

**Negotiation Surplus as the Outcome of Bilateral
Negotiation between Auditors and Clients**

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Abstract

In this paper we propose augmenting the conventional audit pricing model of Simunic (1980) and its adaptations to include sharing in the Producers' Surplus. We call the share retained by the auditor the "negotiation surplus" and hypothesize that this surplus is the outcome of bilateral negotiation to decide on how much of the auditor's profits embedded in the rates should be shifted to the client. Specifically, we view each audit contract as a contract negotiated in dyad—bilateral negotiation between the client and the audit firm when each party is in possession of private information unknown to the counterparty. We use unpredicted audit fees as a proxy measure of the negotiation surplus and find that this surplus increases with increase in the client risk and increase in the technical demands on the auditor. We further find that the client could capture part of the Surplus by maintaining high profitability and low risk exposure.

Keywords: Audit fees, producers' surplus, bilateral/dyadic negotiation, repeated audit engagements.

1. Introduction

Determination of audit fees has been a subject of interest to academic researchers since Simunic (1980) posited that audit fees are determined by compensation for audit effort plus a risk premium. The extant literature elaborated and expanded this model to treat audit fees as an equilibrium outcome of supply of and demand for audit services. Departing from prior studies, this paper considers audit contracts as bilateral agreements subject to the ‘Hold Up’ problem of incomplete markets. The bilateral negotiation is treated as bargaining in dyads where each party is in possession of private information unknown to the counterparty.

We further consider the bilateral negotiation as dyadic in two respects:

- a. Both parties enter the negotiation with the intent of completing the task appropriately.
- b. Both parties share a common set of information but each party has private information which is unknown to the counterparty.

The common and private information play unique roles in the bilateral negotiation that ensues. The common set of information establishes common grounds about which the two parties would have little disagreement. In contrast, the private sets of information give each party to the contract some form of informational advantage the nature of which would be unknown to the counterparty. Inevitably, the beliefs and perceptions about the strength of the counterparty informational advantage generate enough uncertainty and imbalance in the bargaining power to establish a unique partitioning of the producers’ surplus between the auditor and the client.¹

¹ The producers’ surplus is the excess of the price of delivering a service or selling a product above the minimum amount the seller would be willing to receive.

It is this private information that creates uncertainty and ambiguity to allow each party to possess a different degree of bargaining power.² As Hackenbrack, et al. (2014) note, “Should the negotiated fee reflect the accumulation of the auditor’s private, client-specific knowledge, significant changes in the negotiated audit fee might be diagnostic of a fundamental change in the client which is not yet publicly known, but is economically meaningful to investors?”

We hypothesize that audit fees consist of three components

$$\text{Audit fees} = \text{cost of effort} + \text{risk compensation} \pm \text{negotiation surplus}.$$

The first two components, cost of efforts and risk compensation, reflect the level of audit fee to cover auditor’s work and expected risk exposure, while the third component, *negotiation surplus*, captures the amount of money an auditor is able to keep from the producers’ surplus or willing to sacrifice as an investment in the relationship.³ A large positive negotiation surplus indicates a stronger bargaining power for the auditor, a small or negative negotiation surplus indicates a stronger bargaining power for the client. The objective of this study is twofold: (a) develop a prototype of the market structure in which auditors operate given the known institutional constraints, and (b) identify the proxies that auditors and clients employ in determining how much of the producer surplus should be shared with the client.⁴ We refer to this sharing as the “negotiation surplus.”

² In general, the concept of bargaining power is ambiguous and implies a confusion of different factors “excess demand or supply, market concentration, information advantages, the capacity to be patient or less risk averse in bargaining, or superior negotiating skills.”² The only two factors in this list one could expect to be of relevance in auditing are the information advantage and negotiation skills. Neither one of them is observable but we use proxies to estimate information advantage as the driver of bargaining power.

Choi, Albert and George Triantis. February 24, 2012. Bargaining Power and Contract Design. P. 5.

³ Increase in the client risk could also increase the auditor’s bargaining power during the dyad negotiation with the auditee. Therefore, we incorporate several risk factors into the negotiation framework when empirically testing the potential factors affecting the negotiation surplus (see Section 3 for details). To the extent that these risk factors are priced in normal fee determination, our results would capture *both* negotiation power and risk compensation.

⁴ In the initial audit engagement, the negotiation surplus is expected to be negative because the auditor is willing to offer a substantial discount on fees to secure the audit contract. This negative negotiation surplus is what the extant literature calls *low-balling*. Since the low-balling effect is static and most prevailing in the first year (i.e., it does not interact with other

We begin by classifying the factors potentially affecting the relative negotiation power into four groups: (a) information power and relational influence, (b) the auditee profitability and financial conditions, (c) change in client risk, and (d) the auditee's managerial ability. Accordingly, the *negotiation surplus* can be expressed as a function of these factors:

$$\text{Negotiation Surplus} = f(\text{information power and relational influence, auditee financial position, change in client risk, auditee's managerial ability})$$

Empirically we use abnormal audit fees as a proxy for the negotiation surplus.

2. The Market for Audit Services

It is often convenient for authors to transport the new classical economic theory of monopolistic markets to the market for auditing services. But that transfer is meaningless because it does not take into consideration the unique characteristics of audit markets that render the new classical economic theory of monopoly incompatible with this market. The uniqueness of audit markets arises from both sides, the supply and demand.

For the most part, auditing is a requirement of regulatory agencies and also by some lenders and counterparties of contracts. Hence, there are thousands of clients in the market for audit service. Yet, there are no two audit clients alike. Every client has its own unique structure, operations, management, and information system and control mechanisms. As a result, the clients demanding audits cannot go to an open market and seek a Dutch-Auction like contracting. To the contrary, these clients seek audit services in a way to preserve their own comparative advantages as industrial and competitive secrets. As a result, the market for audits suffers from the unavailability of critically important client-related information, which is a typical feature of incomplete markets.

negotiation factors that are more likely to take effect in subsequent engagements), we choose to omit the first year of engagement in the empirical part of this study. Note that, however, the low-balling effect is consistent with the notion of imbalanced negotiation power favoring the auditee in the initial audit engagement.

First, the differential private information held by each party establishes the boundaries for the bargaining power of each. The imbalance in bargaining power arises by the extent to which the strength of the private information known to each side is asymmetric. It is that imbalance in bargaining power that creates friction requiring negotiation to resolve.

Second, as to the supply side, the number of qualified audit firms that could possibly provide service to a publicly listed client is constrained. The required technical knowhow and manpower limits the number of viable audit firms to a maximum of five.⁵ One of these firms is unavailable to perform the audit function due to their performing other serviced that would impair their independence. Other than the incumbent auditor the remaining two may or may not be constrained by the specific specialization in the client's industry.

Third, the demand for auditing is not a discretionary choice for any publicly listed company; it is mandated by the Securities Exchange Act of 1934. As a result, a publicly listed company is effectively a captive client to one of the big four firms available to provide the audit service.

Fourth, the cost of switching from one auditor to another is prohibitive and often understated in the literature. The cost of setting up the relationship for a new partnership is perhaps the item to which the literature refers to as "switching cost." In addition to that cost, the second element is the loss of investment that each party put into the relationship, which might be substantial. However, in view of the number of players in the supply side, the largest item in the switching cost is loss of reputation. Whether the auditor terminates the engagement with a client or the client dismisses the auditor, both parties will be viewed as unable to manage conflict and he client will be viewed as high risk. Both

⁵ The literature often refers to the big four (EY, Deloitte, KPMG & Pricewaterhouse) but grant Thornton has grown in capacity and the portfolio of technical skills to be a viable competitor.

factors will lead the new auditor to charge this client a much higher risk premium and increase audit fees in perpetuity (Griffin and Lont, 2005).

Given these features of the supply and demand, the transaction cost of entering into an audit contract is quite high, which leads to the auditor and the client to be ‘stuck’ in an economic relationship that both parties adjust and adapt to keep it stable. The factor that binds this relationship is the investment that each party makes in the other.

