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Providing a Model for the Factors Affecting the Determination of Audit Fees for Companies Contracted with the Public Sector

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ABSTRACT

The aim of this study is to provide a model for explaining the factors affecting audit fees in private companies contracted with the public sector. The study design was mixed and exploratory: in the qualitative phase, 11 semi-structured interviews were conducted with audit experts, and based on a grounded theory approach, categories and conceptual relationships were extracted. Then, in the quantitative phase, hypotheses were tested using data from 105 companies listed on the Tehran Stock Exchange during the years 2018–2023 with static and dynamic panel models. The quantitative findings showed that contracts with the public sector have a positive and significant effect on audit fees. Additionally, the professional characteristics of the auditor play a moderating role: the interaction between auditor expertise and public sector contracts reduced the intensity of the increase in audit fees, the interaction between the audit firm's size and public sector contracts was also decreasing and significant, and the interaction between auditor changes and public sector contracts showed a significant increasing effect. The results in the dynamic model (GMM) also confirmed this pattern. The interpretation of the results used the theoretical frameworks of agency theory, institutional theory, transaction cost theory, and political economy of auditing. It was shown that institutional differences and the disclosure/oversight requirements of public sector contracts lead to increased auditor effort and consequently higher audit fees. These findings can provide a basis for revising tariff-setting guidelines and auditor selection regulations.

Keywords: Audit Fees, Public Sector Contracts, Auditor Expertise, Auditor Change, Audit Firm Size.

1. Introduction

1.1 Research Problem:

In today's complex and dynamic business environment, auditing is recognized as one of the core pillars of corporate governance and a guarantor of financial transparency (DeFond & Zhang, 2014). One of the key issues in this area is audit fees, which not only reflect the quality of audit services but also impact auditor independence. In Iran, public and private contracts in auditing have different characteristics and requirements, which can lead to differences in the amount of audit fees. While many domestic and international studies have been conducted in this area, a comprehensive examination of the effects of different public and private contracts in the Iranian market has not yet been fully explored.

1.2 Importance of the Study

This research is of particular importance due to the growing business collaboration between the private and public sectors in Iran. The study can assist policymakers and regulatory bodies in more accurately regulating auditor selection processes and tariff setting. Globally, similar studies have shown that public sector contracts are typically associated with higher audit costs because these contracts, due to more complex features such as disclosure requirements and stricter oversight, demand greater effort from auditors (Francis, 2004; Huang et al., 2014).

1.3 Objectives and Research Questions

The main objective of this study is to examine the impact of contract type (public or private) on audit fees in private companies. The research questions are as follows:

Main Question:

What is the difference between the contracts of private companies with public sector clients compared to private sector clients, and how does this affect the determination of audit fees in private companies?

Sub-questions:

- What institutional, legal, regulatory, and accountability requirements do audit contracts between private companies and public sector clients have, and how do these features, compared to contracts with private sector clients, affect the level of audit fees in private companies?
- How do the professional characteristics of the auditor (including expertise, firm size, collaboration history, and auditor change) contribute to the differences in audit fees between private companies contracted with public and private sector clients?
- How do the structural and control characteristics of the contracting companies (public or private clients), particularly in terms of transparency, information complexity, and operational risk levels, influence the pricing of audit services in private companies?
- How do audit firms revise and adjust their audit fee pricing strategies when faced with changes in the composition of their public and private sector clients?

1.4 Innovation and Added Value of the Research

This research, utilizing a mixed (qualitative-quantitative) approach and employing panel data modeling and GMM, investigates the relationship between contract type and audit fees, adding significant value to the analysis. The innovation of this study lies in examining price discrimination in the Iranian audit market and providing a conceptual model to assess this relationship. Additionally, for the first time, this research comprehensively analyzes this phenomenon in private companies contracted with the public sector.

1.5 Scope of the Research

This study examines private companies listed on the Tehran Stock Exchange from 2018 to 2023 and is limited to those companies that have contracts with government institutions. These limitations are imposed due to data availability and the specific characteristics of government contracts in Iran.

1.6 Structure of the Article

This paper is organized into five main sections. The next section reviews the literature and previous research on audit fees and price discrimination. The methodology of the research and data analysis will then be introduced. Finally, the findings and conclusions of the study, along with suggestions for future research, will be presented.

2. Review of Theoretical Literature and Previous Research

2.1 Theoretical Literature Review

2.1.1 Audit Fees and Price Discrimination

Audit fees refer to the amount that companies pay to audit firms in exchange for audit services. This amount is influenced by various factors, including the complexity of the company, audit risk, auditor characteristics, and the type of audit contract. In most studies, audit fees are recognized as one of the key components in the audit services market, directly affecting the quality of audit services and auditor independence. For instance, Francis and Simon (1987) and Simonick (1980) pointed out that audit fees are an important criterion in determining audit quality. Several factors, including auditor characteristics (expertise, firm size, service quality) and characteristics of the audited company (financial structure complexity, business risk, and disclosure quality), influence the determination of these fees (Dao et al., 2023; Huang et al., 2014).

Price discrimination in the audit services market occurs when different prices are charged for the same service provided to different clients, without any difference in the cost of providing the services. This phenomenon primarily arises in situations where there is asymmetric information between the contracting parties, and it can lead to price discrimination between public and private sector clients (Simonick, 1980; Stigler, 1987). In the audit market, institutional and legal differences between public and private clients cause different prices to be set for audit services, even when the financial statement complexities are similar (Francis, 2004).

In this regard, audit fees for companies contracted with the public sector are typically higher than for companies with private sector contracts. This is due to the greater financial disclosure requirements, more complex bureaucratic processes, and more stringent regulatory procedures inherent in public sector contracts. In contrast, the private sector generally has fewer regulatory complexities and legal requirements, leading to reduced audit costs.

2.1.2 Economic Theories and Their Applications in Auditing Service Pricing Analysis

Several economic theories are used to analyze audit fees and price discrimination in the audit services market. The most important of these are:

1. Agency Theory: This theory emphasizes the conflict of interest between managers and owners (shareholders). In this framework, the auditor acts as an independent entity to reduce agency risks. In public sector contracts, where risks and complexities are higher, auditors are required to exert more effort, leading to an increase in audit fees (Watts & Zimmerman, 1986).
2. Transaction Cost Theory: According to this theory, every economic interaction requires additional costs that go beyond the cost of the service itself. In public sector contracts, which are more complex, these additional costs include documentation, compliance with regulatory requirements, and bureaucratic processes, all of which directly contribute to an increase in audit fees (Williamson, 1985).
3. Asymmetric Information and Moral Hazard Theory: This theory suggests that when there is asymmetric information between the auditor and the client, the auditor must exert more effort to compensate for this imbalance and reduce the risk. This additional effort, particularly in public sector contracts that involve more risks and complexities, results in higher audit fees (Simonick & Stein, 1990).
4. Signaling Theory: This theory asserts that the choice of auditor and the level of audit fees can send indirect signals to the market regarding the quality of a company's financial information. Especially for public sector clients, who require more disclosure and higher transparency, auditors with higher fees can send positive signals about the quality of services (Spence, 1973).

2.1.3 Integration of Theories on Audit Fees and Price Discrimination in Audit Contracts

To maintain conceptual coherence, analytical structure, and scientific references, the integration of perspectives in the analysis of audit fees and price discrimination in the audit market is essential.

Previous studies have generally categorized the determinants of audit fees into two groups: auditor characteristics and characteristics of the audited company (Francis, 1984; Simonick, 1980). Some studies have also examined the impact of institutional differences and client type (public or private) on audit costs (He, 2013; Suyono et al., 2023).

However, traditional approaches are not sufficient for a more detailed analysis of phenomena such as price discrimination in professional services markets like auditing. There is a need to integrate various theoretical perspectives to understand the multifaceted interactions between the market, actors, and institutions. This integration can contribute to the development of a more precise model for determining audit fees.

2.1.4 Link Between Economic and Institutional Theories

While classic theoretical models, such as supply and demand theory, introduce factors like service quality, risk, and company complexity as determinants of audit fees, final analyses often overlook the market structure, the role of regulatory institutions, contractual limitations, and political incentives in public sector contracts. Complementary theories, such as bargaining theory, agency theory in the public sector, regulated markets, and public choice theory, can cover institutional and structural dimensions beyond the bilateral relationship between the company and the auditor. These integrated approaches are particularly important in service markets such as government auditing, where government institutions play a key role in regulation and pricing (Rahimi Borojeni & Khorram, 2019; Alwardat et al., 2022).

