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TO SPEND OR NOT TO SPEND: AN INVESTIGATION OF CONSUMER BEHAVIORS RELATED TO TAX REFUNDS

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ABSTRACT

This research is focused on exploring consumer behavior in relation to federal tax refunds. We constructed a survey questionnaire to examine the choices made by consumers; the patterns focused on spending vs. saving behaviors, types of purchases (luxury vs. necessity), and taxpayer confidence levels in tax preparation. The objective of the research is to determine the characteristics of consumers who spend (save) their tax refund, as well as gauge levels of inherent consumer responsibility. We recruited participants via MTurk (Amazon Mechanical Turk) in which participants self-select and complete the survey for compensation. This research used a scenario-based approach for data collection, in which we instructed consumers to respond as if they had received a \$3,000 refund. Results indicate that consumers who describe themselves as tightwads save more of their refund and consider their use of the refund as more responsible than consumers who describe themselves as spendthrifts. Tightwads also perceive that they have more knowledge of tax rules and are less confused about tax reporting than spendthrifts. Our paper contributes to the literature on tax policy by providing insight into the consumer perspective on tax rules and response to tax refunds.

JEL: H24, G51, M30, Z18

KEYWORDS: Tax Refunds, Tax Policy, Saving, Consumer Behavior

INTRODUCTION

A filing citizen can claim a refund from the Internal Revenue Service (IRS) when they have paid too much tax throughout the year. The amount of tax owed is based on income, and is reduced by various credits, deductions, and exemptions, which can net a negative amount – thus the IRS owes a refund to the taxpayer. Tax payments are withheld from income, usually on paychecks of wages or salaries; if the total payments are more than the amount owed, then that is cause for a refund to be issued (Smith 2017). A common complaint among citizens has consistently been the distribution of taxes and high tax rates, yet tax rates need to be at a certain level to produce benefit for citizens. As Smith states “tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person,” meaning payment of taxes is an expectation of basic citizens (Smith and Cannan 2003, p. 466); taxes are owed based on income levels with rates differing at each income bracket. While many citizens often complain about having to pay the government more funds when they file taxes, most citizens receive a tax refund from the government. As of 2003, close to eighty percent of citizens who filed a return received a refund, averaging about \$2,400 (Bobek et al. 2007). In recent years, the percentage is still consistent, while the average tax refund has risen closer to \$3,000, with seventy three percent of taxpayers receiving a refund of an average of \$2,860 in 2016 (Wiles 2018). Each taxpayer is allowed certain deductions and credits based on individual circumstances, so gaining eligibility to receive a refund is not

an impossible task, based on the individual's financial situation of the year while filing. With a deadline of April 15 to file, taxpayers usually receive refunds from the US Treasury by direct deposit to their bank accounts within 21 days of processing by the IRS, or by mail by the end of May (Farrington 2019). As of February 2019, the average refund for 2018 is \$1,865, which is 8% lower than the previous year (Alanis 2019); this is the first year that citizens are filing after Trump's 2017 tax reform.

In the United States, major tax reforms have occurred with each new administration to take office since the start of the twentieth century. Notable reforms have included Reagan's 1981 tax cut, Clinton's 1997 Taxpayer Relief Act, Bush's Reconciliation Act of 2001, Obama's Affordable Care Act of 2012, and the most recent, with Trump's 2018 Tax Reform (Huddleston 2019). With the constant changes and amendments to the tax code, it is no surprise that many taxpayers face uncertainty and confusion when filing their yearly taxes. Tax season is a source of headache and stress for most taxpayers, however since the majority end up receiving some amount in refunds, there is a net positive outcome. Following tax season, these consumers have funds to use at their own personal discretion.

In our study, we explore consumer behavior in relation to federal tax refunds by analyzing the behavior of consumers who have a predominantly "save" vs. "spend" mentality. We also analyze whether the difference in consumer attitudes affects self-reported knowledge or confusion about tax policy. Our paper is important because knowledge of consumer behavior can help guide tax reform policies. Tax rules that are too confusing can result in more errors in tax filings and more cost to the consumer (Scotchmer 1989). In addition, understanding consumer behavior can help both individuals and providers of financial education direct financial literacy efforts to individuals based on their spending preferences and their level of financial expertise. Studies have shown that financial education decays over time (Fernandes et al. 2014) and is only effective if it "enables consumers to ... take the actions necessary for financial well-being today" (Willis 2009). This paper is organized as follows: in the next section, we review the relevant literature, followed by our research objective and hypotheses. We then describe our research method. We present results, followed by a discussion and conclusion.

LITERATURE REVIEW

Save or Spend Mentality

When receiving a sum of money, in such cases as a tax refund, consumers can use those funds in two different ways: save or spend. While most people would prefer to have the ability to save those funds for a rainy day, that is not always possible. Ideally, one would be able to use a refund to either pay off debt or save, but personal nature sometimes prevents the ideal circumstance. Instead of saving, consumers are also likely to treat themselves to an extravagant purchase, take a vacation, or even spend the funds on daily living expenses. As of 2018, based on a poll from the National Retail Federation in February, half of consumers surveyed reported the intent to save, while thirty-five percent intended to use it pay off debt; the remaining intended to spend their refunds (Wiles 2018). People tend to spend money based on predictable changes in income. For example, if someone is expecting to receive a raise in their salary of a certain percentage, and that raise is to be permanent, their consumption level would also rise due to the increased income level; because they earn more, they are willing to spend more (Mankiw 2000). That is part of the reason that people who make more money live in nicer houses and drive higher quality cars – their consumption level is reflective of their income level.

While tax refunds cause a temporary increase in personal funds, they are not a continuous source of income. However, when people become accustomed to a tax refund that stays consistent or increases in amount year after year, they begin to expect it and make plans for its yearly use, whether that be for saving or spending. Moreover, research suggests that taxpayers purposely plan to receive a refund. Bobek et al. (2007) investigate why taxpayers prefer refunds based on the theory of planned behavior (Ajzen 1991). Their

results show that taxpayers' attitudes, such as the desire to avoid uncertainty or avoid any chance of underpayment, influence taxpayers' withholding decisions. However, taxpayers also perceive emotional benefits ("enjoyment" of the refund check) from over-withholding that offset any financial costs. As such, taxpayers in the study who received refunds were more likely to go on a vacation (53.6%) or buy new electronics (37.9%), than they were to save their refund (32.9%) or use it to pay off bills (41.4%) (Bobek et al. 2007). Most consumers want to keep their spending level consistent or maintain a steady growth related to income growth throughout their lifetime; however, with unexpected expenses or different life stages that is not always possible. One of the main factors that contribute to an increase in spending is whether consumers believe the funds, such as a tax rebate or bonus, are a one-time contribution or a permanent source of income. Consumers are more likely to change their spending patterns if the contributions are permanent rather than temporary (Steindel 2001). A permanent tax cut, which results in refund amounts to be permanently higher, will cause consumers to spend more money. Likewise, rebates distributed in lesser amounts can conduct a stimulus more effectively than a lump sum (Spencer and Chambers 2012). Individual life status and demographic differences also have an impact on saving levels and motivation. Varied factors such as family history, financial history, proximity to retirement age, individual financial education, family structure and obligation to family, employment history, and access to financial institutions are all factors that influence motivation to save (Turner and Manturuk 2012). For example, older individuals closer to retirement as well as single parents are more likely to save, as they are more motivated to save for their futures. Meanwhile, families with young children are often likely to spend, because they associate a feeling of happiness with being able to provide their children with new toys or fun activities. The different life experiences of individuals contribute to their save or spend mentality. People who grew up wealthy are higher spenders, as they have never really had the motivation or example to save, while people who grew up in low-income families see the value in saving their funds in case of emergency.

Propensity to Spend Related to Tax Rebates or Refunds

The most common intent of tax rebate usage is to either save the funds or use them to pay off prior debts. In 2019, half of consumers report their intent to save refunds, while only 41% reported that intent in 2018 (Borodovsky 2019). When viewing a refund as a source of purely disposable income for a one-time tax break, the propensity to spend is low overall. Should consumers view this as a permanent tax cut or a continuous source of funds, the propensity to spend would be higher. In a 2001 study designed to measure the effects of changes to income tax withholding, Shapiro and Slemrod (2003) found results associated with the creation of the 10 percent income tax bracket that showed major differences in consumer propensity to spend compared to 1992 studies, with 2001 studies showing a much smaller group of consumers willing to spend (Shapiro and Slemrod 2003). Consumers are more likely to increase spending when they believe the tax policy, and resulting refunds/rebates, are permanent changes. If a tax cut is temporary, consumers are more likely to save greater amounts and spend gradually over time.

Thus, if the amounts in question are "small" amounts, meaning those that do not have a significant impact to the consumer or their wealth, and if the consumer views the tax cut as temporary, then the consumer will treat the rebate like ordinary income (Modigliani and Steindel 1977). On the other hand, other research shows that if the consumer perceives a rebate as a "windfall" – unanticipated money – it is more likely to be spent than other types of assets (Arkes et al. 1994). A specific example of public policy related to consumer spending occurred in 2008, when Congress tried to use tax rebates as a stabilization method for the economy. Economic Stimulus Payments (ESPs) were received by 130 million filers, ranging from \$300-\$1,200, depending on filing status; the average rebate received was \$950 (Parker et al. 2013). The amount spent by the government on this program was \$100 billion, in the hopes of avoiding an economic downturn (Broda and Parker 2008b). The goal of the payments was to increase consumer spending within the economy. Researchers found that the average household spent an average of 12 to 30 percent of the stimulus. Most of the spending occurred in the week that households received the rebates, with low-income households spending the most overall. The average family increased their spending by 3.5% (Broda and

Parker 2008a). Consumers spent lower amounts of their refunds on “necessities,” and more on items such as electronics and furniture (Broda and Parker 2008a). Overall, the research based on 2008 rebates shows that given an influx of funds, consumers are likely to spend it quickly and on things that are not necessarily part of their daily lives. Given the goal of the payments, the government deemed the policy successful, as consumers spent their refunds at a significant rate (Broda and Parker 2008b).

Another factor related to consumer spending of tax refunds may be attributed to credit scores and credit card usage. Credit scores range from 300 (poor) - 850 (excellent), with only approximately 20% of Americans having a score over 800. The scores show a borrower’s payment history on loans and debt (Andriotis 2019). As of 2018, the average credit score in America was 674, which ranks as “good” (Berger et al. 2018). Scores can depend on amount of debt, length of credit history, and promptness of payments. Higher credit scores reflect better financial habits and a higher likelihood of a consumer making prompt payments, and lower interest rates are often offered to applicants with higher credit scores. In addition, consumers with higher scores (above 800) tend to have multiple credit cards, with attempts to keep their spending low – below 10 to 30 percent of credit limit (McAllister 2019). A study featured in *The Journal of Political Economy* focused on distributing refunds over a period of ten weeks from July to September, with the idea that receipt of a rebate would not have an impact on spending. The authors found, in relation to consumption with credit cards, that spending tended to increase on average of \$200 overall within nine months of consumers receiving their tax rebates (Agarwal et al. 2007). While consumers’ first reaction was to save their rebates, it later leads to an increase in credit card spending. Usually, the consumer would spend either the amount received as a refund or slightly less.

Consumer Self Control

The save or spend mentality, which can also be viewed in relation to consumers’ spending self-control (CSSC), is different depending on the individual consumer. Hoch and Loewenstein (1991) define consumer self-control as “a struggle between willpower and desire that arises from preferences that are inconsistent with respect to time.” As an inherent trait, CSSC relates to the consumers’ willingness to spend and their self-control. Those with a low CSSC tend to have poor control and spend excessive amounts of money, sometimes impulsively. Unawareness of future consequences often contributes to poor CSSC; those individuals do not often expect the financial effects of a current purchase. Poor control over personal spending can result in considerable amounts of debt and, in extreme cases, bankruptcy, especially in those individuals with a small amount of personal savings; as of 2011, the personal savings rate of the US has remained consistent at approximately 3%, one of the world’s lowest (Haws et al. 2011). In fact, a recent report from CNBC.com states that more than 1 in 5 Americans do not set aside *any* of their annual income for short-term or long-term goals (Elkins, 2019). Elevated levels of CSSC relate to higher financial awareness and control. Consumers often spend money because they are motivated by the expected pleasure associated with a purchase (Lee et al. 2006). Instead of focusing on the immediate pleasure associated with spending, consumers can control this behavior by relying on thoughts of the pain of paying (Prelec and Loewenstein 1998; Rick et al. 2008). Similarly, credit cards elicit different attitudes and behaviors among consumers when it comes to spending (Awanis and Cui 2014). Research in credit card psychology and behaviors shows that consumers differ in the extent to which they exhibit fiscally responsible behavior when it comes using “plastic” money (Awanis and Cui 2014). Some consumers are more susceptible to negative financial outcomes because of the “credit card effect” which researchers operationalize as consumers’ tendency to spend more, underestimate recent credit card expenditures, and overestimate available income (Awanis and Cui 2014).

While affective reactions to spending money may be partially circumstantial, the pain associated with paying is considered an individual trait (Rick et al. 2008). Therefore, researchers have also examined how consumers may differ in their psychological and behavioral reactions to spending. In general, researchers have also suggested that while some individuals have a propensity to indulge, others find it more difficult

(Ameriks et al. 2003). The marketing literature categorizes those that do not feel pain sufficient to consider the consequences of overspending as *spendthrifts*, and those whose affective reactions to spending “lead them to spend less than their deliberative selves prefer” as *tightwads* (Rick et al. 2008, p. 768). These terms are used to also describe the emotions related with spending money, as tightwads feel a pain associated with purchasing, while spendthrifts are more likely to feel a thrill. Those who experience minimal levels of stress (or pain) when spending may not expect the outcomes of spending. For example, when faced with a potential purchase at a retail store, the spendthrift who feels the thrill of buying an expensive designer handbag now does not behave as though the extravagant shopping spree will force them to give up something else in return. Meanwhile, the tightwad contemplates what he must give up when making this purchase. In this case, the thought of buying a handbag equivalent in value to a monthly car payment may cause them emotional pain, thinking of what else they must give up to be able to afford the car payment. The expected emotions throughout the decision process aid in defining which category a consumer will fall in. The spendthrift, showing poor spending self-control, will buy the bag, while the tightwad refrains, as their higher level of self-awareness and spending control leaves them unable to justify the purchase.

Taxpayer Confusion and Uncertainty

With the introduction of tax preparation and filing assistance services, such as H&R Block in 1955 and TurboTax in the 1980s, consumers now have greater ease in filing yearly taxes, as well as greater access to tax advice with the expansion of the internet (Silva 2019). TurboTax and H&R Block are two of the most popular filing assistance services, both known for their user friendliness and ease of use. However, in years prior, taxpayers were forced to navigate preparation and the complex tax code by either seeking tax advice from a Certified Public Accountant, or trying to figure it out on their own, which increases the degree of uncertainty for most taxpayers. Even to this day, the tax code is continuously changing and becoming more complex, and so often that a clear answer to questions cannot always be easily discovered. It has been argued that taxation should be a component of financial literacy, considering the high complexity of tax law and its potential to have a direct impact on financial wellbeing (Cvrlje 2015). Tax literacy can extend to comprehension of tax policy, tax calculations and preparation, understanding tax reports, or managing personal taxation (Fallan 1999; Razman and Ariffin 2000; Bhushan and Medury 2013).

However, it may be in the better interest of the government to keep the tax code at a high complexity level, as taxpayer confusion may ultimately benefit the government and IRS, as a complex tax code can create added costs for the taxpayer (Scotchmer 1989). The complexity of the law leaves taxpayers unsure about their actual tax liability and how much they would owe or be owed from the IRS, and therefore they may inaccurately report income. With that information incorrect, taxpayers may not receive a tax refund when they may in fact be eligible for one, or a refund may be delayed if elements of the return were not correctly reported. Additionally, the consumers may not be taking full advantage of all deductions or credits they may be eligible for, simply because they are unaware the credit even exists (Krause 2000). In this case, the IRS can collect extra revenue, while the taxpayer suffers.

Research Objective and Hypotheses

The purpose of this study is to identify factors that predict consumers' decisions and behaviors related to use of their tax refunds. Specifically, we seek to examine how individual traits consistent with those exhibited by spendthrifts and tightwads are associated with how people choose to allocate their tax refund in terms of saving versus spending. We also examine how such factors are associated with consumers' level of knowledge related to tax laws and preparation as well as the extent of their confusion on such matters. An additional focus includes the types of expenditures made by average consumers with their tax refunds, as well as the confidence level of the taxpayers in their tax return preparation. Based on the literature describing tightwads vs. spendthrifts, we propose that these individual characteristics are another indicator of planned behavior that applies to the use of a taxpayer's refund. Although there is conflicting

evidence about the saving (Borodovsky 2019; Shapiro and Slemrod 2003) as opposed to spending (Modigliani and Steindel 1977; Bobek et al. 2007) of tax refunds, we believe that the characteristics of a tightwad support our first hypothesis, which follows:

H1: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will save (spend) a greater proportion of their tax refund.

Further, along with saving (as opposed to spending) behavior, we expect that if tightwads spend their refund, they will do so responsibly. This ability to spend responsibly is enhanced by tightwads' fiscally responsible behavior. For example, spendthrifts are more likely than tightwads to carry credit card debt, an effect which is independent of income (Rick et al., 2008) and may thus instead be the result of a lack of awareness associated with falling into the "ensnarling traps" of the credit card effect (Awanis and Cui 2014, p. 412). On the other hand, tightwads may be more financially savvy as they are more likely to be educated and choose areas of study which are more quantitative than those chosen by spendthrifts (Rick et al. 2008). We propose our second hypothesis as follows:

H2: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will use their refund in a more (less) responsible manner.

We also propose to investigate whether tightwads' fiscal responsibility applies to tax literacy. Given this, we predict that consumers who skew more towards a spendthrift mentality will be more confused when it comes to tax regulations and filing protocol, while those who exhibit tightwad characteristics will be more knowledgeable on these matters. Our hypotheses are stated as follows:

H3a: Spendthrift (tightwad) characteristics will be negatively (positively) associated with knowledge related to tax regulations and filing protocol.

H3b: Spendthrift (tightwad) characteristics will be positively (negatively) associated with confusion related to tax regulations and filing protocol.

METHODOLOGY

A survey-based research design was used to evaluate hypotheses 1 and 2. Hypothesis 1 predicts that individual traits associated with tightwads will positively predict the proportion of the tax refund that is saved, while traits consistent with the spendthrift construct will be negatively associated with the proportion of the refund saved. Again, because we asked consumers to allocate their refund to spending or saving using a percentage totaling one hundred, the spending and saving variables are complements of one another and we thus only include the percentage saved in the model. Specifically, we used a hypothetical tax refund scenario which asked consumers to assume they had received a \$3,000 tax refund, a figure based upon the national refund amount (Loudenback 2019). We then asked participants questions related to how they planned to allocate this refund in terms of spending or saving. We also captured respondents' psychological and behavioral relationships with spending and saving to determine the impact of this individual characteristic on the variables of interest.

Sample Selection and Procedure

The survey used to collect empirical data was posted electronically to Amazon Mechanical Turk (MTurk) in November 2018 and was posted through February 2019. MTurk is a crowd-sourcing platform commonly employed by market researchers as it allows for the electronic sourcing of consumer data found to be of equal or better quality than that offered by student samples or professional panels (Kees et al. 2017). MTurk allows respondents to self-select into surveys they want to complete. Our sample included one hundred

ninety-four MTurkers (57% Male/ $M_{Age} = 45.81$), who received nominal compensation (\$1.25) in return for survey completion. At the start of the survey, participants were presented with the following hypothetical scenario: *Imagine after submitting your taxes you receive a refund of \$3,000. Based upon this scenario, please answer the questions that follow.* We chose to use a hypothetical scenario given respondents may not have been comfortable disclosing their tax refund figure and/or been unable to accurately recall the exact amount they received. These factors increased the risk of respondent drop off, and more importantly, biased data. After we exposed participants to the hypothetical scenario, they were asked to complete the scale items capturing the dependent measures of interest which are detailed in the following section.

Measures

Percentage of Refund Saved (%SAVE): The first dependent measure was designed to capture how consumers would allocate a tax refund. Specifically, respondents were told to estimate the percentage of the \$3,000 refund they would spend or save, ensuring that the total of these two options was 100%. We used the following language: *Please estimate the percentage of this \$3,000 refund you would spend or save. The total of both percentages must add up to 100 percent.* We ran all analyses using the percentage consumers indicated they would save, as the spend percentage was simply the complement of this figure.

Tightwad-Spendthrift Score (T-S): To capture this construct, we used an eight-item, seven-point (1 = *does not describe me at all* / 7 = *describes me very much*) scale adapted from Rick et al. (2008). Four of the scale items measured participants' tendency to exhibit characteristics and behaviors consistent with spendthrifts: *Spending money makes me happy; It is hard for me to deny myself the things I want; I have trouble limiting my spending; Sometimes I regret my how much money I have spent.* The other four scale items captured consumers' tendency to think and behave in a manner consistent with tightwads: *I have difficulty spending money; Parting with money makes me anxious; I think carefully about a purchase before I make it; I only spend money on things I need.* We reverse-coded the items capturing the tightwad construct and combined these with the spendthrift items ($\alpha = 0.82$) to create a mean score. Therefore, higher (lower) scores on this measure indicate a greater tendency towards spendthrift (tightwad) characteristics.

Responsible use of tax refund (RESP): This variable captures whether consumers consider their intended use of the hypothetical tax refund to be responsible in nature, versus more frivolous or indulgent. The variable was captured using a three-item, seven-point bipolar scale ($\alpha = 0.96$): *Please categorize your planned use of the \$3,000 refund as...indulgent/responsible, frivolous/sensible, impractical/practical.* Thus, the higher the score, the more responsible the participants considered their planned use of the refund.

Tax Knowledge (KNOW): This research operationalizes tax knowledge as respondents' self-reported understanding of tax regulations and filing preparation. Specifically, we asked respondents to complete a two-item scale indicating their level of agreement (1 = *Strongly Disagree* / 7 = *Strongly Agree*): with the following statements: *I am knowledgeable about tax regulations; I feel confident completing my own tax returns without error* ($\alpha = 0.83$).