The Holdup Problem

More generally, the colloquial term “getting stuck” has a different economic meaning and that is the ‘holdup problem.’ If party A (the auditor) invests in party B (the client), then party B would be in control of the relationship and makes additional demands of party A in order to protect its investment. That is B would have a holdup or a lock on the services of A. Similarly, if B invests in party A, A would have a holdup on party B. The problem in audit contracts is that each party invests in the counterparty and the holdup problem is reciprocal but not to the same degree. The holdup problem would stand out for the party with the relatively larger investment. That is, the party with the larger investment would be in control of the relationship. The holdup relationship means that the exit for either party after the first audit engagement is basically blocked by the high transaction cost facing both sides.

In this case, once a client-specific relational contract starts, the market for the client is that one incumbent auditor. Similarly, the auditor views the client as a captured segment of the larger market. From this perspective, the audit fees are the marginal and average revenues for the auditor. That revenue function is highly elastic—i.e., flat. For any audit firm, this structure would describe each audit contracts in which auditors and the firm are counterparties. The sum of audit fees across all the engagements of a given auditing firm would give a series of highly elastic revenue functions at different levels of prices. The average of the series is average revenue or the demand curve facing the audit firm.

Determining Audit Fees—the General Case

But how do the parties to a bilateral contract come to agree on the fees?

To act in its own interest, the auditor sets the audit fees to equal the marginal cost of the ‘optimal’ audit, the audit program and package that offer the auditor the least exposure to client risk. The audit engagement produces one product, the audit opinion. But that product could take different paths depending on the auditor and client negotiation of performing the audit. The literature had documented the negotiation tactics between the auditor and the client—negotiation about application of the standards, the degree of seeking conservative accounting, the composition of the audit team and various issues related to performing the audit. We assume that each negotiated item leads to a different program and package of auditing scope and processes. Each package will have a different marginal cost starting with the least desirable to the most desirable. The primary criteria differentiating between various packages is the extent to which the auditor would be exposed to client risk. The optimal choice for the auditor is the package that offers the least exposure. Audit fees are set at the marginal cost of that package. Figure 1 displays the behavior of the marginal cost and the revenue function for auditing contracts without any special consideration. The auditor would want to perform audit at level P5 and charge audit fees of a-b. Given a known demand function, as marginal cost increases, the auditor abnormal profits accumulates as the ‘producer surplus.’

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[Insert Figure 1 about Here]

In accepting an engagement, the auditor and the client have the expectation that the relationship will be multipored. In the first contract, the client would have a stronger bargaining power because at that time the client has more degrees of freedom in selecting other auditors. In the meantime the auditor expects to establish a relationship to entice the client to renew the engagement. It is in the first audit engagement that the auditor makes an explicit investment in the client; the auditor gives up a portion of its producer surplus to the client while continuing to perform at the ‘optimal’ audit. This is what DeAngelo (1981) referred to as low balling. In our formulation, the share of the producer surplus given to the client is equivalent to the premium of a put option the auditor purchased from the client, the option to renew the engagement beyond the first year.

[Insert Figure 2 about here]

Additionally, the auditor makes other investments in the client that are less discernible. This is mainly the cost of manpower and effort spent in understanding the client's operations and system of documentation to set up the initial audit. In negotiating the initial agreement, the auditor is aware and prepared to incur the cost of learning about the client and the client is aware that once a commitment is made to one audit firm, switching to another audit firm entails a very high cost.

Future engagement do not follow the same path as the initial engagement because there is a client-specific relationship from which each party has gained knowledge about the counterparty's abilities and bargaining power. The contractual relationship will be purely bilateral, independent of the market of other clients or other auditors. In the second year of audit engagement, the auditor will bargain to recapture the discount given to the client in the first year. Recapturing the lost part of the surplus while performing the 'optimal' level of auditing would be more feasible when the auditor has higher bargaining power than the client.⁶ Figure 3 presents the supply and demand curves for the auditor-client specific micro market when recapturing prior fee discounts.

[Insert Figure 3 about here]

As in dyadic arrangements, there will be three types of information sets: one set consists of a common knowledge, a second set consists of private information known to the auditor only, and a third set consists of private information known to the client only. The bilateral contracting will be more like a cooperative game with bargaining power fueled by the differences in private information. The balance or imbalance in the bargaining power yield four states:

⁶ In a sense, the audit contract would have an embedded call option that the auditor sells to the client.

Auditor's negotiating power		Client's negotiating power	
		<i>High</i>	<i>Low</i>
	<i>High</i>	H, H	H, L
	<i>Low</i>	L, H	L, L

The different private information will create the imbalance that leads to asymmetric bargaining power (H, L) and (L, H). In these cases of imbalance in the bargaining power, each party will have different goals. The auditor will have three goals: (i) to recapture the discount given in the first year, (ii) to continue performing audit at the 'optimal level,' and (iii) make the additional client-specific-relationship investment to incentivize the client to renew the engagement next year. On the other hand, the client will have two goals: (a) to pay a low and fair audit fee, and (b) to ensure the auditor continuing relationship. To enter into a contract that would achieve these goals, the auditor and the client would have to negotiate in good faith.

Proxies for Bargaining Power

The elements of common knowledge are likely to be limited to (a) understanding that the demand for auditing is nondiscretionary, (b) the suppliers of audit services are limited, and (c) both parties know the bounds of disclosing information about the auditee.

The elements of private knowledge are

- i. *Client-Specific Knowledge*. Each auditee has its own unique organizational structure, personnel, operations and systems that expose it to different types of risk. As insiders, the management of the auditee has more detailed and specific knowledge of these internal processes and the entity's risk exposure than does the external auditor. Therefore, the

management of the client is likely to benefit by this information asymmetry in negotiating a more favorable contract. However, the value of this private knowledge to the management will diminish overtime as the same auditor repeats contracting with the same client.

- ii. *Technical knowledge.* Arguably, there is a significant difference between the auditor and the client in the knowledge about both accounting and auditing standards. In the USA, the Public Companies Accounting Oversight Board (PCAOB) was established by Sarbanes-Oxley Act (2001) and was given the responsibility of making auditing standards and rules for professional practice (Section 3),⁷ and rules for investigation and adjudication (Section 5).⁸ The creation of PCAOB gave auditing standards and regulation a quasi-force of law. While the client may know of the broad aspects of these standards and rules, in all likelihood the auditor would have more in depth knowledge of the technical nature of these rules and their implementation. Additionally, auditing of financial statements requires an updated detailed knowledge of accounting standards, the standards used for preparing financial statements that are being audited. Financial accounting and reporting standards are constantly changing. In 2015 alone, the Financial Accounting Standards Board issued more than ten standards updates. While the accounting and internal auditing staff of the client keep abreast of these development, their knowledge of the idiosyncrasies of various standards is not likely to match that of the auditor because the auditor experiences the application of these standards for multiple clients.

⁷ http://pcaobus.org/Rules/PCAOBRules/pages/section_3.aspx

⁸ http://pcaobus.org/Rules/PCAOBRules/Pages/Section_5.aspx

Hypotheses about Sources of Bargaining Power

A. Information Power

A.1 Information power gained through repeated interactions

With repeated audits for the same client, the auditor accumulates more knowledge about the operations and processes of the client's business allowing the auditor to more efficiently achieve the required level of assurance for less effort. All else held constant, the increased efficiency should lead to an increase in the auditor's (producer's) surplus. A longer audit tenure implies that the relational contract between the parties had reached a state of maturity and understanding such that the client would not aggressively seek to obtain a larger share of the producer's surplus. This conjecture, however, remains an empirical question for which we offer the following hypothesis.

Operational Hypothesis 1:

Auditor's tenure in repeated audit engagements enhances the information power and learning of the auditor and the amount of the producer surplus the auditor is willing to pass onto the client.

Variable Measurement: Auditor Tenure is measured by the number of years an audit firm provided the audit service to a given client.

A.2 Information power derived from auditors' expertise

Two factors could enhance auditors' expertise. These are (a) extensive knowledge of new standards or regulations, and (b) industry specialization.

