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Audit seasonality and pricing of audit services: Theory and evidence from a meta-analysis

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ABSTRACT

Auditing is seasonal, with the majority of U.S. public companies having a December fiscal year-end. This results in an audit "busy season" and "off-season" with a non-trivial seasonal impact on the pricing of audit services. We apply an economic framework that explains how audit seasonality affects both the magnitude and the price elasticity of audit demand and audit supply. We find that the audit busy season is associated with an audit fee premium of approximately 10% based on a meta-analysis of 97 analyses from 18 audit fee studies of U.S public companies. A meta-regression of the contextual differences in research design between studies reveals that examining only Big N attenuates the busy season effect size but does not eliminate it, and that the busy season effect size may be larger post-SOX.

1. Introduction

Auditing is seasonal. This is because audit clients' choice of fiscal year-end is not uniformly distributed throughout the calendar year. In the U.S., the majority of public companies have a December fiscal year-end. This clustering of fiscal year-ends introduces audit seasonality to the auditing profession, resulting in an audit "busy season" and "off-season". This may affect the cost structure of audit firms, which in turn affects audit pricing, which is the subject of our study.

We use an economic framework that suggests that the differential pricing of audit services between the busy season and the off-season may be the result of two effects. First, the difference in demand for busy season and off-season audits gives rise to opportunities for audit service providers to engage in third-degree price discrimination, i.e. the ability to charge different prices to different groups of clients for similar services. Second, the capacity constraint experienced by audit firms during the busy season results in a relatively inelastic supply, raising the marginal cost of production and thus justifying higher audit fees. We conduct a meta-analysis of 97 analyses from 18 audit fee studies of U.S. public companies from 2005 to 2015, and find evidence in support of the framework that the audit busy season is associated with an audit fee premium of approximately 10%.

There are few archival studies in audit research that incorporate audit seasonality as a potential explanatory factor for audit fees. For example, Hay (2013, 174) notes that audit seasonality "… is frequently not included in audit fees studies, but [when it is] the evidence shows that it is significantly related to audit fees." However, even when archival studies recognize that audit seasonality may be an explanatory factor, this is often performed on an ad hoc basis with little or no theoretical justification (López & Peters, 2012). So while some studies recognize that audit seasonality has an impact, little space is devoted to why this is so.

The *price* of audit services transmits information between clients and auditors and allows for both the users and producers of audit services to be incentivized and guided by the information contained in those prices. Understanding how audit prices are determined is important because the audit price itself influences the organization, distribution and the production of audit services as well as the

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consumption of such services. In this respect, the distribution of fiscal year-ends as a recurring pattern within every calendar year that affects the consumption and production of audit services represents an important seasonality worthy of understanding, description, and potentially even quantification.

There are two prior meta-analysis studies that examine the commonly used independent variables in audit pricing research (Hay, 2013; Hay, Knechel, & Wong, 2006). While these two papers present wide-ranging meta-analysis of all audit fee studies, Hay (2013) acknowledges that they lack the depth of research that is required when the analysis is directed to individual issues. As such, our first overall contribution to the audit literature is the development of a theoretical framework for the causality between audit seasonality and audit pricing, thus providing the necessary research depth to this issue.

Our second contribution is to extend the time period coverage of the existing review literature concerning the busy season effect on audit pricing. In particular, we extend the meta-analysis research by including more recent studies (from 2005), which utilize underlying sample periods from 2000 to 2015. Furthermore, the two previous meta-analysis studies, as well as other reviews of audit archival research generally (DeFond & Zhang, 2014), have primarily been concerned with *compiling* and *summarizing* the findings of audit fee studies. Our third contribution is to *synthesize* these studies to *quantify* the average effect size of the busy season on audit fees across studies, and to examine if the contextual differences in research design between studies affect the results.