Tax Confusion (CONFUSE): Respondents were asked to report their level of confusion concerning the tax code. Specifically, participants were instructed as follows: *Thinking about the current U.S. tax regulations and rules, please indicate your level of understanding or confusion by completing the scale below.* Participants were then directed to a three-item, seven-point bipolar scale (*I am very clear* / *I am very confused; I feel informed* / *I feel uninformed; I feel confident* / *I lack confidence*; $\alpha = 0.94$).

Credit Score (CS): Respondents were requested to disclose credit score as a proxy for financial responsibility. The scale was a self-reported, five-point interval scale (1 = 300-570, 2 = 580-669, 3 = 670-739, 4 = 740-799, 5 = 800-850). Therefore 1 (poor) indicates a lower credit score and lower financial responsibility, while 5 (excellent) indicates a higher credit score and greater financial responsibility. We

also included a “don’t know” and “would rather not say” option in this question. Therefore, the regression analyses in the additional testing section which explore the implications of credit score have 174 (vs. 194) participants, all of whom responded to the credit score question.

See Appendix A for a detailed overview of the questions and scale items used to capture the constructs of interest.

Descriptive Statistics

Table 1 presents all descriptive statistics and correlations for measures captured in this study. Panel A provides means, standard deviations, and scale reliability, while Panel B shows the correlation matrix. While it is beyond the scope of the current research to explore general consumer habits related to financial responsibility, overall, the standardized means indicate that our sample consumers have a relatively solid grasp of tax regulations and self-categorize as more restrictive in their spending behavior than one may have guessed. However, there is no reason to believe that our sample characteristics are any different than would be reported by the U.S. population at large.

Table 1: Descriptive Statistics and Pearson Correlations

Panel A: Means, Standard Deviations and Scale Reliability of Constructs					
Construct	Variable	Min/Max	Mean	SD	α
Tightwad - Spendthrift Score	TS	1/7	3.54	1.20	0.82
% of Refund Saved (vs. Spent)	%SAVE	0/100	58.50	28.43	N/A
Responsible Use of Refund	RESP	1/7	5.38	1.51	0.96
Tax Knowledge	KNOW	1/7	4.60	1.65	0.83
Tax Confusion	CONFUSE	1/7	3.72	1.78	0.94
Credit Score	CS	1/5	3.36	1.48	N/A

Panel B: Correlation Matrix					
Variable	TS	%SAVE	RESP	KNOW	CONFUSE
TS	1.00				
%SAVE	-0.38**	1.00			
RESP	-0.42**	0.37**	1.00		
KNOW	-0.13	0.08	-0.07	1.00	
CONFUSE	0.140	-0.05	-0.10	-0.73**	1.00
CS	-0.21**	0.28**	0.24**	0.06	-0.07

Table 1 shows descriptive statistics and correlations. Panel A displays descriptive statistics for all variables used in the analyses. Panel B reports the correlations between all variables and indicates whether these correlations were significant at the 1 (***) , 5 (**) or 10 (*) percent levels respectively. In this table n = 194 for all variables except Credit Score (CS) where n = 174 since some participants were unable or unwilling to report their credit score.

RESULTS

Table 2 presents a summary of the results of our hypotheses testing. H1 predicts that consumers with higher scores on the TS scale, indicating that they have a greater inclination towards spendthrift versus tightwad behaviors, will save (vs. spend) a smaller portion of their income. A linear regression model run with tightwad/spendthrift characteristics as the independent variable, and percentage of the tax refund saved as the dependent variable, shows support for H1, and produces the below, statistically significant regression equation ($F(1, 192) = 32.84, p < 0.001$).

$$\%SAVE = -9.02TS + 90.45 + \epsilon \tag{1}$$

More specifically, the regression coefficient for TS variable is negative and statistically significant ($\beta = -9.02, p < 0.001$), indicating that as consumers' scores on the tightwad/spendthrift scale increase (i.e., move away from tightwad and towards spendthrift), the percent of the refund saved is reduced and the percent spent increases. These findings suggest that consumers exhibiting characteristics consistent with tightwads will be more likely to save a greater portion of their tax refund, while the opposite is true for spendthrifts. Consistent with previous research indicating spendthrifts find joy in spending (Rick et al. 2008), our research suggests that consumers who exhibit spendthrift characteristics will spend (vs. save) a larger portion of their tax refund. A second linear regression analysis finds confirmatory support for H2. Specifically, when TS was regressed on how responsible participants felt their planned use of the hypothetical refund was, the regression equation below was found to be significant ($F(1, 192) = 41.09, p < 0.001$), and the coefficient for TS was both negative and significant ($\beta = -0.53, p < 0.001$). Thus, the relationship between the TS score and responsible use of tax refunds is expressed as follows:

$$RESP = -0.53TS + 7.25 + \epsilon \quad (2)$$

These findings indicate that, as predicated, spendthrifts, relative to tightwads, planned to use their hypothetical tax refund in a less responsible manner. To explore the influence of consumers' tendencies towards spendthrift or tightwad characteristics on knowledge (KNOW) and confusion (CONFUSE) related to tax regulations we ran two regressions. First, we regressed the TS variable on tax knowledge, the measure capturing how well consumers felt they understood tax regulations and were confident in their ability to file taxes. This analysis produced the below equation which was significant at the 90% confidence level ($F(1, 192) = 3.27, p = 0.07$).

$$KNOW = -0.18TS + 5.23 + \epsilon \quad (3)$$

Further, the negative and significant coefficient ($\beta = -0.18, p = .07$) for the independent variable indicates that as spendthrift characteristics increase, tax knowledge decreases. Alternatively, tightwad characteristics are positively associated with tax knowledge. These findings offer confirmatory evidence for H3.

H3 also predicts a positive influence of spendthrift characteristics on tax confusion. We investigate this relationship in a follow up linear regression. Specifically, we regressed the TS variable on participants' confusion (CONFUSE) related to understanding tax regulations and filing returns. This analysis produced a significant equation ($F(1, 192) = 3.76, p = 0.05$), as well as a positive and significant beta coefficient for the independent variable ($\beta = 0.20, p = 0.05$) as shown below:

$$CONFUSE = 0.20TS + 3.00 + \epsilon \quad (4)$$

Therefore, confirming H3, the more consumers identified with a spendthrift (vs. tightwad) mentality, the more confused they tended to be when it came to understanding and filing taxes. The beta values in the two previous regression models indicate a relatively equal sized effect of the TS variable on tax knowledge and confusion, but in opposite directions. Consistent with H3, spendthrifts tend to be more confused and less knowledgeable, while tightwads are less confused but more knowledgeable on tax matters.

Additional Testing

Although not specifically hypothesized, we conducted additional testing to gain insight into the relationship between credit score and spending / saving behavior. As previously noted, our sample size for these tests was slightly smaller than in previous analyses. This is because some respondents were either unwilling to provide their credit score or were unable to do so because they did not know it. Therefore, the following analyses were conducted with a sample of 174 participants. First, we ran a regression analysis that used %SAVE as the dependent variable and CS as the independent variable. A significant regression equation

was found ($F(1, 172) = 20.18, p < 0.001$), as was a positive, significant relationship between credit score and %SAVE ($\beta = 7.38, p < 0.001$).

$$\%SAVE = 7.38CS + 35.48 + \epsilon \tag{5}$$

In a second regression, our intent was to discover the influence of the tightwad / spendthrift behavior on credit score, using CS as the dependent variable and TS as the independent variable. The results again produced a significant regression equation ($F(1, 172) = 9.60, p < 0.01$). Further, our results show that, as would be expected, TS negatively and significantly predicts credit score ($\beta = -0.24, p < .001$).

$$CS = -.24TS + 3.92 + \epsilon \tag{6}$$

Table 2: Summary of Regression Results

Hypothesis	Regression Equation	α	B	R^2
H1: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will save (spend) a greater proportion of their tax refund.	$\%SAVE = -9.02TS + 90.45 + \epsilon$	90.45***	-9.02***	0.142
H2: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will use their refund in a more (less) responsible manner.	$RESP = -0.53TS + 7.25 + \epsilon$	7.25***	-0.53***	0.172
H3a: Spendthrift (tightwad) characteristics will be negatively (positively) associated with knowledge related to tax regulations and filing protocol.	$KNOW = -0.18TS + 5.23 + \epsilon$	5.23***	-0.18*	0.012
H3b: Spendthrift (tightwad) characteristics will be positively (negatively) associated with confusion related to tax regulations and filing protocol.	$CONFUSE = 0.20TS + 3.00 + \epsilon$	3.00***	0.20**	0.014
Additional findings (not hypothesized): Credit score significantly and positively predicts the percentage of a tax refund consumers will save.	$\%SAVE = 7.38CS + 35.48 + \epsilon$	35.48***	7.38***	0.100
Additional findings (not hypothesized): Spendthrift (tightwad) characteristics negatively (positively) predict credit score.	$CS = -0.24TS + 3.92 + \epsilon$	3.92***	-0.24***	0.047

Table 2 presents the estimated regression equation for the hypotheses. The alpha, and beta coefficients for the independent variables in the equation, are listed in the third and fourth columns, respectively. The adjusted R-square for equation is displayed in the last column. Values that are significant at the 1 (***) , 5 (**), or 10 (*) percent levels are noted as such. For all equations, $n = 194$, except for the final equation capturing credit score (CS) where $n = 174$ since some participants were unable or unwilling to report this metric.

CONCLUSION

This study was conducted in comparison to similar research conducted in 1992, 2001, and 2008. The previous studies were done in response to major tax reforms within the United States. Tax law and policy has a substantial impact on taxpayers, in terms of their financial standing and resulting behaviors. While tax law can affect the spending habits of consumers, their overall behavior can also be attributed to their individual characteristics. Because spendthrifts are more likely to view their refund as a windfall – they spend a higher proportion it. Spendthrifts also have higher levels of confusion and lower credit scores. On the other hand, tightwads tend to save more of their refunds and have higher levels of tax knowledge. These behavioral findings support a tax policy that allows for refunds. However, in contrast to the findings by Bobek et al. (2007), tightwads in our study who receive a refund anticipate saving it or spending it responsibly, as opposed to viewing it as a windfall and spending it for enjoyment.

Tax law needs to be comprehensive enough for the government to achieve the funds necessary to meet all obligations, yet simple enough for the average consumer to understand. Confused tax filers are more likely to make mistakes, which slows the efficiency. If financial literacy is defined in terms of credit score,

responsible use, and tax knowledge, tightwads tend to show more characteristics of being financially literate due to higher levels of tax knowledge and higher level of responsible use and spendthrifts exhibit qualities of lower financial literacy with lower credit scores. Consumers tend to bear higher costs of tax preparation, in terms of software or outsourcing to a CPA firm. It is a balancing act for legislators to balance consumer costs of tax payments and tax preparation with revenue generation. Consumers will be willing to pay their fair share but must receive some sort of benefit. Government intention is for citizens to receive a tax refund, although not an excessive amount, and then to bring those funds back into the economy. By understanding these differences in consumer behavior, policy setters can consider the type and timing of a rebate or refund program that is meant to spur the economy, yet also contribute to taxpayers’ financial well-being.

APPENDIX A: Construct Items and Measurement

Construct	Question / Items	Scale
Tightwad-Spendthrift	Spending money makes me happy. It is hard for me to deny myself the things I want. I have trouble limiting my spending. Sometimes I regret my how much money I have spent. I have difficulty spending money. * Parting with money makes me anxious* I think carefully about a purchase before I make it. * I only spend money on things I need. * *Items reverse-coded.	1 = Does not describe me at all / 7 = Describes me very much
Percentage of Refund Saved	Please estimate the percentage of this \$3,000 refund you would spend or save. The total of both percentages must add up to 100 percent.	% SAVE _____ % SPEND _____
Responsible Use of Refund	Please categorize your planned use of the \$3,000 refund as...	indulgent / responsible frivolous / sensible impractical/ practical
Tax Knowledge	I am knowledgeable about tax regulations. I feel confident completing my own tax returns without error	1 = Strongly disagree / 7 = Strongly agree
Tax Confusion	Thinking about the current U.S. tax regulations and rules, please indicate your level of understanding or confusion by completing the scale below.	I am very clear / I am very confused. Informed / I feel uninformed. Confident / I lack confidence
Credit Score	Please indicate your best estimate of your credit score:	350 – 579 / 580 – 669 / 670 – 739 / 740 – 799 / 800 -850 / I do not know / I would rather not say

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INTERNAL CORPORATE GOVERNANCE MECHANISMS AND RISK DISCLOSURE: EVIDENCE FROM TUNISIA

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ABSTRACT

Voluntary risk disclosure in the annual reports is increasingly becoming a more common corporate practice. This study aims to examine the impact of internal corporate governance mechanisms of Tunisian companies, on the quality and extent of risk disclosure. Using content analysis followed by a multivariate analysis of a sample of 170 company-year observations from 2011 to 2015, the results indicate that institutional, foreign, and government ownership negatively affect the extent of risk disclosure. However, ownership concentration has a positive effect on the extent of corporate risk disclosure. We also find that audit committee's size has a positive effect on corporate risk disclosure. Finally, we show that board size has a positive effect on corporate risk disclosure, while the presence of woman within the board negatively affects the extent of corporate risk disclosure. Moreover, our analysis reveals that Tunisian companies tend to disclose mainly non-financial risk in their annual reports. Overall, the research provides a new channel through which internal corporate governance mechanisms impact financial reporting. This study contributes to and extends the literature on corporate risk by offering a new perspective on emerging countries' disclosure of risk.

JEL: M42, G34, C23

KEYWORDS: Corporate Risk Disclosure, Ownership Structure, Board of Directors, Audit Committee

INTRODUCTION

The economic and international environment is becoming more and more volatile and uncertain, which could increase the risks companies might face, and thus the amount of information requested by different stakeholders. Marston and Shrivs (1991) argue that growth in complexity of business strategies, operations and regulations makes it difficult for investors to have a clear appreciation of company's financial position, without having a comprehensive and understandable disclosure. In this regard, Mousa and Elamir (2014) report that economic changes are forcing the company to comply to the revolutionary changes in the international financial markets, requiring companies to improve financial reporting practices. Risks are unavoidable, shaping company's business decisions and strategic choices. Therefore, all the relevant information must be disclosed in the financial statements to assist stakeholders in both their risk management and risk assessment. Unfortunately, as pointed out by Linsley and Shrivs (2006), the lack of consistency and clarity in narratives disclosures enhances the risk of information gap and, prevent stakeholders to properly assess the company's risk profile and understand the role of corporate governance. However, the strategy of any communication remains under the discretion of the corporate governance and depends on disclosure incentives rather than the compliance with requirements and enforcement by regulators and legislators (e.g., Beretta and Bozzolan 2004). Prior studies examine

corporate governance characteristics and attempt to identify the factors that influence the risk disclosure practices (e.g., Ntim et al., 2013; Mokhtar and Mellet, 2013; Mousa and Elamir, 2014; Allini et al., 2015). While academics generally disagree on the factors and their effects, they document a relationship between voluntary risk disclosure and corporate governance mechanisms, that needs to be explored. Although the Tunisian context presents an interesting institutional framework for examining the impact of governance mechanisms on the extent of risk disclosure, this relationship has been the subject of very little previous studies in Tunisia. It is thus interesting to study it since this communication is not strongly regulated in this context and it is considered as voluntary. Therefore, the strategy of this communication does not stem from the regulations in force, but it stems mainly from the decisions of the corporate governance. This lack of research examining this association in the Tunisian context, associated with differences in results stated above prompted us to study this relationship in an emergent economy like Tunisia.

This study aims to investigate the impact of governance mechanisms on the risk disclosure in the Tunisian context. Since disclosures are not highly regulated, they are considered as voluntary. Therefore, we argue that in Tunisia, risk disclosure is mainly a corporate strategy and the result of corporate voluntary disclosure initiatives rather than regulatory requirements. The focus of this study is to explore ownership structure, Board of directors' attributes and audit committee size on the extent of corporate risk disclosure in the annual reports of Tunisian firms. The remainder of the paper is organized as follows: Section 2 presents the literature review. In Section 3 we present our methodology, the description of our sample, and the descriptive analysis. The results and their interpretations are provided in Section 4. We present our conclusions in Section 5.

LITERATURE REVIEW

Corporate risk disclosure research goes back to the 2000s. Three main streams of risk literature can be identified. The first stream has focused on the determinants of risk disclosure as well as the association of this disclosure with some attributes related to the company (e.g., Linsley and Shrivess, 2006; Abraham and Cox, 2007; Elzahar and Hussainey, 2012). The second stream emphasized on the attributes of the risk disclosure as well as its value relevance (e.g., Moumen et al., 2015). Finally, the third stream has investigated the association between corporate governance and corporate risk disclosure, which has been the main focus over the recent years (Oliveira et al., 2011; Ntim et al., 2013; Mokhtar and Mellet, 2013; Mousa and Elamir, 2014; Allini et al., 2015). These studies have emphasized on the risk disclosure included in the annual financial reports, since it is the means by which companies communicate information to investors and other stakeholders, for decision-making process. Amran et al. (2009) argue that financial and non-financial components included in the financial reports, convey useful information that can be used to make informed decisions about investments, credit and other strategic choices. In this paper, we focus on the third stream, since our purpose is to examine the impact of corporate governance mechanisms on risk disclosure. We extend previous research and investigate three main corporate governance mechanisms, namely ownership structure, board of directors and audit committee, and we provide evidence complementing their findings. Using a multivariate analysis, we examine the effects of these three important mechanisms on the extent of corporate risk disclosure in the Tunisian context.

Impact of Ownership Structure on Corporate Risk Disclosure

Mokhtar and Mellet (2013), Ntim et al. (2013), Mousa and Elamir (2014) report a positive relationship between ownership structure and corporate risk disclosure. For example, Mousa and Elamir (2014) report that there are different shareholder types having differing rights and benefits and differ from one company to another. Thus, they can have considerable influence on risks disclosure. Institutional ownership is one of the important mechanisms that may affect corporate disclosure practices. Based on an agency theory perspective, institutional investors can monitor and control the corporate disclosure (Elzahar and Hussainey, 2012; Barako et al., 2006). Ntim et al. (2013) report that when the proportion of the firm's shares

held by the large investors is important, it creates an even greater interest in corporate strategic decisions, namely investment and the disclosure of information, including risk information. Empirical studies have examined the association between institutional investors and corporate disclosure. Barako et al. (2006) lead to the fact that extent of corporate voluntary disclosure is positively associated with the proportion of institutional investors. They conclude that managers voluntarily disclose information to respond to the different expectations of these investors. In contrast, Ntim et al. (2013) find a negative relationship between institutional investors and corporate risk disclosure. They explain that investors have many resources and have the means to access some private information. Their interests become then congruent with those of the managers, rather than other investors. This enables them to request information directly, rather than through corporate disclosure. Hence, they can maintain their competitive advantage. The agency theory suggests that institutional investors affect risk reporting practices. Consequently, we state our first hypothesis:

H1(a): The institutional ownership has a positive effect on the extent of corporate risk disclosure.

Foreign ownership is also one of the main characteristics of the ownership structure, that can influence financial reporting. Barako et al. (2006) state that foreign ownership becomes a significant determinant of firm's disclosure practices. In fact, based on the agency theory, we can confirm that foreign investors do not have the same information at their disposal as the local investors. To minimize this information asymmetry, managers generally use of the voluntarily disclosure, and more specifically disclosure about risks. Research examining the association between foreign ownership and risk disclosure is very limited. Mousa and Elamir (2013) have shown a negative but non-significant relationship between foreign ownership and the extent of risk reporting. However, Barako et al. (2006) confirm the existence of a positive and significant association between foreign ownership and risk disclosure. They suggest that firms, which are mainly owned by local investors, should update their voluntarily disclosure practices to effectively catch foreign investors. Thus, our second hypothesis states:

H1(b): There is a positive association between foreign ownership and the extent of risk disclosure.

In the accounting literature, ideas the relationship between ownership concentration and risk disclosure are mixed. Ntim et al. (2013) argue that managers of companies where ownership concentration is high, are less likely to engage in disclosure practices. In fact, costs associated with voluntary disclosure can be significantly higher and exceed potential benefits. Moreover, the marginal cost of additional control is often greater than the resulting performance benefit. Elshandidy and Neri (2015) argue that dispersed ownership leads to less disclosure, thus increasing information asymmetry, which can negatively affect the firm's evaluation. Consequently, additional disclosure enables managers to reduce these conflicts by engaging in understandable voluntary disclosure, including disclosure of information about risks. On the other hand, based on agency theory, we can say that a concentrated corporate ownership structure decreases agency problems within the company. Jensen and Meckling (1976) state that good control and a reduced level of information asymmetry associated with a concentration of ownership, decrease agency problems and improve the performance of the company. Consequently, decrease the need for additional voluntary disclosure. Consistent with this view, Mousa and Elamir (2014) argue that conflicts of interest between shareholders and managers are higher in companies with a dispersed ownership structure than in companies with a concentrated ownership structure. In a dispersed ownership structure, minority shareholders have less power of influence over corporate management, including decisions related to disclosure. Empirically, some studies revealed no significant association between ownership concentration and risk reporting (Mokhtar and Mellet, 2013; Oliveira et al., 2011). Others state that ownership concentration has a negative and significant effect on the extent of risk disclosure (e.g., Ntim et al., 2013). However, the results of Mousa and Elamir (2014) show a positive association between ownership concentration and risk disclosure. They explained that companies with a large ownership concentration are more likely to disclose risk information, because they prefer to communicate more relevant information, to keep investors interested and convince

them of the continued good performance. Therefore, in line with Boesso and Kumar (2007), we hypothesize that companies engage in voluntary disclosure to meet the information need. This leads us to the third hypothesis:

H1(c): The ownership concentration has a positive effect on the extent of risk disclosure.

With significant stakes in the company, the government may also influence the extent of the disclosure, including disclosure about risk. Some researchers suggest that government ownership can deteriorate the quality of some practices in the firm. For example, Hou and Moore (2010) argue that level of corruption and fraud are higher in the Chinese companies with a high level of government ownership. This can be supported by the fact that a strong politic connection, associated with an important level of governmental ownership may guarantee some types of protection against a strict control derived from weak regulatory authorities, which could lead to poor disclosure practices (Ntim et al., 2013). They also report that from an agency theory perspective, managers of firms with a high level of government ownership can increase the extent of risk disclosure mitigate agency problems between managers and government, as an influential shareholder. Eng and Mak (2003) and Ntim et al. (2013) provide evidence that governmental ownership has a positive and significant effect on disclosure practices. Based on 158 Singaporean listed firms, Eng and Mak (2003) argue that government ownership is likely to increase moral hazard and agency problems. Consequently, voluntarily disclosure can help alleviate some of these problems. Consistent with that evidence, Ntim et al. (2013) further argue that these firms tend to disclose more risk information to report their support to government initiatives and compliance with standards and rules, which can facilitate access to critical resources. Given these thoughts, we formulate the following hypothesis:

H1(d): Government ownership has a positive effect on the extent of risk disclosure.

