



5-2018

# Auditor-Provided Tax Services and Audit Quality: Insights from Tax Comment Letters

Terence R. Williams  
twill136@vols.utk.edu

Follow this and additional works at: [https://trace.tennessee.edu/utk\\_chanhonoproj](https://trace.tennessee.edu/utk_chanhonoproj)

 Part of the [Accounting Commons](#)

---

## Recommended Citation

Williams, Terence R., "Auditor-Provided Tax Services and Audit Quality: Insights from Tax Comment Letters" (2018). *University of Tennessee Honors Thesis Projects*.  
[https://trace.tennessee.edu/utk\\_chanhonoproj/2221](https://trace.tennessee.edu/utk_chanhonoproj/2221)

This Dissertation/Thesis is brought to you for free and open access by the University of Tennessee Honors Program at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in University of Tennessee Honors Thesis Projects by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact [trace@utk.edu](mailto:trace@utk.edu).

## **Auditor-Provided Tax Services and Audit Quality: Insights from Tax Comment Letters**

Terence Ryan Williams  
Honors Thesis  
University of Tennessee  
Spring 2018

---

### **Abstract:**

Services provided by an auditor that are not directly related to the audit (“non-audit services” (NAS)) have been a highly investigated research topic since the Sarbanes-Oxley Act of 2002 came into effect. Two conflicting theories have been presented in the prior literature: 1) that NAS can improve audit quality based on spillover of knowledge from the NAS, or 2) that NAS can impair audit quality based on concerns of independence and over-reliance on fees generated from NAS. In this study, I examine the effect of a specific type of NAS, auditor-provided tax services (APTS). Previous tests on the impact that APTS has on audit quality using measures such as accounting restatements, likelihood of a material weakness in internal control, and tax reserve patterns, have found conflicting evidence. I contribute to these studies by being the first to examine the relationship APTS has with the probability of receiving a tax-specific comment in a U.S. Securities and Exchange Commission (SEC) comment letter. Researching thousands of company-years of audit fee information and comment letter details, I find that even the slight use of APTS largely increases the probability of receiving a tax-specific comment letter (TCL). Specifically, I find a non-linear relationship between the proportion of APTS and probability of TCL, such that when less than one percent of total fees are from APTS, on average, 15 percent of company-years receive a TCL. In contrast, when more than one percent of total fees are from APTS, on average, 25 percent of company-years receive a TCL. I then investigate whether there are company characteristics affecting both the proportion of APTS and the probability of a TCL (i.e., correlated omitted variables).

---

Acknowledgements: I thank the Mark Venrick & HOPE Scholarships for financial assistance in my undergraduate honors thesis. I also thank the helpful guidance from my advisor, Lauren Cunningham, and the Greg & Lisa Smith Global Leadership Scholars Program Director, Mark Moon.

# **Auditor-Provided Tax Services and Audit Quality: Insights from Tax Comment Letters**

## **1. Summary**

Services provided by an auditor that are not directly related to the audit (“non-audit services” (NAS)) are a highly investigated and discussed topic of research since the Sarbanes-Oxley Act of 2002 came into effect. There has been conflicting evidence on either side of the argument about the impact NAS in general has on audit quality. One popular belief is that the joint provision of audit and NAS impairs auditor independence and audit quality. A threat to auditor independence arises from any situation that increases the probability the auditor will fail to report the results of his audit and will conceal negative results from shareholders (Simunic 1984). The concern is that the more involved an auditor gets with the client through other services, the less objectivity exists in their relationship (Gwilliam, Marnet, and Teng 2014). Another argument is that through completing NAS, the auditor is able to gain more information about the client and thus has a highly educated view on the client as a whole – leading to improved audit quality (Simone, Edge, Stomberg 2014).

Unfortunately, academic researchers have not been able to build a consensus on this topic. This paper researches the effects of auditor provided tax services (APTS) (a form of NAS) specifically. While many tests have been done on the impact that APTS has on audit independence using audit quality measures such as accounting restatements (Eshleman and Guo 2014), likelihood of a material weakness in internal control (Simone et al. 2014), and by tax reserves patterns (Gleason and Mills 2010), I will be the first to examine the relationship it has with the probability of receiving a tax-specific comment in a U.S. Securities and Exchange Commission (SEC) comment letter. I posit that this measure provides a cleaner setting for examining how tax-specific knowledge benefits tax-specific measures of audit quality. The term

“comment letters” refers to the letters that public companies receive in response to potential deficiencies or requested additional information about public disclosures filed with the SEC. About 50% of companies are up for filing review on any given year (Deloitte 2016). Each public company is mandated to submit a 10-K every year, but is by the SEC at least once every three years. In 2016, the most common topic that triggered an SEC comment letter was MD&A; then followed by Non-GAAP measures and fair value calculations (Deloitte 2016). Income tax issues were the fifth most common topic and made up eight percent of the 2016 comment letters (Deloitte 2016).

The sample used to complete my research originated from AuditAnalytics.com. I began by using the comment letters and audit fees databases for years 2011 – 2016. I used three datasets from these databases: 1) an annual listing of companies’ fees paid to the auditor, broken down by type of service (audit, tax, and other non-audit services), 2) a listing of all comment letters issued to public companies with at least one accounting issue, and 3) a listing of all comment letters with at least one tax comment (“tax comment letters” (TCL)). By combining the information from the three spreadsheets, I was able to test the relationship between the proportion of their total fees spent on tax related issues and the probability of receiving a TCL.<sup>1</sup>

---

<sup>1</sup> To properly evaluate the association between the probability of a TCL and APTS, it is important to properly classify the “0” (no-TCL) observations. Because the SEC is only required to review a company at least once every three years, and because that review can vary from a full-filing review to a targeted-issue review, it is important to identify companies that I know with certainty were reviewed in a specific year, and did have accounting issues examined in a specific year. However, the SEC does not release the names of the companies that were reviewed *without* receiving a comment letter, and does not publicly announce the nature of each review. Therefore, to properly identify the companies with the potential for a TCL, I require that the company received a comment letter with at least one accounting comment. This implies that accounting issues were examined. While it does not guarantee that tax issues were examined with the same level of scrutiny for all observations, it provides a reasonable basis to expect that the SEC examined at least some accounting issues (which would hopefully include taxes). Therefore, I assume that if the SEC identified concerns about the company’s tax accruals or disclosures, they would issue a TCL, and if the SEC did not, there would be no mention of tax issues in the comment letter. While I am not aware of any stronger identification method, this is a limitation of this study.

I find that the probability that a comment letter issued by the SEC includes a tax comment (i.e., the probability of a TCL) is 15% when there are very little or zero APTS. In contrast, once the proportion of total fees being tax related increases past about 1% of total fees, I see a significant increase in the probability of a TCL to about 24%. After the 1% threshold, there is no distinguishable pattern or relationship between the amount of fees that are tax-related and the likelihood of a TCL. Thus, as observed in Figure 1, I conclude that the relationship between APTS and the probability of a TCL is non-linear. Specifically, once an auditor-client relationship passes a minimal level of APTS, the probability of a TCL is relatively constant.