(a) Issuing New Standards

Auditors are required to keep up with changes in accounting and auditing standards. They are able to do so more than the chief financial officers of the companies they audit because the interests of these executives are diffused and less focused on accounting and auditing developments. This

comparative advantage increases the auditors' bargaining power. In fact, this particular factor was specifically discussed in the Report of the Special Examination of Fannie Mae that was issued in May 2006 by the Office of Federal Housing Enterprise Oversight. The report noted that "the increase in audit fees from 9 percent of total fees in 1998 to 25 percent of total fees in 2003 reflects, at least in part, the sharp increase in the number and complexity of accounting policies and practices that the Enterprise had to adopt during that time-frame. (p. 300. Emphasis added).⁹

(b) Industry Expertise

Another source of information power of the auditor is the specialization in the industry of the auditee. Industry specialization is expected to increase the auditor's bargaining power in the dyadic negotiation with the client.

Based on these two factors, we offer the following two hypotheses:

Operational Hypothesis 2a:

The number of pronouncements of new accounting standards enhances the auditor's information power and is positively associated with the auditor's negotiation surplus.

Variable Measurement: Number of accounting standards updates and interpretations issued by the Financial Accounting Standards Board in a year.

Operational Hypothesis 2b:

Auditor industry specialization is a source of information power for the auditor that helps the auditor to retain a larger share of the producer surplus.

Variable Measurement: Auditor industry specialization, measured as an audit firm's market share in an industry (audit fees by audit firm i in industry j / sum of audit fees by all audit firms in industry j).

⁹ Office of Federal Housing Enterprise Oversight (OFHEO). May 2006. *Report of the Special Examination of Fannie Mae*.

Retrieved from http://www.concernedshareholders.com/CCS_OfheoReport.pdf

B. The Client's Financial Position and Investment in Non-Audit Services

During the bilateral negotiation of audit engagement, auditee's profitability plays an important role since it affects not only auditor's assessment of client risk but also the auditee's negotiating power in the contracting process. Firms with a stronger financial position (i.e., higher profitability) generally present a lower risk to their auditors and have a negotiation advantage in agreeing on the fees. This advantage goes beyond the risk consideration since auditors not only want to minimize their risk exposures but also have incentives to keep clients that have successful business operations. Profitable clients are thus more likely to obtain fee reduction in the dyadic negotiation. Furthermore, firms invest in non-audit services to improve their information systems or internal controls. Use of those services potentially leads to an increase of auditee's bargaining power because improvements over information systems or internal controls could help auditors effectively economize their audit efforts. These discussions lead to the following two hypotheses, stated in the alternative form:

Operational Hypothesis 3a:

Unexpected audit fees are negatively associated with the client's profitability.

Measurement of Variable: Rate of return on assets (ROA).

Operational Hypothesis 3b:

Unexpected audit fees are negatively associated with auditee's use of non-audit services.

Measurement of Variable: Non-audit fees as a percentage of total fees.

C. Auditor's Exposure to Client Riskiness

Auditors typically assess the riskiness of their clients in making two decisions: (a) accepting the engagement and (b) determining the level of effort necessary to attain a professionally acceptable and

legally defensible audit report. A significant increase in firm risk, including financial risk and/or information risk, would put the auditee in a relatively disadvantageous bargaining position. The increased riskiness likely reduces the auditee's flexibility in auditor selection and at the same time gives the auditor more discretion at evaluating the level of the added effort required to conduct the audit work. Thus, we expect the increase in client riskiness to give the auditor an upper hand in the negotiation and state the following hypothesis in the alternative form:

Operational Hypothesis 4:

Unexpected audit fees are positively associated with increase in client riskiness.

Measurement of Variables: we use four different measures of client riskiness

- a. Altman Z Score: Altman (1968) Z-score. $ALTMANZ = 1.2 \times \text{working capital}/\text{total assets} + 1.4 \times \text{retained earnings}/\text{total assets} + 3.3 \times \text{earnings before interest and taxes}/\text{total assets} + 0.6 \times \text{market value equity}/\text{book value of total debt} + 0.999 \times \text{sales}/\text{total assets}$.
- b. Earnings to Cash Flow Volatility: Earnings volatility divided by cash flow volatility, each measured as the standard deviation over past eight quarters.
- c. ICW, An Indicator of Internal Control Weakness taking the value of "1" if there was an internal control weakness identified during the year, and "0" otherwise.
- d. RES: an indicator variable equal to "1" if there was a financial restatement during the year, and "0" otherwise.

D. Managerial Ability of the Auditee

According to the upper echelons theory (Hambrick and Mason 1984), an organization's strategic choices and performance levels are affected by managerial characteristics. In addition to the effect of top management on firm performance and firm value documented by Carmeli and Tisher (2004) and Chemmanur and Paeglis (2005), Demerjian, Lev, Lewis, and McVay (2013) find that managerial ability is positively associated with various proxies for higher earnings quality such as

fewer subsequent restatements, higher earnings persistence, and higher quality accrual estimation. From the audit engagement perspective, auditors often consider characteristics of senior managers in client screening, acceptance, and audit planning decisions (Kizirian, Mayhew, and Sneathen 2005; Johnson, Kuhn, Apostolou, and Hassell 2013). In a recent study, Krishnan and Wang (2015) find that higher managerial ability is associated with lower audit fees, suggesting that managerial ability is associated with auditors' assessment of engagement risk.

Based on the above discussion, we expect an auditee with higher managerial ability to possess a stronger bargaining power relative to the auditor when negotiating the pricing of audit engagement. Our fifth hypothesis is thus stated in the alternative form as follows:

Operational Hypothesis 5:

Unexpected audit fees are negatively associated with client's managerial ability.

Measurement of Variable:

MAScore: Managerial ability score obtained from Demerjian, P., B. Lev, and S. McVay. 2012. Quantifying managerial ability: A new measure and validity tests. *Management Science* 58 (7): 1229–1248.

Data and First-Stage Audit Fee Model

Our initial data on audit fees come from Audit Analytics for eleven years from 2004 to 2014.¹⁰ Accounting variables are retrieved from Compustat Fundamentals Annual, and return data are from CRSP. As discussed in previous sections, we exclude audit fees of the first engagement year from our estimation to avoid the confound effect of low-balling on audit pricing. Merging the required data

¹⁰ Our sample period begins in 2004, rather than 2000 when Audit Analytics starts coverage of audit fee data, because of the inclusion of internal control weakness in our second-stage fee analysis. Data on internal control weakness are available in Audit Analytics starting in 2004. Unreported analysis shows that our first-stage variables all retain their statistical significance and directional effects on audit fees when earlier years (i.e., 2000 – 2003) are included in the estimation.

across these three data sources leaves us with 63,106 firm-year observations of reported audit fees and other variables used in the first-stage audit fee estimation. However, only 33,868 observations had all the data available and are used in estimating models and empirical analysis.

We use the following audit fee model adapted from Donohoe and Knechel (2014) to estimate the parameters used in predicting the expected level of audit fees:

$$LAF_{i,t} = \beta_0 + \beta_1 * LTA_{i,t} + \beta_2 * INVREC_{i,t} + \beta_3 * LSEG_{i,t} + \beta_4 * FRN_{i,t} + \beta_5 * ROI_{i,t} + \beta_6 * LOSS_{i,t} + \beta_7 * LEV_{i,t} + \beta_8 * YE_{i,t} + \beta_9 * OPINION_{i,t} + \beta_{10} * BIG4_{i,t} + \varepsilon \quad [1]$$

where *LAF* is the natural logarithm of audit fees, and *LTA* is the natural logarithm of total assets controlling for firm size. *INVREC* is the ratio of inventory and receivables to total assets; *LSEG* is the natural logarithm of the number of segments; *FRN* is an indicator variable equal to 1 if the firm has an income/loss from foreign operations and 0 otherwise. These three variables capture the complexity and inherent business risk of the auditee, and thus are expected to have a significant relationship with audit pricing (Donohoe and Knechel 2014). *ROI* is return on assets calculated as EBIT divided by total assets, and *LOSS* is an indicator variable equal to 1 if income before extraordinary items is negative in current year and 0 otherwise. Both measures capture client profitability. *LEV* is the leverage ratio measured as long-term debt divided by total assets. Client profitability and leverage are expected to be associated with audit pricing since they are related to the auditor's exposure to future losses (Hay et al. 2006). *YE* is the year-end indicator variable set to 1 if the fiscal year end month is not December and 0 otherwise, and this variable captures the effect of busy season on audit fees. *OPINION* is an indicator variable equal to 1 if the client receives a non-standard opinion and 0 otherwise, and we expect a

positive coefficient on this variable since this indicates potential problems in the audit engagement.