Impact of Board of Directors on Corporate Risk Disclosure

Board of directors presents a major governance mechanism that can influence different practices of the firm, and thus risk disclosure. Rechner and Dalton (1991) stipulate that from corporate governance perspective, the board of directors is a key structural mechanism in monitoring managerial behavior and in protecting different stakeholders of the firm. Allini et al. (2015), in line with Elshandidy and Neri (2015), argue that board size is a fundamental characteristic that can determine its effectiveness. According to the agency theory, boards with large number of directors have a great diversity in term of expertise and control. Furthermore, from a stakeholder theory perspective, the larger the size of the board is, the more is the access to information by the external environment (Ntim et al., 2013). Elzahar and Hussainey (2012) argue that boards with large diversity of expertise are more encouraged to prove their efforts regarding risk management, hence by disclosing information about risk. Recently researchers have placed greater emphasis on the association between board size and risk reporting. Some studies have shown the existence of a negative association between board size and risk disclosure (Mousa and Elamir, 2014), others have shown the absence of a significant relationship between board size and risk disclosure (Elzahar and hussainey, 2012; Allini et al., 2015). However, Mokhtar and Mellet (2013) and Ntim et al. (2013) have shown that board size has a positive and significant effect on the corporate risk disclosure. Then we formulate the following hypothesis:

H2(a): Board size has a positive effect on the extent of corporate risk disclosure.

Some boards are characterized by their role duality, where the CEO of the firm is also the chairman of the board. This characteristic can influence the disclosure strategy of the firm. Separation of functions of the CEO and the chairman can enhance the ability of the board to control and to monitor managers and directors by improving the board's independence and accountability (Barako et al., 2006; Rachdi and El Gaied, 2009). Ntim et al. (2013) confirm that duality can influence risk disclosure. However, duality can lead also

to a greater knowledge, comprehension and experience regarding the strategic changes and the opportunities faced by the company, which positively influence firm performance. On one hand, Elzahar and Hussainey (2012) and Ntim et al. (2013), have shown the absence of a significant association between board duality and risk reporting. On the other hand, Mokhtar and Mellet (2013) have shown that board duality has a negative, no significant effect on mandatory risk disclosure. Therefore, we formulate the following hypothesis:

H2(b): Board duality has a negative effect on the extent of corporate risk disclosure.

A further aspect related to the board diversity, is the presence of women within the board. Nielsen and Huse (2010) state that woman contribute to board effectiveness and influence the implementation of strategies through their significant contributions to decision-making. Allini et al. (2014) report that listed firms, with at least one woman within the board, have lower percentage of member participation and meeting frequency than listed companies with no female members on the board. Allini et al. (2014) have shown that firms with large presence of female members on the board, negatively affect non-financial information disclosure. They conclude that number of women within the board is generally limited compared to male, and this because they do not get too close to the other members and therefore do not have a remarkable influence on other male directors. Allini et al. (2015) have found that firms with large proportion of female members disclose more risk information. They concluded that women improve the board's effectiveness and strengthen firm accountability and transparency. Thus, the following hypothesis is formulated:

H2(c): The proportion of women directors on the board has a positive effect on the extent of corporate risk disclosure.

Another important characteristic is the board independence that should be in the corporate governance research. Allini et al. (2015) report that board independence is a crucial factor that can reduce information asymmetry and improve financial reporting quality. In fact, independent directors are considered as professionals that have neither a management role nor shareholding nor any other ownership relation. From a legitimacy theory perspective, their presence is then considered as a means of enhancing firm's legitimacy by fostering a link between the firm and its societal values (Edkins, 2009). Linsley and Shrivies (2006) argue that presence of independent directors can be considered as an important governance structure that enables to mitigate agency problems between shareholders and managers. That is how the presence of independent directors improves reporting quality in general and risk reporting in particular (Allini et al., 2015). Previous empirical results on board independence and risk disclosure are mixed. Elzahar and Hussainey (2012) and Allini et al. (2015) find no significant association between board independence and corporate risk disclosure. However, other studies found a positive association between board independence and corporate risk disclosure (Oliveira et al., 2011; Ntim et al., 2013; Zeghal and El Aoun, 2016). Abraham and Cox (2007) have shown that role of independent non-executive directors is important in the risk reporting process, and they are positively associated with the amount of disclosed information on risk. They conclude that a potential group of independent non-executive directors can rely on a group of executive directors that is competent with respect to risk. Moreover, Oliveira et al. (2011) argue that independent directors are indispensable to the reduce agency costs. Hence the following hypothesis is considered:

H2(d): Board independence has a positive effect on the extent of corporate risk disclosure.

Impact of Audit Committee Size on Corporate Risk Disclosure

Audit committee presents a fundamental mechanism that can guide corporate disclosure practices. Its effectiveness lies on its characteristics and mainly on its size. Persons (2009) confirms that audit committee size is an integral factor that enables to adequately control corporate reporting practices. Li et al. (2012)

reported that large audit committees can help the committee to resolve potential questions concerning the corporate reporting process. In fact, a significant number of members on the audit committee are more likely to bring different point of views and a broad range of expertise to ensure an effective control (Bedard and Gendron, 2010). Madi et al. (2014) find that audit committee size is positively and significantly associated to the voluntary disclosure. They conclude that audit committee size improves disclosure and reduces the information asymmetry related to the agency problems. Thus, we formulate the following hypothesis:

H3: The audit committee size has a positive effect on the extent of corporate risk disclosure.

DATA AND METHODOLOGY

This section is organized into three parts. First, we discuss the sample and data and collection. Next, we discuss variable measurement. The third part describes the empirical model.

Sample and Data Collection

This study is based on a sample of 77 Tunisian firms listed in the Tunisian stock exchange (TSE) in 2015. Financial companies are excluded because of their specific regulations both in term of corporate governance and in term of risk disclosure. Also, 17 non-financial companies were eliminated for a lack of data. Thus, we were able to select 34 listed companies observed from 2011 to 2015. The period of our study can be justified by our incentives to examine the relationship reported above in the post revolution period in the Tunisian context. During this period, Tunisia has had its revolution and elected the first freely elected president of modern Tunisia. However, we excluded 2016-2020 since many laws have changed in addition to the COVID-19 pandemic. The corporate risk disclosure and the corporate governance variables were collected from the sampled companies' annual reports presented in the Financial Market Council and from information provided on the website of the Tunisian Stock Exchange.

Variables Measurements

Our dependent variable is the extent of corporate risk disclosure in the annual reports of Tunisian firms. Content analysis seems to be the most appropriate method enabling to analyze the big amount of information presented in the annual reports. Mousa and Elamir (2013) confirm that content analysis is a way to categorize items in a text and can be used when a large amount of information needs to be analyzed. This method requires identifying the unit of analysis. Linsley and Shrives (2006) report that number of words, number of pages and number of sentences can be used to perform content analysis. Thus, in the previous literature, the extent of risk disclosure was assessed using different units of analysis. Hassan (2009) used the paragraph as a unit of analysis in the UAE context. Louhichi and Zraik (2015) used the word as a unit of analysis by setting out six reference words relating to risk. Other researchers used the sentence as a unit of analysis (Amran et al., 2009; Elzahar and Hussainey, 2012; Mokhtar and Mellet, 2013; Moumen et al., 2015). In this study, the sentence is used as a unit of analysis since it presents a complete and reliable basis. Linsley and Shrives (2006) argue that use of the number of sentences as a unit of measure is a well-established method for the coding of risk disclosure. However, the word cannot be coded without referring to the sentence and it can only be interpreted in the context of a sentence (Linsley and Shrives, 2006; Elsandidy and Neri, 2015). Before starting the content analysis, we should introduce a clear definition of risk disclosure. Linsley and Shrives (2006) broadly define risk disclosure as “if the reader is informed of any opportunity or prospect, or of any hazard, danger, harm threat or exposure, that has already impacted upon the company or may impact upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure”.

We have analyzed an initial sub-sample composed by five annual reports to verify the coherence of the coding process, the inter-reliability test. This additional analysis yielded a Scott’s Pi of 0.80, which present a satisfactory degree since it is higher than 0.75 as proposed by Linsley and Shrives (2006). This step is performed to improve the reliability and to reduce the subjectivity of the content analysis method. Linsley and Shrives (2006) argue that content analysis is inevitably subjective and therefore the counting method needs to be reliable to draw valid conclusions. Then, the analysis is performed and completed by a single coder from the authors for all the annual reports. Each counted sentence is classified according to the grid of risk categories proposed by Linsley and Shrives (2006) and in coherence with the proposal framework developed by the ICAEW (1998). Based on previous literature, the output of the analysis is classified according to their semantic dimensions (Good / Bad; Past / Future; Monetary / Non-Monetary). And finally, we count the total number of different predefined categories and dimensions. Independent variables are those related to corporate governance, and control variables are namely, the age of the firm, the leverage and the industry presented in Table 1.

Empirical Model

We use the following model to examine the association between corporate governance mechanisms and the extent of corporate risk disclosure in the Tunisian context.

$$RD = \alpha_0 + \alpha_1INS + \alpha_2COWP + \alpha_3GOWP + \alpha_4FOWP + \alpha_5SZB + \alpha_6INDB + \alpha_7WMB + \alpha_8DUB + \alpha_9SZAC + \alpha_{10}END + \alpha_{11}AGE + \alpha_{12}INDUST + \epsilon \tag{1}$$

Where, RD is the extent of risk disclosure, INS the institutional ownership, COWP the concentrated ownership, GOWP the government ownership, FOWP the foreign ownership, SZB the board size, INDB the board independence, WMB the presence of female members on the board, DUB the role duality of the board, SZAC the audit committee size, END the firm leverage, AGE the firm age and INDUST the firm industry.

Table 1: Independent Variables

Variable	Measure & Definition	Authors
Panel A: Independent Variables		
INS	The proportion of shares held by institutional investors	Elzahar and Hussainey (2012), Ntim et al. (2013), Mousa and Elamir (2014)
FOWP	The proportion of shares held by foreign investors	Baccouch et al. (2010), Mousa and Elamir (2014)
COWP	The proportion of shareholding > 5%	Ntim et al. (2013), Mokhtar and Mellet (2013), Mousa et Elamir (2014)
GOWP	<i>The proportion shares held by the government</i>	Ntim et al. (2013)
SZB	Total number of directors in the board	Barako et al. (2006), Mokhtar and Mellet (2013), Mousa and Elamir (2014), Allini et al. (2015)
DUB	1 if the CEO is the chairman of the board 0 otherwise	Elzahar and Hussainey (2012), Mokhtar and Mellet (2013), Ntim et al. (2013)
WMB	The proportion of women directors within the board	Allini et al. (2014), Allini et al. (2015)
INDB	The proportion of independent non-executive directors on the board	Oliveira et al. (2011), Ntim et al. (2013), Allini et al. (2015)
SZAC	Total number of members in the audit committee	Persons (2009), Li et al. (2012), Madi et al. (2014)
Panel B: Control Variables		
END	Debt ratio (firm leverage)	Abraham and Cox (2007), Hassan (2009), Mousa and Elamir (2014)
AGE	Age of the firm	Mak and Li (2001)
INDUST	1 if the firm is industrial 0 otherwise	Baccouche et al. (2010), Elzahar and Hussainey (2012), Mokhtar and Mellet (2013)

This table shows the independent variables and the control variables used in our model. Panel A shows the independent variables including proportion of shares held by institutional investors, foreign investors and by the government, proportion of women directors within the board, proportion of shareholding. Panel B shows the control variables age of the firm, the leverage and the industry. The third column reports the main references for each variable

RESULTS AND DISCUSSION

This section is organized into three parts. First, we present the descriptive statistics. Next, we discuss multivariate analysis. The third part describes the negative binomial regression estimation.

Descriptive Statistics

Table 2, Panel 1 shows that total number of sentences disclosed on risks is 1972 sentences, which is very low compared to the other contexts. Moreover, we can notice that most of the disclosed sentences represent non-financial risks (1271 sentences) which represent 64% of total disclosed sentences. This result is consistent with Amran et al. (2009), Oliveira et al. (2011) and Ntim et al. (2013) who showed that firms disclose non-financial risks more than financial risks in their annual reports. This can be explained by the fact that activities and strategies of the studied Tunisian companies are influenced by the revolutionary context and by the economic changes during the five years of the study. This situation may increase the level of risks related to strategic, but non-financial operations of the firms, which leads them to disclose these types of risks. Ntim et al. (2013) in the South-African context, explain that focus on disclosing non-financial risks can reflect the operational and strategic changes faced by firms during the financial crisis of 2008. Results are also in consistence with the findings of Linsley and Shrivs (2006) that showed that strategic risks, operational risks, and financial risks are the most disclosed risks in the annual reports. In fact, in our case, the most disclosed categories are strategic risks (790 sentences), financial risks (701 sentences) and operational risks (439 sentences). The importance attached to this information can be explained by the financial difficulties faced by Tunisia after the revolution, such as the increase in exchange rates (EUR/TND and USD/TND), the increase in the inflation rate and the increase in purchase prices. Table 2, Panel 2 shows that number of disclosed sentences on total risks is on average 11.6 sentences varying from one sentence to 36 sentences. This also justifies the low commitment to risk disclosure by Tunisian companies. Finally, the results presented in Table 2, Panel 3 suggest that Tunisian firms are interested to disclose mostly past information with 1432 sentences (representing 72.61% of total disclosures). Bad information is disclosed in 1255 sentences (63.64% of total disclosures) while non-monetary information is disclosed in 1487 sentences (75.4% of total disclosures).

Table 2: Descriptive Analysis 12 Risk Disclosure

Panel 1: Risk Disclosure by Year and by Category						
	2011	2012	2013	2014	2015	Total
Financial risk disclosure	139	133	128	136	165	701
Operational risk disclosure	94	104	83	72	86	439
Empowerment risk disclosure	4	8	7	6	9	34
Information processing and technology risk disclosure	1	1	0	1	0	3
Integrity risk disclosure	1	0	1	2	1	5
Strategic risk disclosure	160	150	142	149	189	790
Total	399	396	361	366	450	1,972

Panel 2: Descriptive Statistics of Risk Disclosure				
	Mean	Std. Dev.	Min	Max
Risk disclosure	11.6000	6.9217	1.000	36.0000

Panel 3: Risk Disclosure Classified by Semantic Disclosure							
	Good	Bad	Monetary	Non-Monetary	Past	Future	No Specific Time
Risk disclosure	717	1,255	485	1,487	1,432	528	12

This table shows the descriptive analysis of risk disclosure. Panel 1 shows the total number of sentences disclosed on risks by year and by category. Panel 2 shows the descriptive statistics of disclosed sentences on total risks. Panel 3 of this table shows the disclosed sentences on total risks classified by their semantic dimension.

Descriptive statistics are presented in Table 3 and Table 4. Table 3, shows that proportion of institutional investors is on average 16.81%, varying between 0% and 88.42%. Likewise, the proportion of foreign investors ranges from 0% to 73.43% with an average of 9.34%. Regarding ownership concentration and government ownership, they represent respectively an average of 66.90% and 6.45%. The board size ranges from 4 to 12 members with an average of 8 members which complies to the Tunisian commercial companies' law (TCCL). The proportion of female members within the board is on average 7.26%, varying between 0 and 55.55%. The audit committee size represents on average 3 members varying between 2 and 5 members. Therefore, two firms do not comply to the minimum of 3 members fixed by the TCCL. AGE and END, represent on average 38.2 and 0.54 respectively.

Table 3: Descriptive Statistics of Quantitative Variables

Variables	Mean	Std. Dev.	Minimum	Maximum
Panel A: Independent Variables				
INS	0.1681	0.2137	0.0000	0.8842
FOWP	0.0934	0.1746	0.0000	0.7343
COWP	0.6690	0.1611	0.2470	0.9986
GOWP	0.0645	0.1891	0.0000	0.7980
SZB	8.2000	2.5457	4.0000	12.0000
WMB	0.0726	0.1176	0.0000	0.5556
INDB	0.1387	0.1272	0.0000	0.5000
SZAC	3.2471	0.5308	2.0000	5.0000
Panel B: Control Variables				
AGE	38.2000	20.2521	3.0000	89.0000
END	0.5450	0.4031	0.0081	2.6768

This table shows the descriptive statistics of quantitative variables. Panel A shows the mean, standard deviation, minimum, and maximum for the continuous independent. Panel B shows the mean, standard deviation, minimum, and maximum for the continuous control variables

Table 4 presents the descriptive statistics of dichotomous variables. The analysis shows that at the board of directors, 60.59 combine the functions of CEO and chairman. And 50% of the sampled firms are industrial firms.

Table 4: Descriptive Statistics of Dichotomous Variables

Variable	Frequency	Proportion (%)
Panel A: Independent Variable		
DUB	0	39.41
	1	60.59
Panel B: Control Variable		
INDUST	0	50.00
	1	50.00

This table shows the descriptive statistics of dichotomous variables. Panel A shows the frequency and proportions for the dummy independent variable. Panel B shows the frequency and proportions for the dummy control variable. For the companies of the sample 61% of the CEOs are chairman of the board. Half of the companies of the sample are industrial

Multivariate Analysis

We start by checking for the multicollinearity between the explanatory variables. The results of the Spearman correlation matrix presented in Table 5, indicate that multicollinearity is not a problem since the highest value is 0.4253, which is less the multicollinearity threshold recommended by Kennedy (2008).

As we explained before, our dependent variable represents a count variable that range from 0 to 36. Thus, this type of variables rarely meets the normality condition, and a Linear Regression model seems to be inappropriate, which was confirmed by the Shapiro-Wilk test. Zeghal et al. (2007) argue that in the classical linear models, the dependent variable is expressed as a linear combination of explanatory parameters while assuming that this variable is normally distributed, whereas Generalized Linear models such as the Poisson-Regression Model (PRM) and the Negative-Binomial model are based on alternative distributions. Thus, we conduct our analysis through a Generalized Linear model. For the PRM, we should consider the equality between the mean and the variance of the dependent variable. In our case, the variance of our dependent variable is largely higher than its mean, indicating an overdispersion problem. This can be confirmed or infirmed by the deviance test and the Chi-Square test. The result of these both tests are presented in Table 6.

Table 5: Spearman Correlation Matrix

	INS	FOWP	COWP	GOWP	SZB	WMB	INDB	SZAC	END	AGE
INS	-									
FOWP	0.4253	-								
COWP	0.1108	0.1037	-							
GOWP	-0.2730	-0.1167	0.0736	-						
SZB	0.1764	0.2769	0.0721	0.0285	-					
WMB	0.0559	-0.1657	0.0355	0.3149	0.2582	-				
INDB	0.0258	-0.1235	-0.3026	-0.2300	-0.3512	-0.3475	-			
SZAC	-0.2213	-0.1404	-0.0675	0.3831	0.3129	0.1713	0.0594	-		
END	-0.1136	-0.1824	-0.1170	0.0387	0.0699	-0.1128	0.1557	0.4028	-	
AGE	0.0101	0.1595	0.2213	0.1401	0.2241	0.0467	-0.1116	0.2743	0.0218	-

This table shows the Spearman correlation matrix to check the multicollinearity between the explanatory variables. From this table, the highest value is 0.4253, which indicate no multicollinearity problem.

Table 6: Deviance and Khi² Tests

Test	Coefficient	Significance
Deviance test	591.0908	0.0000***
Chi-Square test	571.3930	0.0000***

This table shows deviance and Khi² tests. Both tests are significant at the level of 1%, which lead us to reject the null hypothesis. The use of negative binomial regression is appropriate. ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.

Results show that these two tests are significant at the level of 1%, which lead us to reject the null hypothesis. Thus, the use of negative binomial regression is appropriate and necessary. Given that our study covers 34 companies during a five-year period, our data correspond consequently to a panel data, hence a problem of heterogeneity may arise. Thus, it is necessary to model the heterogeneity of behaviors by using the fixed or the random effect model, based on Hausman test. Table 7 displays a significant coefficient at the level of 1%, implying that a fixed effect model is necessary.

Table 7: Hausman Test

Coefficient	34.2100
Significance	0.0002***
Appropriate specification model	Fixed-effect model

This table shows Hausman test is significant at the level of 1%. A fixed effect model is required. ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.

Negative Binomial Regression Estimation

The fixed effect negative binomial regression results, presented in Table 8 show that Wald Chi-Square statistic is highly significant at the level of 1% (Wald Chi2 = 27.24, P-value = 0.0071), which means that estimators can properly explain the extent of the risk disclosure, and therefore our model is globally significant.

Results show that proportion of institutional investors has a negative and significant impact at the level of 1% on the extent of risk disclosure. Thus, when firms have significant proportions of institutional ownership, they have an interest to reduce the level of risk reported in their companies' annual reports. This implies that institutional investors have sufficient information on risks. Given their importance in companies, they can exercise their power to hide some risk information. Our results are consistent with previous evidence (e.g., Abraham and Cox, 2007; Ntim et al., 2013), suggesting that institutional investors can benefit from a large amount of non-public information-by a simple direct contact with the managers. Our result our first hypothesis H1(a) which assumes that institutional ownership has a negative impact on the extent of risk disclosure. Unlike Mousa and Elamir (2013, 2014), who found a non-significant relationship between risk disclosure and foreign ownership, our results show that foreign ownership has a negative and significant impact at the level of 10% on the extent of risk disclosure. This implies that proportion of foreign shareholders decreases the level of risk disclosure in the annual reports of Tunisian companies. Hence, we reject our hypothesis H1(b).