Because these are only statistical relations, the direction of causality is unclear. On the one hand, consistent with concerns about independence, this could imply that when the auditor provides more than a minimal amount of APTS, they are less likely to catch tax issues during the audit, which increases the probability of the client receiving a TCL after the completion of the audit. On the other hand, the association could be due to correlated omitted variables. For example, if companies with more complex tax issues are more likely to receive an SEC comment about taxes in a comment letter, and companies with more complex tax issues are more likely to engage an auditor in APTS, the relationship above could just be showing that companies with more complex tax issues are more likely to receive SEC comments on tax issues.

To examine this further, I proxy for the types of tax issues facing a company with a variety of measures, and then examine whether these measures are associated with APTS and TCL. These measures include: size (by total assets), foreign vs non-foreign (geographic region of corporate headquarters), industry classification, and tax haven vs non-tax haven (of corporate headquarters). My sample suggests that as the size of a company increases, so does their reliance on APTS as well as their probability of receiving a TCL, suggesting that it is a potential

correlated omitted variable. While there is a difference between foreign and non-foreign entities, the relationships are not consistent between APTS and TCL, suggesting that geographic region is not a correlated omitted variable. Specifically, within my sample, foreign companies chose to receive less APTS on average and were much more likely to not receive any NAS at all. In contrast, foreign companies have a higher probability of receiving a TCL. I rely on future research to examine the origins of this unique finding

Interestingly, the Real Estate and Commodities industry sector reported the highest reliance on APTS (11.25%) while also receiving the lowest likelihood of receiving a TCL (5.52%). The industries that were the most likely to receive a TCL in my sample were the Information Technologies and Services (39.62%) and the Electronics and Machinery (35.56%) sectors. In general, there were several industries that have higher (though maybe not the highest) probability of TCL and higher percent of APTS. Therefore, industry composition is also a potential correlated omitted variable.

My final proxy for tax complexity is the incorporation of the company in a tax haven. I was not able to gather a significant number of samples that received a comment letter, so my work focuses primarily on their use of APTS. I find that the average proportion of fees being related to tax services is much less in tax havens than in other markets around the world. Because I am primarily concerned about correlated omitted variables that increase APTS and TCL, I conclude that tax havens are not a significant concern for my study.

Aside from company characteristics to proxy for tax complexity, I also consider auditor characteristics that could be associated with both APTS and TCL. Traditional research suggests that larger audit firms have more reputation to lose by sacrificing their independence on any given audit engagement (DeAngelo 1981). For example, Francis and Krishnan (1999) find that

Big 4 auditors exhibit greater conservatism when issuing audit reports. There is also evidence that investors place more weight on the earnings of a firm audited by a Big 4 auditor, consistent with investors viewing the earnings as being of higher quality (Teoh and Wong 1993). My tests suggest that companies audited by a Big 4 Firm are more likely to receive a TCL than those who are not, and companies engaging a Big 4 auditor pay for a larger percent of APTS. Therefore, I consider this as another potential correlated omitted variable.

Finally, I consider the fact that the amount of APTS paid to the auditor is a choice that companies make. Is it possible that companies have a policy of having no non-audit services at all, and that there is something systematically different about these companies compared to the rest of my sample? I examine this possibility by splitting my sample based on whether a company has none or at least some non-audit services. The first thing that I notice is that smaller companies are much less likely to receive any form of NAS. I also find that, on average, 13.68 percent of companies that do not receive any form of NAS (so APTS is equal to zero) receive a TCL. This is significantly less than the likelihood of companies that pay for zero APTS but do receive some other form of NAS (16.57%). Therefore, I consider analyses that both include and exclude companies with no NAS.

Based on the findings described above, in multivariate analyses, I control for company size, the presence of a Big 4 auditor, and industry composition. Even after controlling for these characteristics of the company and auditor that affect both APTS and TCL, I continue to find that higher levels of APTS are associated with higher probability of receiving a TCL, for both NAS and non-NAS companies. On average, having more than one percent of total fees as APTS is associated with a 21 percent increase in the probability of receiving a TCL. I leave it to future

research to explore additional company characteristics that may better proxy for tax complexity (i.e., other correlated omitted variables).

Tax related comment letters are known to have negative effects on the companies to which they are issued. Research suggests that in the years following TCL's, public companies tend to spend an additional 1.5% in quarterly tax payments (Kubick et al. 2017). Additionally, comment letters result in a distraction for the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) and can lead to restatements (Cassell, Dreher, Myers 2013). Companies should be aware of the effects that receiving APTS has on their likelihood of receiving a TCL so they can factor that cost into the benefit they receive from these services.

## **2. Background and Hypothesis Development**

### ***2.1 SEC Rules Around Non-Audit Services***

When the assurance market reached saturation levels in the 1970s, audit firms expanded their revenue base by providing consulting services in taxation, systems, and other areas (Wootten and Wolk 2008). From the 1970s into the 1990s, audit firms' gross revenues from consulting services exceeded those from assurance services (Wootten and Wolk 2008). For example, in 2000, PricewaterhouseCoopers (PwC) generated 49 percent of gross fees from consulting, 33 percent from assurance, and 18 percent from tax (Omer, Berdard, and Falsetta 2006). During this period, tax partners experienced increased pressure to generate revenue by cross-selling tax-related services to audit clients, as well as to develop creative tax strategies (Maydew and Shackelford 2005). A flood of large scale accounting failures led to the fall of WorldCom, Enron and Arthur Andersen, and also initiated legislative change. According to the Sarbanes Oxley Act of 2002 ("SOX") Section 201, audit committees are directly responsible for

the oversight of the engagement of the company's independent auditor, and SEC rules are designed to ensure that auditors are independent of their audit clients. To maintain independence, SOX Section 201 provides a list of non-audit services that are prohibited, including:

- Bookkeeping
- Financial information systems design and implementation
- Appraisal or valuation services, fairness opinions, or contribution-in-kind reports
- Actuarial services
- Internal audit outsourcing services
- Management functions or human resources
- Broker-dealer, investment adviser, or investment banking services
- Legal services and expert services unrelated to the audit

While tax related services are not included on this list, audit committees of companies have increasingly decided to avoid APTS. In fact, since SOX took effect in the early 2000's, APTS have decreased by 74% among publicly traded companies (Gleason and Mills 2011). The decline happened quickly and dramatically. According to research completed by Maydew and Shackelford (2005,2):

In 2001, S&P 500 companies, on average, paid their auditors about the same fees for their audit work as they did for their tax work (i.e., the combination of tax compliance, tax advice and tax consulting). Two years later in 2003, the S&P 500 were paying twice as much for audit work as tax work. By 2004, we estimate that the average S&P 500 firm was paying their auditor four times more for audit work than tax work.

To further illustrate the change in services since the passage of SOX, in contrast to the figures described above about PwC in 2000, in 2017 PwC generated 32 percent of gross fees from consulting, 43 percent from assurance, and 25 percent from tax (Accounting Today 2018). Of the audits that I sampled, 16 percent of companies chose not to receive any form of non-audit services. This is due to an increased pressure by companies to avoid any independence issues with their auditors or any kind of fraud in general (Chasan 2014). According to the Wall Street Journal article, “Auditors Draw Some Clients Closer” (Chasan 2014, 2):

Since the collapse of Enron and its auditor, Arthur Andersen, more than a decade ago, regulators on both sides of the Atlantic have been cautious about auditors receiving big fees for consulting and other services that could potentially cloud their judgment when reviewing a company’s books.