Lastly, *BIG4* is an indicator variable equal to “1” if the auditor is one of the big 4 audit firms.¹¹

A description of the variables used in this paper are in Exhibit A. Table 1 presents the descriptive statistics for the variables identified above for testing the five hypotheses plus four control variables and Table 2 presents the correlation coefficients matrix. .

[Insert Exhibit A about here]

[Insert Table 1 about here]

[Insert Table 2 about here]

Abnormal Audit Fee—Estimating the Negotiation Surplus.

In repeated audit engagements a mature relational contract would have been formed between the auditor and the management of the audited firm such that the domain and intensity of negotiable terms would have been reduced to matters related to audit fees. Depending on the bargaining power of each party, actual audit fees may be above or below expectations. As a result, our proxy for auditor’s negotiation surplus is the amount of unpredicted audit fees. Adopting this proxy requires careful consideration of how we formulate audit fee predictions. For this purpose we adopted two approaches:

A. *In Time-and-Space Prediction (Jackknife Method)*

¹¹ It is important to note that our fee prediction model is not exhaustive by construct, as our goal is to examine the effect of relational factors on audit pricing through bilateral negotiation between the auditor and the client. As a result, certain fee determinants documented in prior literature (e.g. Hay et al. 2006) are categorized as relational factors under the dyadic negotiation framework and therefore examined in the second stage (i.e., determinants of negotiation surplus) instead. To the same end, certain factors such as client profitability and riskiness are included in both first-stage and second-stage models because these attributes play a role in not only determining the normal level of audit fees but also rendering one party more bargaining power over the other during the negotiation process.

This approach provides predictions for each company's audit fees within the same year of the actual audit. We make the predictions for each firm individually using audit fee models estimated for *each industry separately* excluding the firm whose fees are being predicted. Specifically, the approach used is known as the Jackknife method. It is an iterative process which involves several steps:

- a. Hold out one observation at a time and estimate an audit fee model using all remaining observations.
- b. Use the estimated coefficients to predict audit fees for the one holdout observation.
- c. Repeat the process for all observations in the sample, one at a time.
- d. Estimate the negotiation surplus as the Jackknife prediction error of the difference between actual and predicted values.

The Jackknife Method: $JSURPLUS_T = LAF_t - JPred_t$

Where

LAF_t = Actual audit fees in year t.

$JPred_t$ = The Jackknife predicted audit fees for year t.

$JSURPLUS_T$ = Jackknife generated negotiation surplus,

B. Temporal Prediction (Predicting one period ahead)

This is the conventional approach for making forward prediction. We estimate audit fee models for *each industry* in a given year, year t, and use the estimated coefficients with the information in the following year to make the predictions for year t+1. In this case nothing stays the same and the only assumed stationary conditions are structural and operating conditions for each firm.

The advantage of this approach is predicting audit fees under the conditions expected to occur during the period for which the contract is renegotiated.

The Temporal Prediction Method: $TSURPLUS_{t+1} = LAF_{t+1} - TPred_{t \rightarrow t+1}$

Where

- LAF_t = Log Actual audit fees in year t.
 LAF_{t+1} = log Actual audit fees in year t + 1
 $TPred_{t \rightarrow t+1}$ = Predicted log audit fee for year t+1 using coefficients estimated in year t.
 $TSurplus_{t+1}$ = One-period ahead prediction for year t+1.

Figure 4 shows our estimated results of abnormal audit fees by calendar year using Jackknife (Panel A) and one-period-ahead (Panel B) methods. The unexpected audit fees, in both panels, are higher in 2004 and 2005; this is consistent with the anticipated increase in auditors' efforts imposed by Sarbanes-Oxley Act. Since normal determinants of audit fees do not capture such incremental efforts driven by this regulatory change, we expect the increased fee effect to be absorbed in the unexpected audit fees, as shown in Figure 4.

[Insert Figure 4 about here]

Results using Principal Components

As noted earlier, we state the operational hypotheses under the assumption that each variable impacts one side of the bargaining power: the client or the auditor. But the reality is that we could never make this assertion with confidence because of the interactive nature of all these factors. For example, we hypothesized that audit tenure enhances the negotiation power of the auditor and is thus positively correlated with the estimated negotiation surplus. However, the validity of that hypothesis is conditional on holding the impact of other variables constant. Assume, for example, that the auditee is highly profitable and has a very low risk profile, to what extent would these factors modify the

hypothesized statement about auditor tenure? Furthermore, from a different perspective, the auditor efficiency in performing an audit will increase by repeated engagement resulting in lower cost of delivery the service as tenure increases. Would it be in the interest of the auditor-client relationship to share the cost savings resulting from that efficiency? These and other factors render the independence of the operational hypotheses questionable.

For this reason we wanted to aggregate the impact of these variables on the auditor negotiation surplus in a way to orthogonalize their impact. We do this aggregation by clustering the 10 test variables into factors using principal component analysis with varimax rotation. We identified two independent principal components (PCA1 and PCA2) explaining 32% of the variation in the data set. As the results in Panel A of Table 3 show, the two principal components are distinctly different.

We examine the relationship between each principal component and abnormal audit fees after control variables are: firm size measured by the logarithmic transformation of sales (LSALES), market-to-book to represent the auditee's investment opportunities and prospects (MTB), an indicator variable for the pre-Sarbanes-Oxley Act (POSTSOX) and an indicator variable for the period of the financial crisis 2007- 2009 (FCA). This regression takes the following form using 33,868 observations, the same number used in model [1]:

$$\begin{aligned} \text{Negotiation Surplus} = & a + b_1 \text{PCA1} + b_3 \text{PCA2} + b_4 \text{LSALES} + b_5 \text{MTB} \\ & + b_6 \text{POSTSOX} + b_7 \text{FCR} + e \end{aligned} \quad [2]$$

In this model, "Negotiation Surplus" measured as $JSURPLUS_T$ for the unpredicted audit fees using the Jackknife method, or as $TSurplus_{t+1}$ for the one-period ahead prediction. PCA1 and PCA2 are the first and second principal components, LSALES is the logarithm of sales, MTB is market to book ratio,

POSTSOX an indicator variable for the period 2004-2006 and an indicator variable for the period 2007-2009 (FCR).

The results of this regression are in Table 3 for both measures of abnormal audit fees (the proxy for negotiation surplus). Panel B of Table 3 presents the results of the estimating regression [2]. Adjusted R^2 for these regressions are 4% for the measurement of abnormal audit fees using the Jackknife method and 6.8% for the measurement of abnormal audit fees using the one-year ahead prediction. Given that the dependent variable is essentially a measure of differences, we view the 4% to 6.8% measures of goodness of fit to be reasonable.

For both measures of abnormal audit fee, we are able to designate the first principal component as representing the client and the second as representing the auditor.

- a. *The Client Factor*: A negative and significant (at $p < 0.01$) coefficient on the first principal component, PCA1 is, which is consistent with the client having more bargaining power.
- b. *The Auditor Factor*: A positive and significant (at $p < 0.01$) coefficient on the second principal component, PCA2, which is consistent with the impact of a strong auditor bargaining power.
- c. The signs and significance of other control variables are consistent across the two measures of negotiation surplus except for the variable POSTSOX. The coefficient on this variable is highly significant for the one-period ahead negotiation surplus, $TSurplus_{t+1}$, but insignificant for the Jackknife measure of negotiation surplus.

We now turn the factor loading on each principal component reported in Panel A of Table 3 to examine the variables that loaded on each one of these two factors.