Table 8: Regression Estimates

	Coefficient	Z Statistic	Significance
INS	-3.8540	-4.1200	0.0000***
FOWP	-2.8298	-1.6600	0.0980*
COWP	2.2775	3.6000	0.0000***
GOWP	-1.1449	-1.9100	0.0560*
SZB	0.0998	2.4900	0.0130**
DUB	0.1238	0.7900	0.4320
WMB	-1.4234	-2.5300	0.0110**
INDB	-0.6304	-1.0300	0.3030
SZAC	0.2917	1.8500	0.0650*
END	-0.1981	-0.7100	0.4760
AGE	0.0491	2.2700	0.0230**
	Wald Chi-Square		27.2400
	Significance		0.0070***

*This table shows results for the negative binomial regression estimation. The Wald Chi-Square statistic is significant at the level of 1% meaning that estimators can properly explain the extent of the risk disclosure and the model is globally significant. ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.*

The ownership concentration has a positive and very significant impact at the level of 1% on the extent of risk disclosure. Inconsistent with the findings of Oliveira et al. (2011) and Mokhtar and Mellet (2013), our result implies that companies with a large ownership concentration have an interest to disclose more risk information in the annual reports. This can be explained by the power and the control exercised by these investors over the manager regarding risk disclosure practices, and their willingness to reduce agency problems in the company. These findings are in line with Mousa and Elamir (2014) that indicate companies with a high ownership concentration are more likely to disclose risk information because they prefer to share with investors more relevant information to attract them and convince them of the company's performance. These findings support the prediction in H1(c).

The regression coefficient for government ownership, has a negative and significant impact on the extent of risk disclosure at the level of 10%. In fact, in Tunisia, companies with significant government ownership do not engage too much on risk disclosure. This is likely because such companies feel protected by the state and therefore, they have a reduced incentive to disclose relevant risk information to other stakeholders. Our results support those of Dam and Scholtens (2012) but are inconsistent with the findings of Eng and Mak (2003) and Ntim et al. (2013) that suggest that government ownership is positively associated with voluntary risk disclosure, implying that H1(d) is not empirically supported. Also, it is not in line with our hypothesis H1(d). The board size of has a positive and significant impact at the level of 5% on the extent of risk disclosure. This can be motivated by the great diversity of expertise and responsibility that can be found in large boards. In fact, the higher the number of board members, the more the accountability of the company in terms of transparency and disclosure. Our result corroborates the findings of Mokhtar and Mellet (2013), who explain that positive relationship between risk disclosure and board size reflects the importance of directors' awareness towards their responsibility to support financial reporting. Likewise, this result converges with the result of Ntim et al. (2013) that indicates that large boards of directors are associated with better managerial power and greater diversity in terms of expertise and stakeholder representation, which can improve the legitimacy and the reputation of the firm. However, our results are not consistent with the results of Elzahar and Hussainey (2012), Mousa and Elamir (2014) and Allini et al. (2015). Our hypothesis H2(a) is thus verified.

We also note that proportion of women on the board of directors has a negative and significant influence on the extent of risk disclosure at the level of 5%. This means that a significant proportion of women in the board decreases the level of risk disclosure. Our result is similar to that of Allini et al. (2014), but inconsistent with the result of Allini et al. (2015), that indicate that a significant proportion of female directors improves the level of risk disclosure. This leads us to reject our hypothesis H2(c). We find that board duality and the board independence have no significant impact on the extent of the corporate risk disclosure, similar to that of Elzahar and Hussainey (2012). In fact, the absence of a significant relationship between board independence and risk reporting implies that directors cannot exert pressure on managers and other board members to disclose risk information. Thus, we reject both hypothesis H2(b) and H2(d).

Consistent with Madi et al. (2014), the audit committee size-has a positive and significant impact-indicating that large audit committees are more diverse in terms of expertise and motivation for greater transparency, thus reducing corporate agency problems. However, this is not consistent with the results of Elzahar and Hussainey (2012). Then we confirm our hypothesis H3. The regression coefficients for INDUST, and END have no significant impact on the extent of the risk reporting. However, consistent with Baccouche et al. (2010), we find that AGE has a positive and significant impact at the level of 5% that suggest that older companies have an interest in disclosing more risk information. This may be related to some legitimacy and reputation issues of older companies, and their willingness to disclose any relevant information in the annual reports, proving their risk awareness.

CONCLUSION

This study investigates the relationship that may exist between internal corporate governance mechanisms and the extent of risk disclosure in annual reports. The results show that Tunisian firms do not disclose high amount of risk information in their annual reports. Therefore, the annual reports may not provide useful information about risk that assists users in their decision-making. This can be explained by the weak regulations' requirements about risk disclosure in the annual reports in the Tunisian context. Our results also indicate that institutional, foreign, and government ownership as well as the proportion of female members within the board of directors negatively affect the extent of corporate risk disclosure. Moreover, ownership concentration, board size, audit committee size and the firm age have a positive effect on the level of corporate risk disclosure. This study contributes to the ongoing debate on any possible association between internal corporate governance mechanisms and the extent of risk disclosure in annual reports. It

extends the literature on corporate risk by offering a new perspective on emerging countries' disclosure of risk. Moreover, our findings can be useful to legislators in setting regulations and rules, mandating companies for more disclosure about information risk in their annual reports.

However, this study has some limitations. Firstly, our study is based on a content analysis enabling to measure the extent of corporate risk disclosure. As stated in previous literature, this method involves subjectivity. But as explained by Linsley and Shrives (2006), this method remains effective as it provides important contributions in the existing literature. Secondly, this study uses a small sample of non-financial companies. Thus, the results cannot be generalized to all Tunisian firms. Finally, this paper offers some suggestions for future research. First, future studies may examine the same relationship on financial firms and compare the results with our findings in other countries. Second, we suggest that separate studies of group of financial and non-financial firms, is worth investigating to derive comparative analysis between these two sectors. Third, future work may include other variables related to external governance mechanisms, particularly about risk disclosure.

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GILTI INCOME AND FINANCIAL REPORTING: AN ANALYSIS OF THE 10-K DISCLOSURES BY S&P 500 FIRMS FOLLOWING THE 2017 TAX REFORM

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ABSTRACT

The 2017 tax reform introduced a minimum tax on “global intangible low-taxed income” (GILTI). Current research has shed limited light on how firms report GILTI-related items on their financial statements. This study examines the 10-K disclosures of S&P 500 firms after the 2017 tax reform (Tax Cut and Jobs Act, or TCJA) and focuses on the differences in their financial reporting choices (period cost vs. deferred method) for GILTI. Most of the firms that chose the deferred tax method are concentrated in the subsectors of pharmaceutical, biotechnology, and software technology. Ten firms reported a total of \$24.77 billion of GILTI-related deferred tax liability (and potential “cookie jar” for future earnings) after the passage of TCJA in December 2017. For these firms, GILTI-related items constitute a substantial portion of the total deferred tax liabilities and pre-tax income. The results also show that firms in the industrial sector are in general less likely to be affected by the GILTI regime than firms in the sectors with high-return intangible assets. This is consistent with the legislative intent for the GILTI tax.

JEL: M41, M48

KEYWORDS: Accounting Policy, Deferred Tax Liability, Global Intangible Low-Taxed Income, Tax Cut and Jobs Act

INTRODUCTION

The 2017 tax reform, also known as the Tax Cuts and Jobs Act (TCJA) of 2017, is considered a major overhaul following the Internal Revenue Code of 1986 on the taxation of corporations’ international transactions and foreign earnings. TCJA created section 951A and introduced a minimum tax on a category of income known as the “Global Intangible Low-Taxed Income” (GILTI) from Controlled Foreign Corporations (CFC). Before the GILTI provision, US corporations may reduce their overall tax burden by shifting intangible assets, such as patents or copyrights, to subsidiaries in a low tax foreign jurisdiction. The introduction of the GILTI regime is aimed to reduce the incentives for firms to move income-generating properties around the globe to structure the best tax outcome. The on-going discussion of a global minimum tax scheme for the OECD countries resembles that of the GILTI tax with the same objective to prevent large multinational corporations from moving their incomes across countries and shopping for the best tax deal. Following the passage of TCJA on December 22, 2017, the Financial Accounting Standards Board staff issued guidance on how to report the impact of the GILTI inclusion on financial statements (FASB Staff Q&A Topic 740 No.5). However, we have limited empirical evidence on the landscape of GILTI-related accounting disclosures for a large cross-section of U.S firms. This study contributes to the literature by systemically examining how the GILTI items are reported by the S&P 500 companies. Sector-based analyses show that firms in the sector of healthcare and information technology are most likely to disclose the effect of GILTI on their financial statements, followed by firms in the industrials and consumer discretionary sector. The interaction between the GILTI provision and a “territorial-based” international tax system for U.S. corporations after the 2017 tax reform created complications for the financial reporting

of income taxes on consolidated financial statements. A divergence of views emerges among accounting firms and tax practitioners on how to apply the Accounting Standards Codification on income taxes (ASC 740) on GILTI. As such, the FASB staff concluded that firms may elect to treat the tax liability from GILTI either as a current-period expense (the period cost method), or to account for the basis differences affected by the GILTI regime as a deferred tax item on the balance sheet (the deferred tax method). The results from the samples of this study show that 209 firms elected the period cost method and they are distributed across different sectors. A total of 15 firms are found to have elected the deferred tax method and they are concentrated in the pharmaceutical, biotechnology and software/technology sub-sector. Following the passage of TCJA in December 2017, ten firms in the S&P 500 reported GILTI-related deferred tax liability with an average of \$2.4 billion and median of 1.6 billion. The average is \$149 million for the five firms that reported GILTI-related deferred tax assets.

Prior accounting literature has suggested that companies would use income tax items as a “cookie jar” to manage earnings. In Blouin et al (2010), it is estimated that firms have pre-emptively released income tax reserves up to \$4.4 billion for the 100 largest nonfinancial, nonutility firms before the effective date of a regulatory regime change on the financial reporting of uncertain tax positions. In comparison, it is shown here that the ten large firms in the pharmaceutical and tech/biotech industries recognized a total \$24.77 billion in deferred tax liabilities (DTL) following TCJA under the deferred methods for GILTI items. These recognized DTL can be used as accounting reserves because the DTL may be released into earnings for future years. The background of GILTI is explained next in the literature review section, as well as the related research on firms’ financial reporting of foreign earnings before and after the 2017 tax reform.

LITERATURE REVIEW

Before the 2017 tax reform known as the Tax Cuts and Jobs Act (TCJA), the U.S. generally does not tax foreign business profits through a foreign subsidiary until the event of a dividend payment by the subsidiary back home, otherwise known as a “repatriation”. This created an opportunity for firms to accumulate earnings and profits in a low-tax foreign jurisdiction and delay repatriation payments. For this reason, Congress created an anti-deferral rule in the Revenue Act of 1972 known as the subpart F income (codified in the Internal Revenue Code, Subtitle A, Chapter 1, Subchapter N, Part III, Subpart F) to prevent an indefinite delay in collecting revenues. Subpart F income is taxed on a current basis (in the period when the profit occurs), without regard to whether the income is distributed to shareholders. It generally includes passive income from investments that can be moved easily from one country to another.

The 2017 tax reform created code section 951A on Global Intangible Low-Taxed income (GILTI). The tax on GILTI is a minimum tax on Controlled Foreign Corporations’ (CFC) foreign earnings over and above a “net deemed tangible return” from tangible properties. The GILTI tax is conceived in a way that is similar to subpart F to tax foreign profits on a current basis but with a broader tax base than the existing subpart F. But different from subpart F, the GILTI is not taxed at the CFC level but at the shareholder level. The GILTI inclusion is equal to the U.S. shareholder’s share of the CFC’s net income, reduced by the excess of (i) 10 percent of the CFC’s aggregate adjusted basis in depreciable tangible property used in its trade or business, over (ii) the CFC’s net interest expense. Currently companies can take a deduction of 50% of GILTI tax paid and apply their foreign tax credits as an offset. After applying the deduction and foreign tax credits, the effective tax rates on the GILTI inclusion may range from 10.5% to 13.125%.

Another main feature of the 2017 tax reform is to allow a one-time “toll tax” or deemed repatriation tax of 15.5% on foreign cash holdings or 8% on non-cash holdings. This toll tax is part of the overall design by TCJA to shift from a worldwide taxation model to a more “territorial” system by providing a dividend-received deduction to U.S. shareholders who receive distributions out of foreign-source earnings from CFCs. But the GILTI inclusion and the territorial-based dividend received deduction for shareholders created complications for financial reporting. Usually, the outside basis of a parent entity in a CFC is considered as

the unit of account under Accounting Standards Codification (ASC) 740. However, because foreign-source dividends paid out of foreign earnings are no longer subject to US tax due to the dividend-received deduction under TCJA, the timing difference between the book and tax basis of a foreign subsidiary cannot necessarily be used to predict future U.S. income tax. As such, there is a divergence in views on how to account for GILTI associated with foreign subsidiaries and its impact on financial statements (Deloitte, KPMG 2018). Tax practitioners have argued that a flexible financial reporting approach is warranted. For instance, the Tax Executives Institute asserts that the Financial Accounting Standards Board (FASB) should “adopt a method for disclosing the financial impacts of the GILTI regime that...does not provide a single prescribed accounting standard. The method should provide preparers sufficient ability to make judgements on their GILTI tax accounting based on individual facts and circumstances” (TEI, 2018)

The Financial Reporting on Foreign Earnings pre-TCJA and FASB Staff Guidance on GILTI

In the pre-TCJA period when firms can avoid U.S. taxation if their foreign earnings are not repatriated, the Accounting Principal Board Opinion 23 (APB 23) has been relied upon for the financial reporting of foreign and domestic tax liabilities. Under APB 23, companies also do not have to report or disclose potential U.S. tax liabilities as long as the foreign earnings are deemed to be indefinitely reinvested overseas (also known as Permanently Reinvested Earnings, or PRE). This is considered one of the “loop-holes” (Furner and Dickins 2019) for multinational corporations to manipulate both their tax liabilities from foreign operations and their compliance with the disclosure requirements of PRE on the financial statements (Ayers et al. 2015). Some accounting research has studied the disclosures on the impact of the one-time transition tax, also known as the “toll tax” by TCJA. Given the limited time between the passage of TCJA and the 10-K due dates for fiscal 2017, the Securities and Exchange Commission (SEC) in its Staff Accounting Bulletin (SAB-118) allowed firms to make an initial rough estimate on the impact of the transition tax. Honeker and Thomas (2019) examined the impact of this transition tax (not the GILTI tax) on firms’ deferred tax asset and liabilities and Chen et al. (2021) discussed the following adjustments after the initial estimates under SAB-118. Due to the complexities regarding the impact of GILTI tax on financial statements, the FASB staff believes that the current ASC 740 is not clear-cut on the treatment of GILTI on financial statements and “plans to monitor how entities that pay tax on GILTI are accounting for and disclosing its effects” (FASB Staff Q&A 2018). In the same Q&A, the staff report takes the position that firms can either report the GILTI tax as: 1) a period cost: treat the tax liability on future GILTI inclusions as a current-period expense, or 2) deferred tax items: account for the temporary differences that would result in GILTI tax as deferred tax on the balance sheet (which are expected to reverse into earnings in future periods).

It is yet to be seen whether the FASB would propose a formal draft on the important changes brought by TCJA on foreign earnings and GILTI. Some companies may see opportunities in earnings management by using the divergence in the methods to account for the GILTI items, and investors would likely demand more detailed information and disclosures. This view on firms’ opportunistic reporting behavior is supported by empirical evidence on a prior “tax holiday” enacted by the American Jobs Creation Act during 2004-2005 to encourage the repatriation of foreign-source earnings. Although firms can repatriate earnings and receive an 85 percent dividend-received deduction during that tax holiday, Morrow and Ricketts (2014) show that firms participated in such a holiday reduced their reported financial reporting income for the holiday period. They attributed this to an “expectation management” behavior by reducing earnings during the repatriation period to enable potential earnings growth in subsequent fiscal years. Firms that chose the deferred method to account for GILTI items may adopt a similar approach to recognize a deferred tax liability and reduce current earnings with the understanding that future earnings may be influenced by a reversal of the deferred tax liability.

Unintended Consequence of GILTI

Because there is no uniform requirement currently by the FASB on the accounting choice of GILTI items, the aim of this study is to first conduct a systematic review of the disclosure and reporting regarding GILTI in a representative sample of large U.S. companies. The design of the GILTI tax also suggests that Congress intended to capture high-return income that is also highly mobile across borders (Callas and Prater 2020), income that is often generated by intangibles such as patents, software, and technical know-hows that can be easily migrated to low-tax jurisdictions. In this way, GILTI tax are usually associated with pharmaceutical, biotech and technology firms. However, recent anecdotal evidence also suggests that GILTI is hitting traditional, railroad companies such as Kansas City Southern (Rubin 2018) due to the interactions between GILTI and other parts of the Internal Revenue Code. The income and expense allocation rules under the foreign tax credit limitation calculation can allocate some interest expense to foreign income and reduce the credible ratio assigned to the foreign tax credit. Some industrial companies with large plant and equipment, and likely large interest expenses to finance their capital expenditures may somehow become an unintended target of the GILTI tax. Therefore, in the next section a logistical regression model is constructed to test whether firms in different sectors have the same odds of being affected by GILTI and thus disclosing their accounting choice for GILTI items.

DATA AND METHODOLOGY

This study analyses a representative sample of large US corporations. Form 10-Ks form firms listed on the S&P 500 index are collect from the Securities and Exchange Commission's website at www.sec.gov/edgar/searchedgar/companysearch.html. As Table 1 shows, the sample selection starts with firms on the index in 2017. To have a comparison on the initial and subsequent disclosures by the companies on the effects of TCJA, the sample is further restricted to firms that were listed in the S&P 500 in both 2017 and 2018 (n=461). This is consistent with the pattern that there are on average 22 firms added to, and an equal number of firms taken off from the index on a yearly basis. The sample is further screened for subsequent acquisition by other companies and sufficient Compustat data coverage on the financial statement items. This results in a final sample of 459 companies.

Table 1: Sample Selection

Selection Criteria	Number of Firms
Step1: Firms listed on the S&P 500 Index as of 12/31/2018	500
Step 2: Firms not listed on the S&P 500 in both fiscal 2017 and fiscal 2018	(39)
Step 3: Firms that underwent Merger/Acquisition or do not have consistent Compustat data coverage	(2)
Final Sample size	459

As Table 1 shows, 10-K data are collected for the 459 firms on the S&P 500 index after the sample selection procedure. Symantec and VF Corp were removed from the sample in Step 3.

As discussed in the literature review section, one of main intention of the GILTI legislation is to tax foreign incomes from firms that can easily move their intangible assets around jurisdictions to seek the best tax outcome. In this regard, large pharmaceutical and biotech companies in the Healthcare sector, as well as firms in the technology sector are the main focus of this new tax law. A question arises on whether firms in other sectors, such as industrial companies that has large capital expenditures on plants and equipment, are equally affected by GILTI. To this end, a logistical regression is used to see if firms in the industrial sector are equally affected by the GILTI tax, and therefore equally likely to disclose an accounting policy election associated with GILTI.

For $i = 1, \dots, n$ firms, the model is $\log \left[\frac{p_i}{1-p_i} \right] = \alpha + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_k x_{ik}$

where p_i is the probability that $y_i = 1$, that is if a firm discloses its accounting policy for GILTI (either deferred or period) and $y_i = 0$ if a firm didn't disclose any GILTI items or the GILTI items are immaterial. $x_1 \dots x_k$ are indicator/dummy variables when a firm belongs to one of the sectors in the S&P 500 index. Because there are 11 main sectors on the S&P 500, the logistic regression will create 10 dummy variables (using the Utilities sector as the reference sector). The null hypothesis is that the coefficient on the Healthcare or IT sector equals the coefficient on the Industrial sector. For example, the following SAS code is used to test whether firms in the Healthcare sector is more likely to disclose GILTI than the Industrial Sector:

```
proc logistic data=gilti_sp500;
class GICSectors (ref="55") /param=ref;
model gilti (event='1')= GICSectors;
Healthcare_vs_Industrials: test GICSectors35=GICSectors20;
run;
```

RESULTS

The overall pattern of how the firms disclosed GILTI items on their Forms 10-K is shown on Panel A of Table 2. In total, 224 firms disclosed accounting policy elections on GILTI (48% in the sample period), out of which 209 firms opted for the period cost method and 15 firms disclosed that they elected the deferred method. Panel B of Table 2 shows top sectors with GILTI-related disclosures. The specific GIS sub-sectors for the firms under the deferred method are shown in Table 3. Overall, firms that have adopted the period cost method are distributed across different sectors while those that elected the deferred method are concentrated in the subsectors of pharmaceuticals, biotechnology and information technology.

Table 2: Sector Analysis of on The Financial Reporting of GILTI For S&P 500 Firms

Panel A: Accounting Disclosures on GILTI and Deferred Taxes for Fiscal Year 2018 By GIS Sector			
	Firms That Do Not Mention the Effect of GILTI Tax Provision on Deferred Taxes or the Impact of GILTI Is Immaterial	Firms That Elected Treat GILTI Provision as a Period Cost	Firms That Elected to Treat GILTI as Deferred Tax
Energy Sector	21	5	0
Materials Sector	5	18	0
Industrials	29	34	0
Consumer Discretionary	31	30	0
Consumer Staples	11	21	0
Healthcare	14	37	6
Financials	43	20	0
Information Technology	17	32	8
Communication Services	11	7	1
Utilities	25	1	0
Real Estate	28	4	0
Subtotal	235	209	15
Panel B: Top Sectors That Discloses the Impact of GILTI and Related Financial Reporting Policy Election			
	GILTI as Period Cost	GILTI as Deferred Tax	Number of Firms with GILTI Disclosure
Healthcare	37	6	43
Information Technology	32	8	40
Industrials	34	0	34
Consumer Discretionary	30	0	30
Consumer Staples	21	0	21

Panel A shows the sector information for the 459 firms listed on the S&P 500 index in both fiscal 2017 and 2018. Panel B shows the top five sectors affected by the GILTI tax.

Table 3: Firms That Elected the Deferred Method, By GIS Subsectors

Company Name	SIC Sector Code	SIC Sector Name
Apple Inc	452020	Technology Hardware, Storage & Peripherals
Analog Devices	453010	Semiconductors & Semiconductor Equipment
Alexion Pharmaceuticals Inc	352010	Biotechnology
Activision Blizzard Inc	502020	Entertainment
Biogen Inc	352010	Biotechnology
Intl Business Machines Corp	451020	IT Services
Johnson & Johnson	352020	Pharmaceuticals
Lilly (Eli) & Co	352020	Pharmaceuticals
Lam Research Corp	453010	Semiconductors & Semiconductor Equipment
Microsoft Corp	451030	Software
Nvidia Corp	453010	Semiconductors & Semiconductor Equipment
Oracle Corp	451030	Software
Pfizer Inc	352020	Pharmaceuticals
Regeneron Pharmaceuticals	352010	Biotechnology
Xilinx Inc	453010	Semiconductors & Semiconductor Equipment

Table 3 shows the detailed sub-sector information for the firms that elected the deferred method for GILTI items.