## ***2.2 Comment Letter Process***

SOX Section 408 mandates that the SEC review the public filings issued by a company, including the Form 10-K, at least once every three years. During this review, the staff may identify areas of the filing that require clarification or appear to be inconsistent with U.S. GAAP or SEC disclosure rules, in which case the SEC will issue “comments” to the company. In issuing comments to a company, the staff may request that a company provide additional supplemental information so the staff can better understand the company’s disclosure, revise disclosure in a document on file with the SEC (an amendment or restatement), or provide additional or different disclosure in a future filing with the SEC. There may be several rounds of letters from the SEC staff and responses from the filer until the issues identified in the review are

resolved. These letters set forth staff positions and do not constitute an official expression of the SEC's views.<sup>2</sup>

These comment letters issued by the SEC are public information and made available to the EDGAR database on sec.gov after the SEC's comments have been fully addressed by the company's responses. SEC comments are filed as UPLOAD filings and company responses are filed as CORRESP filings. Comment letter trends are researched heavily by large accounting firms to understand the areas that cause companies the most trouble. In my sample period of 2011 through 2016, the most commonly issued comments related to (Deloitte 2016):

1. Management discussion and analysis (28.2 percent of all letters)
2. Non-GAAP Measures (14.1 percent)
3. Fair Value Calculation (11.3 percent)
4. Segment Reporting (8.4 percent)
5. Income Tax (8.0 percent)

As described previously, because I am specifically interested in the effect of APTS on audit quality, I focus on tax-related comment letters (TCL). In the last year of my sample period, 2016, the most commonly issued comments related to taxes included (Chatergoon 2017):

- Disclosures and tax impacts of U.S. and foreign tax jurisdictions
- Valuation Allowances
- Tax Rate Reconciliations

Several examples of tax comments are provided in Appendix A.

---

<sup>2</sup> Information about the SEC comment letter process is available at <https://www.sec.gov/divisions/corpfin/cffilingreview.htm> and referred to on the SEC website as the "Filing Review Process."

I am aware of only one other study that examines TCLs. Kubick, Lynch, Mayberry, and Omer (2016) collected 2,820 SEC comment letters between 2004 and 2012, of which 845 were tax-related (approximately 30 percent). They compare the tax behavior of 479 companies that receive SEC tax-related letters to 479 that received SEC letters not related to taxes with controls put into place matching industries, years, profitability, and other factors. The study reveals that companies increase their provision for income taxes by approximately 1.4 percentage points, and their actual cash payments by 1.5 percentage points after receiving a tax-related comment letter. Thus, the receipt of a TCL is potentially costly to companies, since it is associated with an increase in future tax payments, and something that companies would presumably want to avoid.

### ***2.3 Hypothesis Development***

Recent research has had a positive outlook on the effects of providing APTS for the sake of clients. Research completed by Simone, Ege, Stomburg (2006) showed a “negative relation between tax NAS and the likelihood of a material weakness in internal control from 2004 through 2012.” Their argument is that tax NAS actually improves internal control quality – thus improving both financial reporting quality and audit quality. This improvement is a result of the increased frequency in their involvement in tax matters, often earlier in the year, which allows for earlier detection or prevention of internal control issues. Simone, Ege, Stomburg’s (2006) research differs from mine due to their focus on total audit internal control quality, rather than focusing on APTS’s impact on reporting tax figures and disclosures specifically.

Robinson (2008) similarly investigates how APTS has a positive effect on quality while no longer impairing independence after SOX 2002. She does this by focusing on auditors’ going-concern opinions among a sample of bankruptcy filing firms. Her tests are inspired by the bankruptcy of corporations such as Enron in the early 2000’s that initiated legislation. Her study

documents a significant positive correlation between the level of tax services fees and the likelihood of correctly issuing a going-concern opinion prior to the bankruptcy filing. She concludes that restricting tax services by auditors of firms in risk of bankruptcy may decrease the quality of reporting decisions without affecting auditor independence.

Lennox (2016) explores the effect that restrictions on APTS by the Securities and Exchange Commission (SEC) in 2005-2006 has on audit quality. In order to do this, he divides his sample into companies whose APTS purchases significantly dropped after these restrictions were introduced and those whose APTS purchases remained relatively consistent. He measures audit quality by the number of incidences of accounting misstatements, tax-related misstatements, and auditors' going concern opinions. In his research, he was unable to find significant change in overall quality, suggesting that there may not be a causal relationship between APTS and audit quality.

Gleason and Mills (2011) is the only study that I am aware of that examines the association between APTS and a direct measure of tax accruals or disclosures. They test the adequacy of reserves for IRS disputes using data from 2000 to 2002 before major legislation came into effect. According to their research, on average, corporations that purchase APTS are adequately prepared for disputes with the IRS. In contrast, corporations that do not purchase APTS require additional tax reserves for IRS disputes or settlements. This suggests that companies who receive APTS have a better understanding of future IRS disputes and issues. This is an important factor in financial reporting quality because it allows companies to react to tax issues without having to adjust their tax planning in order to satisfy their additional tax related obligations. Collectively, these results suggest that APTS does not impair independence,

and instead, companies are more likely to have adequate reserves (expenses) needed for tax liabilities.

Despite negative public perception that APTS could impair auditor independence and decrease audit quality, the studies described above suggest that APTS either *improves* audit quality or has no effect on audit quality. I hope to contribute to this research by introducing a measure of audit quality that is tax-specific but covers a broad range of tax accrual and disclosure issues (as opposed to only IRS reserves) and is in the post-SOX era. Because SEC comment letters are issued after the completion of the audit, a tax-related comment letter suggests that the auditor ‘missed’ a problem with tax accruals and disclosures that was subsequently identified by the SEC. Thus, my measure of TCL is an *inverse* measure of audit quality. In other words, as the probability of TCL increases, audit quality is decreasing. Because prior literature finds mixed results and public perception is negative for APTS, I do not have a directional prediction for my hypothesis:

*H1: Auditor-provided tax services are not associated with the probability of a tax comment letter.*

### **3. Research Design and Results**

#### ***3.1 Data***

My research is designed with the hopes of gathering as many relevant comment letters as possible to study the trends related to APTS. I create a unique identifier for each client and year by combining Company Name and File Date Together. I also match this with the information about the proportion of total audit fees that were tax related and how often that related to having a TCL in that year. In order to do this, I create three different spreadsheets. First, an annual listing of companies’ fees paid to the auditor, broken down by type of service (audit, tax, and

other non-audit services). Second, a listing of all comment letters issued to public companies with at least one accounting issue (which includes tax comments). Lastly, a listing of all comment letters with at least one tax comment (“tax comment letters” (TCL)). I combine them into one spreadsheet and look at relational trends with the total proportion of APTS (on average, 8.16% of total fees related to tax services) and the probability of tax related comment letters (on average, 21.03% of comment letters have at least one tax comment).