- First, the variables that load (correlate) heavily with the *Client Factor* are:

- a. ROA for client profitability (+);
- b. AltmanZ for client risk of ruin (+);
- c. LEVCFFV for the volatility of earnings divided by the volatility of cash flow (-);
- d. INDSPE for industry specialization (+).

- Second, the variables that load (correlate) heavily on the *Auditor Factor* are:

- i. LTenure for auditor tenure (-);
- ii. FASB for accounting standards and interpretations in a year (+);
- iii. ICW for internal control weakness (+);
- iv. RES for financial restatement (+).
- v. INDSPE for industry specialization (-);

[Insert Table 3 about here]

Testing Hypotheses using Linear Regression on Raw Variables

In the previous analysis, the two principal components explain a small proportion of the commonalities in the data set, only 32%. Thus, regressing abnormal audit fees on principal components does not capture the major impact of the hypothesized determinants. For this we turned to OLS regression of abnormal audit fees on the hypothesized determinants without clustering. The form of the linear relationship and expected signs are as follows:

$$\begin{aligned}
 \text{Neg. Surplus} &= \beta_0 + \beta_1 \text{LTENURE} + \beta_2 \text{FASB} + \beta_3 \text{INDSPE} + \beta_4 \text{ROA} + \beta_5 \text{NAF} \\
 \text{Expected sign:} &\quad ? \quad \quad \quad + \quad \quad \quad + \quad \quad \quad - \quad \quad \quad - \\
 &+ \beta_6 \text{ALTMANZ} + \beta_7 \text{IEVCFV} + \beta_8 \text{ICW} + \beta_9 \text{RES} + \beta_{10} \text{MASCORE} \\
 &\quad - \quad \quad \quad + \quad \quad \quad + \quad \quad \quad + \quad \quad \quad - \\
 &+ \beta_{11} \text{LSALE} + \beta_{12} \text{MTB} + \beta_{13} \text{POSTSOX} + \beta_{14} \text{FCR} + \varepsilon, \quad [3] \\
 &\quad ? \quad \quad \quad ? \quad \quad \quad ? \quad \quad \quad ?
 \end{aligned}$$

Where the dependent variable, Negotiation Surplus, is measured as $JSURPLUS_T$ for the unpredicted audit fees using the Jackknife method, or as $TSurplus_{t+1}$ for the one-period ahead prediction. All explanatory variables are defined along with the statements of the related hypotheses and are also reported in Exhibit A.

The results of estimating this model are reported in Table 4, Panel A for the Negotiation Surplus using the Jackknife method, and Panel B using the one-period ahead prediction. Given that the dependent variable consisting of difference numbers, we believe that obtaining values of adjusted R^2 between 8% and 11% to constitute good fit. It is more surprising, however, that the coefficients on all explanatory variables are statistically significant (at $p < 0.01$) and are in the expected directions. More specifically, auditor Negotiation Surplus (abnormal audit fees) increases with the increase in the number of accounting standards and interpretations (FASB), industry specialization, and client riskiness and decreases with client profitability, the size of non-audit fees, and management ability.

[Insert Table 4 about here]

Reconciliation of the Findings

At first glance it would appear that the aggregate analysis using Principal Components and the OLS regression results are inconsistent, but they are essentially the same for the following reasons. First, the variables loaded high on the *Auditor Factor* in the aggregate analysis (auditor tenure, number of FASB standards, internal control weakness, restatements, and industry specialization) have the same signs as the coefficients on the same variables in the OLS results. Second, the variables loaded on the *Client Factor* (profitability, likelihood of financial distress, and relative volatility of earnings and cash flow) have the opposite signs on the *Client Factor* as compared to the hypothesized relationships. However, the *Client Factor* is negatively related to the auditor Negotiation Surplus. Thus, from the vantage point of the Negotiation Surplus, the variables loading on the *Client Factor* have essentially the correct signs as hypothesized and are completely consistent with the results of OLS regression. The only variable that is difficult to classify is INDSPECIAL for industry specialization.

Conclusion

In this paper, we posit that the generic economic theory and modeling of monopoly does not describe the market for audits. Instead, auditing is subject to the holdup problem reflecting a very high transaction cost and contracting by bilateral negotiation. This characterization is consistent with the market for audits because each audit client is unique in that there are no two clients having the same operations, structure, risk exposure or any other element of the business environment for which auditors have to self-tailor audit programs. As such, we view the contracting between the auditor and the client as a bilateral contract negotiated in dyads. We also recognize that audit firms are profit-making entities and they embed their profits in the schedule of the rates they charge the client. Further, accepting the “irrelevance principle” in negotiation, pricing audits would be the only contractual term about which there would be negotiation in bilateral contracts. The abnormal component in charged profits is known as the producers’ surplus and the role of the presumed negotiation is to decide on sharing this surplus. In other markets, the producers’ surplus is a function of the degree of monopolistic structure of the industry, the marginal cost of production and the elasticity of demand for the product. In the case of auditing, once a client-auditor relationship begins, that relationship constitutes a micro market for both the auditor and the client. All other audit firms out there become irrelevant. In this micro market, the average and marginal revenue of the audit is the negotiated audit fee. The demand function is, therefore, highly inelastic and the producers’ surplus is completely a function of the auditor’s production technology and cost. Given the inelasticity of demand for auditing, bargaining is the only way a client could share in the producers’ surplus (i.e., reduce audit fees).

In the micro structure of audit markets, all the producer surplus belong to the auditor in which the client could share based on the negotiation of each agreement. Empirically it is not feasible to identify a clean measure of the amount of the producer surplus the auditor would share with the client. Page | 26

We posit that this amount is largely a function of the high transaction cost of switching auditors and the audit firm's expectation of renewing the engagement. As an empirical proxy the negotiated share of the producer surplus, we used abnormal audit fees measured by two different types of predictive relationships. These are (a) the difference between actual audit fees and the predicted audit fees and the prediction using the Jackknife method, and (b) the difference between actual and predicted audit fees using one year forward.

The results of regressing abnormal audit fees on client-related and auditor-related factors suggest that auditors give the client a share in their producer surplus when the client's performance is deteriorating and recapture this discount when the client becomes more profitable and exits financial difficulties. The amounts and magnitude of this sharing of surplus depends on the negotiation power of each party.

One main limitation of this study is that we are likely capturing a component of the auditor premium for client risk. This issue has to be explored further before this "rough" draft is completed.

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Exhibit A

Variable Definitions

Variables	Definition
$TSURPLUS_{t+1}$	Unexpected audit fees measured as the actual fees minus the predicted fees estimated using the one-year-ahead approach, where coefficients from industry-year audit fee regressions in year t are used to estimate predicted fees in year $t+1$. Both the actual fees and predicted fees are in natural logarithm.
$JSURPLUS_t$	Unexpected audit fees measured as the actual fees minus the predicted fees estimated using the Jackknife approach, where coefficients from industry-year audit fee regressions in year t , excluding firm i , are used to estimate predicted fees in year t for firm i . Both the actual fees and predicted fees are in natural logarithm.
$LTENURE$	Natural logarithm of the number of years the auditor has stayed with the client firm.
$FASB$	Change in all FASB-issued accounting standards (including FAS, EITF, interpretations, and staff positions), measured as the number of new accounting standards issued in a year.
$INDSPE$	Auditor industry specialization, measured as an audit firm's market share in an industry (audit fees by audit firm i in industry j / sum of audit fees by all audit firms in industry j).
ROA	Return on assets, measured as net income divided by total assets at year t .
NAF	Non-audit fees as a percentage of total fees.
$ALTMANZ$	Altman (1968) Z-score. $ALTMANZ = 1.2 \times \text{working capital} / \text{total assets} + 1.4 \times \text{retained earnings} / \text{total assets} + 3.3 \times \text{earnings before interest and taxes} / \text{total assets} + 0.6 \times \text{market value equity} / \text{book value of total debt} + 0.999 \times \text{sales} / \text{total assets}$.
$IEVCFV$	Earnings volatility divided by cash flow volatility, each measured as the standard deviation over past eight quarters.
ICW	An indicator variable that equals to 1 if there is an internal control weakness identified during the year, and 0 otherwise.
RES	An indicator variable that equals to 1 if there is a restatement announced during the year, and 0 otherwise.
$MAScore$	Managerial ability score from Demerjian et al. (2012).
$LSALES$	Natural logarithm of sales.
MTB	Market-to-book ratio, measured as market capitalization divided by the book value of common equity.
$POSTSOX$	An indicator variable equal to 1 for years 2004-2006, and 0 otherwise.