As a comparison, Nichols et al. (2018, 2019) selected 139 Fortune-250 companies for their 2017 and 2018 Forms 10-K and reported that 23 companies disclosed GILTI items, of which just four companies (Biogen, Eli Lilly, IBM, and Johnson & Johnson) in 2018 and one company in 2017 (Pfizer) recorded a deferred tax liability for GILTI-related basis differences. Because firms may not have made the election on time for their fiscal 2018 10-K, our sample also includes firms without initial information on GILTI for fiscal 2018 but subsequently disclosed their election on Forms 10-K filed in 2019. A closer examination of the specific disclosures indicates that a smaller number of firms reported a large amount of GILTI-related deferred tax liability without much details on the underlying basis differences that established deferred taxes for GILTI. For example: in Eli Lilly's 2018 10K (Note 13):

“Related to GILTI, we elected to establish deferred taxes in the amount of 1.68 billion for the reversal of temporary items in future years”

Pfizer (2018) did not provide a tabulated result on deferred taxes, but states that

“In 2017, we provided a provisional deferred tax liability of approximately \$1.0 billion based on the evaluation of certain temporary differences inside each of our foreign subsidiaries that are expected to reverse as global intangible low-taxed income. In 2018, this estimate was finalized and we have provided for an additional deferred tax liability of approximately \$200 million, resulting in a deferred tax liability of approximately \$1.2 billion”

It is also worth noting that Apple does not use “GILTI” anywhere in its financial statements but disclosed “minimum tax on foreign earnings” in the deferred tax liability section instead of mentioning the GILTI word. Appendix A contains sample 10-K disclosures on GILTI items. Panel A of Table 4 shows that the firms that elected deferred tax method for the financial reporting of GILTI after TCJA recognized a total \$24.7 billion in deferred tax liabilities (DTL) in their 10-K disclosures. The respective amount (excluding Apple) is shown in Figure 1. The breakdown of each firm's GILTI-specific DTL, total DTL and pre-tax income is listed in Panel B of Table 4. The results also suggest that GILTI-related DTL constitutes a substantial portion of total DTL reported by each company. It is shown in Figure 2 that the impact by

GILTI-items on the current-period income statement is mostly below 45% of pre-tax income while most GILTI-related DTL is under 60% of total DTL. Firms under the deferred method could be using the opportunity to recognize the income tax effect of GILTI (to reduce net income) in the current period while put the same amount on the balance sheet as DTL. Any reversal of these GILTI-related DTL can potentially reduce the effective tax rate and increase earnings in the future.

Table 4: GILTI and Deferred Tax Liabilities of S&P 500 Firms

Panel A: Reported Deferred Tax Liability (DTL) on Form 10-K (in Millions)						
	Firm	Tic	Fiscal Year End	GILTI-related DTL	Total DTL	Pre-tax Income
1	Apple*	AAPL	9/28/2019	10,809	11,595	65,737
2	Analog Devices*	ADI	11/2/2019	1,254	2,304.5	1,485.7
3	Alexion	ALXN	12/31/2018	268.8	930.7	242.2
4	Biogen	BIIB	12/31/2018	544.6	2,305.4	5,899.6
5	IBM	IBM	12/31/2018	1,927	7,398	1,1325
6	Johnson & Johnson	JNJ	12/30/2018	2,971	11,271	17,999
7	Lilly	LLY	12/31/2018	1,680	3,175.7	3,795.7
8	Microsoft	MSFT	6/30/2019	2,607	5,716	43,688
9	Oracle	ORCL	5/31/2019	1,515	2,766	12,420
10	Pfizer	PFE	12/31/2018	1,200	9,456	11,885
	Subtotal			2,477		

Panel B: Percentage of Fiscal 2018/2019 GILTI-Specific Deferred Tax Liability (GILTI-DTL) To Total DTL and Pre-Tax Income (Pi)			
Firm	GILTI-DTL/Total DTL	GILTI-DTL/Pi	
Apple	93.22%	16.44%	Based on data collected from 2018 and 2019 Form 10-K, Table 4 shows the ten firms with the largest amount of GILTI-related Deferred Tax Liability (DTL) and its proportion to total DTL and pre-tax income.
Analog Devices	54.42%	84.41%	
Alexion	28.88%	110.98%	
Biogen	23.62%	9.23%	
IBM	26.05%	17.02%	
Johnson & Johnson	26.36%	16.51%	
Lilly	52.90%	44.26%	
Microsoft	45.61%	5.97%	
Oracle	54.77%	12.20%	
Pfizer	12.69%	10.10%	
Mean	41.85%	32.71%	

*Firms that finalized the reporting decision on GILTI-related deferred tax items in fiscal 2019

Figure 1: GILTI-Related Deferred Tax Liabilities (DTL, in Millions), Excluding Apple

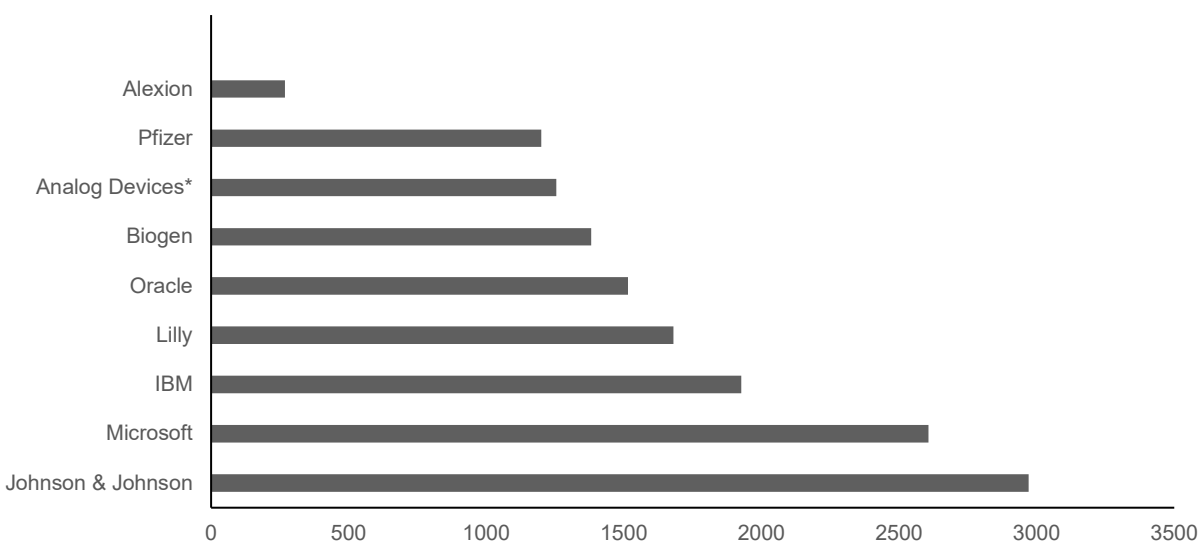
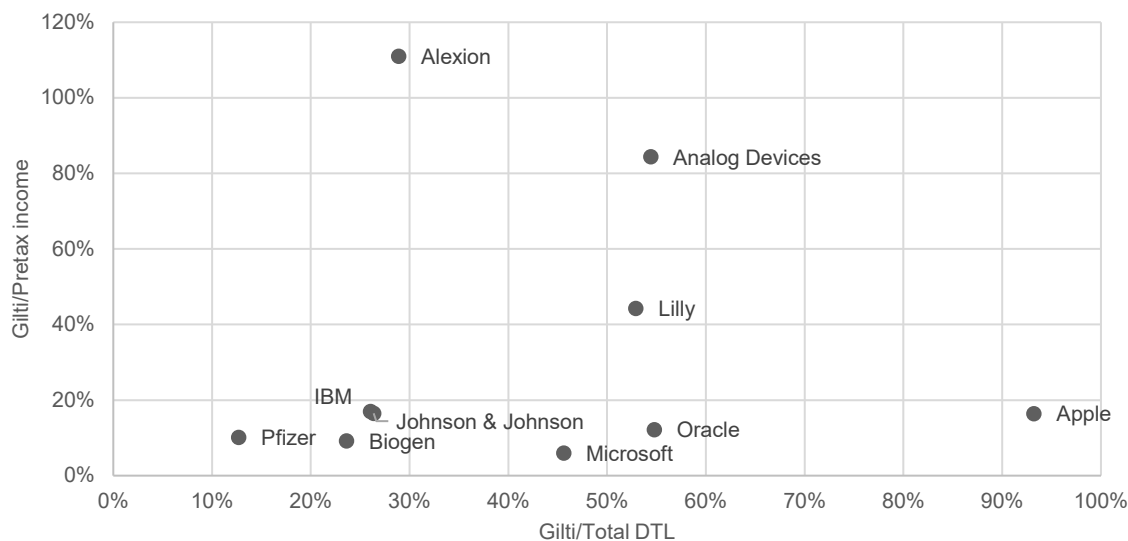


Figure 1 shows the amount of GILTI-related deferred tax liabilities disclosed on Form 10-K for fiscal 2018. Apple does not use “GILTI” anywhere in its financial statements but disclosed \$10.8 billion of deferred tax liability associated with “minimum tax on foreign earnings” on its fiscal 2019 Form 10-K

Figure 2: GILTI-Specific Deferred Tax Liabilities (DTL) to Total DTL and Pre-Tax Income



As Figure 2 shows, the impact by GILTI-items on the current-period income statement is mostly below 45% of pre-tax income while most GILTI-specific DTL is under 60% of total DTL. The results also show that most firms electing to record a DTL are in the pharmaceutical, biotech and software-technology where intangibles such as copyrights, trade-secrets and technical know-hows can generate a higher rate return. It can be reasonably expected that they are subject to the GILTI tax on a regular basis after the 2017 tax reform. As firms are allowed the option of either treating GILTI as a period cost or setting up a reserve for expected future GILTI inclusion, the deferred method offers the opportunity to reduce the variability in the effective tax rates for future periods. The disclosures on the specific basis differences on GILTI items are however scarce in the Form 10-Ks. The data also suggest that fewer firms report deferred tax assets (DTA) associated with GILTI. Table 5 shows that five companies reported a total of 149 million of DTA and only one of them (Regeneron) is in the pharmaceutical/biotech sector. This is consistent with the historical pattern that most firms record a DTL

for subpart F incomes (TEI 2018). The mean ratio of GILTI-related DTA/Total DTA is 22% and the scale of GILTI-related DTA is on average less than 6% of pre-tax income.

Table 5: GILTI and Deferred Tax Assets of S&P 500 Firms

	Firm	Tic	Fiscal Year End	Disclosed as:	GILTI-related DTA	Gross DTA	Pre-tax Income
1	Activision Blizzard	ATVI	12/31/2018	In the footnote	-219	-671	1,877
2	Lam Research	LRCX	6/30/2019	In the footnote as DTA	-47.6	-470.6	2,446.5
3	Nvidia	NVDA	1/27/2019	GILTI deferred tax asset	-376	-1,140	3,896
4	XILINX Inc	XLNX	3/30/2019	GILTI deferred tax asset	-38.41	-157.48	968.33
5	Regeneron	REGN	12/31/2018	In the footnote as DTA	-68	-672.8	2,553.5
	Subtotal				-149.8		
Panel B: Percentage of Fiscal 2018/2019 GILTI-Specific Deferred Tax Asset (GILTI-DTA) to Total DTA and Pre-Tax Income (Pi)							
	Firm				GILTI-DTA/Total DTA	GILTI-DTA/Pi	
1	Activision Blizzard				32.64%	-11.67%	
2	Lam Research				10.11%	-1.95%	
3	Nvidia				32.98%	-9.65%	
4	XILINX Inc				24.39%	-3.97%	
5	Regeneron				10.11%	-2.66%	
	Mean				22.05%	-5.98%	

Panel A shows that there are five companies in the sample that reported deferred tax assets on their 10-K. The ratio of GILTI-related deferred tax assets (DTA) over Total DTA and pretax income is reported in Panel B DTA amount are presented as negative numbers in contrast to DTL numbers

Logistical Regression Results

The number of firms in the sample (n=459) confers statistical power for the use a logistical regression model in Table 6. In the model, different industry sectors are indicator variables to predict the log-odds of the probability that a firm makes a GILTI-related accounting choice. Panel B of Table 6 shows that we can safely reject the null hypothesis that Healthcare and Industrial firms are equally likely to be affected by the GILTI tax. The difference between IT and Industrial firms are however only marginally significant.

Table 6: Logistic Regression Results

Panel A: Dependent Variable = Log-Odds of the Event When a Firm Discloses an Accounting Policy for GILTI Items				
GIC Sector Code	Parameter	Estimate	Standard Error	Pr > ChiSq
	Intercept	-3.2189	1.0198	0.0016
10	Energy	1.7838	1.1347	0.1160
15	Materials	4.4998	1.1382	<.0001
20	Industrials	3.3779	1.0507	0.0013
25	Consumer Discretionary	3.2189	1.0520	0.0022
30	Consumer Staples	3.8655	1.0856	0.0004
35	Healthcare	4.2720	1.0630	<.0001
40	Financials	2.4534	1.0551	0.0201
45	Information Technology	4.0745	1.0601	0.0001
50	Communication Service	2.9004	1.1207	0.0097
60	Real Estate	1.2730	1.1514	0.2689
Panel B: Testing of the Null Hypothesis $\beta_{Healthcare}=\beta_{Industrials}$				
		Wald Chi-Square		Pr > ChiSq
	Healthcare_vs_Industrials	5.1970		0.0226
Panel C: Testing of the null hypothesis $\beta_{IT}=\beta_{Industrials}$				
		Wald Chi-Square		Pr > ChiSq
	IT_vs_Industrials	3.2850		0.0699

Table 6 shows the relationship between GIC Sectors (as indicator/dummy variables) and the log-likelihood that firms are affected by GILTI. The Utilities sector is the reference sector. Panel B shows that we may reject the null hypothesis that Industrial firms are equally likely to be affected by GILTI as Healthcare firms. Panel C shows that the difference between IT firms and Industrials is not as statistically significant.

CONCLUDING COMMENTS

The objective of this study is to analyze firms' financial reporting choices on Global Intangible Low-Taxed Income (GILTI). Currently there is a paucity of published empirical evidence regarding such accounting choices following the Tax Cut and Jobs Act of 2017 (TCJA) for a representative sample of large firms across different industries and sectors. This study contributes to the literature by collecting Form 10-K data of S&P 500 firms regarding GILTI, and presenting statistics on the adoption of different GILTI accounting methods. Furthermore, a logistic regression model is deployed to test whether firms in different sectors are equally affected by the GILTI regime.

The results indicate that a substantial amount of GILTI-related deferred tax liability (DTL) has accumulated on firms' balance sheet, mostly for those in the pharmaceutical, biotechnology, and the software-technology sector. The underlying details of the temporary differences that gave rise to the DTL are however scarce from the disclosures. The lack of a clear guidance by the Financial Accounting Standards Board for GILTI items may give rise to reporting behaviors that seek to smooth out the variability of tax expenses and future effective tax rates when the deferred method is elected for GILTI. This is supported by the fact that pharmaceutical and biotech companies are particularly sensitive to any future change in the GILTI tax rates (Davison 2021, Strasburg and Cooper 2021). There is also anecdotal evidence reported by the Wall Street Journal that the GILTI tax may have an unintended consequence on industrial companies such as the Kansas City Southern Railroad. A logistic regression model is deployed for the samples in this study to test whether the GILTI regime affect different sectors in the same way. The results show that in general Industrial

companies are less likely to be affected by the GILTI tax than firms in the healthcare sector where high-return intangible assets such as patents can be easily moved around jurisdictions to shop for the best tax deal.

A limitation of this study is that the sample is limited to S&P 500 companies and there is no longitudinal comparison. Future research may use more 10-K disclosures from 2020 and beyond. Several avenues are also open for future research in this area. First, the sample size may be increased to firms listed on the Russell 1000/3000 to further explore the impact of GILTI and the disclosure pattern by both large and small/midcap firms that represent the lion's share of active companies on the U.S. equities market. Second, as manually collecting disclosure data is time-consuming, the insights gathered in this research can be further expanded to explore a statistical formula that may be applied to predict future U.S. tax liability with the current information given on GILTI-related deferred taxes. Third, with time-series data in the future, a comparability of the usefulness of financial statements between firms that adopted the period cost vs. the deferred method may be carried out with statistical power.

The current GILTI regime is also undergoing expansion as the Biden administration has proposed to increase the tax rate on GILTI from 10.5% to 21%. The tax base will also be broadened. In a draft legislation released on August 25, 2021, Senate Finance Committee Chairman Ron Wyden outlined his plan on how multinational corporations would be taxed (EY 2021). Specifically, he proposed changes that eliminated the Qualified Business Asset Investment (QBAI) exemption (or tangible asset exemption) and thus GILTI becomes “global *inclusion* of low-tax income”. If the proposals become law, researchers may use this setting to collect data and analyze how firms re-adjust their reporting for GILTI on the financial statement and whether their previous disclosures add relevant information. This also adds urgency to the FASB's income tax disclosure project post TCJA as investors may need a comprehensive framework and standardized disclosure requirement to evaluate corporate tax exposure and ESG-related investing for GILTI items.

APPENDIX

Appendix A: Samples of 10-K disclosures on future foreign GILTI income and deferred tax balances

1-Apple 2019 10-K

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the “Act”), which significantly changed U.S. tax law. The Act lowered the Company's U.S. statutory federal income tax rate from 35% to 21% effective January 1, 2018, while also imposing a deemed repatriation tax on previously deferred foreign income. The Act also created a new minimum tax on certain foreign earnings, for which the Company has elected to record certain deferred tax assets and liabilities. The Company completed its accounting for the income tax effects of the Act during 2019, in accordance with the U.S. Securities and Exchange Commission Staff Accounting Bulletin No. 118

Deferred tax liabilities	2019	2018
Minimum tax on foreign earnings	10,809	---

2-Microsoft 2018 10-K

On December 22, 2017, the TCJA was enacted into law, which significantly changed existing U.S. tax law and included numerous provisions that affect our business, such as imposing a one-time transition tax on deemed repatriation of deferred foreign income, reducing the U.S. federal statutory tax rate, and adopting a territorial tax system. In fiscal year 2018, the TCJA required us to incur a transition tax on deferred foreign income not previously subject to U.S. income tax at a rate of 15.5% for foreign cash and certain other net

current assets, and 8% on the remaining income. The TCJA reduced the U.S. federal statutory tax rate from 35% to 21% effective January 1, 2018. In addition, the TCJA subjected us to a tax on our global intangible low-taxed income (“GILTI”) effective July 1, 2018. Under GAAP, we can make an accounting policy election to either treat taxes due on the GILTI inclusion as a current period expense or factor such amounts into our measurement of deferred taxes. *We elected the deferred method, under which we recorded the corresponding deferred tax assets and liabilities on our consolidated balance sheets.*

3-Pfizer 2018 10-K

The TCJA subjects a U.S. shareholder to current tax on global intangible low-taxed income earned by certain foreign subsidiaries. The FASB Staff Q&A, Topic 740, No. 5, Accounting for Global Intangible Low-Taxed Income, states that we are permitted to make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as global intangible low-taxed income in future years or provide for the tax expense related to such income in the year the tax is incurred. *We have elected to recognize deferred taxes for temporary differences expected to reverse as global intangible low-taxed income in future years.* In 2017, we provided a provisional deferred tax liability of approximately \$1.0 billion based on the evaluation of certain temporary differences inside each of our foreign subsidiaries that are expected to reverse as global intangible low-taxed income. In 2018, this estimate was finalized and we have provided for an additional deferred tax liability of approximately \$200 million, resulting in a deferred tax liability of approximately \$1.2 billion. 4-Regeneron During 2018, we recorded an income tax benefit of \$68.0 million as an adjustment to the provisional amount recorded as of December 31, 2017, which was partly attributable to our election to record deferred tax assets and liabilities for expected amounts of GILTI inclusions. Our assessment of the re-measurement of U.S. net deferred tax assets at the lower enacted corporate tax rate is now complete.

5-Xlinix

All income tax amounts reflect the use of the liability method under the accounting for income taxes, as interpreted by Financial Accounting Standards Board (FASB) authoritative guidance for measuring uncertain tax positions. Under this method, deferred tax assets and liabilities are determined based on the expected future tax consequences of temporary differences between the carrying amounts of assets and liabilities for financial and income tax reporting purposes. The TCJA introduced GILTI, which subjects a U.S. shareholder to current tax on income earned by certain foreign subsidiaries. The FASB allows companies to either (1) recognize deferred taxes for temporary differences that are expected to reverse as GILTI in future years (deferred method) or (2) account for taxes on GILTI as period costs in the year the tax is incurred (period method). The Company elected the deferred method.

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REMOTE WORK AND STATE TAX COMPLEXITY: THE HIGH COST TO INTERSTATE EDUCATORS

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ABSTRACT

Remote work appears to be an apparent and growing trend. In particular, as higher education continues to expand its remote learning delivery models, the number of academic workers who provide instruction remotely also increases. In addition to the current remote faculty, 518 remote higher education positions are available (HEJ 2021) to teach the 6.9 million students enrolled in distance education courses (Ruiz & Sun, 2021). Consequently, payroll services must become well-versed in staying current in a complex tangle of state tax laws and requirements. This paper examines individual knowledge of state income tax obligations by remote interstate employees and their desire to obtain a refund of the overpayment of those taxes. Based on asynchronous interviews of 58 faculty members at a single institution, our results suggest that most do not understand state income tax regulations. Employees view taxes as unfair compared to their level of tax knowledge (Harris, 1989). The institution deducts the tax from earnings, and the employee is burdened with requesting a refund. Just as important, it can be argued that tax professionals who complete the tax returns of these employees lack knowledge and understanding of the nuances of the state income tax system as well.