### ***3.2 Primary Results, H1***

The primary result of my thesis is displayed in Figure 1. When there is a very small proportion of tax fees related to the total fees earned in an audit (zero or less than one percent), the probability of receiving a tax-specific SEC comment letter (TCL) is only about 15 percent. This is much lower than the likelihood of being issued a TCL for audits where the proportion of tax fees surpasses one percent. It immediately spikes up and remains static around 25 percent even until tax fees reach over 50% of the total fees paid to the auditor. This relationship suggests that the presence of APTS may increase the likelihood of receiving a TCL, and that the relationship is non-linear. The remaining tests in the sections below are completed with the hope of understanding this relationship and the variables that may have an impact on it.

[Insert Figure 1 here]

## **4. Examining Alternative Explanations**

Although the relationship is easily apparent in Figure 1, the causality of this relationship remains unclear. I decide to further research the data to discover any additional relationships that may provide insights into why APTS and the probability of TCL are related. I complete tests on six different measures to further understand the complexities in my primary results. In particular,

I am concerned about correlated omitted variables, i.e., those company or auditor characteristics that could be associated with both APTS and TCL. For example, if companies with more complex tax issues choose to purchase more APTS, and the SEC has more questions about tax estimates and disclosures for companies with more complex tax issues, the association observed above may not be causal. It may just suggest that companies with more complex tax issues are more likely to receive a TCL.

#### ***4.1 Company Size***

The total size of audited companies is commonly associated with an increased tax complexity. Larger companies are more likely to be involved in multiple states, have multiple sources of income, have foreign operations, and complex financing strategies. In my experience, larger companies also receive much higher fees for compliance services due to the heightened level of expertise required. In order to test the relevance of size, I calculate the observations' percentile of the total sample's distribution for total assets. I then calculate the average APTS and the average TCL for each bucket of observations based on their size percentile rounded to one-tenth of a decimal (0.0 – 1.0). Figure 2 displays the linear relationship that exists between the size of the company by assets, and both the amount of APTS received and the probability of receiving a TCL. The figure shows that the largest companies (1.0) used almost 12 times the amount of APTS (12.03%) as the smallest companies (0.0 size percentile, 1.13% APTS). The figure also shows that the largest companies (1.0) are approximately four times more likely to receive a TCL (31.97%) compared to the smallest companies (0.0 size percentile, 7.14% TCL). Between APTS and TCL, there is an apparent, and consistent, increase along with the size of the company, suggesting that this is a potential correlated omitted variable.

[Insert Figure 2 here]

## ***4.2 Company Geographic Location***

I choose to also test the differences that pertain to my research based on whether the company was operating in a foreign country. Previous research has concluded that the “international arena” is one of the largest contributors to total tax complexity (Burton and Karlinsky 2016). Thus, it is possible that the location of the company also has the potential to affect the likelihood of companies accepting APTS or receiving more TCL’s. The sample that I created has a much larger proportion of domestic companies than foreign, since the sample is comprised of companies traded on a U.S. stock exchange. Only 449 of my sampled company-years are foreign. While that is still significant, and can be used for testing, it is still much smaller than the 8,357 domestic company years in my sample. As shown in Figure 3, the proportion of APTS is only slightly less than the domestic at 6% of total fees for foreign clients (domestic – 8.28%). In contrast, foreign companies’ comment letters were 32.96% likely to be tax related compared to 20.39% among domestic companies. Because these relations are opposite, foreign companies are more likely to receive a TCL but less likely to purchase APTS, it is not of concern to me as a potential correlated omitted variable.

[Insert Figure 3 here]

## ***4.3 Tax Havens***

Recent activity by the OECD and G20 has focused on altering the status of current tax havens (McCahey 2017). Tensions about extent to which auditors should provide APTS have been a trend internationally with European Parliament recently capping non-audit services to 70% of total audit fees (Chasan 2014). The empiric question still remains whether auditor provided tax services have any influence on the level of independence an auditor may have with

a client or on the auditor's audit quality output. In my research, I review any differences in audit services provided or TCL probabilities of clients who were being audited in tax haven countries. They are described as "countries or territories where taxes are assessed at a low or nonexistent rate" and likely do have an effect on legislation and company practices (Forbes 2017). The list of well-known tax havens, and the ones that I used for testing are (Forbes 2017):

- Bermuda
- Singapore
- Mauritius
- Netherlands
- Channel Islands
- Monaco
- Luxemburg
- Isle of Man
- Switzerland
- Cayman Islands
- Ireland
- Bahamas

The EU has stepped up its efforts to combat tax avoidance in recent years after several high profile examples were made public, most notably the Paradise Papers, which disclosed world leaders' abuse of tax havens (Petroff 2017). Because of these efforts, being headquartered in a tax haven country may lead the SEC to increase scrutiny on tax related disclosures and estimates, thus increasing the probability of receiving a TCL. As shown in Figure 4, there is an inverse relationship between tax havens, APTS and the probability of TCL. Tax Haven countries tend to have a smaller percent of tax fees (4.23%) than the rest of my sample while having a larger possibility of the comment letter being tax related (29.78%). Because tax havens affect APTS and TCL in opposite directions, it is not of concern to me as a potential correlated omitted variable.

[Insert Figure 4 here]

#### **4.4 Industries**

Public research and literature are in agreement that different industries pay different effective tax rates (Folger 2011). This allowed me to conclude that there are differing tax treatments depending on industry, that could lead to different probability of TCL and difference purchasing strategies for APTS. By looking at Figure 5, it is apparent that any potential relationship between industry, APTS, and TCL, varies by industry. For example, the industries within my sample that were the least likely to receive a TCL are: 1) Real Estate and Commodities (5.52%), 2) **Natural resources and Food** (12.47%), 3) Financial Services (14.27%). The Financial Services II is not included in the ranking due to its low number of units. There is some overlap with the industries with the least usage of APTS, which are: 1) Customer Products (5.67%), 2) **Natural Resources and Food** (5.68%), and 3) Telecommunications (6.90%).

The industries within my sample that were the most likely to receive a TCL are: 1) **Information and Technologies Services** (39.62%), 2) Electronics and Machinery (35.56%), and 3) **Manufacturing and Construction** (31.11%). Similar to above, there is some overlap with the industries that relied the most on APTS, which are: 1) Real Estate and Commodities (11.2%), 2) **Manufacturing and Construction** (9.00%), and 3) **Information Technologies and Services**. Thus, I conclude that there are some industries that could influence what I observe in my main result and I consider industry composition to be a potential correlated omitted variable.

[Insert Figure 5 here]

#### ***4.5 Auditor Size (Big 4 vs. Non-Big 4)***

Big 4 auditors have a reputation for providing higher quality audits (Teoh and Wong 1993). I test whether my form of quality measurement (Big 4 vs Non-Big 4) explains which companies are more likely to receive TCLs and which companies have higher APTS. Of the 8,806 company-years in my sample, 5,077 of them are audited by a Big 4 firm. Referring to Figure 6, Big 4 audits are much more likely to receive a TCL (23.75%) than the audits completed by local and regional firms (17.32%). This would suggest that, by my measure of quality, that Big 4 audits have lower quality, but prior literature also demonstrates that larger companies are more likely to use a Big 4 auditor, so it could mean that larger companies (audited by Big 4 auditors) receive more scrutiny from the SEC. Additionally, companies hiring Big 4 auditors purchase a higher proportion of APTS (9.74%) than companies hiring their Non-Big 4 counterparts (6.02%). Because Big 4 is positively associated with both TCL and APTS, I consider this a potential correlated omitted variable.