FCR

An indicator variable equal to 1 for years 2007-2009, and 0 otherwise.

Figure 1

**The Supply and Demand Curves for
An Auditor-Client Micro Market**

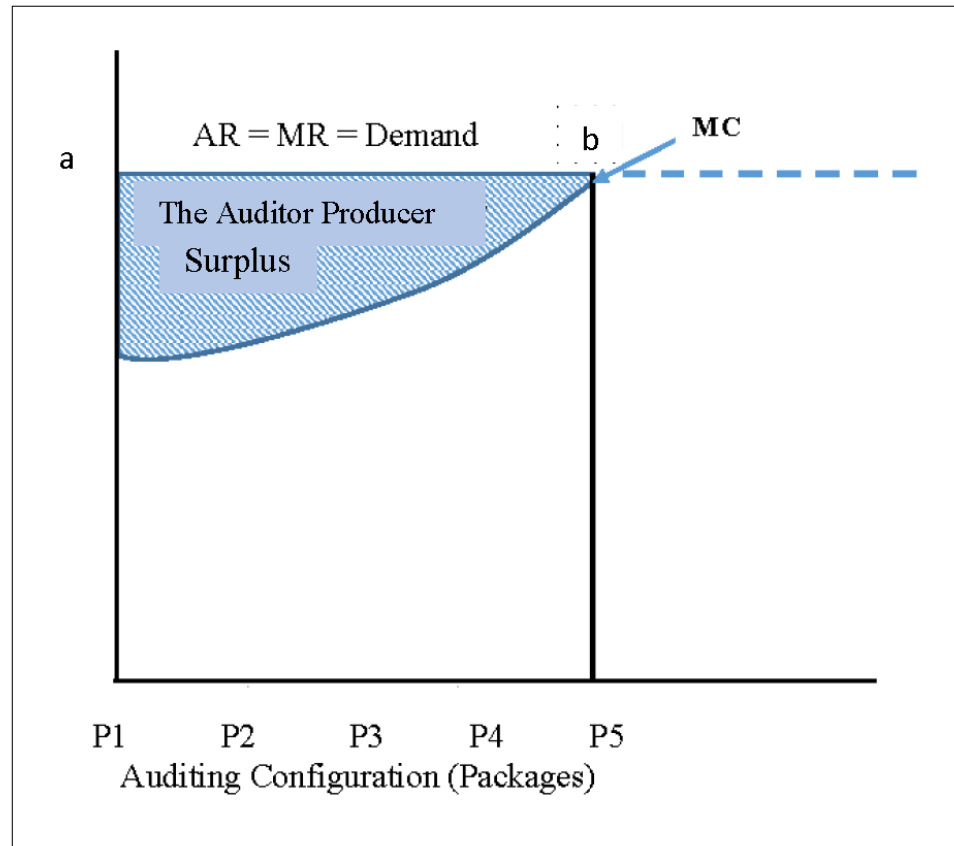


Figure 2

**An Interpretation of Low Balling as an Investment in the
Option to Renew the First Audit Engagement**

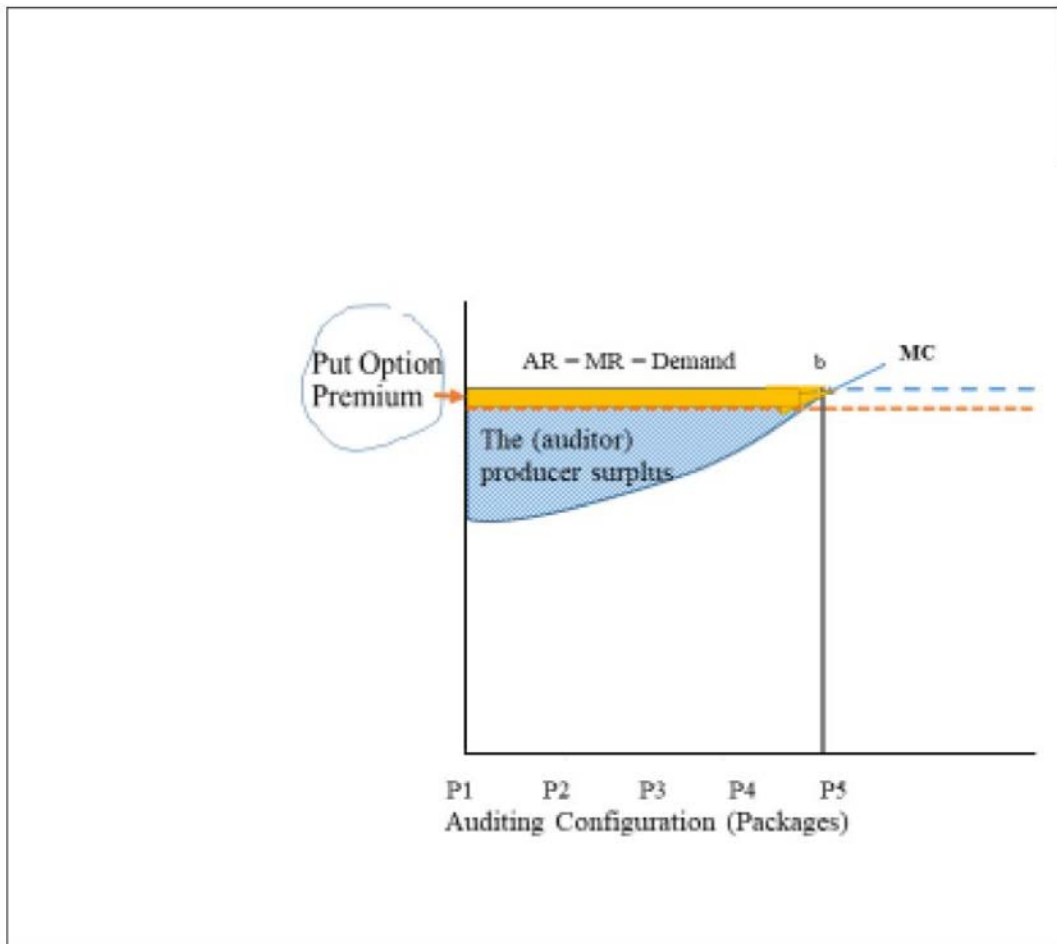


Figure 3

**When the Auditor Recaptures Prior Investment in a
Client-Auditor Micro Market.**

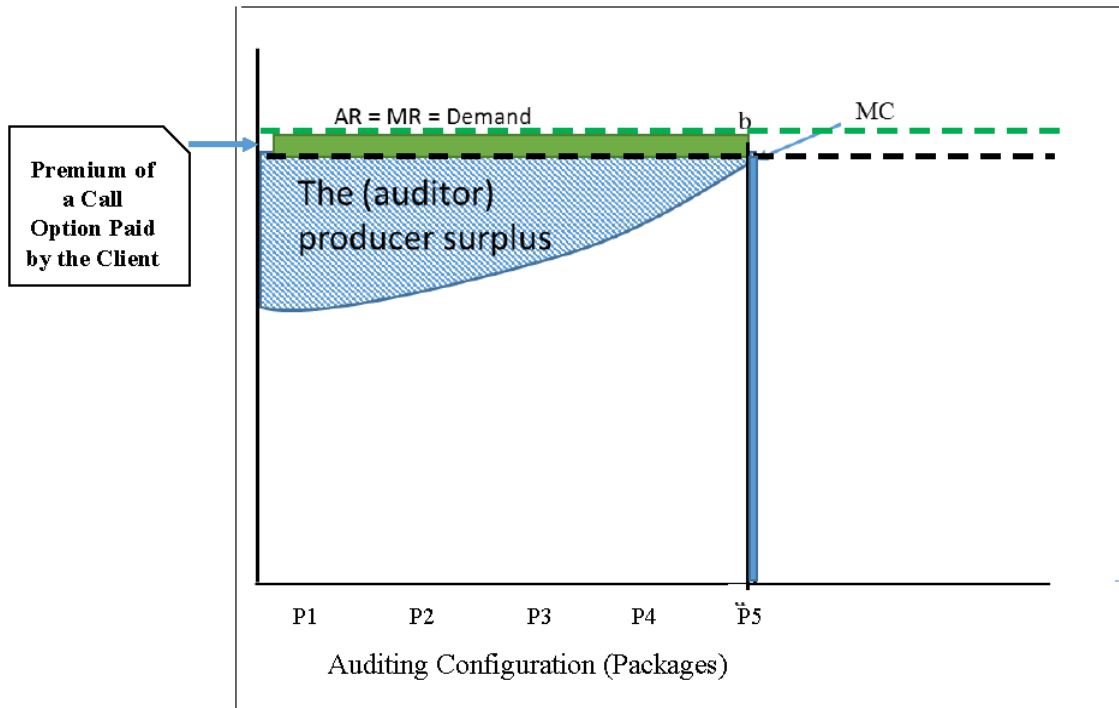


Figure 4 (A)

Panel A: Unexpected audit fees estimated from Jackknife method

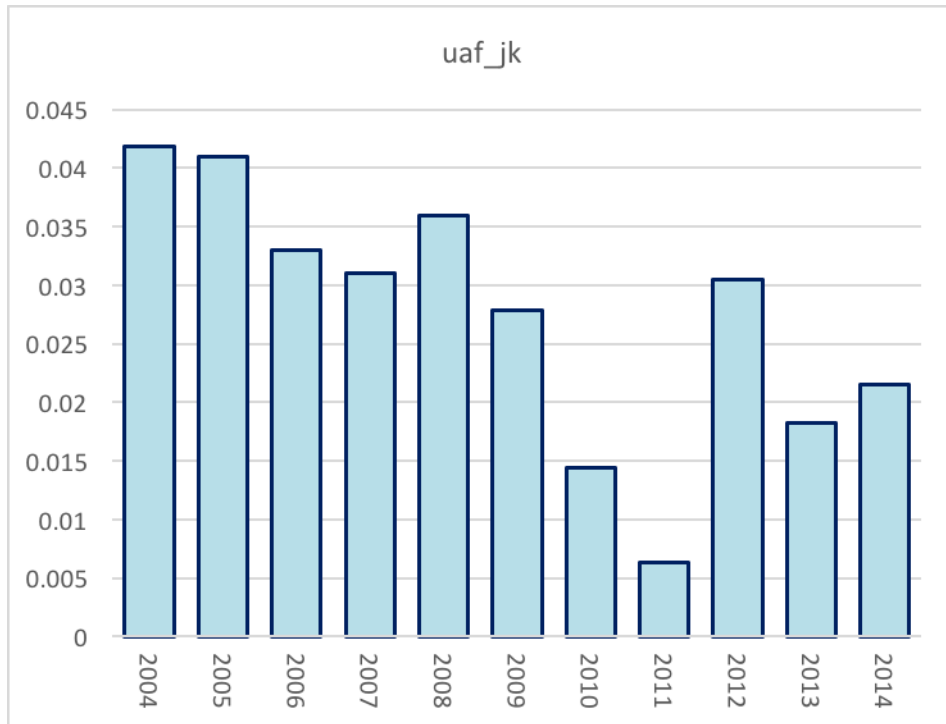


Figure 4 (B)

Panel B: Unexpected audit fees estimated from one-period-ahead method

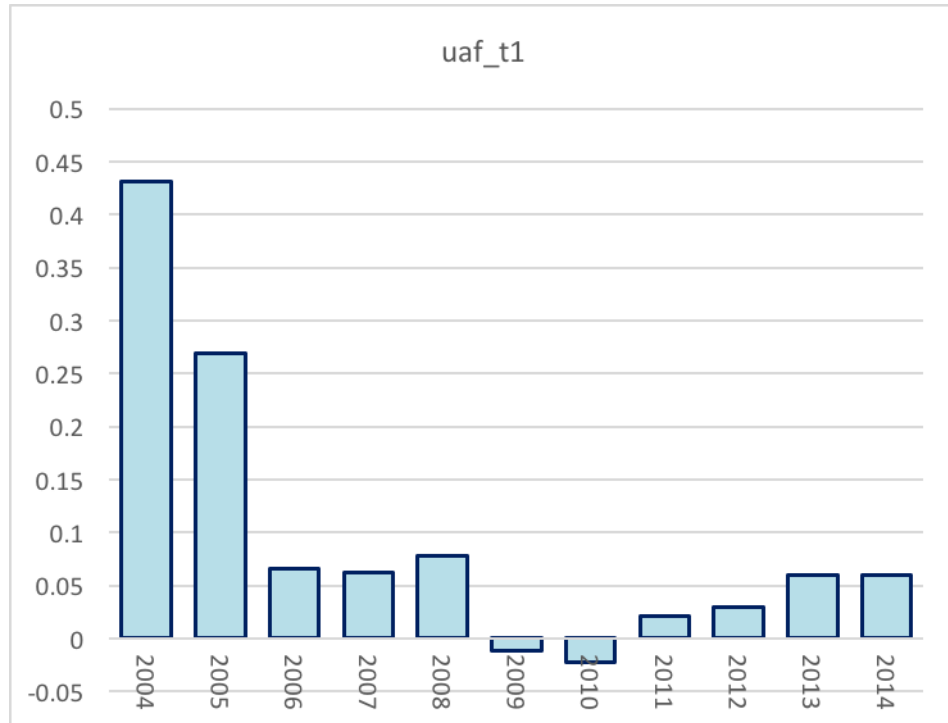


Table 1
Descriptive Statistics

Variable	N	Mean	Std. Dev.	P25%	Median	P75%
<i>TSURPLUS_{T+1}</i>	33,868	0.103	0.573	-0.261	0.099	0.466
