



Size effects and audit pricing: Evidence from Germany

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ABSTRACT

Previous research into audit pricing has focused on the US and Australasian markets. This study aims to elaborate on the role played by various size effects on audit pricing using data from the German market.

As previous research has shown, audit firms that provide additional non-audit services are able to charge higher fees for auditing. By contrast, our results show that only Big 4 auditors can earn an audit fee premium by providing non-audit services.

Our findings also show that the Big 4 premium shown by previous German research is strongly affected by the premium for overall market leadership. Furthermore, we find that the influence of risk variables such as leverage or past losses is significant only for small auditees, while for large auditees size is the determining factor.

Finally, this study proposes that using the logarithm of the number of employees is a better proxy for company size than is the more commonly used logarithm of total assets because it is more constant over time and does not bear the risk of interdependencies with other financial statement-based variables. Therefore, its further use in audit pricing research is strongly recommended.

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1. Introduction

Prior research has analyzed size effects on audit pricing in Germany and other countries (Bigus & Zimmermann, 2009, Köhler, Marten, Ratzinger, & Wagner 2010). We extend the literature by analyzing a Big 4 audit fee premium and a premium for providing non-audit services (NAS). We focus on the influences of auditor and auditee size as well as the interaction of a premium for overall market leadership with the Big 4 premium. We go beyond previous research by separately analyzing a premium for NAS for (non-)Big 4 auditors and prove that a NAS premium is not a general result but rather occurs for Big 4 auditors only.

Previous research has shown that auditee size, usually measured as the logarithm of total assets or the logarithm of total sales, is the main determinant of audit pricing. However, this result has generally not been controlled for robustness by using different size variables. In contrast to previous studies, we use a size proxy that is not based on financial statement data, namely the logarithm of the total number of employees. Furthermore, we use the logarithm of total assets and that of total sales to control for robustness.

We show that using the logarithm of the total number of employees as a size proxy is a better alternative to the company size proxies thus far used in audit research. The advantage of using this size proxy is avoiding possible interdependencies on other variables based on balance sheet or P&L data (i.e. problems of multicollinearity). In addition, owing to the worldwide use of political labor market instruments and legal protection against dismissal, this variable is expected to be less sensitive to economic developments such as economic downturns.

In the present study, we focus on size effects of audit pricing. We investigate the general Big 4 premium in Germany and examine whether an audit fee premium for auditors that provide NAS to their clients is a general phenomenon or whether it results from auditor characteristics (i.e. being a Big 4 auditor). For NAS in particular, the results are likely to differ for Germany compared with other international settings because the German legal framework is less concrete and allows

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auditors to provide a wider range of NAS. Therefore, NAS are generally supposed to play a more important role in audit pricing in Germany.

The focus of prior global audit pricing research has been on two areas: how the pricing of audit services is affected by auditor size and by providing additional NAS to clients. Previous studies have shown that being defined as a Big 4 auditor (or formerly Big 8 or Big 6) has a positive effect on chargeable audit fees, the so-called Big 4 premium (Francis, 1984; Francis & Simon, 1987; Gul, 1999; Palmrose, 1986a; Simunic, 1980), but the degree of this Big 4 premium has been shown to differ. Simunic (1980) showed an audit fee premium for the Big 8 auditor that has the highest fees on average. In more recent studies, Bigus and Zimmermann (2009) and Köhler et al. (2010) provided the first evidence of a Big 4 audit fee premium in Germany. Our analyses go beyond these studies because we provide a closer analysis of a Big 4 premium and its interaction with auditors that provide NAS to their clients. We also conduct a closer analysis on the influence of the premium for overall market leadership on the Big 4 premium.

Using a German data set, we confirm previous research findings on the existence of both a Big 4 premium and a premium for the provision of NAS by auditors. Furthermore, previous German research only analyzed the effects of the sum of NAS provided by an auditor on audit fees. By separately analyzing the fees for other attestation services, fees for tax consultancy and fees for other services, mandatorily published according to German commercial law, we prove that auditors earn a premium for providing NAS in any of these categories.

Although we show a Big 4 and a NAS premium for both our complete data set and for subsets of large and small¹ auditees, we find that audit pricing clearly differs between large and small auditees. We find that the audit pricing of small auditees is also affected by risk variables (i.e. leverage or past losses), whereas the audit pricing of large auditees is not significantly affected by these variables, but by their sizes only. Furthermore, we show that providing NAS results in a significant audit fee premium for Big 4 auditors only, not for non-Big 4 auditors providing NAS. By further investigating the Big 4 premium, we show that the market leader in our sample is able to obtain an audit fee premium not only compared with non-Big 4 auditors but also compared with the remaining Big 4 auditors. Thus, this finding indicates the existence of a market leader premium.

This paper is organized as follows. Section 2 presents the literature overview and develops the research questions. In Section 3 the research design of this study is presented, including an overview of the data available for the German market and the model specification. The data analysis and results are found in Section 4. A summary of this study and the conclusion is then presented in the final section.

2. Literature review and research questions

Prior studies have examined the influence of the characteristics of Big 4 auditors on audit pricing for several international markets. DeAngelo (1981) showed that large auditors earn higher audit fees because of their higher degrees of perceived quality. When analyzing the influence of the Big 8 characteristics on internal accounting controls and external audit control using US data, Simunic (1980) found a statistically significant premium for one audit firm whose fees were on average clearly higher than were those of the remaining Big 8 auditors. Francis (1984) confirmed a Big 8 audit fee premium using an Australian data set. In a second step, he used the median of total assets to divide the sample into large and small auditees in order to show the same statistically significant positive effect for both groups. These findings were supported by Gul (1999) who used Hong Kong data. By using the top and bottom quartiles of auditee total assets to define large and small companies, Gul (1999) determined that a Big 6 premium existed in both cases.

Further evidence of the existence of premiums for big audit firms has been provided by research with a different focus. In the case of the influence of auditor industry specialization on audit pricing, Ferguson and Stokes (2002) showed a Big 6, and later, a Big 5 premium for an Australian sample for only one year out of four when there was no industry specialized auditor. However, if auditors specialized in the particular industry, non-industry specialized Big 6/Big 5 auditors achieved a premium compared with other non-industry specialized auditors. Furthermore, in a study on the Australian audit market Ferguson, Francis, and Stokes (2006) provide evidence of the existence of a premium for auditors described as city-specific market leaders. In another field of research, Antle, Gordon, Narayanamoorthy, and Zhou (2006) found statistically significant evidence of a Big 6 discount using a UK data set from 1994 to 2000. When using a US data set of the fiscal year 2000 to test for robustness, they also reported negative but statistically insignificant coefficients.

Overall, previous international audit pricing research has confirmed the existence of a Big 4 audit fee premium, even when distinguishing between small and large auditees. Furthermore, these results seem to interact with other factors such as city-specific market leadership (Ferguson et al., 2006).

Past research has also explained the association between audit fees and the provision of NAS by auditors to their clients (Firth, 1997; Hay, Knechel, & Li 2006; Palmrose, 1986b; Simunic, 1984). For a US data set containing only Big 8 auditors, Palmrose (1986b) showed positive influences on audit fees if the incumbent auditor provides management advisory services in the following three categories: accounting services, non-accounting services and tax services. Palmrose (1986b) further found that the NAS premium differs for large (total assets > \$150 million) and small auditees. Although a significant positive association was found between accounting and non-accounting services and audit fees for large auditees, a positive

¹ Small audit clients are defined as the bottom half of the logarithm of the number of employees.

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