2.1.5 Combined Theoretical Framework of the Research (Conceptual Model)

Based on theoretical foundations, classical and institutional perspectives on the audit market, economic theories related to pricing professional services (such as agency theory, information economics, and regulation), and a systematic review of domestic and international research, the combined conceptual framework of this study has been developed. This framework provides a theoretical mechanism for explaining the audit fee determination process in a context where differences in client type (public or private) can lead to price discrimination in the audit services market.

In this model, the variable "client type" is positioned as the contextual variable at the center of the analysis, influencing the phenomenon under study through two paths:

- On the one hand, by directly affecting the level of audit fees;
- On the other hand, by playing a moderating role in the relationships between auditor characteristics, the audited company, and the received audit fee.

The designed theoretical model considers three main categories of factors in explaining differences in audit service pricing:

1. Supply-side factors (Auditor characteristics): Including professional expertise, audit firm size, and service quality.
2. Demand-side factors (Characteristics of the audited company): Including operational complexity, audit risk, and company profitability.
3. Institutional and audit market structure factors: Including legal frameworks, procurement and bidding regulations, market concentration, and regulatory and financial disclosure considerations.

This integrated theoretical framework forms the basis for developing the final conceptual model of the research and guides the direction of the empirical hypothesis testing in the following chapters. (Figure 2-1) Below is a graphical representation of the relationships among the theoretical variables of the research.

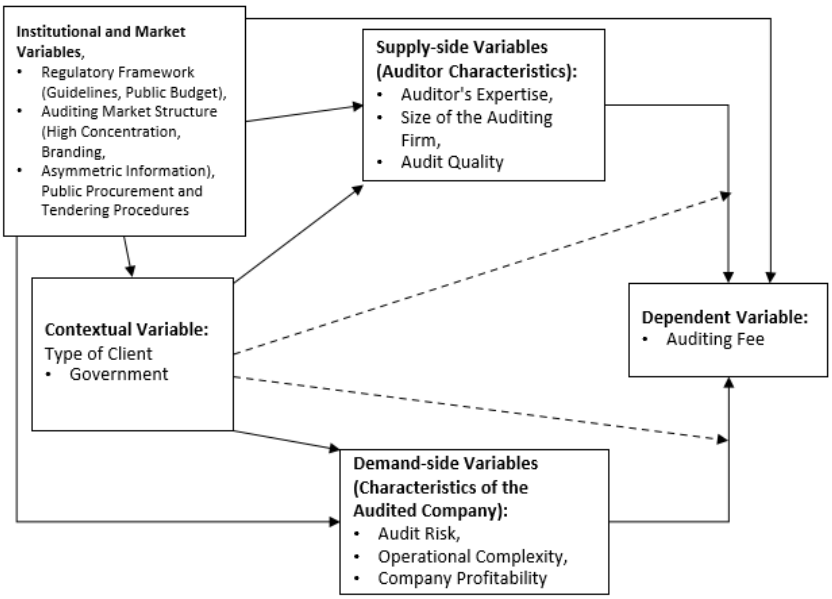

Figure 2-1: Conceptual Model Based on Theoretical Foundations and Qualitative Analysis

2.1.6 Conclusion and Theoretical Orientation of the Research

The analysis outcomes indicate that in service markets with asymmetric information, high concentration, and regulatory oversight, client type acts not only as a contractual characteristic but also as an institutional differentiating component in determining audit service pricing. In other words, companies contracted with government entities face different conditions than those with private clients due to disclosure requirements, bureaucratic procedures, and specific regulatory frameworks.

As a result, the theoretical orientation of this research is designed to analyze the impact of client type on audit fees, taking into account the moderating roles of factors such as auditor size and expertise. This framework will form the basis for the development of qualitative questions and quantitative hypotheses in the following chapters. Furthermore, based on the theoretical analysis provided in this model, audit contracts related to public sector clients, although sometimes associated with lower risks, may require more effort from auditors due to limited auditor selection, multilayered institutional controls, bureaucratic processes, and complexities in accountability, resulting in higher audit fees. In contrast, private clients, with greater flexibility and simpler contractual processes, may face different pricing models.

2.2 Previous Research

2.2.1 International Studies

Various international studies have examined the impact of client type (public sector) on audit fees. These studies have particularly shown that public sector contracts, due to their specific characteristics, such as regulatory requirements and increased complexities, can influence the level of audit fees. For example, Dow et al. (2023) showed that reliance on public sector contracts increases audit fees because these contracts involve more oversight and complexities. These studies emphasize that governments often impose specific legal and regulatory requirements on auditors, which lead to higher costs and, consequently, higher audit fees.

Furthermore, Sun et al. (2021) highlight the impact of perceived risk and the additional workload in public sector contracts, which also contribute to increased audit fees. Particularly in situations where available information is limited or organizational complexities exist, auditors are forced to spend more time and resources, which drives up audit costs. Other similar

studies have also shown that greater disclosure requirements and more complex regulations in public sector contracts lead to higher costs.

2.2.2 Domestic Studies

In Iran, various studies have addressed the impact of contract type on audit fees. For example, a study by Beitari et al. (2023) found that companies with government entities involved in their ownership generally face lower audit fees compared to private companies. This difference is particularly evident in public sector contracts, which involve more complexities and regulatory pressures. In fact, semi-government companies typically require more resources to be spent on the audit process due to governmental requirements and oversight, which results in their audit fees being lower compared to private companies.

Domestic studies have also shown that disclosure requirements and information complexity in public sector contracts lead to higher audit fees. For example, a study by Alipour et al. (2024) refers to the direct connection between government reporting systems and audit fees. This research highlights that in public sector contracts, due to the need for more extensive disclosure and closer monitoring, auditors are required to invest more time and effort, ultimately increasing audit costs. These factors are particularly noticeable in state-owned companies, which have more complex structures and broader information infrastructures.

Summary: The set of research questions and hypotheses, based on solid theoretical foundations and both international and domestic empirical evidence, aims to explore how the type of contract between private companies and public sector clients, along with auditor characteristics, interact to shape audit fee levels. Testing these hypotheses in the quantitative phase of the research will enable empirical assessment of the proposed conceptual framework, marking a crucial step toward designing a local model for fair and accurate audit fee determination.

Table 2-1: Comparison of Previous Research Studies

Author(s)	Year	Main Research Topic	Key Variables Examined	Relevance to Current Research
Dow et al.	(2023, 2025)	Impact of public sector contracts on audit fees in private companies	Proportion of government sales, institutional complexity, political risk	Very high – Direct analysis of the composition of public sector clients in private companies
He et al.	(2024)	Differences between public and private auditors in auditing local governments	Auditor type, audit quality, cost	High – The role of auditor type and its impact on pricing
Sun et al.	(2021)	Auditor sensitivity to the presence of public sector clients	Presence of public contracts, pricing behavior	Medium – Identifying the presence of public clients as a source of risk
Simonick	(2024)	Pricing strategies of small firms with an industry focus	Industry expertise, reduced fees, quality	High – The role of auditor expertise in moderating the pricing relationship
Cameron et al.	(2024)	Impact of auditor workload on audit quality	Number of clients, public clients, quality	High – Operational pressure due to public clients
Ramadan-Nejad	(2024)	Comparative analysis of fee-setting models in different countries	Market structure, local concepts, grounded theory	High – Qualitative framework supporting the theoretical section of the research
Dalvandi et al.	(2021)	Relationship between government ownership and audit fees	Percentage of government ownership, audit risk	Medium – Impact of ownership as a substitute for public client
Alipour et al.	(2024)	The effect of political connections on the relationship between affiliated parties and audit fees	Political connections, related party transactions	Medium – Role of government institutions and information risk
Vaez et al.	(2016)	The role of auditor expertise in moderating the relationship between risk and audit fees	Expertise, related parties, audit cost	High – Detailed examination of the moderating role of the auditor
Sadrayi et al.	(2021)	Identifying factors affecting audit fee determination	Local factors, previous year's fees, thematic analysis	High – Confirmation of differences between the internal and external audit market contexts

3. Methodology and Model Introduction

The research methodology is the foundational element for the credibility of scientific findings and the reliability of the researcher's inferences from the data. The selection of the research approach and analysis method should align with the nature of the problem, research objectives, and data type to provide a suitable framework for addressing the questions and testing hypotheses (Creswell, 2014; Newman, 2020).