<i>JSURPLUS_T</i>	33,868	0.028	0.560	-0.320	0.043	0.393
<i>LTENURE</i>	33,868	2.095	0.780	1.609	2.079	2.639
<i>FASB</i>	33,868	20.089	8.173	12	18	29
<i>INDSPE</i>	33,868	0.183	0.121	0.023	0.205	0.276
<i>RDA</i>	33,868	-0.023	0.299	-0.029	0.037	0.081
<i>NAF</i>	33,868	0.161	0.150	0.039	0.124	0.244
<i>ALTMANZ</i>	33,868	4.220	8.741	1.704	3.196	5.463
<i>IEVCFV</i>	33,868	1.191	2.050	0.309	0.578	1.150
<i>ICW</i>	33,868	0.047	0.212	0	0	0
<i>RES</i>	33,868	0.085	0.278	0	0	0
<i>MASCORE</i>	33,868	0.000	0.123	-0.071	-0.024	0.034
<i>LSALE</i>	33,868	5.886	2.318	4.331	5.997	7.493
<i>MTB</i>	33,868	3.816	6.616	1.307	2.155	3.744
<i>POSTSDX</i>	33,868	0.302	0.459	0	0	1
<i>FCR</i>	33,868	0.277	0.448	0	0	1

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All variables except *FASB* and indicator variables, i.e., *ICW*, *RES*, *POSTSDX*, and *FCR*, are winsorized at top and bottom 1%. See Appendix A for variable definitions.