[Insert Figure 6 here]

#### ***4.6 Companies That Only Purchase Audit Services***

Finally, I consider the fact that there are companies who do not receive any NAS (so APTS equals zero because there are no NAS purchases at all). This could be the company's desire to show that their auditor is independent (because the auditor is only getting paid to do the audit), or could be due to companies that lack the complexity that would benefit from APTS or other forms of NAS. As shown in Figure 7, 13.68% of the 1,411 company-years within my sample that did not receive any NAS receive a TCL. Meanwhile, 22.43% of the rest of the companies, the ones who were charged with NAS, receive a TCL.

[Insert Figure 7 here]

One would think that because of the perceived risk of being provided NAS that high profile, large companies would be the ones avoiding it. The reality is that the small companies are the ones who most often do not receive NAS. According to Figure 8, the smallest decile of companies in my sample avoided NAS 77.46% of the time. There were very few companies (2.27%) within the top 10% in size within my sample who chose to not receive NAS. This suggests that while the proportion of NAS usage has decreased across the market, the larger companies are not abandoning NAS all together.

[Insert Figure 8 here]

I also research how my original model displaying my primary results reacts once I exclude audited companies that did not receive NAS of any kind. Figure 9 shows that, once removing zero NAS companies, the lower decile jumps up to a probability of receiving a TCL of about 17%. After that first grouping, the relationship becomes non-linear like my original test. There is still a substantial jump around one percent of APTS, so I do not believe that my results are solely driven by the choice of having no NAS, but I will consider this in my final multivariate analysis by including and excluding no-NAS companies from the model.

[Insert Figure 8 here]

#### ***4.7 Multivariate Analyses***

To account for the potential correlated omitted variables described above, I estimate the following multivariate logistic regression:

$$TCL_{it} = \beta_0 + \beta_1 HighFees_{it} + \beta_2 PercRankSize_{it} + \beta_3 Big4_{it} + \beta_k IndustryFE_{it} + \varepsilon_{it} \quad (2)$$

where *TCL* is set equal to one if the company's comment letter includes a tax question, and zero otherwise; *HighFees* is set equal to one if the company has purchased APTS in excess of one percent of total fees, and zero otherwise; *PercRankSize* the sample percentile for the observation's company size based on total assets; *Big4* is set equal to one if the company hires a Big 4 auditor (Deloitte, EY, KPMG, and PwC), and zero otherwise; and *IndustryFE* represents separate indicator variables for each of the industries reported in Figure 5; *it* denotes that the regression is run based on observations for company *i* in year *t*.

I expect that  $\beta_1$  will be positive and significant if higher proportions of APTS are associated with a higher probability of receiving a TCL. In Table 1, Panel A, I report the results of the regression for all observations. In Table 1, Panel B, I report the results of the regression for only those observations where there are at least some NAS purchased (i.e., I drop observations where APTS is equal to zero and other forms of NAS are also equal to zero). In both panels, I find that the coefficient on *HighFees* is positive and significant at the one percent significance level ( $p < 0.01$ ). Economically, I find that companies with more than one percent of total fees as APTS are associated with a 21 percent higher probability of receiving tax questions in their comment letter ( $e^{0.193} - 1$ ). This increase appears to be both quantitatively ( $p < 0.01$ ) and qualitatively (21 percent) significant.

## **Conclusions**

I find that companies with higher APTS also have a higher probability of receiving a TCL. Contrary to prior research that finds that APTS does not have a negative effect on audit quality, I find a setting where higher APTS is associated with a negative outcome. Because comment letters cause management's time to be diverted and can lead to restatements, my research should be of interest to audit committees deciding whether they should purchase tax

services from their auditor. I find that factors that contribute to this relationship are the size of the company, industry classification, and type of auditor. I leave it to future research to determine the direction of causality. For example, based on the findings in prior literature, I could interpret this association to suggest that auditors with more APTS lack independence, are less likely to catch deficient tax disclosures and estimates during the audit, and thus are more likely to have the SEC issue a TCL to their clients. However, additional analyses are necessary to rule out alternative explanations (e.g., exploring other measures that may better proxy for tax complexity that could be correlated omitted variables).

## References:

- Burton, H. and S. Karlinsky. 2016. Tax Professionals' Perception of Large and Mid-Size Business Tax Law Complexity. *eJournal of Tax Research* 14 (1): 61-94.
- Chasan, E. 2014. "Auditors Draw Some Clients Closer." *The Wall Street Journal*. March 4. Retrieved from [blogs.wsj.com/cfo/2014/03/04/auditors-draw-some-clients-closer/](https://blogs.wsj.com/cfo/2014/03/04/auditors-draw-some-clients-closer/) on March 29, 2018.
- Chatergoon, K. 2017. "2016 Trends in SEC Comment Letters." *Marcum LLP*. Retrieved from [www.marcumllp.com/insights-news/2016-trends-in-sec-comment-letters](http://www.marcumllp.com/insights-news/2016-trends-in-sec-comment-letters) on March 29, 2018.
- Cohn, M. 2017 "PwC Sees Global Revenue Grow to \$37.7B." October 4. Retrieved from [www.accountingtoday.com/news/pwc-sees-global-revenue-grow-to-377b-in-fy-2017-led-by-advisory-business](http://www.accountingtoday.com/news/pwc-sees-global-revenue-grow-to-377b-in-fy-2017-led-by-advisory-business) on March 29, 2018.
- De Simone, L. M. S. Ege, and B. Stomberg. 2015. Internal Control Quality: The Role of Auditor-Provided Tax Services. *The Accounting Review* 90 (4): 1469-1496.
- DeAngelo, L. E. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3 (3): 183– 199.
- Deloitte. 2014. "SEC Comment Letter Examples: Income Taxes." Deloitte & Touche LLP. Retrieved from [www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-sec-comment-letter-examples-income-taxes-12112014.pdf](http://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-sec-comment-letter-examples-income-taxes-12112014.pdf) on March 29, 2018.
- Depietro, A. 2017. "The 12 Most Lucrative Tax Havens in the World." *Fortune*. February 22. Retrieved from [fortune.com/2017/02/22/world-best-tax-havens-countries-corporate-business/](http://fortune.com/2017/02/22/world-best-tax-havens-countries-corporate-business/) on March 29, 2018.
- Divine, C. 2016. "SEC Comment Letters — Statistics According to "Edgar"." *Deloitte*. Retrieved from [www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-aers-sec-comment-letters-statistics-according-to-edgar-supplement-to-the-ninth-edition.pdf](http://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-aers-sec-comment-letters-statistics-according-to-edgar-supplement-to-the-ninth-edition.pdf) on March 29, 2018.
- Eshleman, J. D., and P. Guo. 2014. Do Big 4 Auditors Provide Higher Audit Quality after Controlling for the Endogenous Choice of Auditor? *AUDITING: A Journal of Practice & Theory*: 33 (4): 197-219.
- Folger, J. 2011. "Highest Corporate Taxes By Sector." *Investopedia*. August 26. Retrieved from <https://www.investopedia.com/financial-edge/0811/highest-corporate-taxes-by-sector.aspx> on March 29, 2018.
- Francis, J. R., and J. Krishnan. 1999. Accounting accruals and auditor reporting conservatism. *Contemporary Accounting Research* 16 (1): 135–165.
- Gleason, C. A., and L. F. Mills. 2010. Do Auditor-Provided Tax Services Improve the Estimate of Tax Reserves? *Contemporary Accounting Research* 28 (5): 1484 - 1509.