JEL: H24, J61

KEYWORDS: Personal Income Tax, Overtaxed, Tax Compliance, Tax Complexity, Remote Workers, State Taxes

INTRODUCTION

Individuals know they are required to pay taxes (Nugent, 2013). Depending on the state and whether the employee is a resident, non-resident, or lives in a state that reciprocates with the state of employment, the personal income tax may not apply to the employee. Because of the knowledge needed to determine if the personal income tax should be collected from an employee, taxpayers are indifferent to comply. As noted by Roth et al. (1989), tax compliance is determined when the taxpayer submits the required filings of all tax returns on time, accurately reporting the proper tax liability as per applicable tax law. Tax complexity is due to the increased sophistication in tax law (Richardson & Sawyer, 2001). Tax complexity can be due to various confusion of forms, procedures, or computations. However, it is sometimes caused by the complexity of the rules that govern tax collection (Carnes & Cuccia, 1996). State income tax was introduced in the United States in 1911 by Wisconsin (Lutz, 1920). When reviewing state income taxes nationally, on average state income taxes account for 24.1% of a state's source of tax revenue (Mayo et al., 2021). We interviewed academic faculty from a New York regional college in this study. We find that New York's tax revenues are used for education, hospitals, highways, public welfare, funding state police, and other state and local government expenditures (Mayo et al., 2021).

In New York, the personal income tax rate is a graduated tax, meaning that the more a taxpayer earns, the higher the associated tax rate charged to the earner. In 2020, as a married filing jointly taxpayer, the personal income tax rate ranged from 4.5%, earnings from \$0 to \$17,150, to 8.82% earnings \$2,155,351

and above. New York assesses state income tax on all earnings of a household, not just what the employee earns in the state (Scarboro, 2021). There are large numbers of workers who commute from a neighboring state each day to work. For these workers, there is often state tax reciprocity. For example, more than 799,432 workers commute into New York from other states, giving it the largest number of out-of-state workers. Similarly, The District of Columbia has 69% of its workers who reside in a state (not the District of Columbia), resulting in the highest percentage of out-of-state workers (US Census data, On the map, 2019). However, in this paper, we discuss something different. Our study is specific to workers who are not living in the state as with the examples above, but additionally, they do not actually work in the state due to the remote nature of their work. This phenomenon is growing as more individuals work remotely. To our knowledge, a study on the overpayment of state income tax by remote employees is currently missing from the tax complexity literature. This study addresses this gap in the literature by examining a set of remote workers at a single employer. We study the knowledge these employees have of state income tax regarding their withholding, their opinions on the tax, and their attitude towards the potential overpayment of the tax. Our study suggests that typical employees do not understand the basics of tax accounting, much less the assessment procedure of state income taxes. The remainder of this paper is organized into four sections. The literature review is in the subsequent section. Next, the data and methodology are discussed. Then, analysis and presentation of the findings are presented. Finally, the conclusion and further research recommendations will complete the paper.

LITERATURE REVIEW

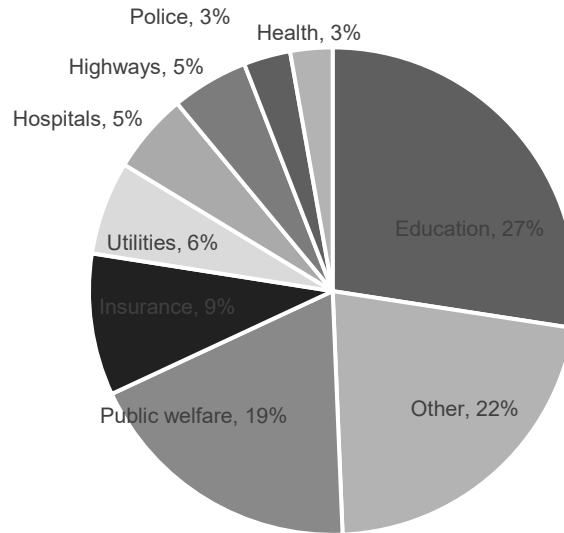
This section summarizes previous literature that briefly introduces the history of state income tax, issues of rule complexity on tax collection, and the increasing rate of remote work.

State Tax History

In 1911 a tax was levied on non-residents and foreign corporations that earned income within Wisconsin (Lutz, 1920). Thus Wisconsin was the nation's first state to adopt a personal income tax. State tax funds aid local governments, education, healthcare, transportation, corrections, pension, care for those with mental illness and disabilities, assistance to low-income families, economic development, state police, environmental projects, parks and recreation, and housing. In a 2019 combined state and local government finances summary gathered by the census, the majority of state and local income taxes are spent on education, followed by other expenditures such as miscellaneous costs associated with the identified areas, and public welfare, as can be seen in the chart below (Mayo et al., 2021). Figure 1 shows State and Local spending by category.

The personal income tax impacts a consumer's decision on where, when, and how to work. New York was the eighth state to enact such a tax in 1919, with a maximum rate of 3% on earnings greater than \$50,000. The city of New York imposed its income tax in 1966 on residents and non-residents who work in New York City limits (Urbach, 1995). Wages are taxed in the state where they are earned unless the employee works in a state that does not withhold state income tax. Withholding is when income tax is deducted from wages by employers to pay employees' income taxes associated with the earnings within the state, for state income tax, and within the United States, for federal income tax. Like federal income tax withholdings, state income tax withheld from an employee's earnings is reflected on the pay stub each payroll period. This originated from the model establishing the personal income tax that said: "...that all persons should be taxed fairly and fully at their place of domicile for the personal benefits they derive from the government" (Lutz, 1920, p. 83).

Figure 1: State and Local Government Spending



Mayo et al. 2021 This figure shows where states and local governments spend their income tax dollars. Almost half of all income tax dollars are spent on education and other services beyond healthcare, safety, and public welfare.

How an Employee Is Taxed

An employee is taxed on their earnings based on the location of the job being performed. It is in the determination of the location that a reference to tax laws is needed. According to the New York State Department of Taxation and Finance (2006), a personal income tax will be assessed to non-resident individual's taxable income that is derived from sources in New York. If an employee has a home office and it is a bona fide employer office, it is considered a normal workday, just outside the state and subject to the personal income tax. The employer must have established a bona fide employer office for the employee to owe New York State income tax on income earned. There are several factors to apply to determine if a home office is a bona fide employer office.

a-The primary factor, or.

b-at least four of the secondary factors and three of the other factors.

A primary factor to establish a home office is that it contains or is near specialized facilities that cannot be made available at the employer's place of business, but those facilities are available at or near the employee's home, then the home office will meet this factor.

A secondary factor in establishing a home office, where at least four of the factors must be met, consists of:

- 1) *The home office is a requirement or condition of employment.*
- 2) *The employer has a bona fide business purpose for the employee's home-office location.*
- 3) *The employee performs some of the core duties of his or her employment at the home office.*
- 4) *The employee meets or deals with clients, patients, or customers on a regular and continuous basis at the home office.*
- 5) *The employer does not provide the employee with designated office space or other regular work accommodations at one of its regular places of business.*
- 6) *Employer reimbursement of expenses for the home office.*

Along with four of the secondary factors, 3 other factors must be met to establish a bona fide home office.

- 1) *The employer maintains a separate telephone line and listing for the home office.*
- 2) *The employee's home office address and phone number are listed on the business letterhead and/or business cards of the employer.*
- 3) *The employee uses a specific area of the home exclusively to conduct the business of the employer that is separate from the living area and will not qualify if the area is used for both business and personal purposes.*
- 4) *The employer's business is selling products at wholesale or retail and the employee keeps an inventory of the products in the home office for use in the employer's business.*
- 5) *Business records of the employer are stored at the employee's home office.*
- 6) *The home office location has a sign indicating a place of business of the employer.*
- 7) *Advertising for the employer shows the employee's home office as one of the employer's places of business.*
- 8) *The home office is covered by a business insurance policy or by a business rider to the employee's homeowner insurance policy.*
- 9) *The employee is entitled to and claims a deduction for home office expenses for federal income tax purposes.*
- 10) *The employee is not an officer of the company.* (Eristoff, 2006, p. 2-5)

As a non-resident of the state of New York, online faculty do not meet the primary factor, nor do they meet at least four of the secondary or three of the other factors. Having earned income in another state, no withholdings are collected from the state of residence, where the income is derived, if applicable. Since the income by a resident is earned within the state of residence, the state has the authority to tax the resident. The resident receives the benefits afforded to them by that state and thus should share in the tax burden (Hashmi, 2012). The state tax will be assessed at the time of the annual federal tax return filing on April 15.

Tax Complexity

Tax complexity can significantly affect a government entity's ability to collect the tax due to inaccurate filings. Nugent (2013) suggests that increased tax complexity may result in a moral ambiguity resulting in tax underpayment. Specifically, while people may understand their moral obligation to pay taxes, they may have trouble determining how much in payments fulfills this obligation. Consequently, if calculating the correct amount of tax due is a difficult task, a taxpayer may perceive there to be moral ambiguity and underpay their taxes. Subsequently, increasing tax complexity may potentially encourage taxpayers to circumvent their obligation to pay taxes. Cox and Eger (2006) found that tax complexity contributes to increased tax non-compliance amongst state tax payments in state taxes.

Remote Work

There is a notable increase in the number of employees who work from home. It is anticipated that the percentage of employees working from home at least one day a week will increase from 5.5% to 16.6%, and 10% of full-time employees will work from home five days a week instead of one (Courtney, 2021). The Survey of Business Uncertainty explains that by 2025, 36.2 million Americans will be working remotely, representing 22% of the workforce (Courtney, 2021). Many of these remote employees can live in a state that differs from their employer's state. This increase in remote employees may increase the risk to employers and employees; since the resulting complexity of navigating the state tax requirements of this remote work will result in incorrect tax withholding, tax payments and possibly increase tax non-compliance due to the ambiguity of these rules. Further, consistent with Nugent (2013), tax ambiguity could create moral ambiguity resulting in increased tax underpayments. This paper extends the work of

Saad (2014) by using a set of remote employees from the same employer to determine the level of knowledge, understanding, and attitude toward the state income tax being assessed to them. Saad interviewed thirty participants. Using this qualitative data gathering technique, he determined the level of knowledge of the complex income tax system by the taxpayers. The results show that employers are engrained toward paying taxes, and more so when those taxes support public services.

DATA AND METHODOLOGY

Respondents in this study were adjunct or part-time academic faculty of an accredited state academic institution in the US state of New York. This subgroup of workers was selected given the increased likelihood that adjunct and part-time faculty may reside outside the state and subsequently teach remotely. Our interviews took place between September 2021 and October 2021. All respondents had a formal education with a minimum of a master's degree. Data collection was accomplished using emailed-based asynchronous interviewing. Qualitative research is known to allow researchers to obtain in-depth and valuable information. However, qualitative research can be time-consuming and sometimes expensive. The asynchronous email interview is a qualitative research method where questions are asked and followed up via multiple online exchanges between researcher and participant within a particular time frame (Ratislavová & Ratislav, 2014). The literature argues that email interviewing is advantageous in qualitative research since it is cost and time-efficient while maintaining the ability to obtain in-depth information. Email interviews are less costly than phone interviews or face-to-face interviews. It is simpler to transcribe an email interview and maintain accuracy, given the communication is already available in a written form. The researcher can conduct multiple interviews simultaneously, which also saves time. (East et al., 2008; Selwyn & Robson, 1998). Just as email distribution of electronic surveys directly replaces the role of traditional mailing, asynchronous interviewing (electronic interviewing) uses email as one-to-one interviewing (Selwyn & Robson, 1998).

This type of interview method is beneficial for the convenience of the interviewee; however, we acknowledge that it may lack some of the spontaneity by the participant, as the participant has a chance to write out their responses (Bampton, R., Cowton, C., & Downs, Y. 2013; Burns 2010). State-affiliated colleges and universities in New York state generally make their list of employees, including faculty, public; therefore, potential respondents could be identified and selected using the online source for payroll records openpayroll.com (2021) for the entity. This sample selection method was beneficial because of the nature of the study and the need to stay within the chosen state of New York. A total of 290 employees of the university were contacted. The 28 respondents identified as New York residents were excluded since they were not adversely affected by the tax; others identified as non-residents. A New York state return has a statute of limitations when filing an amendment for a refund. A taxpayer must file an amended return within three years of the date the original return was due or filed, or within two years of the date, the tax was paid, whichever is later (Hiller, 2019). Each non-resident will have up to three years of earnings information that will be included in the data calculations.

There were several disadvantages to our methods. Firstly, this method uses a narrow scope of one employer for the sample, which is not a sufficient representation of the population of remote workers. Consequently, this study is not intended to represent the state of New York or other states. Instead, it presents a set of responses that consider that the move to remote work; and resulting tax complexity could signal a more significant problem worthy of further and expanded research. Secondly, we faced the problem of some employees not responding to our email. Some recipients communicated that they were suspicious of the inquiry for fear of being part of a 'fishing' scheme or repercussions from the employer. Subsequently, this may have contributed to some employees not responding to the email request for an interview.

There are three sections in the data collection process. Section one consists of salary information from 2018-2020 from the employer. This information was collected from publicly available sources. Section

two collected the participant's state of residency, which then led to the identification of "Resident," "Nonresident," and "Reciprocating." The US Supreme Court ruled against double taxation in the 2015 case between *Comptroller of the Treasury of Maryland v. Wynne*. This decision states that two or more states cannot tax the same earnings (Supreme Court, 2015). Consequently, a non-reciprocating state indicates that the worker must file a separate state tax return in the state where the income was earned. New York does not reciprocate with any other state (Paille, 2018), so the status of "Reciprocating" was eliminated. Section three estimated the amount of personal income tax from the New York earnings and the impact to the respondent and the state of New York. Several broad assumptions as to the total household earnings of the employees can be made to project the extent of the problem, but only the New York earnings are used to estimate the tax withheld.

RESULTS AND DISCUSSION

Our interviews took place between September 2021 and October 2021. The authors contacted the respondents via email and asked to participate in a short interview on state tax responsibilities. Respondents represented all professional disciplines employed by the same employer in New York. The disciplines include accounting, biology, business, communications, early childhood development, economics, education, finance, healthcare, history, information systems, law, management, nursing, philosophy, psychology, and Spanish (Puccio, 2021). A total of 290 potential participants were invited to be interviewed via email, and 58 agreed to participate. Twenty-eight identified as New York residents were excluded. The remaining 30 participants comprise 11 different majors. Another benefit of an asynchronous email interview is that no additional transcription is needed.

Saeed (2020) suggests that economists and social philosophers have theories on what constitutes a sound tax system. The elements include equity, the certainty of imposition, the convenience of payment, and the economy in the collection. Our questions reflected the theory of certainty of imposition and convenience of payment. The state of New York sets the standard for the assessment, not the employer. As a general rule, employees are subject to the laws of the city and state where they physically perform work (Cirner, 2021). For our sample, residents of New York are not impacted and thus excluded. Only employees who are not physically performing work within New York are included. To be considered derived from New York sources, the income must be earned while in New York or while working remotely in a bona fide home office paid for by the employer (Eristoff, 2006). As remote employees, the non-resident respondents do earn their income from the state of New York, but not while in the state of New York, nor do they work in a bona fide home office paid for by the employer. The results of our email-based interview answers show that non-resident employees are being assessed by New York personal income tax. New York State Tax Law Section 601(e) imposes a personal income tax on a non-resident individual's taxable income that is derived from New York sources (Eristoff, 2006). Of the 58 respondents, 30 responses indicate that they may be paying taxes that they do not owe since they are not New York state residents. As can be seen from Table 1, a majority of the New York non-resident participants are residents of New Jersey followed by Florida, Georgia, Minnesota, Ohio, Pennsylvania, Arizona, California, Colorado, Connecticut, Maryland, Rhode Island, Utah, and Virginia.

Table 1: Residence of Participants

State of Residence	
AZ	1
CA	1
CO	1
CT	1
FL	5
GA	3
MD	1
MN	2
NJ	8
OH	2
PA	2
RI	1
UT	1
VA	1

This table shows the state of primary residence of interview participants.

While the results of these interviewees may not be representative of remote workers in the state, based on projections, it could have widespread implications for employees and taxes withheld. Using the data provided from openpayroll.com (2021) the earnings for each survey participant were collected for the previous three years and accumulated by year for the Table 2 below. The earnings were then divided to calculate each employee's average amount of earnings. Based on the New York state income tax rates for each respective year (Scarboro, 2021, Loughead & Wei, 2021, Loughead, 2021), the estimated amount of New York tax withheld was calculated.

Table 2: Estimated State Tax for Non-Resident Employees

Year	Non-Resident NY Earnings	Avg Non-Resident Earnings/Employee	Tax Rate	NY Tax Withheld/ Employee	Non-Resident NY Tax Withheld
2018	\$353,485	\$16,833	4.50%	\$757	\$15,907
2019	\$367,806	\$14,712	4.50%	\$662	\$16,551
2020	\$655,069	\$22,589	4.50%	\$1,016	\$29,478
Total	\$1,376,360	\$54,134		\$2,435	\$61,936

This table shows the earnings of the employees, in total and earnings per employee average amount. These employees reside in another state and are labeled as non-resident. The New York state income tax rate is then multiplied by the average earnings per employee to determine the amount of tax withheld from each employee and, then calculated again for the total number of non-resident employees in the sample.

According to a senior finance professional for the institution, Non-resident employees are expected to work with their tax preparer, who should know the regulations associated with personal income tax, correct any state taxes that are collected, and follow procedures to reclaim their earnings. A Harris poll conducted on behalf of the American Institute of CPAs surveyed 2,053 adults in the US in October 2020 and found that 47% of respondents are unaware that each state can have tax laws associated with remote work (Vera, 2020). Thus, the average non-resident employee lacks an understanding of the basic rules concerning personal income tax. Of the 30 non-resident participants, only 5 teach a business discipline, as can be seen in Table 3. The majority of the participants teach healthcare. None of the 30 participants claimed to be a tax expert.

Table 3: Teaching Discipline

Discipline	
Accounting	2
Biology	1
Early Childhood Development	1
Economics	1
Education	2
Finance	1
Healthcare	11
Information Systems	5
Management	1
Nursing	3
Psychology	2

This table shows the academic areas taught by the participants of the interview.

Our results suggest that the complexity of the state income tax rules appears to cause some confusion surrounding what is owed in state taxes. A majority of the respondents live in states that assess a personal income tax but were unaware of the tax rules associated with personal income tax in other states, or being assessed a tax they may not owe. Based on our responses, which represent employees that work for an institution located in the state of New York, but do not earn their wages while physically working in the state; over three years they may have been assessed and overpaid over sixty thousand dollars in personal income tax. This estimate is solely based on earnings from the New York employer, not the additional earnings of New York taxes when filing a New York state return. If the employee or the associated tax preparer is not knowledgeable of the ability to request a refund by submitting an amended state tax return, the state of New York will retain all of those funds. All 30 non-resident respondents indicated a willingness to file amended returns to reclaim these possible overpayments.

CONCLUDING COMMENTS

This paper explores the personal income tax assessment of non-resident employees of a New York employer using an interview to collect data. The results suggest that the tax complexity of state taxes, specifically related to remote workers, may lead to incorrect tax withholding, filing, and resulting payments. The findings offer several insights for taxpayers that work remotely in a state other than their employing state. Results show that most do not understand their state income tax obligations. There is also some willingness to amend prior-year tax returns to obtain a refund from the state. Employees view taxes as unfair compared to their level of tax knowledge (Harris, 1989). The institution deducts the tax from earnings, and the employee is burdened with requesting a refund. The taxpayer's knowledge of tax rules does not significantly affect their compliance with those rules (Vera, 2020). As the study discovered, employees appear not to question the deduction due to their apparent confusion regarding the taxes due. Employees perceive the tax to be correct due to their lack of knowledge of the tax guidelines. This overpayment of personal income tax is very beneficial for the state collecting the assessment but can be refunded to the employee by filing an amended state tax return. This study offers some insight for further research. A greater understanding of the personal income tax assessment by employers on non-resident remote employees is needed for future expanded research. This is significant, as the potential full-time remote workers in 2025 are projected to increase to 36.2 million by the Survey of Business Uncertainty (Courtney, 2021). Additional research is needed to determine if the growth in remote workers will perhaps lead to increased personal income tax in states where employees reside rather than in the employer's state.

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PROFESSIONAL SKEPTICISM: STANDARDSETTERS' RESPONSIVENESS TO STAKEHOLDER COMMENT LETTERS

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ABSTRACT

Auditing standards direct auditors to exercise professional skepticism (PS) in all facets of an audit. However, until the 2020 revisions to both US and global auditing standards were issued, there were no clear definitions of or guidance on how PS can be demonstrated and documented. How to exercise PS was left to the individual auditor to decide. Ironically, the same regulatory bodies often criticized and, occasionally, took punitive action against auditors, citing a lack of PS. To close this expectation gap, both the International Ethics Standards Board for Accountants (IESBA) and the American Institute of Certified Public Accountants (AICPA) issued proposals to define, demonstrate, and appropriately apply PS. This paper provides an overview of both proposals, analyzes comment letters submitted by constituents at the exposure draft stage of the due process, and describes how and to what extent constituent input impacted the final standards issued in 2020. The results suggest that constituents generally supported both proposals. While the AICPA and IESBA incorporated some of the constituent input in their final standards, several major stakeholder recommendations were ignored. Stakeholder feedback overwhelmingly suggests that added guidance for the proper application of PS is needed, along with education and training programs.

JEL: M42

KEYWORDS: IESBA, AICPA, Professional Skepticism, Audit Engagements, Audit Standards

INTRODUCTION

For more than five decades, exercising due professional care has been one of the foundations of performing financial statement audits and issuing audit reports. Both US and international auditing standards state that to exercise due professional care an auditor must use professional judgement (PJ) and professional skepticism (PS). However, prior to the issuance of the latest revisions of US auditing standards (AICPA, 2020) and the international ethics code (IESBA, 2021), available guidance merely stated that auditors should exercise professional skepticism during the audit. Thus, both the US and global auditing codes lacked clear and consistent practical application guidance of both PJ and PS (Omer, Sharp, and Wang, 2018). In addition, according to the Public Company Accounting Oversight Board (PCAOB), applying PS appropriately is ultimately the responsibility of each individual auditor (Gissel, 2018). Thus, public and private US regulators and global regulatory bodies generally left the 'how to' exercise PJ and PS up to the auditors. However, the same regulatory bodies routinely criticized auditors for their lack of PS at seemingly every turn, without providing specific guidance concerning regulatory expectations and without providing examples of how auditors can demonstrate that they exercised PJ and PS. To compound

the problem, alleged failure to properly exercise PS has led to numerous litigation actions against auditors, including enforcement actions by the Securities and Exchange Commission (SEC) and the PCAOB (Brazel, 2019).