Table 2
Pearson Correlation Table

N = 33,868		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>TSURPLUS_{T+1}</i>	(1)	1.000													
<i>JSURPLUS_T</i>	(2)	0.937	1.000												
<i>LTENURE</i>	(3)	-0.048	-0.031	1.000											
<i>FASB</i>	(4)	0.124	0.009	-0.092	1.000										
<i>INDSPE</i>	(5)	0.075	0.044	0.228	0.025	1.000									
<i>ROA</i>	(6)	-0.059	-0.069	0.113	-0.013	0.152	1.000								
<i>NAF</i>	(7)	-0.144	-0.190	0.053	0.105	0.096	0.060	1.000							
<i>ALTMANZ</i>	(8)	-0.068	-0.084	-0.025	0.018	0.021	0.267	0.016	1.000						
<i>IEVCFV</i>	(9)	0.038	0.052	-0.080	0.000	-0.039	-0.264	-0.031	-0.088	1.000					
<i>ICW</i>	(10)	0.165	0.144	-0.035	0.048	0.032	-0.011	-0.038	-0.015	0.027	1.000				
<i>RES</i>	(11)	0.071	0.065	-0.042	0.022	0.006	-0.016	-0.004	-0.014	0.029	0.158	1.000			
<i>MASCORE</i>	(12)	-0.034	-0.037	0.020	-0.005	0.038	0.121	0.031	0.122	-0.062	-0.025	-0.027	1.000		
<i>LSALE</i>	(13)	0.057	0.064	0.303	-0.068	0.499	0.378	0.115	-0.003	-0.148	0.010	-0.009	0.127	1.000	
<i>MTB</i>	(14)	0.048	0.048	-0.054	-0.011	-0.042	-0.235	-0.003	0.055	0.037	-0.005	0.002	0.073	-0.146	1.000

All variables except *FASB* and indicator variables, i.e., *ICW* and *RES*, are winsorized at top and bottom 1%. See Appendix A for variable definitions.

Table 3
Principal Component Analysis of Negotiation Power-Related Variables

Panel A: Principal Component Factors and Loadings

Principal-Component Factors with Orthogonal Varimax Rotation

Component	Variance	Difference	Proportion	Cumulative
Comp1	1.9126	0.6420	0.1913	0.1913
Comp2	1.2706	.	0.1271	0.3183

Scoring coefficients

Variable	Comp1	Comp2
<i>LTENURE</i>	0.0295	-0.5468
<i>FASB</i>	0.0827	0.2815
<i>INDSPE</i>	0.2516	-0.3054
<i>RDA</i>	0.6369	-0.0057
<i>NAF</i>	0.1161	-0.1331
<i>ALTMANZ</i>	0.6328	0.0590
<i>IEVCFV</i>	-0.2846	0.1972
<i>ICW</i>	0.1219	0.4400
<i>RES</i>	0.0582	0.4451
<i>MASCDRE</i>	-0.1008	-0.2770

Panel B: Regression Analysis

Variable	Expected sign	$TSURPLUS_{t+1}$	$JSURPLUS_t$
$PCA1$	-	-0.062*** (-6.296)	-0.086*** (-8.562)
$PCA2$	+	0.086*** (17.205)	0.086*** (16.973)
$LSALES$?	0.041*** (12.063)	0.042*** (11.837)
MTB	?	0.005*** (7.129)	0.005*** (7.124)
$POSTSOX$?	0.209*** (21.665)	0.005 (0.503)
FCR	?	0.006 (0.873)	0.003 (0.473)
Intercept		-0.209*** (-9.956)	-0.218*** (-10.177)
No. of Observations		33,868	33,868
Adjusted R^2		0.068	0.040

Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. One-tailed (two-tailed) tests are used for variables with (without) an expected sign. Standard errors are adjusted for firm clustering. $PCA1$ ($PCA2$) are predicted variables based on the scoring coefficients for Comp 1 (Comp 2) in Panel A.

Table 4
Determinants of Unexpected Audit Fees

Panel A: Jackknife Estimation				
Dep. Var. = $JSURPLUS_t$		OLS	Newey-West	Prais-Winsten
Variable	Expected Sign	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
<i>LTENURE</i>	?	-0.001 (-1.356)	-0.001** (-2.541)	-0.004*** (-4.952)
<i>FASB</i>	+	0.000* (1.479)	0.000 (1.031)	0.000* (1.627)
<i>INDSPECIAL</i>	+	0.050 (0.822)	0.050* (1.387)	0.299*** (6.057)
<i>ROA</i>	-	-0.117*** (-5.328)	-0.117*** (-5.836)	-0.068*** (-6.111)
<i>NAF</i>	-	-0.747*** (-20.249)	-0.747*** (-30.102)	-0.696*** (-32.925)
<i>ALTMANZ</i>	-	-0.004*** (-5.571)	-0.004*** (-8.040)	-0.002*** (-5.231)
<i>IEVCFV</i>	+	0.010*** (4.600)	0.010*** (5.401)	0.004*** (3.960)
<i>ICW</i>	+	0.319*** (17.942)	0.319*** (19.616)	0.136*** (12.691)
<i>RES</i>	+	0.080*** (6.910)	0.080*** (7.095)	0.051*** (7.658)
<i>MASCORE</i>	-	-0.136*** (-2.745)	-0.136*** (-4.414)	-0.002 (-0.103)
<i>LSALE</i>	?	0.032*** (8.142)	0.032*** (14.420)	0.018*** (5.774)
<i>MTB</i>	?	0.005*** (6.573)	0.005*** (8.677)	0.002*** (5.254)
<i>POSTSOX</i>	?	0.052*** (5.600)	0.052*** (5.350)	0.025*** (3.526)
<i>FCR</i>	?	0.012* (1.716)	0.012 (1.449)	0.004 (0.870)
Intercept		-0.100*** (-4.308)	-0.100*** (-6.527)	0.006 (0.322)
No. of Observations		33,868	33,868	33,868
Adjusted R^2		0.083		0.078
F-statistics		75.00	140.7	109.7

Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. One-tailed (two-tailed) tests are used for variables with (without) a predicted sign. All variables except indicators variables and FASB are winsorized at top and bottom 1%. Standard errors in OLS regression are adjusted for firm clustering. See Appendix A for variable definitions.

Panel B: One-Period-Ahead Estimation

Depvar = $SURPLUS_{t+1}$		OLS	Newey-West	Prais-Winsten
Variable	Expected Sign	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
<i>LTENURE</i>	?	-0.001* (-1.710)	-0.001*** (-3.143)	-0.005*** (-6.335)
<i>FASB</i>	+	0.002*** (6.760)	0.002*** (4.806)	0.003*** (12.518)
<i>INDSPECIAL</i>	+	0.176*** (3.003)	0.176*** (4.982)	0.593*** (11.684)
<i>ROA</i>	-	-0.110*** (-4.703)	-0.110*** (-5.073)	-0.059*** (-4.510)
<i>NAF</i>	-	-0.685*** (-18.940)	-0.685*** (-27.791)	-0.646*** (-29.451)
<i>ALTMANZ</i>	-	-0.004*** (-5.337)	-0.004*** (-7.623)	-0.002*** (-4.401)
<i>IEVCFV</i>	+	0.009*** (4.082)	0.009*** (4.727)	0.004*** (2.961)
<i>ICW</i>	+	0.350*** (19.637)	0.350*** (21.299)	0.186*** (14.824)
<i>RES</i>	+	0.071*** (6.080)	0.071*** (6.241)	0.050*** (6.711)
<i>MASCORE</i>	-	-0.121*** (-2.513)	-0.121*** (-3.957)	0.018 (0.765)
<i>LSALE</i>	?	0.030*** (7.820)	0.030*** (13.465)	0.017*** (5.167)
<i>MTB</i>	?	0.004*** (6.405)	0.004*** (8.400)	0.002*** (5.907)
<i>POSTSDX</i>	?	0.237*** (25.728)	0.237*** (24.098)	0.131*** (17.757)
<i>FCR</i>	?	0.009 (1.384)	0.009 (1.182)	0.063*** (11.698)
Intercept		-0.127*** (-5.635)	-0.127*** (-8.379)	-0.033* (-1.796)
No. of Observations		33,868	33,868	33,868
Adjusted R^2		0.108		0.095
F-statistics		151.5	196.2	147.0

Significance level: *** p<0.01, ** p<0.05, * p<0.1. One-tailed (two-tailed) tests are used for variables with (without) a predicted sign. All variables except indicator variables and FASB are winsorized at top and bottom 1%. Standard errors in OLS regression are adjusted for firm clustering. See Appendix A for variable definitions.