- Gwilliam, D., O. Marnet, and C. M. Teng. 2014. "How Does Joint Provision of Audit and Non-Audit Services Affect Audit Quality and Independence? A Review." Chartered Accountants' Trustees Limited: London, UK. Retrieved from <https://www.icaew.com/en/products/audit-and-assurance-publications/~media/481bd2be6ac7414cb4248996d259f8f5.ashx> on March 29, 2018.
- Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. 2016. The Effects of Regulatory Scrutiny on Tax Avoidance: An Examination of SEC Comment Letters. *The Accounting Review* 91 (6): 1751-1780.
- Lennox, C. 2016. Did the PCAOB's Restrictions on Auditors' Tax Services Improve Audit Quality? *The Accounting Review* 91 (5): 1493-1512.
- Maydew, E. L., and D. A. Shackelford. 2005. The Changing Role of Auditors in Corporate Tax Planning. *NBER Working Paper No. 11504*. Retrieved from <http://www.nber.org/papers/w11504> on March 29, 2018.
- McCahey, J. E. 2017. "International Tax Reform." *PwC*. Retrieved from [www.pwc.com/gx/en/about/global-regulatory-affairs/international-tax-reform.html](http://www.pwc.com/gx/en/about/global-regulatory-affairs/international-tax-reform.html) on March 29, 2018.
- Omer, T. C., J. C. Bedard, and D. Falsetta. 2006. Auditor-Provided Tax Services: The Effects of a Changing Regulatory Environment. *The Accounting Review* 81 (5): 1095-1117.
- Robinson, D. 2008. Auditor Independence and Auditor-Provided Tax Service: Evidence from Going-Concern Audit Opinions Prior to Bankruptcy Filings. *AUDITING: A Journal of Practice & Theory* 27 (2): 31-54.
- Simunic, D. 1984. Auditing, Consulting, and Auditor Independence. *Journal of Accounting Research* 22 (2): 679-702.
- Teoh, S. H., and T. J. Wong. 1993. Perceived auditor quality and the earnings response coefficient. *The Accounting Review* 68 (2): 346-366.
- Wootten, C. W., and C. Wolk. 2008. "The Development of 'The Big Eight' Accounting Firms in the United States, 1900 to 1990." *AccountingInformation.com* (April).

## **Appendix A:**

### **Examples of common Tax-specific comment letters issued by the SEC (Deloitte 2014)**

---

#### **Disclosures**

- Please add a discussion of capital [loss] carryforward and any limitations on the ability to use the capital losses.
- To [the] extent necessary to understanding the changes in your effective income tax benefit/expense for each period presented, please also provide revised MD&A disclosure, as applicable, to be included in future periodic reports.
- It is not clear how the amounts presented for “provision for income taxes” and “non-controlling interest” for each pro forma period presented are consistent with the corresponding rate or percentages indicated in the respective footnotes supporting these amounts. Please revise to expand the corresponding footnotes as appropriate to specifically disclose the details of how the adjustments presented were derived. In regard to the provision for income taxes, separately present the effect of each of federal, state, local and foreign taxes, and how each contributed to the effective tax rate indicated. 5
- Considering the significance of your “other” category to total deferred tax assets and liabilities as presented on the table on page [X], please revise future filings to disclose the nature of the items included in this category and discuss any geographic concentrations of the amounts. Please provide us with your proposed disclosure.
- Please tell us the total amount of legacy litigation expenses and non-cash income tax provisions included in Non-GAAP core operating income for all periods presented in your Form 10-K for the year ended December 31, 2012 and your most recently filed Form 10-Q. In addition, please clarify for us whether these charges have been incurred during the past two years. To the extent they have, we remain unclear how your disclosure complies with Item 10(e)(ii)(B) of Regulation S-K. • We note your disclosure of your effective income tax rates excluding the effects of goodwill and trademark impairments on page [X], which appears to represent a non-GAAP measure. Please revise to provide the disclosures required by Item 10(e) of Regulation S-K in future filings and show us a draft of your proposed revisions.

#### **Foreign Tax Rate and Other Reporting Issues**

- Please revise to separately disclose the components of income/(loss) before income tax expense as domestic and foreign operations. We refer you to Rule 4-08(h) of Regulation S-X.
- We note the significance of the benefit from foreign income taxed at other than U.S. rates as disclosed in the income tax rate reconciliation on page [X]. We also note the significant difference between the U.S. statutory rate and your foreign effective tax rate. In light of the significant impact of lower taxes on foreign earnings to your operating results, in future filings

please explain the relationship between foreign pre-tax income and the foreign effective tax rate in greater detail. In that regard, please disclose the foreign effective tax rate, with accompanying description of the primary jurisdictions where your foreign income is earned for tax purposes and the statutory rates and incentives in those jurisdictions. It appears that separately discussing the foreign effective income tax rate is important information material to an understanding of your results of operations. Refer to Item 303(a)(3)(i) of Regulation S-K and Section III.B of SEC Release 33-8350.

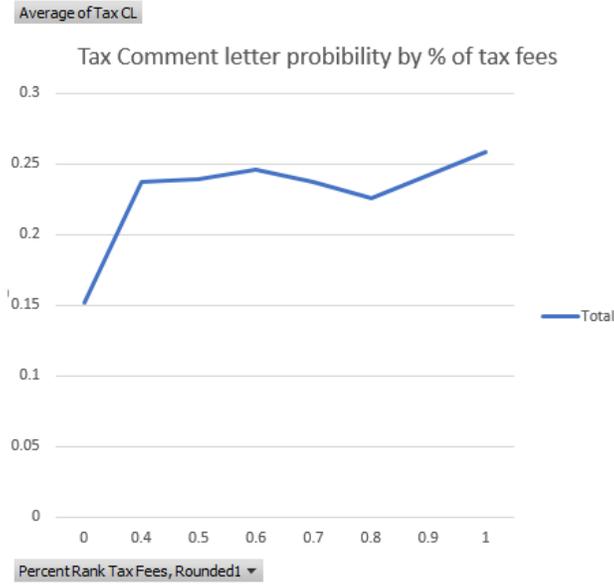
- Please tell us the significant components of the [X]% adjustment to the statutory federal income tax rate due to “foreign rate differences.” We see that the differential significantly increased from prior periods.
- You indicate that your year to date effective tax rate for 2012 was [X]% as compared to [X]% in 2011. Please expand your discussion of income taxes to better discuss your effective tax rate for each period with reference to your reconciliation of the U.S. statutory income tax rate to the effective tax rate in your financial statements. Please also address the underlying material reasons for the change in your effective tax rate from period to period. You also disclosed that the lower effective tax rate was due to a higher proportion of pretax income being generated by your foreign operations where income tax rates are lower than in the U.S. Please discuss which foreign jurisdictions had the most significant impact on your effective tax rate, as applicable.
- We note from your reconciliation between the actual effective tax rat

---

*Notes: I chose these examples because they related to the two most common topics of TCL's. Each bullet point is an individual comment that would be made to an audited company. All text comes directly from Deloitte (2014).*

**Figure 1:**

**Tax Comment Letter Probability by % of Tax Fees**



Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific (y-axis) and the proportion of audit fees that were produced from auditor provided tax services (x-axis). The proportion of tax fees are aggregated into values 1-10 to simplify analysis. There is 0 linear relationship between the two variables. There is a significant difference between the 0-2 and 2-8 ranges meaning that very little auditor provided tax services is found with lower proportions of tax-specific comment letters.