In this study, to examine the complex phenomenon of determining audit fees for private companies contracted with public sector clients, an exploratory mixed approach has been used. This approach combines qualitative and quantitative methods and is conducted in two phases. In the first phase (qualitative phase), data were collected through in-depth interviews with experts and analyzed using a grounded theory approach based on Strauss and Corbin (1998) (Strauss & Corbin, 1998; Khelatbari, 2020). In this phase, open, axial, and selective coding techniques were applied to identify concepts, categories, and causal relationships within the context of the subject and to develop the initial conceptual model.

In the second phase (quantitative phase), qualitative findings were converted into testable models and empirically examined using panel data econometrics methods. Statistical data on manufacturing companies listed on the Tehran Stock Exchange from 2018 to 2023 were extracted and used to test the hypotheses.

3.1 Research Approach and Reasons for Choosing a Mixed Method Approach

This research employs an exploratory mixed approach; in this approach, qualitative methods are first used to explore key components and develop the theoretical framework, followed by converting the qualitative findings into hypotheses and conducting quantitative tests. This mixed design is recommended when the dimensions of the phenomenon under study are complex, multilayered, and based on qualitative concepts that have not been fully explored in the previous literature (Creswell & Plano Clark, 2018).

In the case of the present research — examining price discrimination in audit fees for private companies with public sector clients — there is a need for a precise explanation of the role of institutional, behavioral, and professional factors. Since the structure of audit contracts with public sector entities, accountability requirements, and bidding processes have not been fully modeled in the domestic literature, using grounded theory analysis in the qualitative phase allowed the researcher to design a more accurate conceptual framework for this phenomenon from the perspective of experts. These findings then formed the basis for developing testable hypotheses in the quantitative phase.

3.2 Research Method Type

Given the multilayered and complex nature of the phenomenon under investigation — i.e., "determining audit fees for private companies contracted with public sector clients and auditor professional characteristics" — this study adopts an exploratory mixed method approach. In this approach, qualitative data are first collected and analyzed, and then, based on the qualitative findings, the theoretical framework and testable hypotheses are developed and validated in the quantitative phase. 3.3 Qualitative Section

3.3 Statistical Population

3.3.1 Statistical Population

In the qualitative phase of the research, the statistical population consisted of audit experts and professionals with experience in auditing both public and private companies in Iran. The goal of selecting this population was to obtain reliable data about the factors influencing the determination of audit fees in the context of client type differences (public or private). The selection criteria included at least 10 years of professional experience, experience in managing audit contracts, involvement in the development of audit standards, or teaching in university fields related to auditing service pricing. In this section, purposive sampling was initially used, followed by snowball sampling until theoretical saturation was reached, where new data did not provide new concepts or categories. Finally, 11 semi-structured interviews were conducted.

3.3.2 Sampling Method and Expert Selection

For expert selection, purposive sampling was employed to identify individuals with deep and relevant experience in determining audit fees. The selection of experts was based on professional qualifications, field experience, and familiarity with

policy requirements. The selection process was conducted in a step-by-step, combined manner. Initially, a list of experts was compiled using recommendations from the Iranian Association of Certified Accountants and university professors, and snowball sampling was then used to identify additional participants. The selection criteria included scientific or practical expertise in auditing and membership in the Iranian Association of Certified Accountants with at least 10 years of experience. After this process, 11 experts meeting these conditions were selected for in-depth interviews. The principle of theoretical saturation determined the number of interviews.

3.3.3 Data Collection Tools

In the qualitative section of this research, the primary data collection tool was semi-structured interviews. This tool was chosen to deeply explore the attitudes, practical experiences, and analyses of auditing professionals regarding the impact of public sector contracts on audit fee determination.

3.3.4 Qualitative Data Analysis Method

To answer the qualitative research questions and uncover the hidden dimensions of the studied phenomenon, the data collected from the in-depth semi-structured interviews were analyzed using the grounded theory approach.

3.4 Quantitative Section

In this phase of the research, regression models based on panel data will be used to examine the relationships between the main variables and test the hypotheses. In this study, both static and dynamic regression models and econometric tests will be employed to analyze the effects of public sector client types in private companies and auditor characteristics (expertise, size, and auditor change) on audit fees.

3.4.1 Statistical Population

The statistical population for this research includes all companies listed on the Tehran Stock Exchange. The study covers a six-year period from 2018 to 2023. The sampling method used is systematic exclusion. Specifically, only companies that simultaneously meet the following criteria were included in the final sample:

1. Exclude companies operating in investment, financial intermediation, insurance, and leasing sectors due to fundamental differences in the financial structure and characteristics of these industries compared to other manufacturing and service companies.
2. Exclude companies that have undergone changes in their fiscal year or primary business activity during the study period, in order to prevent the impact of heterogeneous variables on the data trends.
3. Exclude companies whose financial information was incomplete or unreliable during the study period (2018 to 2023).
4. Exclude companies with inactive trading symbols or those that were not traded even once during a fiscal year, as the lack of market data could cause disruptions in the analysis.
5. Only companies whose fiscal year ends on March 19 of each year remained in the sample to ensure the comparability of data over time.

By applying these five criteria, 105 companies were selected as the statistical sample. Given the six-year period, the total number of observations in this study is 630 company-year observations.

Table 3-1: Screening Stages

Screening Stage	Considerations	Sample Screening
First	All companies listed on the Tehran Stock Exchange	596 units
Second	Investment and financial intermediation companies	33 units
Third	Insurance and leasing companies	21 units
Fourth	Companies with no changes in fiscal year or primary business activity during the study period	169 units
Fifth	Availability of complete financial information for these companies from 2018 to 2021	159 units
Sixth	The company's trading symbol must be active and traded at least once in the year	80 units
Seventh	Correct fiscal year ending on March 19 of each year	29 units
	Selected Sample	105 units

3.5 Methodology Summary

The methodology of this research, combining both qualitative and quantitative approaches, provides a comprehensive and coherent framework for analyzing audit fees. This mixed approach enables a deeper understanding of the factors influencing audit fees and,

through the use of panel data and regression analyses, delivers reliable empirical results.

3.6 Introduction to the Quantitative Model of the Research

Based on the results obtained from the qualitative data analysis in the first phase of the research and the conceptual model extracted from grounded theory, the econometric model of the research was developed to examine the effect of public sector contracts on audit fees and the moderating role of auditor characteristics (including expertise, size, and change). The variables used in this model were derived from the main categories identified in the qualitative phase, which were also described in the research's paradigmatic model. Accordingly, the quantitative model of the research was designed to test the hypotheses and examine the role of each conceptual variable in explaining structural differences in audit fees.

Model: $Audit\_Fee_{it} = \alpha_1 Gov\_Contract_{it} + \beta_1(Audit\_expertise_{it} \times Gov\_Contract_{it}) + \beta_2(Audit\_big_{it} \times Gov\_Contract_{it}) + \beta_3(Audit\_change_{it} \times Gov\_Contract_{it}) + \gamma_1 size_{it} + \gamma_2 lev_{it} + \gamma_3 MBT_{it} + \gamma_4 ROA_{it} + year_{Fixed} + id_{Fixed}$

Explanation of Model Variables:

Dependent Variable:

- Audit Fee (Audit_Fee_it): The logarithm of the audit fee for a company's auditor for a given financial period.

Independent Variables:

- Government Contracts (Gov_Contract_it): The volume of public sector contracts with companies, disclosed under financial statement orders or accompanying notes, and measurable as a percentage of total sales or services.
- Auditor Expertise (Audit_expertise_it): Auditor expertise in the industry, based on the ratio of total sales of clients audited by the auditor in a specific industry to the total sales of companies in that industry over a given year.
- Auditor Size (Audit_big_it): A dummy variable equal to 1 if the auditor is a member of the Iranian Association of Certified Accountants (private audit firms); otherwise, 0 (if it is the Audit Organization).
- Auditor Change (Audit_change_it): A value of 1 if the company appoints a new auditor during the current period, and 0 otherwise.
- Company Size (Size): The size of the company is the natural logarithm of the company's total assets.
- Financial Leverage (Lev): The company's leverage is calculated by dividing total liabilities by total assets.
- Market-to-Book Ratio (MBT): This ratio is the result of dividing the market value per share by the book value per share.
- Return on Assets (ROA): This ratio is calculated by dividing net profit by total assets.