Our review of studies on U.S. public firms published after 2005 (covering a time period from 2000) shows that 75% of these studies show a statistically significant effect of busy season on audit fees. By combining the results from these studies we find that the audit fees charged by audit service providers during the busy season is approximately, and on average, 9.85% higher relative to the off-season. In addition, the busy season effect size is greater post-SOX. This result is in contrast to the findings of Hay et al. (2006, 177–178) and Hay (2013), in which only 25% of the individual studies reviewed identified a significant effect from the busy season. The authors conclude that the busy season effect disappeared after 1990. However, our result is consistent with surveys conducted by Sweeney and Summers (2002) and Persellin, Schmidt, and Wilkins (2015) that document a significantly increased workload for auditors during the busy season.

The remainder of this paper is organized as follows. In Section 2, we review why audit clients may choose a particular year-end date and how this leads to seasonality in the provision of audit services. In Section 3, we examine from a theoretical point of view the implications for demand and supply of audit services and how this affects the pricing of audit services. A description of the meta-analysis of recent empirical literature is provided in Section 4. Section 5 elaborates on our sample construction and presents the results of the meta-analysis. Section 6 provides some evidence on how heterogeneity in research design in these studies impacts the size of the busy season effect size, while Section 7 concludes.

2. Audit clients' choice of fiscal year-end

The fiscal year refers to the annual accounting period adopted by a business (Warren & Carl, 1993).[1] All businesses are required to have a fiscal year for tax purposes, and a fiscal year-end must be first specified when a firm is established. In the U.S., the majority of public companies have a December fiscal year-end.[2] A firm's choice of fiscal year-end may be influenced by factors such as business seasonality, regulation, and industry convention.

Some firms choose a fiscal year-end based on the natural cycle of their business (Huberman & Kandel, 1989; Smith & Pourciau, 1988). Specifically, firms that experience large seasonal variation in their sales activities may find it beneficial to choose the end of their busiest time as the fiscal year-end as this is the time when inventories are lowest (Huberman & Kandel, 1989). By avoiding the overlap of fiscal year-end and the peak of business activities, firms will be able to "coordinate conflicting demands for administrative resources" (Du & Zhang, 2013, 948).[3]

The choice of fiscal year-end is also governed by industry norms and convention. For instance, a December year-end appears to be the most popular choice in the software publishing industry (Sinha & Fried, 2008). Education services firms, on the other hand, commonly have a June year-end as it corresponds with the end of the school year (Sinha & Fried, 2008). Regulation also plays an important role in determining the fiscal year-end of firms in certain industries (Du & Zhang, 2013; Kamp, 2002).[4] Specifically, industries in which more than 90% of firms have December fiscal year-end are primarily from regulated or recently deregulated industries such as transportation, natural gas, banking and insurance industries (Du & Zhang, 2013; Smith & Pourciau, 1988).

[1] Firms usually have a 12-month reporting period. Nevertheless, this fiscal year convention introduces a comparability issue to some industries such as the retail industry. This is because the number of week and weekend days in any fiscal quarter vary from year to year and therefore it is problematic for retailers (which have most of their business activities on weekends) to complete within-year comparisons across quarters (Johnston, Leone, Ramnath, & Yang, 2012). Retailers are therefore recommended by the National Retail Federation to adopt a 52/53-week fiscal year because the number of days in a quarter is constant under this convention. The 52/53-week fiscal year convention is also common among manufacturing firms. This is because the fiscal year under this convention will always end on a given day of the week. For instance, manufacturing firms could choose to end on Friday under this convention in order to conduct inventory count over the weekend without disrupting their production (Sinha & Fried, 2008).

[2] This varies across countries. In South Pacific countries such as Australia and New Zealand, most public companies have a strong preference for a June fiscal year-end (López & Pitman, 2014). In Japan, most public companies have a March year-end (Kamp, 2002). Most continental European public companies, similar to U.S. companies, have a strong preference for December fiscal year-end (Kamp, 2002).

[3] Lehman Brothers changed its fiscal year-end from December to November in 1994 to shift "year-end administrative activities to a time period that conflicts less with the business needs of institutional customers" as documented in the *Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, filed on February 28, 1995*.

[4] In most continental European countries in the European Union, the law assumes a December fiscal year-end for firms which do not have an explicit preference for their balance sheet date (Kamp, 2002).