*Figure 2:*

*% of Tax Fees and Probability of Tax Comment Letter by Company size*

| Company Size       | Average of % Tax Fees2 | Average of Tax CL  |
|--------------------|------------------------|--------------------|
| 0                  | 0.011253295            | 0.071428571        |
| 0.1                | 0.047885146            | 0.126002291        |
| 0.2                | 0.064778874            | 0.158910329        |
| 0.3                | 0.064454067            | 0.139772727        |
| 0.4                | 0.073209569            | 0.172531215        |
| 0.5                | 0.093059229            | 0.220454545        |
| 0.6                | 0.091910501            | 0.222474461        |
| 0.7                | 0.095858499            | 0.254545455        |
| 0.8                | 0.108653436            | 0.305334847        |
| 0.9                | 0.11106563             | 0.307954545        |
| 1                  | 0.120315871            | 0.319727891        |
| <b>Grand Total</b> | <b>0.081634577</b>     | <b>0.210311151</b> |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific, the proportion of audit fees that were produced from auditor provided tax services and the size of an audited company. The size of the company was calculated by the total assets held by the company in that year and were aggregated into values 1-10 to simplify analysis. The percentage of tax fees was calculated by taking the amount of audit fees that were related to tax services and dividing it by the total fees accumulated by the audit.

*Figure 3:*

**Differences in Foreign/Domestic Companies**

| Row Labels         | Count of Domestic/Foreign | Average of % Tax Fees | Average of Tax CL  | Average of Audit Only |
|--------------------|---------------------------|-----------------------|--------------------|-----------------------|
| Foreign            | 449                       | 0.060096515           | 0.329621381        | 0.285077951           |
| Domestic           | 8357                      | 0.082791762           | 0.203900921        | 0.153523992           |
| <b>Grand Total</b> | <b>8806</b>               | <b>0.081634577</b>    | <b>0.210311151</b> | <b>0.16023166</b>     |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific, the proportion of audit fees that were produced from auditor provided tax services and whether the audited company is foreign or domestic. The percentage of tax fees was calculated by taking the amount of audit fees that were related to tax services and dividing it by the total fees accumulated by the audit. Nationality of the company was provided with the data from AuditAnalytics.com.

**Figure 4:**

*% of Fees that are from Auditor Provided Tax Services depending on Whether the Company Operates in a Tax Haven*

| <b>Classification</b> <input type="button" value="v↑"/> | <b>Max of Count</b> | <b>Average % of Tax Fees</b> | <b>Average of Tax CL</b> |
|---------------------------------------------------------|---------------------|------------------------------|--------------------------|
| Tax Haven                                               | 108                 | 0.041288367                  | 0.29782201               |
| Non-Tax Haven                                           | 8698                | 0.082135542                  | 0.20922456               |
| <b>Grand Total</b>                                      | <b>8698</b>         | <b>0.082135542</b>           | <b>0.29782201</b>        |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. The graph shows the difference in the proportion of total fees are from auditor provided tax services in companies that operate inside and outside of tax havens. The percentage of tax fees (x-axis) was calculated by taking the amount of audit fees that were related to tax services and dividing it by the total fees accumulated by the audit. The countries that I used as “tax havens” were: Bermuda, Netherlands, Luxemburg, Cayman Islands, Singapore, Channel Islands, Isle of Man, Ireland, Mauritius, Monaco, Switzerland, and the Bahamas.

**Figure 5:**

**% of Fees from Auditor Provided Tax Services and Tax-Specific Comment Letters by Industry Classification**

| Industry Classification               | Count of Industry Designation | Average of % Tax Fees <sup>2</sup> | Average of Tax CL  |
|---------------------------------------|-------------------------------|------------------------------------|--------------------|
| Other                                 | 58                            | 0.053350617                        | 0.068965517        |
| Consumer Products                     | 1099                          | 0.056736387                        | 0.23566879         |
| Natural Resources and Food            | 505                           | 0.056775545                        | 0.124752475        |
| Telecommunications                    | 604                           | 0.06901296                         | 0.163907285        |
| Beverages, Apparel, and Mining        | 543                           | 0.07594764                         | 0.208103131        |
| Health Care and Insurance             | 773                           | 0.07684346                         | 0.166882277        |
| Financial Services I                  | 876                           | 0.079653527                        | 0.142694064        |
| Electronics and Machinery             | 734                           | 0.088123322                        | 0.355585831        |
| Transportation and Leisure            | 821                           | 0.088726272                        | 0.19001218         |
| Information Technologies and Services | 631                           | 0.088999976                        | 0.396196513        |
| Manufacturing and Construction        | 1063                          | 0.090081467                        | 0.311382879        |
| Financial Services II                 | 31                            | 0.099390714                        | 0.096774194        |
| Real Estate and Commodities           | 1068                          | 0.11248263                         | 0.055243446        |
| <b>Grand Total</b>                    | <b>8806</b>                   | <b>0.081634577</b>                 | <b>0.210311151</b> |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific, the proportion of audit fees that were produced from auditor provided tax services and SEC Industry Classification of the audited company. The percentage of tax fees was calculated by taking the amount of audit fees that were related to tax services and dividing it by the total fees accumulated by the audit. Industry Classification of the company was provided with the data from AuditAnalytics.com. Count was included for each industry classification to show that sample sizes were sufficient.

*Figure 6:*

*% of Fees from Auditor Provided Tax Services and Tax-Specific Comment Letters by Big 4/Non-Big 4 Auditor*

| <b>Industry Classification</b> ▼ | <b>Count of Industry Designation</b> | <b>Average of % Tax Fees2</b> | <b>Average of Tax CL</b> |
|----------------------------------|--------------------------------------|-------------------------------|--------------------------|
| Non-Big 4 Auditor                | 3729                                 | 0.060183361                   | 0.173236793              |
| Big 4 Auditor                    | 5077                                 | 0.097390257                   | 0.237541855              |
| <b>Grand Total</b>               | <b>8806</b>                          | <b>0.081625308</b>            | <b>0.210287271</b>       |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific, the proportion of audit fees that were produced from auditor provided tax services and whether the companies auditor was one of the Big 4 accounting firms (PwC, Deloitte, EY, or KPMG), The percentage of tax fees (x-axis) was calculated by taking the amount of audit fees that were related to tax services and dividing it by the total fees accumulated by the audit.