3.7 Data Analysis Method

To test the research hypotheses and examine the relationships between variables, the static panel data method has been used. This method employs the F-Limer test and the Hausman test to analyze causal relationships and determine the optimal model. These tests help better analyze different panel models and facilitate the selection of the most appropriate model.

- F-Limer Test: This test is used to determine whether the fixed effects panel model is better than the pooled model. If the fixed effects model is significantly better, it is used for further analysis.
- Hausman Test: This test is used to select the most appropriate model between fixed effects (Fixed Effects) or random effects (Random Effects). The Hausman test helps in choosing the appropriate model for panel data and ensuring the validity of the results.

If the fixed effects model is confirmed, it will be used for analysis. To control for serial correlation and heteroscedasticity, the Generalized Method of Moments (GMM) is used. This method is suitable for panel data and helps analyze the effect of endogenous variables.

Regression Diagnostics Tests

To check the validity of the regression results, the following tests have been used:

1. Stationarity Test: The Dickey-Fuller test is used to check the stationarity of time series data. This test is used to detect whether the data are stationary over time. Non-stationary data can lead to incorrect and misleading results.
2. Durbin-Watson Test: This test is used to detect autocorrelation between residuals in the regression model. Autocorrelation in data can lead to incorrect estimates in regression, so this test is essential to assess this issue.

3. F-Fisher Test: This test is used to check the significance of the regression line and the effect of variables on each other. It examines whether the regression model is generally significant or not.

3.8 Dynamic Panel Regression Model

To address issues of serial correlation and heteroscedasticity, the GMM model has been used. This model is particularly suitable for panel data and helps analyze the effects of endogenous variables. The use of GMM effectively controls the problems of serial correlation and heteroscedasticity, thereby contributing to higher accuracy in data analysis.

4. Findings

In this chapter, the results obtained from the analysis of the research data are systematically and scientifically presented in two sections: qualitative and quantitative. The analyses were conducted with the aim of answering the research questions and hypotheses, as well as providing a model for better understanding the factors influencing the determination of audit fees in companies contracted with the public sector. The qualitative findings are presented first, derived using the grounded theory approach, followed by the quantitative analyses based on panel data.

4.1 Qualitative Analysis

In the qualitative section, data were collected through 11 semi-structured interviews with experts in the field of auditing. These data were analyzed using the grounded theory technique in three stages (open, axial, and selective coding). The results of the qualitative analysis are presented in the form of various concepts and categories.

Explanation: In the first stage of coding, a total of 56 initial concepts were identified, representing the factors influencing the determination of audit fees from the perspective of experts. These concepts are listed in Table 4-1.

This table includes the key concepts extracted from the interviews, which have been precisely classified based on factors affecting audit fee determination. Core concepts such as "Auditor's Workload," "Auditor Expertise," "Client Type," and "Auditor Effort" are included among other main concepts. These indicators will be widely used in the analysis and conceptual modeling of the research.

Explanation:After open coding, the identified concepts were divided into subcategories and main categories across six analytical dimensions. These categories are presented in the form of a paradigmatic model in Table 4-2.

Explanation: Table 4-2 displays the classification of concepts into main and subcategories. This classification includes six analytical dimensions: causal conditions, the central phenomenon, strategies, contextual conditions, intervening conditions, and outcomes. Specifically, in the "Audit Fee" category, which was chosen as the central phenomenon, factors such as "Auditor's Workload" and "Audit Quality" were identified as determining subcategories. This section fully explains the initial conceptual model of the research.

Table 4-1: List of Extracted Indicators in the First Stage of Coding

Indicator	Initial Codes	Source
A1	Auditor's Workload	P1, P3, P7
A2	Auditor Characteristics	P1, P5
A3	Company Profitability	P1, P6
A4	Auditor Work Pressure	P1, P9, P11
A5	Auditor Size	P1, P2, P4
A6	Company Sales Volume	P1, P6
A7	Financial Statement Items	P2, P9
A8	Auditor Expertise	P1, P4, P10
A9	Client Type	P1, P5, P8
A10	Company Ownership Structure	P3, P5
A11	Auditor Change	P2, P10, P11
A12	Audit Risk Testing	P1, P6
A13	Content Testing	P1, P8
A14	Auditor's Work Experience	P1, P6, P10
A15	Company Size	P1, P6, P8
A16	Audit Organization	P2, P6, P8

Indicator	Initial Codes	Source
A17	Access to Audit Information	P1, P6, P8
A18	Accompanying Notes	P3, P5
A19	Auditor Effort	P2, P11
A20	Company Value	P1, P3, P6
A21	Auditor Selection	P1, P5
A22	Audit Quality	P2, P7, P10
A23	Manager Behavior	P1, P3
A24	Financial Leverage	P1, P9, P11
A25	Ethical Values	P1, P6, P11
A26	Professional Responsibility	P3, P6, P11
A27	Responsibility to Society	P2, P6
A28	Individual Interactions	P4, P6
A29	Interactions with Internal Control	P1, P5, P9
A30	Detection Risk	P2, P6, P8
A31	Earnings Management	P2, P5
A32	Fraud	P3, P7, P8
A33	Industry Characteristics	P1, P5
A34	Auditor-Manager Relationships	P1, P6, P10
A35	Corporate Governance	P7, P9
A36	Company Contractors	P1, P2, P4
A37	Company Characteristics	P1, P6, P9
A38	Retaliatory Behavior	P3, P4
A39	Internal Audit Committee Size	P3, P6, P11
A40	Earnings Management	P5, P9
A41	Auditor Partner	P1, P2, P4
A42	Auditor Compensation	P1, P6, P5
A43	Accountability	P1, P6, P9
A44	Responsibility	P2, P6, P11
A45	Industry Practices	P2, P5, P10
A46	Institutional Shareholder Pressure	P3, P5
A47	Financial Constraints	P6, P8
A48	Geographic Location	P3, P5, P6
A49	Audit Risk	P1, P6, P10
A50	Auditor's Opinion Type	P1, P3
A51	Corporate Governance Elements	P1, P3, P5
A52	Integrity	P2, P9, P10
A53	Honesty	P1, P6, P7
A54	Effective Internal Control	P3, P5, P10
A55	Administrative Rules and Regulations	P4, P6, P11
A56	Loyalty	P3, P9

Table4-2:Classification of Initial Concepts into Subcategories and Main Categories

Main Categories	Subcategories	Initial Codes
Outcome	Audit Fee	Audit Quality, Audit Risk Testing, Content Testing, Auditor Effort, Access to Audit Information, Accompanying Notes, Manager Behavior, Effective Internal Control, Detection Risk, Earnings Management, Fraud, Industry Practices, Interactions with Internal Control, Retaliatory Behavior
	Audit Opinion	Type of Auditor Opinion
Action Strategy	Auditor's Workload	Auditor's Workload, Financial Statement Items, Company Contractors
Causal Conditions	Client Type	Public Sector Clients - Public Sector Clients, Corporate Governance Elements, Corporate Governance, Institutional Shareholder Pressure
		Private Sector Clients - Private Sector Clients, Internal Audit Committee Size, Company Ownership Structure
Intervening Conditions	Auditor Expertise	Auditor Expertise, Auditor's Work Experience, Auditor Partner, Auditor Selection, Audit Organization, Auditor Characteristics
	Auditor Size	Auditor Size
	Auditor Change	Auditor Change

Main Categories	Subcategories	Initial Codes
	Company Characteristics	Company Size, Company Sales Volume, Company Characteristics
		Financial Leverage
		Profitability of the Company
		Market Value of the Company
Outcome	Difference in Audit Costs	Difference in Audit Costs, Auditor Work Pressure, Auditor Relationships with Managers, Geographic Location, Financial Constraints

4.1.1 Paradigmatic Model

The paradigmatic model of the research was designed to identify and analyze the factors influencing the determination of audit fees, with an emphasis on institutional and contractual differences in private companies contracted with public and private sector clients. This model explains the relationships between categories across six analytical dimensions (causal conditions, central phenomenon, intervening conditions, context, strategies, and outcomes).

