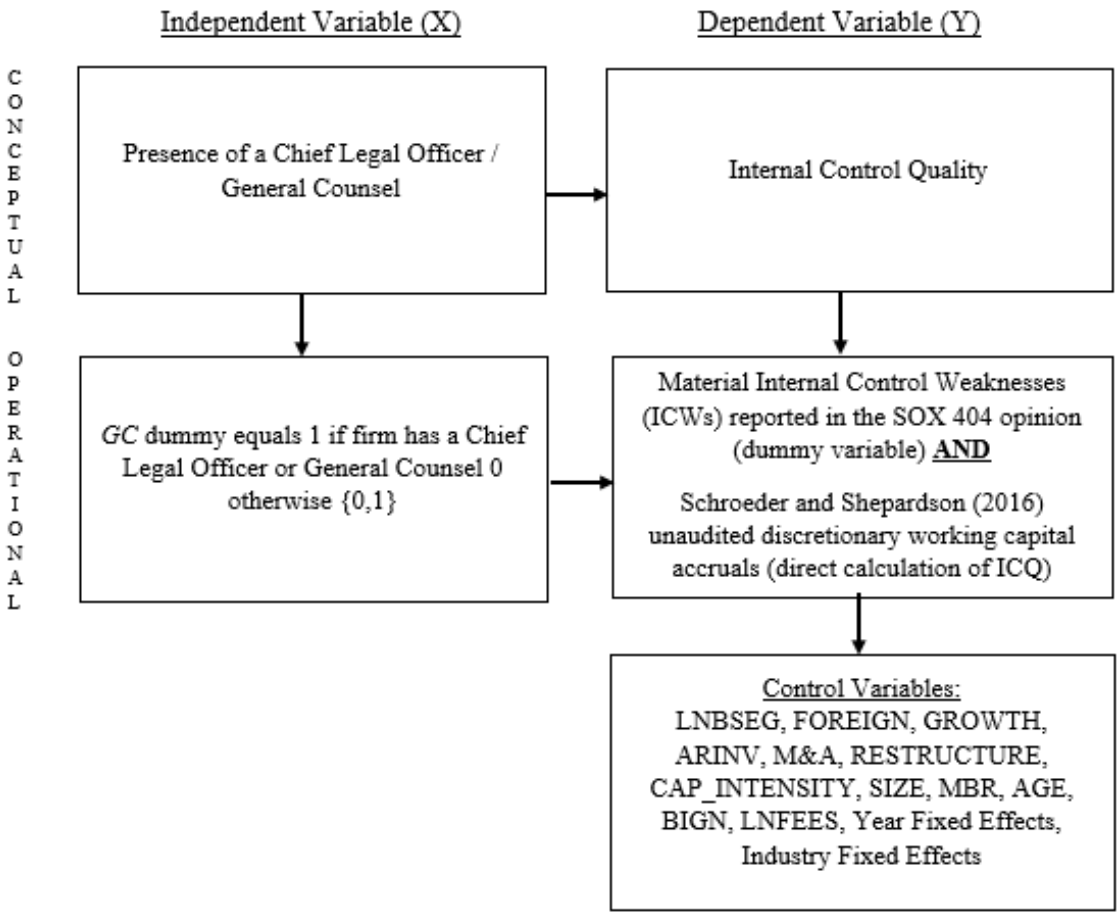


Figure 3
Libby boxes model 1 and 2

C Predictive validity framework model 3 and 4

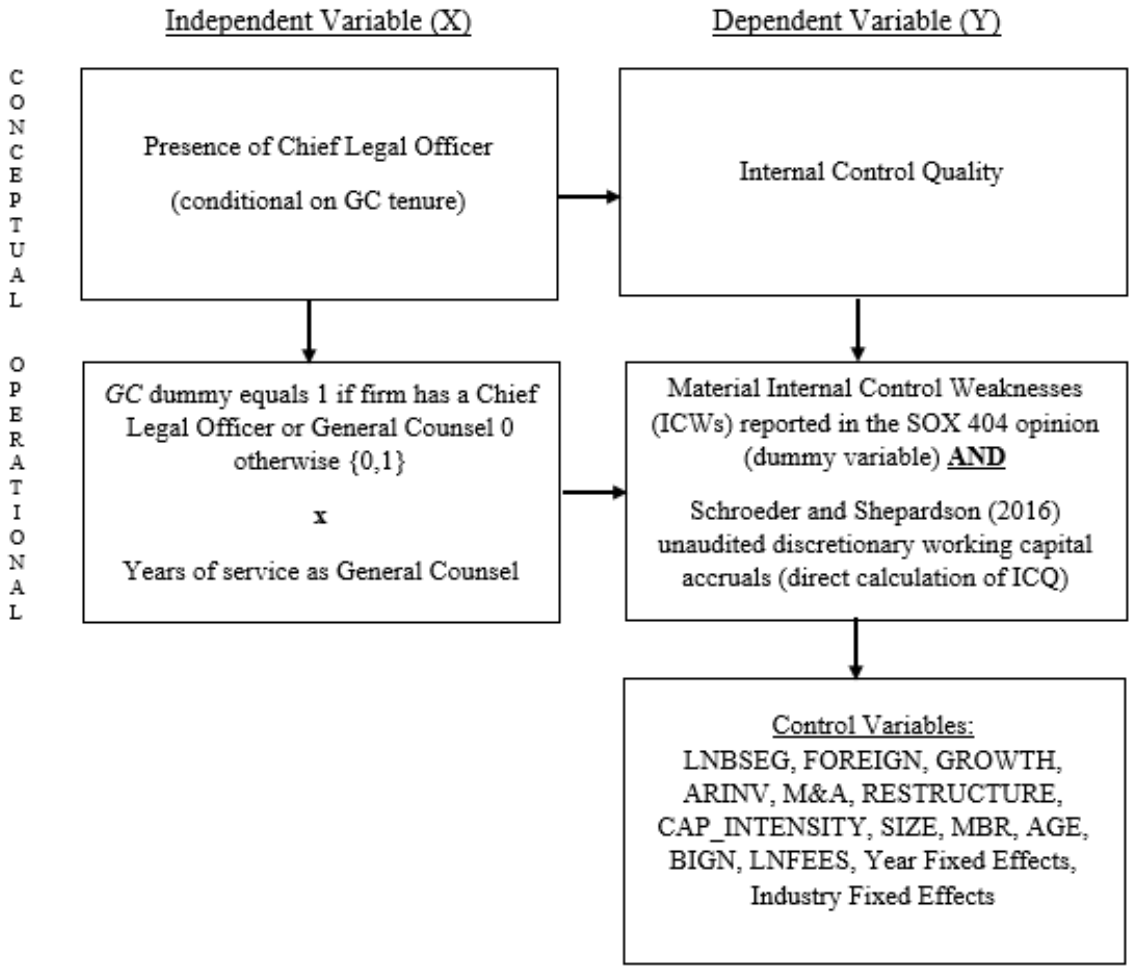


Figure 4
Libby boxes model 3 and 4

D Variable definitions

Table 22
List of control variables with definitions

Variable	Definition
GC	Dummy variable taking the value of 1 if a general counsel is present in a firm
ICW	Dummy variable taking the value of 1 if an internal control weakness under SOX 404(a) or (b) has been reported in that year by the firm
DISC_AQ	Discretionary accruals calculated using the method of Schroeder & Shepardson (2016)
Log of Business Segments	Natural log of number of business segments
Foreign dummy	Dummy for foreign operations of the company
Growth	Yearly average of asset growth
Receivables & Inventory	Total accounts receivable and inventory scaled by total assets
M&A dummy	Dummy variable if any M&A activity in that year, based on EPS effect
Restructure	Dummy variable if any restructuring activity has taken place in that year, based on EPS effect
Size	Natural log of total assets
Firm Age	Years firm has been publicly listed
Market-to-book ratio	Market-to-book ratio calculated using the market capitalization of the firm divided by book value. Book value is calculated by subtracting intangible assets and total liabilities from total assets
Big 4 auditor dummy	Dummy variable that takes 1 if the auditor is a Big-4 firm, namely Ernst & Young, PwC, Deloitte, or KPMG
Log of Audit Fees	Natural log of total audit fees
Yearly fixed effects	Year fixed effects
Industry fixed effects	Industry fixed effects based on a 2-digit SIC Code

Control variables and definitions orginate from Schroeder & Shepardson (2016) and Doyle et al. (2007)