**Figure 7:**

**% of Fees from Auditor Provided Tax Services and Tax-Specific Comment Letters Depending on the Reception of Non-Auditor Services (NAS)**

| <b>Classification</b>       | <b>Count</b> | <b>Average of Tax CL</b> |
|-----------------------------|--------------|--------------------------|
| APTS = 0, but other NAS > 0 | 1509         | 0.165672631              |
| APTS = 0, and Other NAS = 0 | 1411         | 0.136782424              |
| <b>Grand Total</b>          | <b>2920</b>  | <b>0.151712329</b>       |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the percentage of observations that receiving a tax comment letter within two subsamples: 1) observations where APTS is zero, but there were other NAS purchased, and 2) observations where APTS is zero, and there were no other NAS purchased. Count was included to show that sample sizes where sufficient.

**Figure 8:**

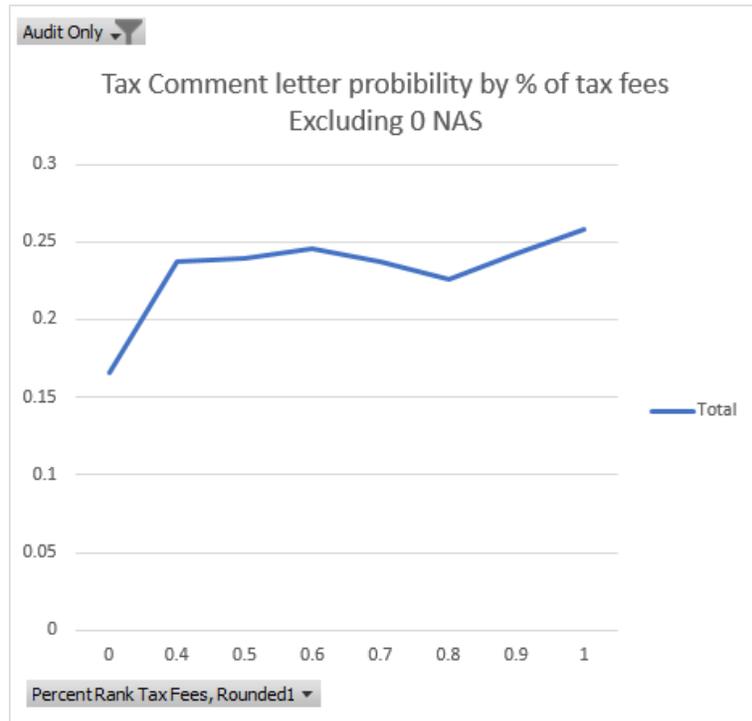
**% of Companies Receiving 0 Non-Audit Services by Company Size**

| Row Labels         | Average of Audit Only |
|--------------------|-----------------------|
| 0                  | 0.774553571           |
| 0.1                | 0.421534937           |
| 0.2                | 0.2553916             |
| 0.3                | 0.204545455           |
| 0.4                | 0.133938706           |
| 0.5                | 0.079545455           |
| 0.6                | 0.059023837           |
| 0.7                | 0.032954545           |
| 0.8                | 0.020431328           |
| 0.9                | 0.003409091           |
| 1                  | 0.002267574           |
| <b>Grand Total</b> | <b>0.16023166</b>     |

Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the size of the company being audited (left column) and the proportion of companies that do not elect to receive non-audit services (right column). The size of the company was calculated by the total assets held by the company in that year and were aggregated into values 1-10 to simplify analysis. There is a very strong, easily apparent, inverse relationship between the two variables. The smaller a company is by total assets, the less likely the company elects to receive non-audit services.

Figure 9:

**Tax Comment Letter Probability by % of Tax Fees Excluding Companies that Received 0 NAS**



Notes: This figure includes data collected from AuditAnalytics.com. It is made up of information about audit fees and other details as well as specifics regarding tax related comment letters from 2010-2016. It shows the relationship between the probability that the SEC comment letter received is tax-specific (y-axis) and the proportion of audit fees that were produced from auditor provided tax services (x-axis) within my sample excluding companies that do not receive any form of non-audit services. The proportion of tax fees are aggregated into values 1-10 to simplify analysis. There is 0 linear relationship between the two variables. There is a significant difference between the 0-2 and 2-8 ranges meaning that very little auditor provided tax services is found with lower proportions of tax-specific comment letters.

**Table 1**  
**Multivariate Analysis**

| VARIABLES                           | Panel A |         |     | Panel B      |                |     |
|-------------------------------------|---------|---------|-----|--------------|----------------|-----|
|                                     | coef    | TCL     |     | coef         | TCL            |     |
|                                     |         | p-value |     |              | p-value        |     |
| Intercept                           | -3.018  | (0.000) | *** | -2.623       | (0.000)        | *** |
| <i>HighFees</i>                     | 0.193   | (0.002) | *** | <b>0.201</b> | <b>(0.004)</b> | *** |
| <i>PercRankSize</i>                 | 1.260   | (0.000) | *** | 1.249        | (0.000)        | *** |
| <i>Big4</i>                         | 0.013   | (0.839) |     | 0.029        | (0.667)        |     |
| <i>Beverages, Apparel</i>           | 0.970   | (0.068) | *   | 0.602        | (0.268)        |     |
| <i>Consumer Products</i>            | 1.017   | (0.053) | *   | 0.577        | (0.282)        |     |
| <i>Electronics &amp; Mach</i>       | 1.620   | (0.002) | *** | 1.190        | (0.027)        | **  |
| <i>Financial Services</i>           | 0.418   | (0.429) |     | 0.010        | (0.985)        |     |
| <i>HealthCare &amp; Insurance</i>   | 0.507   | (0.339) |     | 0.089        | (0.869)        |     |
| <i>IT and Services</i>              | 1.774   | (0.001) | *** | 1.417        | (0.009)        | *** |
| <i>Man and Construction</i>         | 1.368   | (0.009) | *** | 0.937        | (0.080)        | *   |
| <i>Nat Resources &amp; Food</i>     | 0.267   | (0.620) |     | -0.143       | (0.796)        |     |
| <i>Real Estate</i>                  | -0.525  | (0.329) |     | -0.883       | (0.108)        |     |
| <i>Telecommunications</i>           | 0.598   | (0.261) |     | 0.170        | (0.755)        |     |
| <i>Transportation &amp; Leisure</i> | 0.740   | (0.161) |     | 0.349        | (0.518)        |     |
| Pseudo R <sup>2</sup>               |         | 0.084   |     |              | 0.079          |     |
| Area Under ROC                      |         | 0.700   |     |              | 0.694          |     |
| Observations                        |         | 8,806   |     |              | 7,395          |     |

Notes: Table 1 presents the results from estimating the multivariate regression using logistic regression. Panel A uses all available observations; Panel B uses only those observations with at least some NAS. The model examines the association between *HighFees*, equal to one if the company purchased more than one percent of total fees in APTS, and zero otherwise, and *TCL*, equal to one if the company's comment letter includes questions about taxes, and zero otherwise. P-values are reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively (two-sided).