- Causal Conditions: Client type (public or private) is recognized as the causal factor influencing the audit pricing process.
- Central Phenomenon: "Audit Fee" is placed as the central phenomenon in the model.
- Intervening Conditions: Factors such as auditor expertise, firm size, and auditor change are identified as moderating variables.
- Context: Company and auditor characteristics are considered as the context for analysis.
- Strategies: Professional auditors' reactions (workload) to different conditions.
- Outcomes: Audit quality, audit opinion type, and differences in costs.

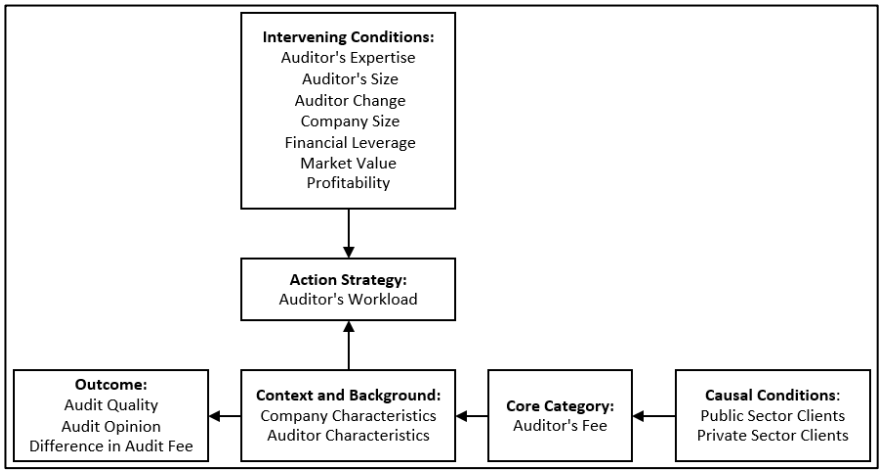

Figure 4-1: Paradigmatic Model of Factors Affecting the Determination of Audit Fees

Theoretical Conclusion

In this section, the theoretical conclusion of the research is presented based on the systematic analysis of qualitative data and the paradigmatic model. The three-stage coding process (open, axial, and selective) resulted in the development of an indigenous model that explains the mechanisms of audit fee determination in private companies contracted with public and private clients. This model emphasizes the multidimensional interaction between institutional, professional, contextual, and consequential factors.

The qualitative findings of the research align with some well-known theories. For example, agency theory predicts a conflict between the government's regulatory body and the auditing firm, which was explicitly reported in the interviews. Additionally, the

findings are consistent with transaction cost theory, as implicit costs (such as approval time, re-auditing, and frequent supervision changes) in public sector contracts were identified as reasons for the increase in audit fees.

Since the final model of this section is presented in Table 4-2 and Figure 4-1, the conceptual structural model derived from the qualitative analysis (Figure 1-4) provides an explanatory framework for understanding the conceptual relationships governing audit fee determination in private companies based on client type. This framework forms the theoretical basis for designing econometric models and testing hypotheses in the next chapter.

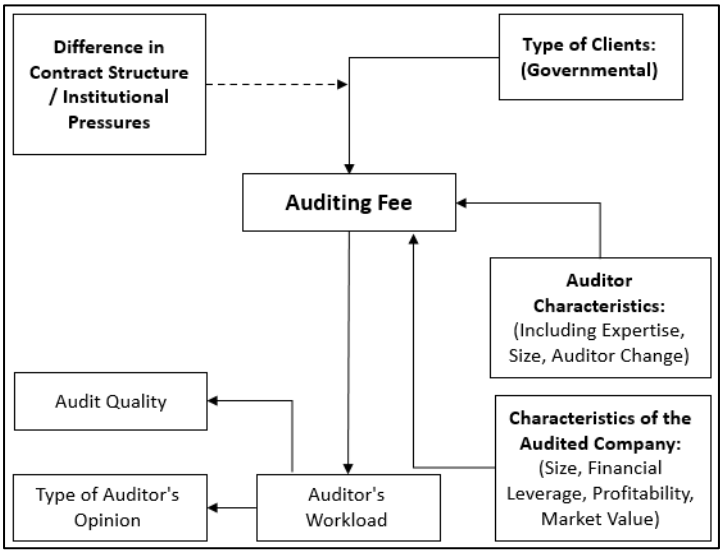

Figure 4-2: Structural Conceptual Model Derived from Qualitative Analysis

4.1.2 Formulation of Hypotheses

Based on the conceptual model (Figure 4-1) and the structural conceptual model derived from qualitative analysis (Figure 4-2), the following hypotheses were formulated:

1. **Main Hypothesis:**
   - The type of contract between private companies and public clients, compared to private clients, significantly affects the audit fees of private companies.
2. **Sub-hypotheses:**
   - The intensity of dependency of private companies' revenue on public or private clients (based on contract volume) significantly and directionally affects the audit fees of private companies.
   - Auditor expertise significantly moderates the relationship between the type of contract (public or private client) and the audit fees of private companies.
   - The size of the audit firm significantly moderates the relationship between the type of contract (public or private client) and the audit fees of private companies.
   - Auditor change significantly moderates the relationship between the type of contract (public or private client) and the audit fees of private companies.

4.2 Quantitative Analysis

In the quantitative phase of the research, data from 105 companies listed on the Tehran Stock Exchange during the period from 2018 to 2023 were collected. Panel regression analyses were performed to test the hypotheses and assess the relationship between the independent and dependent variables.

4.2.1 Descriptive Statistics

In the first step of the statistical analysis, descriptive statistics were used to examine the characteristics of

the data. The results show that the mean and median of most variables are close to each other, with a low standard deviation, indicating a normal distribution of the data. Additionally, the negative skewness in return on assets (-1.71) indicates a leftward distribution. These analyses were conducted using EViews software.

Table 4-3 shows that the highest average corresponds to company size (14.47), while the lowest is related to return on assets (0.047). The highest standard deviation belongs to the market-to-book ratio (MTB), indicating high variability in this variable, whereas the lowest standard deviation is related to the public sector contracts of companies. In terms of skewness, the MTB variable has the highest positive skewness (24.14), while return on assets has the highest negative skewness (-1.71).

Table 4-3: Descriptive Statistics Results

Variable	Symbol	Mean	Maximum	Minimum	Standard Deviation	Skewness	Kurtosis
Market-to-Book Ratio	MTB	7.247225	1661.554	0	66.8465	24.14138	597.3377
Government Contract	GOV_CONTRACT	0.230998	0.72	0.001	0.182859	0.712851	2.343771
Company Size	SIZE	14.47031	20.59804	10.64469	1.518094	0.430565	4.163425
Return on Assets	ROA	0.047562	0.7346	-1.10955	0.215414	-1.71788	9.924287
Leverage	LEV	0.712363	3.721779	0.036955	0.495291	3.117662	15.21967
Auditor Size	AUDIT_BIG	0.212698	1	0	0.409541	1.404156	2.971654
Auditor Change	AUDITOR_CHANGE	0.457143	1	0	0.498556	0.172062	1.029605
Auditor Expertise	AUDITOR_EXPERT	0.369663	1.564274	3.93E-05	0.389281	0.394716	1.55824
Audit Fee	AUDIT_FEE	7.360503	8.099858	6.09131	0.260642	-0.63406	2.844809

4.2.2 Multicollinearity Test

In multiple regression analysis, the absence of severe multicollinearity among the independent variables is a crucial assumption. Multicollinearity occurs when one or more explanatory variables can be linearly predicted from the others, which may affect the precision of the regression coefficients. To examine multicollinearity, the Pearson correlation coefficient was used. The results indicate that none of the correlation coefficients between the independent variables exceed the critical value of ±0.8, thus there is no severe multicollinearity in the models, and the regression parameters can be estimated with adequate precision.