To eliminate this gap between existing guidance for exercising PJ and PS during an audit and the expectations of the regulatory bodies, both the AICPA (2019, June) and the IESBA (2018) issued exposure drafts to revise the existing codes. Both documents received many comment letters. While there was widespread stakeholder support for both proposals, some recommended changes in the proposed standards while others opposed them. After considering the comments, both the AICPA (2020) and IESBA (2021) issued their final standards. In the remainder of this paper, the main focus of the study is PS because it is a critical component of PJ in every facet of each audit engagement, and lack of PS has been the basis of many legal and negative peer review actions.

This paper first examines the comment letters submitted in response to the exposure drafts issued by the AICPA and IESBA. Both proposals posed questions about how individual auditors, auditing firms, financial statement users, and other stakeholders viewed the importance and the appropriate application of PS. The paper provides insight into the due process of standard setting by analyzing how the comment letters impacted the final standards as compared to what was proposed concerning PS. While the analysis of the comment letters indicates that a majority of participants agree there should be a regulated set of standards for applying PS during an audit, several respondents recommended specific revisions, additions, and deletions to the exposure drafts. Thus, it is warranted to identify any changes made to the proposals prior to the issuance of the final standards. Finally, the paper addresses the perceived need for improvement in and standardization of professional guidelines for PS and proposes a path forward for training and education programs that aim to enhance the exercise of PS by public and private accountants.

LITERATURE REVIEW

The AICPA's Auditing Standards Board (ASB) issues Statements of Auditing Standards (SAS) that are used by auditors to conduct all audits except the audits of public companies. Public companies are audited using the standards set forth by the PCAOB. Currently, AICPA auditing standards (hereafter referred to as the Code) sections AU-C 200 (pars. .A22-.A31) and 230 (pars. .07-.13) state that PS requires the auditor to question evidence, be alert to documentation and transactions that may lead to misstatements or be used to commit fraud, and always critically assess audit evidence (AICPA, 2011). In addition, the ASB (AICPA, 2019, May) issued SAS 134 (Code sections 700-706) to revise the auditor's report effective December 15, 2021. One of the major changes is a new requirement that the audit report state that PJ was exercised and PS was maintained throughout the audit.

According to the PCAOB (2021, section 1015), PS reflects a questioning mindset that critically assesses audit evidence. While both sets of standards have several paragraphs of discussion, neither supplies a scale of PS to be used in various audit areas and there are no specific examples of actions that can be taken when auditing different financial statement accounts. In addition, there is scant discussion of how exercising PS enhances the auditors' ability to meet their obligations under the fundamental principles of auditing and ethics requirements.

The IESBA issues ethics standards that govern the conduct of global accountants who are in public or private practice. IESBA (2021) defines PS as the attitude of professional auditors who are always questioning evidence obtained, critically assessing audit evidence, and making decisions based on their expertise. This document clearly states that skepticism does not mean disbelieving, but looking for proof before being able to trust a statement.

Thus, current versions of the standards issued by regulators in the US and world-wide include definitions of PS that are vague and include references to an attitude of a questioning mindset, critically assessing evidence, and being alert to inconsistencies that may indicate the existence of misstatements and fraud. While the AICPA goes into slightly more detail discussing conditions that may indicate fraud, the IESBA focuses on the idea that to exercise PS, audit expertise should be used to ensure that all doubts and questions are resolved when critically assessing audit evidence (Yazid and Suryanto, 2017). Given the difficulties surrounding the proper application of PS, numerous research studies have examined various aspects of PS, as we review below.

Literature on Professional Skepticism

Extant academic research has employed surveys, simulations, cognitive constructs, and descriptive approaches to examine various aspects of PS. Boyle and Carpenter (2015) define PS as an attitude that includes a questioning mind and a critical assessment of audit evidence. While not novel, the main contribution of the study is the description of various methods, actions, and evidence analysis steps that auditors can undertake and document when exercising PS. The authors conclude that auditors must recognize that material misstatement can in fact exist, regardless of their prior experiences with and assessment of management's integrity.

In a survey study, Gissel (2018) aimed to gain insights on participants' perceptions of PS and the value of training practices they undertook. Survey participants spanned the spectrum of practicing auditors, including firm partners, audit managers of all ranks, and staff auditors. Gissel (2018) aimed to learn whether audit professionals viewed PS as a well-defined concept or as a subject that is left up to interpretation. After much analysis, she concluded that the majority (70%) of participants perceived PS to be a subjective concept and open to individual or regulatory interpretation.

In a simulation study, Eutsler, Norris, and Trompeter (2018) investigated how social relationships and interactions between auditors and management impact the auditor's exercise of PS. The authors found that auditors are more or less likely to recommend intensive follow-up when undertaking audit procedures depending on their level of social interactions, with a low level of social interactions leading to more intensive follow-up and a high-level of social interactions leading to less intensive follow-up. While anecdotal evidence existed that such social interactions could be a threat, Eutsler et al. (2018) was the first academic study to demonstrate that social relationships between client management and the auditor can be a threat to PS.

Dimitrova and Sorova (2016) examined the critical elements of attributes, mindset, and actions that underlie PS. The auditor must have the knowledge and skills to conduct the audit, gather persuasive evidence because a skeptic does not assume honesty or the lack thereof on the part of management, and objectively evaluate the evidential matter for competency and sufficiency to arrive at an audit opinion. Thus, an auditor should have a questioning mind that looks at evidence without judgment (avoiding biases that may be present), have interpersonal understanding and self-confidence to interpret and evaluate the evidence, and self-determination to judge the adequacy of the evidence to issue an opinion. Hence, the appropriate level of PS to be exercised depends on the risk of the area under audit, resulting in a PS continuum.

Glover and Prawitt (2014) published a skepticism continuum map with PS being defined as an attitude that includes a questioning mind. The continuum ranges from complete trust which would call for less audit evidence and documentation to neutral, presumptive doubt, and complete doubt which would necessitate the most extensive audit evidence and documentation. In another study, Nolder and Kadous (2018) aimed to analyze PS using a dual conceptualization approach. This approach uses cognitive processing employing different mindsets and personal attitudes to determine their impact on the subject's perception of PS. The authors conclude that using this approach would help improve standard setting and audit quality.

Brazel (2019) summarizes various regulatory and legal actions against auditors world-wide to demonstrate that the failure of auditors to exercise an appropriate level of PS is a major global issue. However, he also explains that the more PS is exercised, progressively higher levels of audit evidence are required to justify opinions. Therefore, without a scale provided by regulators depicting what degree of PS is acceptable in different audit areas, some auditors overcompensate using unwarranted efforts and time. Ironically, this is the same conclusion Nelson (2009) reached more than a decade ago when he noted that application of PS is evident when auditors reflect increased risk assessments in their judgments, given the information that is available. The author concluded that auditors who exhibit high levels of PS in all areas of the audit need more hard evidence in order to accept an assertion, which then can lead to auditors unnecessarily exceeding budgeted hours.

In an opinion piece published for an online accounting newsletter, Lord (2018) states that the future of auditing will mainly depend on how auditors exercise PS and whether they can convince regulators and users of financial statements that their opinions are based on persuasive evidence. The author points out that PS is one of the main pillars of the auditing profession that must continuously evolve and be maintained to support the audit of the future. She concludes by suggesting example steps auditors can take, such as use of probing questions, critical assessment of evidence, and increased attention to inconsistencies.

The review of both professional and academic literature indicates that while US and world regulators criticize auditors for not exercising appropriate PS, auditing standards lack a clear, consistent definition (Nelson, 2009; Hurtt, Brown-Liburd, Earley, and Krishnamoorthy, 2013), leaving application of PS open to interpretation (Brazel, 2019; Glover and Prawitt, 2014). If individual auditors view PS as open to interpretation and subjective, auditors may believe they are appropriately applying PS based on their individual circumstances. However, as Gissel (2018) suggests, if regulators have interpretations that differ from those used by individual auditors when exercising PS, the consequences of regulatory evaluation of audit quality will be negative and occasionally punitive. Below we review literature that has explored the education and training of accountants on PS.

Literature on PS Education and Training

Findings from extant research suggests that many accounting firms have some type of PS training. For example, in Gissel (2018), thirty-two firms were surveyed, ranging from Big-4 to small regional accounting firms, on their perception of and training for PS. Twenty-five of the thirty-two firms had training for PS. However, most of the training consisted of mentoring from senior professionals and was done on an annual basis, with very few firms conducting ongoing training. In addition, individual auditors surveyed universally stated that they believe PS is subjective and they would like to have scalar guidance when applying PS in different risk and account areas.

Hayes (2016) performed a study showing the impact of increasing instructional content of PS on students. Using a sample of senior-level undergraduate auditing students across three different sections, Hayes had participants first self-assess their own level of skepticism and then complete a management fraud risk assessment for a hypothetical scenario. However, one of these sections had additional PS instruction prior to participating in the study. These students were shown concrete examples that demonstrated the importance of PS and the consequences of not having PS. The results showed that the section with added PS instruction had significant improvement in skepticism and in the accuracy of the assessed level of management fraud risk.

Glover and Prawitt (2014) promote the idea of training accountants' framing where different perspectives are visible using various window frames. By understanding, for example, how journal entries look like from different perspectives, accountants can better question their own and others' conclusions and effectively approach management explanations with a questioning mind. A follow-up study by Nolder and

Kadous (2018) examined different components of PS and found that PS is mainly comprised of an individual's mindset and attitude. The authors suggest that mindset consists of an individual's cognitive processes, procedures, and judgment criteria used to complete a specific task while attitudes are evaluative responses that include beliefs and feelings that drive an individual's intentions and actions. The authors point out that future research that measures mindset by cognitive processing variables and attitude by evaluative responses associated with a target situation is needed to develop a more complete view of PS and a better understanding of how PS is exercised.

Indeed, professional skepticism is a concept that is inherently determined by the mental processes of an auditor. To better understand how to improve the exercise of PS, Olsen and Gold (2018) proposed the use of cognitive neuroscience research given that cognitive neuroscience has furthered the understanding in other areas that require a mental focus, such as psychology, economics, and consumer research.

Another study explored ways of teaching auditing students and professionals to change the manner in which they process information and the steps of their thought processes (Hurt et al., 2013). According to the authors, law students are less prone than accounting students to be biased toward an advocacy position because law schools emphasize the understanding of both positive and negative precedents, and law students are trained in advocating their position as well as explaining why contrary positions are incorrect. This approach is also used in the instruction of forensic accounting courses. Brazel (2019) proposed that auditors should be educated and trained like forensic accountants and lawyers, where viewing the situation from both sides results in more skeptical and less biased judgements. Hurt et al. (2013) also proposed a potential link between moral reasoning and behavior and skeptical judgment. In particular, auditors with high moral development are more sensitive to information about the client's competence and integrity while obtaining evidence. Furthermore, the environmental and social conditions in which auditors interact with clients can negatively affect the level of PS they exercise (Eutsler, Norris, and Trompeter, 2018).

Finally, Lee, Welker, and Wang (2013) examined the possible inclusion of interview process interpretations in the PS training of accountants. They observed how auditors perceive deception while interviewing other individuals, which can be comparable to performing inquiries of an audit client. The study found that auditors who had more training in risk assessment and in identifying the behavioral traits of deception exercised more appropriate presumptive doubt in an interview/inquiry situation.

Both the AICPA (2019, June) and the IESBA (2018) addressed the perceived need to enhance the exercise of PS in audits and issued exposure drafts for proposed standards that achieve this goal. In the remainder of this paper, we analyze comment letters filed in response to both proposals, providing insight into the extent to which stakeholders agreed, partly agreed conditional on certain changes (i.e., recommended revisions, deletions, and/or additions to the proposals), or disagreed with the proposals. Next, we analyze the impact of feedback from comment letters on the final standards issued, and we discuss a proposed path forward including the implications of the final standards issued for the application of PS in practice and the need for further guidance and training. We close with concluding comments.

DATA AND METHODOLOGY

International Ethics Standards Board for Accountants (IESBA) Data

In May 2018, the IESBA released the consultation paper *Professional Skepticism – Meeting Public Expectations*, which sought input on the IESBA's consideration of the long-term PS issues. The consultation paper explored three distinct topics concerning PS: 1) behavioral characteristics underlying PS; 2) whether such characteristics should be followed by all accountants in public and private practice; and 3) whether the Board should take further actions, within or beyond the Code, to deal with the behaviors that enable professional accountants to execute suitable levels of PS. The IESBA gave individuals and

organizations the ability to supply feedback on the consultation paper from May 2018 through August 15, 2018 (IESBA, 2018). Sixty-two comment letters were filed in response to the questions posed in the consultation paper. Of the ten questions posed, we analyzed the nine listed in Table 1 (one question, question 9, asked for open-ended answers that could not be quantified).

The IESBA received a total of 62 comment letters. A review of the 62 comment letters revealed that 9 comment letters did not respond in the format requested by the IESBA and could not be used in our analysis; hence, our analysis is based on 53 usable comment letters. Of the 53 comment letters in our sample, 32 were professional accounting societies or organizations, consisting of 4 that were based in the US and 28 that were based in other countries. In addition, 10 accounting firms responded, including all Big-4 accounting firms and others, with 3 firms being based in the US and 7 in other countries. Other respondents included 6 governmental organizations, 3 of which are based in the US, and 5 academic/other individuals, 2 of whom are based in the US. Besides the US, 19 other countries are represented in the sample, including Canada, Argentina, England, Belgium, Germany, Denmark, Ethiopia, Nigeria, Ghana, Zimbabwe, Uganda, South Africa, Iran, Pakistan, Australia, New Zealand, Japan, Malaysia, and Singapore.

Table 1: IESBA Questions Analyzed

Question 1: Do you agree with the premise that a key factor affecting public trust in the profession is whether information with which a professional accountant is associated can be relied upon for its intended use?
Question 2: Do you agree with the behavior associated with public expectations of professional accountants? Are there aspects that should be included or excluded from the summary?
Question 3: Do you agree that the mindset and behavior described in paragraph 10 should be expected of all professional accountants?
Question 4: Do you believe the fundamental principles in the Code and related application material are sufficient to support the behaviors associated with the exercise of appropriate "professional skepticism?"
Question 5: Do you believe professional skepticism, as defined in International Standards on Auditing, would be the appropriate term to use?
Question 6: (a) Do you believe that the Code should retain/use the term "professional skepticism" but develop a new definition? (b) If so, do you support a new definition along the lines set out in paragraph 19? (c) If you do not support a definition along the lines described, could you please provide an alternative definition?
Question 7: (a) Would you support an alternative term to 'professional skepticism,' such as 'critical thinking,' 'critical analysis' or 'diligent mindset?' (b) If not, what other term(s), if any, would you suggest which focusses on the mindset and behaviors to be exercised by all professional accountants?
Question 8: Should the IESBA develop additional material, whether in the Code or otherwise, to highlight the importance of exercising the behavior and relevant professional skills as described?
Question 10: Should the Code include the application or other material to increase awareness of biases, pressure and other impediments to approaching professional activities with an impartial and diligent mindset and exercising appropriate professional skepticism in the circumstances?

This table reflects a verbatim reproduction of the questions asked to stakeholders for feedback in the IESBA consultation paper 'Professional Skepticism – Meeting Public Expectations' (IESBA, 2018). Question 9 is omitted because it asked for open-ended answers that could not be quantified for purposes of our analysis.

American Institute of Certified Public Accountants (AICPA) Data

In June 2019, the AICPA's Auditing Standards Board (ASB) released an exposure draft – *Audit Evidence*, which asked for feedback on a proposed SAS, which, if issued, would supersede *SAS No. 122: Clarification and Recodification* (AICPA, 2011). This proposal was the result of the ASB's response to the evolving nature of business and audit services and the perceived need to revise AU-C section 500 (Audit Evidence) (AICPA, 2011). One of the key issues addressed for revision was the application of PS by auditors. The AICPA described PS as being attentive to assertions and documents that are contradicted by other evidential matter obtained or information indicating that the reliability of the audit evidence obtained cannot be

trusted. The exposure draft aimed to resolve issues related to how auditors can more clearly demonstrate PS, how auditors can better describe the basis for their professional judgments, and how auditors' mindset affects the nature, timing, and extent of procedures performed as well as the critical evaluation of audit evidence. Underlying the proposal was a concern about the large number of audit quality inspection findings that assert lack of PS on the part of auditors. Finally, the ASB intended to clearly articulate PS in the auditing standards. Individuals and organizations were asked to submit feedback on the exposure draft by September 2019 (AICPA, 2019, June).

The AICPA received a total of 41 comment letters. Of the 41 comment letters submitted, 38 were usable for purposes of this study. Three comment letters did not respond in the format requested by the ASB and were therefore excluded from our sample. Respondents in our sample consist of 15 accounting firms (including all Big-4 firms and others), 9 professional accounting organizations, 5 governmental organizations, and 9 academic/other individual. While the exposure draft posed 15 questions about audit evidence, our analysis focuses on questions 7 and 8, which are specifically related to PS and listed in Table 2.

Table 2: AICPA Questions Analyzed

Question 7: Do you agree with the approach taken by the ASB in addressing the topic of professional skepticism?
Question 8: If the guidance in the proposed SAS is implemented, would the application of professional skepticism be enhanced and more clearly understood in evaluating whether sufficient appropriate audit evidence has been obtained?

This table reflects a verbatim reproduction of the two questions related to professional skepticism asked to stakeholders for feedback in the AICPA exposure draft 'Audit Evidence' (AICPA, 2019, June).

The feedback to the IESBA's consultation paper and the AICPA's exposure draft is described and summarized in the next section. We categorized stakeholder responses to posed questions at three levels based on the degree of agreement with the posed question: 1) those agreeing with the question (Agree), 2) those partially agreeing with the question conditional on certain revisions (Partially Agree), and 3) those not agreeing with the question (Disagree).

Impact of Stakeholder Comments on Final Standards Issued

We compare and contrast each proposal to the final standards issued by the IESBA (2021) and the AICPA (2020) and use the analysis of the degree of stakeholder agreement with the proposals to provide insight into the responsiveness of the standard-setting process to stakeholder input. Specifically, we use the recommendations for proposal revisions from the comment letters to see whether standard setters amended their proposals and included stakeholder suggestions in the final standards they issued. The aim is to understand the efficacy of constituent comments in shaping the standards that govern PS and describe the state of general acceptance of audit standards. General acceptance facilitates the conduct of high quality audits which form the foundation of financial market efficiency by giving financial market participants the confidence they need to trust the information based on which they make investment decisions.

RESULTS

The nature of stakeholder comments received by the IESBA and AICPA in response to each of the questions posed in the respective proposals are discussed below. We describe the actions taken by the IESBA and AICPA in response to stakeholder suggestions and recommendations by comparing the final standards (IESBA, 2021; AICPA, 2020) to the original proposals (IESBA, 2018; AICPA, 2019, June).

IESBA Responsiveness to Stakeholder Feedback

Table 3 tabulates stakeholder responses to the posed IESBA questions by level of agreement (agreed fully versus partially agreed versus disagreed) and stakeholder type (professional accounting organization, accounting firm, governmental organization, or academic/other individual). Respondents who did not respond to a particular question are reflected in the ‘N/A’ column in the table. Note that of the 53 respondents, only one respondent (a professional accounting organization) consistently answered all nine questions in the same response category, which was ‘Agree.’ All other IESBA respondents gave varied answers across the nine questions. As can be gleaned from Table 3, except for questions 5, 6, and 7, a majority of the 53 respondents fully agreed with the posed questions and this result holds true for each stakeholder type. On the other hand, respondents more frequently disagreed with questions 5, 6, and 7. Below, we discuss results for each question.

Table 3: Extent of Stakeholder Agreement with IESBA Consultation Paper

Question	Agree					Partially Agree					Disagree					N/A				
	P	F	G	A	All	P	F	G	A	All	P	F	G	A	All	P	F	G	A	All
Question 1	27	9	4	4	44 (83%)	2	0	0	0	2 (4%)	3	1	2	1	7 (13%)	0	0	0	0	0 (0%)
Question 2	21	9	4	2	36 (68%)	1	0	0	0	1 (2%)	7	1	2	3	13 (25%)	3	0	0	0	3 (6%)
Question 3	28	9	5	1	43 (81%)	2	1	1	2	6 (11%)	1	0	0	2	3 (6%)	1	0	0	0	1 (2%)
Question 4	14	9	4	2	29 (55%)	4	0	1	1	6 (11%)	14	1	1	2	18 (34%)	0	0	0	0	0 (0%)
Question 5	6	2	2	2	12 (23%)	2	0	2	1	5 (9%)	24	8	2	2	36 (68%)	0	0	0	0	0 (0%)
Question 6	18	4	1	3	26 (49%)	1	0	1	0	2 (4%)	11	6	4	2	23 (43%)	2	0	0	0	2 (4%)
Question 7	10	4	2	2	18 (34%)	0	0	0	0	0 (0%)	20	6	4	3	33 (62%)	2	0	0	0	2 (4%)
Question 8	26	8	6	5	45 (85%)	0	0	0	0	0 (0%)	3	2	0	0	5 (9%)	3	0	0	0	3 (6%)
Question 10	25	9	6	5	44 (83%)	0	0	0	0	0 (0%)	4	1	0	1	6 (11%)	3	0	0	0	3 (6%)

This table tabulates a breakdown of the 53 comment letters in our sample that agree, partially agree, or disagree with each of the nine questions analyzed from the consultation paper ‘Professional Skepticism – Meeting Public Expectations’ (IESBA, 2018). Counts are reported in total and by category of respondent of either Professional Accounting Organization (denoted P; n=32), Accounting Firm (denoted F; n=10), Governmental Organization (denoted G; n=6), or Academic/Other Individual (denoted A; n=5). The category ‘Partially Agree’ reflects instances where the respondent agreed with the question but conditional on certain revisions. N/A reflects respondents who did not respond to a particular question. See Table 1 for details of the nine questions analyzed from the exposure draft (question 9 from the exposure draft was excluded from the analysis because it asked for open-ended answers that could not be quantified).

Among those responding to question 1, 83% agreed that public trust in the profession is affected by the degree of reliability of the financial information with which accountants are associated. While this question does not directly address PS, a certain degree of PS on the part of accountants is necessary for the information with which they are associated to be reliable. Four percent of respondents only partially agreed and 13% of respondents disagreed with question 1. The two professional accounting organizations that partially agreed recommended a separate statement for business accountants. The IESBA positively addressed this issue in a later question. The respondents that disagreed had objections concerning the term “associated with” when referencing the information professional accountants audit. Since the term is not defined in the Code, its interpretation is unclear. These respondents believe that since the information provided by accounting professionals widely varies, how much association a professional should have with

that information for it to be able to be relied upon by an investor is impossible to determine. The IESBA responded positively to this objection and this term does not appear in the final standard issued.