Based on the results presented in Table 4-4, the correlation coefficient between most of the independent variables in the research is less than 0.8. According to Gujarati (1995), when the correlation coefficient between two independent variables does not exceed 0.8, there is no issue of severe multicollinearity. Therefore, based on the observed coefficients, it can be concluded that there is no severe multicollinearity among the variables in the regression models of this study, and the parameter estimation can be done with appropriate precision and statistical confidence.

Table 4-4: Results of the Multicollinearity Test

Variable	MTB	GOV_CONTRACT	IND_CONTRACT	SIZE	ROA	LEV	AUDIT_BIG	AUDITOR_CHANGE	AUDITOR_EXPERT	AUDIT_FEE
MTB	1									
GOV _CONTRACT	0.00910	1								
SIZE	-0.0213	0.22720	-0.2272	1						

Variable	MTB	GOV_CONTRACT	IND_CONTRACT	SIZE	ROA	LEV	AUDIT_BIG	AUDITOR_CHANGE	AUDITOR_EXPERT	AUDIT_FEE
ROA	0.01051	-0.0284	0.02846	0.1733	1					
LEV	-0.0183	-0.007	0.00709	-0.035	-0.500	1				
AUDIT _BIG	-0.0250	0.0150	-0.0150	0.4531	0.0174	-0.0158	1			
AUDITOR _ CHANGE	0.05174	0.0094	-0.009	-0.285	-0.072	0.00400	-0.469	1		
AUDITOR _EXPERT	0.02182	-0.023	0.0237	-0.297	-0.087	0.0372	-0.455	0.91945	1	
AUDIT _FEE	0.0551	0.0990	-0.0990	-0.147	-0.028	-0.0003	-0.073	0.153865	0.135957	1

4.2.3 Inferential Data Analysis

4.2.3.1 Unit Root Test

For estimating regression models with panel data, it is essential to check the stationarity of the variables. In the case of non-stationarity, the modeling results may suffer from spurious regression, affecting the validity of the inferences. Therefore, before running the regression models, a stationarity test was conducted for all variables. In this research, the Levin, Lin, and Chu (LLC) test was used to check for data stationarity. This test is based on the unit root test, and its null hypothesis examines the presence of non-stationarity in the data series. If this null hypothesis is rejected, the stationarity of the variable can be confirmed at a specified confidence level.

According to the results in Table 4-5, the test statistic values and significance levels (p-values) for all variables are reported to be less than 0.05. Therefore, the null hypothesis, which assumes the presence of a unit root for all variables, is rejected. It can be concluded that the data are stationary at the 95% confidence level. This finding provides the necessary validity for using panel econometric estimation methods such as Generalized Least Squares (GLS) and dynamic models.

Table 4-5: Results of the Stationarity Test of Variables

Variable	Unit Root Test	Chi-Square Statistic	p-value	Result
audit_fee	Augmented Dickey-Fuller	358.84	0	Stationary – I(1)
gov_contract	Augmented Dickey-Fuller	245.331	0	Stationary – I(1)
audit_expert	Augmented Dickey-Fuller	282.135	0.0007	Stationary – I(1)
audit_big	Augmented Dickey-Fuller	41.2317	0.0002	Stationary – I(1)
audit_change	Augmented Dickey-Fuller	155.826	0.0002	Stationary – I(1)
Lev	Augmented Dickey-Fuller	268.873	0.0038	Stationary – I(1)
Mtb	Augmented Dickey-Fuller	250.927	0.0279	Stationary – I(1)
Roa	Augmented Dickey-Fuller	375.08	0	Stationary – I(1)
Size	Augmented Dickey-Fuller	380.413	0	Stationary – I(1)

4.2.3.2 Cointegration Test

Cointegration is used to estimate the long-term equilibrium coefficients of models when variables have unit roots. While differencing can achieve stationarity, valuable information may be lost. The cointegration test allows regression to be conducted based on time-series variables without the risk of spurious regression.

To examine cointegration in the panel data, the Kao (1999) and Pedroni (2004) tests were used. These tests are applied to assess the long-term relationship between variables and prevent spurious regression. The results of the Kao residual cointegration test show the rejection of the null hypothesis (no cointegration) at the 99% level, meaning that there is a significant long-term relationship between the dependent variable and the independent variables in the model.

The results of this test in Table 4-6 indicate that the existence of a long-term cointegrating relationship is confirmed, showing stability and a significant connection between the variables in the research model. These results provide a reliable basis for conducting regression analyses in the subsequent phases of the research.

Table 4-6: Results of the Cointegration Test

Cointegration Test Type	Test Statistic	P-Value
Kao Residual Test	-9.13043	0.0000

4.2.3.3 Static Regression Analysis

At this stage, in order to select the appropriate model for estimating panel data, two important statistical tests were used: the F-Limer test to assess the suitability of the panel model against the pooled model, and the Hausman test to determine the choice between the fixed effects model and the random effects model.

Table 4-7: Results of th e F-Limer and Hausman Tests for the First Model

F-Limer Test	F-Statistic Value	P-VALUE
Null Hypothesis: No Difference Between the Fixed Effects Model and the Pooled Model	1.488078	0.003
Hausman Test	**Chi-squared Statistic**	**P-VALUE**
Null Hypothesis: No Difference Between Fixed Effects and Random Effects Models	4.993473	0.7583

The results of the F-Limer test show that the test statistic is 1.488078, and the p-value is 0.003. Since the significance level is less than 0.05, the null hypothesis, which assumes the equality of intercepts across all cross-sections (pooled model), is rejected. Therefore, the use of the panel data model instead of the pooled model is confirmed.

Next, the Hausman test was conducted to choose between the fixed effects model and the random effects model. According to the results, the test statistic is 4.9934, and the p-value is 0.7583. Since the p-value is greater than 0.05, the null hypothesis of the Hausman test, which suggests no significant difference between the fixed effects and random effects models, is not rejected. Based on this, the random effects model was chosen as the appropriate model for estimation.

Conclusion: Based on the results of the F-Limer and Hausman tests, the suitable model for econometric analysis in the first phase of the research is the panel model with random effects.

Table 4-8: Results of Model Estimation

Variable	Coefficient	T-Statistic	P-value
GOV_CONTRACT	15.00408	4.095043	0
GOV_CONTRACT * AUDITOR_EXPERT	-4.71748	-2.28031	0.0229
GOV_CONTRACT * AUDIT_BIG	-16.5941	-4.63054	0
GOV_CONTRACT * AUDITOR_CHANGE	11.65942	3.243452	0.0012
SIZE	0.489122	81.20914	0
LEV	0.09297	1.156608	0.2479
MTB	0.000256	1.781544	0.0753
ROA	-0.45393	-3.49006	0.0005
R-squared	0.78269		
Durbin-Watson Statistic	1.922892		

Table 4-8: Results of Model Estimation with Random Effects Method for the First Model: This table presents the results of the model estimation using the random effects method for the first model of the research, where the dependent variable is Audit Fees and the key variable is Government Contracts.

- R-squared (R^2) indicates that 78% of the variation in the dependent variable is explained by the explanatory variables in the model, demonstrating a good explanatory power of the model.
- Durbin-Watson Statistic: The value of 1.92, which falls within the acceptable range (1.5 to 2.5), suggests that there is no autocorrelation in the residuals, and the classical regression assumptions hold.

Results of Coefficients

- Government Contracts: A positive and significant coefficient of 15.004 indicates that government contracts have a significant positive impact on audit fees, confirming the main hypothesis of the research.
- Interaction of Government Contracts × Auditor Expertise: A negative and significant coefficient of -4.71748 indicates that auditor expertise plays a moderating role in weakening the relationship

between government contracts and audit fees, confirming the second sub-hypothesis.

- Interaction of Government Contracts × Auditor Size: A positive and significant coefficient of 11.65942 indicates that auditor size strengthens the positive effect of government contracts on audit fees, confirming the third sub-hypothesis.
- Interaction of Government Contracts × Auditor Change: A negative and significant coefficient of -16.5941 indicates that auditor change reduces the impact of government contracts on audit fees, confirming the fourth sub-hypothesis.

Results of Control Variables:

- Company Size: A positive coefficient of 0.489122 indicates a significant positive relationship between company size and audit fees.
- Return on Assets (ROA): A negative coefficient of -0.45393 shows a significant negative relationship between ROA and audit fees.

In the following section, the results of the F-Limer and Hausman tests for the second model, with the independent variable Private Sector Contracts, will be provided in Table 20-4.

Table 4-9: Results of F-Limer and Hausman Tests for the Second Model

F-Limer Test	F-Statistic Value	P-VALUE
Null Hypothesis: No Difference Between the Fixed Effects Model and the Pooled Model	4.648495	0.0000
Hausman Test	**Chi-squared Statistic**	**P-VALUE**
Null Hypothesis: No Difference Between Fixed Effects and Random Effects Models	11.33409	0..1835

In Table 4-9, the F-Limer test statistic is 4.648495 and the p-value is less than 0.05. Therefore, the null hypothesis of the appropriateness of the pooled model is rejected, confirming the use of the panel data model.
Next, after performing the Hausman test, the test statistic is 11.33409, and the p-value is 0.1835. Since the p-value is greater than 0.05, the null hypothesis of no significant difference between the fixed effects model and the random effects model is accepted. Therefore, the appropriate model for regression estimation is the panel data model with random effects.

4.2.4 Dynamic Regression Analysis (GMM Model)

In this section, the Generalized Method of Moments (GMM) is used to address issues of endogeneity, heteroscedasticity, and autocorrelation. This method is effective for unbalanced panel data models and moderate sample sizes, and it is particularly useful when there is a likelihood of endogeneity in the data. The dependent variable, Audit Fee, is included with a lag in the model to account for its dynamic nature.
To evaluate the validity of the model, the Sargan test and the second-order autocorrelation test (AR(2)) were employed. The results showed that both tests were satisfied, confirming that the estimated GMM model is valid. Therefore, the results obtained are interpretable.

Table 4-10: Results of the First Model Estimation Using the Dynamic Method (GMM)

Variable	Coefficient	Standard Error	Z-Statistic	P-Value
AUDIT_FEE(-1)	-0.53991	0.044894	-12.0264	0
GOV_CONTRACT	0.12226	0.06181	1.98145	0.0409
GOV_CONTRACT * AUDITOR_EXPERT	-58.1106	23.27953	-2.49621	0.013
GOV_CONTRACT * AUDIT_BIG	-1.693526	0.084031	-1.926153	0.0175
GOV_CONTRACT * AUDITOR_CHANGE	52.95388	18.30021	2.893622	0.004
Sargan Test Statistic		26.20429		
P-value (Sargan Test)		0.124597		

As shown in Table 4-10, the results of estimating the first model of the research with the independent variable "Government Contracts" using the dynamic panel method (GMM) are reported. In this model, "Audit Fees" is considered as the dependent variable, and its one-period lag is included as an explanatory variable.

The coefficient of the "Government Contracts" variable is estimated to be 0.12226, and with a P-value less than 0.05, this coefficient is statistically significant. This finding indicates that an increase in the volume of government contracts leads to an increase in audit fees. In other words, the results of the dynamic model confirm that there is a positive and significant relationship between the volume of government contracts and the level of audit fees in companies listed on the Tehran Stock Exchange.

Next, the moderating effects of variables on the relationship between government contracts and audit fees are examined:

- Auditor Expertise: The coefficient of the interaction variable "Government Contracts × Auditor Expertise" is -58.1106, and it is significant. This finding suggests that auditor expertise has a negative moderating effect on this relationship.
- Auditor Size: The coefficient of the interaction variable "Government Contracts × Auditor Size" is -1.6935, and it is significant. This means that an increase in auditor size reduces the strength of the effect of government contracts on audit fees.
- Auditor Change: The coefficient of the interaction variable "Government Contracts × Auditor Change" is 52.9539, and it is significant. This result shows that auditor change strengthens the effect of government contracts on audit fees.

4.2.5 Analysis and Final Summary

Based on the analysis of static and dynamic regression models for both public and private sector clients, the following results were obtained:

- Government contracts significantly increase audit fees.
- Moderating variables, such as auditor expertise, audit firm size, and auditor change, have significant effects in both models.
- The findings indicate the presence of price discrimination in the Iranian audit services market, which arises from institutional and contractual differences between the public and private sectors.

In this section, the research hypotheses were analyzed, and the results showed that all hypotheses were confirmed. Government contracts have a significant positive effect on audit fees, while private contracts have a negative effect. Furthermore, auditor expertise, audit firm size, and auditor change were identified as significant moderating variables in these relationships.

Table 4-11: Summary of Hypothesis Test Results

Hypothesis Number	Hypothesis Description	Test Result	Hypothesis Status
Main Hypothesis	The type of contracts between private companies and public sector clients, compared to private clients, has a significant effect on the audit fees of private companies.	In both static and dynamic models, the positive effect of government contracts and the negative effect of private contracts on audit fees were confirmed.	Confirmed
Sub-Hypothesis 1	The degree of dependency of private companies' income on public or private clients (based on contract volume) significantly and directionally affects the audit fees of private companies.	A positive relationship with government contracts and a negative relationship with private contracts, both were reported as significant.	Confirmed
Sub-Hypothesis 2	Auditor expertise moderates the relationship between the type of contract of private companies (government or private client) and the audit fees of private companies.	The interactive effect of auditor expertise was significant and negative in both static and dynamic models.	Confirmed
Sub-Hypothesis 3	Auditor firm size moderates the relationship between the type of contract of private companies (government or private client) and the audit fees of private companies.	The interactive effect of auditor size was significant and positive in both models.	Confirmed
Sub-Hypothesis 4	Auditor change moderates the relationship between the type of contract of private companies (government or private client) and the audit fees of private companies.	In both models, the interactive effect of auditor change was significant.	Confirmed

5. Results

The findings of this study, derived from a combined analysis of qualitative and quantitative data, indicate that the type of governmental client plays a significant role in determining audit fees. This influence is not only direct but is also shaped by the interaction with auditor characteristics, including expertise, firm size, and auditor change. Moreover, the degree of revenue dependence of private firms on governmental or private contracts serves as a complementary factor that plays a critical role in explaining variations in audit fee levels and constitutes the foundation of the study's main hypothesis. The results are further interpreted within contemporary theoretical frameworks in auditing, which illuminate the complex relationships among stakeholders, auditors, clients, and institutional conditions.

Explanatory Theories of the Findings

- Agency Theory: Firms with governmental clients face higher agency risks due to public accountability requirements and formal oversight. These conditions lead to increased auditor effort, which in turn raises audit fees.
- Institutional Theory: The presence of legal frameworks and environmental pressures in governmental contracts drives auditors to deliver more rigorous services, thereby increasing audit costs.
- Transaction Cost Theory: Contracting with the public sector involves complexities such as payment delays, administrative procedures, specific reporting requirements, and formal procurement processes, all of which impose higher implicit costs on auditors.
- Political Economy of Auditing Theory: Firms subject to the scrutiny of public or political institutions strategically pay higher audit fees in order to mitigate regulatory risks.

5-1. Overall Conclusion

The mixed-method analysis of this study reveals that the audit fees of private firms are influenced by two primary factors:

1. The nature of the firm's contracts with clients (governmental or private).
2. Auditor characteristics and the attributes of the audited firm.

In the qualitative phase, using grounded theory methodology, seven main categories and nine subcategories were identified and classified within a conceptual paradigm model. This model outlines the causal relationships, contextual factors, intervening conditions, strategies, and consequences associated with the audit fee determination process in the interplay between governmental and private clients.

In the quantitative phase, the financial data of 105 private firms listed on the Tehran Stock Exchange during 2018–2023 were analyzed, and the results demonstrated that:

- Governmental contracts were significantly associated with higher audit fees.
- Private contracts significantly reduced audit fees, reflecting the more competitive pricing mechanisms in the private market.
- Auditor expertise, audit firm size, and auditor change had significant moderating effects on the relationship between contract type and audit fees.

The findings indicate the existence of price discrimination in the Iranian audit services market, arising from institutional differences between governmental and private clients. This discrimination is further moderated by the professional characteristics of auditors.

5-2. Qualitative Findings Conclusion

In the qualitative section, analysis of the data from semi-structured interviews with auditing experts revealed 7 main categories and 9 subcategories. These categories were organized within a conceptual paradigm model that precisely explains the relationships between client type, auditor characteristics, and company attributes.