For question 2, 68% of the respondents agreed that the public expects accountants to behave in the manner described in the proposal. Having an inquiring mind, exercising professional judgment, and using the help of informed third parties ensures that accountants follow the principles of integrity, objectivity, competence and due care, confidentiality, and professional behavior required during the conduct of an audit. In addition, having an inquiring mind requires that accountants act with PS, which includes a critical assessment of evidence. Finally, exercising PJ and PS ensures that accountants are aware of threats to their compliance with the principles to which they must adhere and the behaviors they have to display. Those threats include self-interest, advocacy, familiarity, and intimidation. One professional accounting organization only partially agreed and suggested addition of the redundancy threat whereby the auditor may collect excessive evidence that does not enhance the quality of the audit. The IESBA did not agree. The 13 respondents who disagreed with the question objected to the undue reliance on PS and the inclusion of detailed discussions of biases and threats in the fundamental principles of the standard. Despite such objections, the IESBA's final standard includes these discussions in the fundamental principles (section 110) and the conceptual framework (section 120) (IESBA, 2021).

For question 3, responding individuals and organizations were 81% in agreement that the mindset and behaviors described in the proposal should be expected of all accounting professionals. The six respondents who only partially agreed recommended that the IESBA include specific examples in the discussions concerning PS, PJ, and various biases that only apply to business accountants. One of the arguments made by the three respondents who disagreed was that the term mindset is not appropriate and discussion concerning fundamental principles such as competence, integrity, and objectivity should be sufficient. In addition, those three respondents stated that the IESBA should present a new approach to describe the behavior expected of all professional accountants. Despite these stakeholder suggestions, the IESBA final standard does not contain specific examples concerning PS, PJ, and various biases that only apply to business accountants and contains the discussions and terms opposed by the respondents.

For question 4, only 55% of the respondents agreed that the fundamental principles described in the Code along with the available application material related to PS sufficiently support the appropriate exercise of PS in practice. The IESBA wanted to ensure the Code contains adequate material and discussion of the fundamental principles concerning PS and clearly articulates the specific behavior set that should be exercised by accountants. In addition, the IESBA wanted to be certain that accountants understand and adhere to the Code. For the six respondents who only partially agreed and recommended revisions to the proposal, the main area of concern was that the principles are seen through a narrow audit lens whereas a wider lens that addresses both public and private accountants would be more appropriate. The 18 constituents who disagreed were primarily professional accounting organizations that cited the lack of explicit examples of exercising PS in different audit areas, the anxiety of being subjected to legal action, and a lack of different scales and levels of PS to be exercised when auditing various financial statement items. Nonetheless, the final IESBA standard provides neither specific audit examples nor scales and levels of PS to be exercised when auditing specific financial statement accounts. However, IESBA Code section 120.16 A2 specifically discusses how PS and the fundamental principles of auditing are interrelated and how behaving with integrity, objectivity, and professional competence and due care contributes to the exercise of PS (IESBA, 2021). At the same time, the exercise of PS enhances the ability of the accountant to adhere to these fundamental principles.

Question 5 garnered the most disagreement of all the questions. Only 23% of the respondents agreed with question 5 that professional skepticism as defined in the International Standards on Auditing is the appropriate term to use, and another 9% only partially agreed conditional on recommended revisions. The recommended revisions center on the complaint that the proposal is audit-centric and propose discussions

that would address the behavior of private accountants or the organizational environment of the audit firms and their clients. The 68% of the respondents who disagreed maintained that: 1) it is impossible to cure the audit-centricity of the proposal; 2) additional definitions and discussions of PS are required for non-attestation engagements; and 3) using the proposed definition of PS across other engagement areas of practice would risk confusion for users and professionals alike. In response to those recommending revisions, the IESBA added section 200.5 A3 to the final standard which addresses accountants in business and includes detailed discussions of how they can promote and implement an ethics-based culture in business (IESBA, 2021). To address the concerns of those who disagreed, the IESBA included a requirement that professional business accountants present information that does not mislead or influence a desired behavior, exercise professional judgment to present all facts accurately, refrain from omitting information to support a predetermined point of view, avoid undue influence of individuals or technology, and be aware of risks of personal bias (Code Section R220.4, IESBA, 2021). It is noteworthy that the glossary of the Code does not include a definition of PS. Thus, the standards communicate behaviors and characteristics underlying PS to professional accountants solely through the discussions in the main Code sections.

For a related question, question 6, stakeholders were only 49% in agreement that the Code should retain/use the term PS but develop a new definition. The two who only partially agreed conditional on recommended changes were concerned that the new definition may not apply to non-attest engagements. The 43% who disagreed universally stated that a new definition should have more clarity and be expanded. In the final standard, the IESBA does not include a definition of PS and instead relies on extensive discussions that illustrate how PS enhances adherence to fundamental principles of auditing and support the exercise of PJ and due care during the conduct of an audit. Finally, additional discussions illustrate how PS supports the conduct of business accountants under the Code (sections 200 and 220, IESBA, 2021).

In question 7, the IESBA asked stakeholders if they would support an alternative term to PS, such as, critical thinking, critical analysis, or diligent mindset. Of the 53 respondents, 34% agreed that they would support an alternative term, while 62% disagreed and would like the term PS to remain. The respondents who agreed with changing the term PS stated that a new term would allow applicability across all different circumstances and not just to audit and assurance engagements. They also made it clear that an alternative term would strengthen the definition of PS and better describe what is expected of all accounting professionals. However, most respondents felt that the fundamental principles described in the Code are sufficient to support behaviors associated with exercising appropriate PS.

Question 8 asked stakeholders whether the IESBA should develop added guidance to emphasize the importance of applying PS. This question received the most agreement among respondents, with 85% agreeing that additional materials should be developed. It is evident that the respondents do not feel that the PS discussion included in the Code clearly describes what behaviors constitute appropriate professional skepticism. Most respondents asked the IESBA to provide case studies that give examples of exercising appropriate PS, materials that are readily implementable, and short videos that would help in understanding the exercise of PS. Additionally, respondents requested some hypothetical examples which illustrate how cases can be handled in regards to exercising PS in such areas as loan loss allowance determination, impaired inventory and intangibles, and fair values of financial instruments. While the final standard does not include specific examples, the IESBA meeting agendas indicate that developing additional materials concerning PS is under consideration.

The last question asked whether the Code should include application or other material to increase awareness of biases, pressures, and other impediments to approaching professional activities with an impartial and diligent mindset and exercising appropriate PS in the circumstances. Among those who responded, 83% agreed that the Code should include discussions that address personal and organizational biases. The 11% who disagreed stated that the psychological concepts should not be included in an accounting Code and one

of those respondents felt that the term PS should not apply outside the context of providing assurance services. The IESBA agreed with the majority and included extensive discussions of four threats to compliance with fundamental principles (Code Section 120.6 A3) and eight threats and biases that may exist when exercising PJ and PS (Code Section 120. 12 A2) (IESBA, 2021).

The process that started with the IESBA's consultation paper concerning PS culminated in major revisions to the Code that improve accountants' understanding of PS and how to appropriately apply it. The Code requires that accountants exercise PS by approaching a task with a diligent and impartial mindset and applying this mindset along with professional expertise to properly evaluate information and perform duties. Further, the Code requires that all professional accountants apply these concepts in discharging their responsibilities. While the IESBA considered changing the term PS, the revised Code retains the term and describes how the fundamental principles are associated with the exercise of appropriate PS. Constituent reaction to questions 5, 6, and 7 clearly indicates that while the term PS is well regarded, the definition of PS does not have general appeal. One of the main objections is that the definition, underlying characteristics, and application of PS as described in the Code is assurance-centric. The IESBA responded to these concerns by including behaviors and characteristics in the Code that would apply in all circumstances across accounting practice. Overall, a large majority of stakeholders feel that there is an overwhelming need to provide additional material to illustrate how to appropriately exercise PS and PJ in various settings and how to train professionals about biases that impede the proper exercise of PS.

AICPA Responsiveness to Stakeholder Feedback

In the US, the professional ethics codes for accountants practicing in public and private sectors are issued by different organizations. While the AICPA audit code may inform the behavior of business accountants, it does not apply to them. First, the AICPA institutionalized the use and application of PS in financial statement audits by revising the auditor's report (Code sections 700-706, AICPA, 2019, May). Under these revisions that will become effective for years ended December 15, 2021, the audit report must state that the auditor exercised PJ and maintained PS throughout the audit. Next, the AICPA issued a proposal to revise how audit evidence is obtained and assessed to ensure sufficient and appropriate evidence exists to render an audit opinion (AICPA, 2019, June). Contained in the exposure draft were extensive revisions to existing Code sections 500-585, including those concerning the use of due professional care and exercise of PJ and PS during audits. The discussion below describes how those submitting constituent input responded to the two exposure draft questions concerning proposed revisions to PS.

The proposal interweaved the concepts surrounding PS throughout the exposure draft released for comment. This was accomplished by including additional guidance about the auditor's evaluation of whether sufficient appropriate audit evidence has been obtained and demonstrating the application of PS when obtaining and evaluating sufficient appropriate audit evidence. In addition, there was discussion of four biases that may impede the exercise of PS.

Question 7 asked whether the stakeholders agreed with the approach taken by the ASB in addressing the topic of PS. As reported in Table 4 below, of the 38 respondents, 76% agreed with the approach taken by the ASB, 5% partially agreed, 5% disagreed, and 13% did not respond to this question. Question 8 follows up question 7 by asking stakeholders whether implementation of the proposal would improve the application of PS and help accountants better understand how to exercise PS when evaluating whether sufficient appropriate evidence has been gathered. Only 55% of respondents agreed that implementation of the proposed SAS would provide an enhanced application and clearer understanding of PS. Another 18% partially agreed, while 8% disagreed, and 18% did not respond to this question.

Table 4: Extent of Stakeholder Agreement with AICPA Exposure Draft

Question	Agree				Partially Agree				Disagree				N/A							
	P	F	G	A	All	P	F	G	A	All	P	F	G	A	All					
Question 7	6	11	5	7	29 (76%)	0	1	0	1	2 (5%)	1	0	0	1	2 (5%)	2	3	0	0	5 (13%)
Question 8	6	7	4	4	21 (55%)	0	4	1	2	7 (18%)	1	0	0	2	3 (8%)	2	4	0	1	7 (18%)

This table tabulates a breakdown of the 38 comment letters in our sample that agree, partially agree, or disagree agree with each of the two questions analyzed from the AICPA exposure draft ‘Audit Evidence’ (AICPA, 2019, June). Counts are presented in total and by category of respondent of either Professional Accounting Organization (denoted P; n=9), Accounting Firm (denoted F; n=15), Governmental Organization (denoted G; n=5), or Academic/Other Individual (denoted A; n=9). The category “Partially Agree” reflects instances where the respondent agreed with the question but conditional on certain revisions. N/A reflects respondents who did not respond to a particular question. See Table 2 for details of the two questions analyzed from the exposure draft.

Overall, constituent input was positive with most respondents agreeing with the two questions in each of the four respondent categories. In addition, 21 respondents spanning all respondent categories fully agreed with both questions and another 8 respondents fully agreed with at least one of the two questions. This sentiment suggests that the AICPA and ASB did an excellent job in explaining and incorporating PS in the proposed revisions to code section 500 (AICPA, 2019, June). In general, stakeholder comment letters reveal the following:

The proposed statement clearly explains the importance of exercising PS in each of the concepts and principles included in the statement;

There are excellent examples of activities that demonstrate the application of PS in obtaining and assessing audit evidence;

The discussion and examples include how technological advances need to be used when exercising PS;

The proposal makes it clear that the persuasiveness of the evidence, not the quantity, must be emphasized which clearly demonstrates why exercising PS is important;

The proposal clearly describes ways to obtain audit evidence while applying PJ and PS; and

The discussion of management’s biases is important for the exercise of PS.

However, two respondents (one accounting firm and one academic/other individual) only partially agreed to question 7 while seven other respondents spanning most respondent categories (with the exception of the professional accounting organization category) only partially agreed to question 8. Across the two questions, only one respondent, an accounting firm, partially agreed with both questions. Respondents partially agreeing suggested the following recommended revisions to the proposed changes:

The discussions concerning PJ and PS (Code sections 200.A22-.A26 and .A27-.A32) should be reiterated in the final standard for audit evidence (Code sections 500-585) as it is important to showcase this discussion;

The discussion related to auditors’ four biases should either be deleted or removed from section 500 and relocated to section 200. If included, to increase the auditor’s understanding of the four biases listed (availability, anchoring, confirmation, and overconfidence), familiar examples should be included in addition to the definitions provided;

The final standard should include more guidance, examples, and explicit mention of scales or benchmarks on which the auditor's evaluations and exercise of PS must be based;

The evaluation of whether sufficient appropriate evidence is obtained should document the evaluation of the risk of material misstatement, the nature of audit procedures performed in response to this risk, and an analysis whether the evidence obtained corroborates or contradicts management's assertion; and

There should be a requirement that auditors document the extent to which evidence collection was driven by available evidence rather than the most persuasive evidence.

On the other hand, two respondents (one academic/other individual and one professional accounting organization) completely disagreed with both questions and another academic/other individual who had partially agreed with question 7, completely disagreed with question 8. These respondents cited that the discussion of biases and mindsets should not be included in auditing standards (question 7) and that the material in the proposal would require the Code to be completely rewritten so the proposal should be delayed until the AICPA decides to do a complete rewrite (question 8).

In response to recommendations for modifications to the exposure draft and opposing comments, the AICPA made certain revisions to the proposed standard before issuing the final standard (AICPA, 2020). First, the AICPA retained the definition and discussion concerning the four biases but moved it to code section 200 .A27. In addition, the AICPA added a fifth bias (automation bias). Furthermore, the AICPA added to code sections 330, 500, 520, and 540 requirements for documenting the evaluation of misstatement risk, audit procedures performed, and nature of the evidence. Lastly, unlike the IESBA, the AICPA glossary (section 200 .14) includes a definition of PS (questioning mind, alertness to conditions that may indicate misstatement or fraud, and critical assessment of evidence).

However, the AICPA declined to include specific examples of biased behavior and scales of exercising PS in different areas of audits. In addition, there is no detailed discussion of PJ and PS in section 500. Auditors must use the relevant material in section 200 for this purpose. Finally, despite the suggestions from stakeholders, the final standard does not require the auditor to document whether evidence collection was driven by the availability rather than the persuasiveness of evidence.

A PATH FORWARD

People respond to how they are evaluated and rewarded. The application and exercise of PS by professional accountants is ensured when the ethical values that align with the fundamental principles are supported throughout the accountant's organization. Thus, audit firms and private businesses must have an organizational environment and culture that enhance accountants' principles and minimize individual biases. The organization's leaders must promote the importance of, and hold themselves accountable to, a system of quality management they design and implement. These systems must encompass education and training programs, appropriate reward criteria, effective whistleblower policies, processes that are designed to prevent non-compliance with rules and regulations, and clearly stated ethical values. And importantly, these systems must facilitate the appropriate exercise of PS. Nonetheless, to consistently effectuate the proper application of PS in practice, professional standards and supporting materials must be unambiguous in defining PS and establishing how it is properly applied in various circumstances.

Reviewing the proposals, constituent feedback, and the final standards issued, the IESBA and AICPA both clearly emphasize the importance of exercising PS, and they have accomplished much headway in clarifying the concept of PS. Both governing bodies appear to have been responsive to a majority of constituent feedback. However, although the final standards have been issued, much remains to be done to help accountants execute a proper level of PS. In the case of the IESBA standards, we agree with

respondents that the term PS is generally more applicable in an assurance setting and view the changes the IESBA incorporated into the Code to address this concern in a positive light. Because PS results from a cognitive process, we also concur with both standard setters that cognitive biases and other threats to PS should be acknowledged in the standards. On the other hand, constituent calls for PS scales were seemingly ignored within the final standards of both governing bodies. Even though scales such as the Hurtt PS scale (Hurtt, 2010) have been developed, such a scale has not been incorporated into professional standards. In our opinion, the inclusion of agreed-upon PS scales in either the standards or supporting materials would be tremendously helpful in attaining a consistent execution of PS in practice. Additionally, specific examples of how the appropriate application of PS is demonstrated in different audit areas would help practicing auditors. Thus, both the IESBA and the AICPA have further opportunities to revise their respective codes and/or create materials that may include PS scales and real or hypothetical case studies. At the same time, all stakeholders play a role in facilitating the proper execution of PS. In the following paragraphs, we explore other aspects that may assist auditors in their quest to effectively execute PS.

Without a doubt, regulators, educators, and professionals must collaborate to develop applied guidance for PS in different practical scenarios. In public and private organizations, boards of directors and audit committees can influence auditors to exercise PS by supporting the auditors in their pursuit to gather appropriate and sufficient evidence that is persuasive to render an opinion. They may ask probing questions during meetings and not shy away from disagreeing with management. Directors and committee members should be educated in areas of PJ and PS, along with accounting, auditing, technology, and financial practices. All stakeholders must understand that while professionally skeptical actions can be documented, it is difficult to document skeptical thinking until it manifests itself in actions. Currently, one avenue open to accountants to demonstrate the use of PS is to document actions taken, the nature of the critical evidence that led to each action, and the final decisions made to expand, reduce, or leave unchanged the type of evidence needed during the course of the audit. Since professionally skeptical thought processes occur in the mind and are not directly observable, it is important to include in the documentation a description of how the auditor overcame certain biases when evaluating evidence and exercising professional judgment.

Gissel (2018) provided insights into the types of training desired by accountants, which included mentoring by experienced senior professionals, lectures and presentations, conferences or off-site continuing professional education, and self-study cases on the subject. The education and training of professional accountants flow from academia and standard setting. To ensure that the proper application of PS is thoroughly integrated into the fabric of audit practice, accounting curricula of both undergraduate and graduate programs must address this topic and there should be training in all workplace settings. Too often, the teaching of PS in accounting classes at the undergraduate and graduate levels is limited to defining PS (although there is not one clear and universally agreed-upon definition) and identifying the threats that can impede PS. Coverage of threats should be expanded to include how they impact an auditor's level of PS depending on the risk area and financial statement account being audited. In addition, academicians should work to implement curricula that reflect a framework for PS and focus on its application. Indeed, both Brown-Liburd (2017) and Gissel (2018) show that hands-on applied practice of PS across varied scenarios is needed in audit classrooms for budding audit professionals to build the skill of PS. In addition, as recommended by Hayes (2016), direct classroom instruction on PS in an applied audit setting such as risk assessment would better prepare students to be professionally skeptical.

The PS literature points to a host of factors that play a role in and may help with PS. For example, auditors should be trained on the impact that other factors besides cognitive biases may have on PS, such as moral characteristics and social factors. In addition, incorporating deception risk and detection concepts into PS training could increase the questioning mind of an auditor. In applying PS, it may also be helpful for auditors to be trained to routinely consider how management, regulators, and investors would view an accounting choice and how this choice would look like in the press. In fact, one approach that can aid auditors in being more skeptical and less subject to biases is to train them to analyze any situation from

multiple perspectives. A multi-perspective analysis can be particularly useful for the evaluation of evidence when consideration of both confirming and disconfirming evidence is important.

In summary, a multitude of possible factors interact in the application of PS, which brings to light the complexity of PS. Stakeholders are clearly voicing a need for additional and pointed training and support regarding the exercise and documentation of PS in practice that will hold up in the face of regulatory inspections or peer reviews. Stakeholders are also calling for the incorporation of a PS scale into the standards as a needed step in the path forward. Pointed and improved education and training practices and further research are needed to help constituents successfully apply PS in the performance of audit engagements. Herein lies an important opportunity for standard setters, audit and accounting organizations, academics, and businesses to work together to develop a globally recognized PS framework that supplies practical implementation examples, illustrations, and other relevant material demonstrating the appropriate level and exercise of PS across various risk settings and audit areas. Thankfully, the professional, academic, and organizational accounting environments have a long history of cooperation in such matters and are likely to meet this challenge.

CONCLUDING COMMENTS

This paper presents an overview of the proposals by the IESBA and AICPA to enhance the exercise of PS by accountants and describes how and to what extent the comment letters submitted by constituents at the exposure draft stage of the due process impacted the final standards issued. First, we analyzed the constituent input, tabulating the responses to the nine IESBA and two AICPA questions by level of agreement (agree, partly agree, or disagree) and by type of constituent (professional accounting organization, accounting firm, governmental organization, academic/other individual). Next, we compared the final documents issued by both standard setting bodies to the respectively proposed standards and we identified the impact of the constituent input on the final standards issued.

While the results suggest that constituents generally supported both proposals, there were a few who opposed the proposals and several respondents partly agreed conditional on recommended changes to be included in the final standards. Both the IESBA and the AICPA were responsive in incorporating some of the constituent input in their final standards. However, some major constituent suggestions were not incorporated into either set of final standards. Stakeholder feedback overwhelmingly suggests that 1) a PS scale is needed to facilitate the measurement of PS in practice, and 2) additional authoritative guidance for the proper application of PS is needed, along with education and training programs that can be provided in academic accounting curricula and professional organizations. These findings carry implications for regulators, auditors, and other constituents, all of whom play an important part in advancing the profession's skillfulness in applying PS.

Our study is subject to certain limitations. One limitation is the fact that the IESBA and AICPA due process in setting standards is not entirely observable from the outside. It is likely that both the IESBA and AICPA used sources besides constituent input from comment letters to revise the proposals and issue the final standards. In addition, the basis for why the standard setting bodies did not incorporate some constituent suggestions from comment letters is not known. One possibility is that standard-setters will address such feedback outside of the Code. Another possibility is that further research is needed before something can be considered for standard-setting purposes. For example, future research is needed to establish a universally appealing and practically applicable scale for PS that will enable auditors to document and demonstrate in a straightforward way that they applied an effective level of PS during audit engagements. This is important given that failure to properly apply PS is a major criticism auditors routinely receive from regulators. In addition to PS scales, it may be helpful for regulators to use as examples prior audit engagements for which auditors were cited to have lacked PS as a basis for development of training materials for how auditors could demonstrate appropriate PS in such circumstances. Ultimately, PS should

become a more standardized, concrete, and implementable concept that can be measured and documented with consistency in practice, and that can be taught in the classroom and in life-long continuing professional training.

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