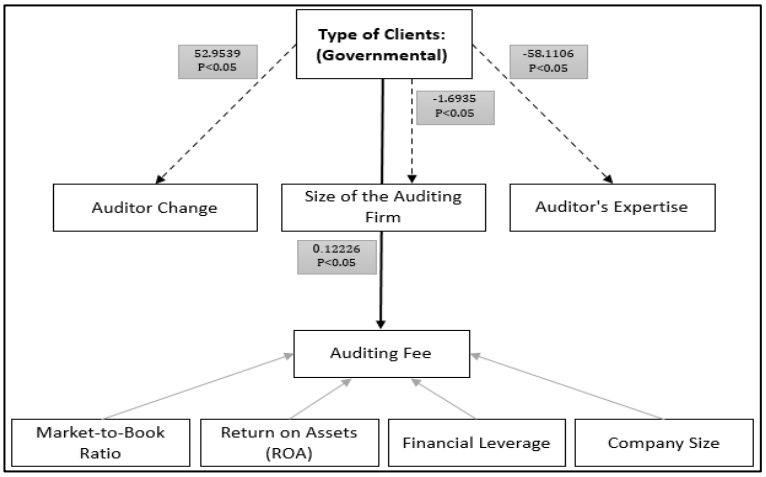

Figure 5-1. Research Model Results

5-2-1. Answer to the Main Research Question

The type of client (governmental or private) was identified as a key factor in determining audit fees. Private firms contracted with the public sector face more complex requirements, such as disclosure, supervision, and political pressures, which necessitate greater auditor effort, leading to increased audit fees.

5-2-2. Answer to the First Sub-question

Governmental contracts, due to their institutional characteristics and more stringent regulatory requirements, lead to higher audit fees, whereas private contracts are set in a more competitive environment with fewer requirements.

5-2-3. Answer to the Second Sub-question

Auditor expertise plays a crucial role in moderating the differences in audit fees between governmental and private clients. Expert auditors have a greater ability to provide clarity in service pricing.

5-2-4. Answer to the Third Sub-question

The structural and control characteristics of companies also affect the pricing of audit services. Governmental companies, with more complex processes and greater oversight, require more thorough audits, which increases audit costs.

5-2-5. Answer to the Fourth Sub-question

Changes in the composition of clients (governmental or private) for private companies can impact their audit fee pricing strategies. Auditing firms adjust their pricing strategies based on the specific characteristics of each sector when faced with changes in the client composition of private companies.

Conclusion : The findings of the qualitative section of this study, derived from the content analysis of semi-structured interviews with experts and grounded theory methodology, were able to fully address the main and sub-research questions. These analyses demonstrated that the process of determining audit fees for private companies contracted with both governmental and private clients is influenced by institutional, professional, structural, and strategic factors. These factors were organized within a paradigmatic model, which includes causal relationships, contextual conditions, intervening conditions, strategies, and outcomes. This model formed the basis for designing the conceptual model and formulating hypotheses in the quantitative phase of the research.

The findings align with the concepts of agency theory, transaction cost theory, institutional theory, and price discrimination, and they are consistent with the principles of asymmetric information theory. This theoretical and empirical coherence reflects the consistency of the mixed methodology approach of the study and the validity of the final conceptual model.

Table 5-1: Alignment of the Qualitative Research Questions with Theoretical Categories and Final Findings

Research Question (Qualitative Section)	Related Theoretical Category/Dimension	Final Findings Extracted from Interview Analysis
What are the differences between contracts of private companies with governmental clients compared to private sector clients, and how do these differences impact the determination of audit fees for private companies?	Core Category: Audit Fees, Causal Conditions, Strategies, Outcomes	A paradigmatic model was developed, illustrating the influence of client type, auditor characteristics, and company attributes on the audit service pricing process, which led to the formulation of the study's conceptual model.
What institutional, legal, regulatory, and accountability features do audit contracts between private companies and governmental clients have, and how do these features impact the audit fees compared to contracts with private sector clients?	Core Category: Client Type (Governmental or Private)	Governmental clients have more complex reporting structures, layered supervision, and institutional pressures, leading to higher audit fees in governmental contracts.
How do the professional characteristics of auditors (including expertise, firm size, collaboration history, and auditor change) contribute to the differences in audit fees between private companies contracted with governmental and private clients?	Core Category: Auditor Characteristics (Expertise, Size, Change)	Auditor expertise, firm size, and auditor change were identified as moderating variables that either amplify or diminish the effect of contract type on audit fees.
How do the structural and control characteristics of companies contracted with governmental or private clients, particularly in terms of transparency, information complexity, and operational risk levels, influence the pricing of audit services in private companies?	Core Category: Company Characteristics (Size, Profitability, Ownership, Liquidity)	Larger company size, complex structure, and lower transparency or liquidity levels lead to increased audit effort and higher audit fees.
How do auditing firms revise and adjust their audit fee pricing strategies when faced with changes in the composition of their governmental and private clients?	Strategies and Contextual Conditions	When governmental contracts increase, auditing firms adopt more conservative approaches and follow stricter guidelines for fee setting. In contrast, private contracts allow for more flexible pricing strategies.

5-3. Conclusion of the Quantitative Findings

The results of the quantitative analyses revealed that audit fees for private companies are influenced by two main factors:

1. The type of contract the company has with clients (governmental or private).
2. Auditor characteristics and the attributes of the audited company.

The findings indicate that:

- Government contracts are significantly associated with increased audit fees. This is due to the greater regulatory complexities and legal requirements in governmental contracts.
- Private contracts are typically associated with lower audit fees, attributed to price competition and simpler processes.
- Auditor characteristics (expertise, size, and auditor change) have a significant impact on the relationship between contract type and audit fees. Auditor expertise, in particular, has a lesser impact in private contracts.
- Company size and profitability (ROA) significantly influence the level of audit fees.

5-3-1. Conclusion of the Main Hypothesis

The main hypothesis of the research, which stated that the type of contract between private companies and governmental clients significantly impacts audit fees compared to contracts with private clients, was confirmed. The findings showed that governmental contracts are significantly associated with increased audit fees. This increase is due to regulatory complexities, broader legal requirements, and more intricate administrative processes in governmental contracts. Furthermore, private contracts are typically associated with lower audit fees due to price pressures and the simpler nature of private sector contracts.

5-3-2. Conclusion of the First Sub-hypothesis

The first sub-hypothesis of the research, which addressed the impact of private companies' revenue dependence on governmental or private clients on audit fees, was confirmed. The results showed that

greater dependence on governmental contracts leads to increased audit fees, while dependence on private contracts significantly reduces audit fees. This difference in impact indicates that the institutional structure and operational requirements of governmental contracts increase audit complexity and costs.

5-3-3. Conclusion of the Second Sub-hypothesis

The second sub-hypothesis, which stated that auditor expertise has a significant impact on the relationship between contract type and audit fees, was also confirmed. The findings showed that auditor expertise plays a role in reducing the difference in audit fees between governmental and private clients. Specifically, auditors with higher expertise in the specific industry of governmental clients can reduce price discrimination and provide more accurate audit fee rates. This is particularly effective in governmental contracts, which have greater complexities.

5-3-4. Conclusion of the Third Sub-hypothesis

The third sub-hypothesis, which addressed the impact of audit firm size on the relationship between contract type and audit fees, was significantly confirmed. Larger firms, due to more advanced infrastructure, specialized teams, and stronger bargaining power, can manage the complexities of governmental contracts at lower costs. As a result, the effect of governmental contracts on audit fees is less pronounced in larger firms. This finding suggests that larger firms, due to higher productivity and better quality control standards, are able to reduce price discrimination in the audit market.

5-3-5. Conclusion of the Fourth Sub-hypothesis

The fourth sub-hypothesis, which proposed that auditor change has a significant impact on the relationship between contract type and audit fees, was confirmed. Auditor change strengthens the relationship between contract type (governmental or private) and the level of audit fees, especially in governmental contracts. This is due to the increased time and resources needed to understand the complex processes of governmental clients and reduce uncertainty in these processes. Auditor change results in higher audit costs, especially in governmental projects, which involve more complex requirements and increased oversight.

These findings indicate the existence of price discrimination in the audit market between governmental and private clients, which is moderated by the professional characteristics of auditors. The research demonstrates that contract type (governmental or private) and auditor characteristics are key determinants of audit fees.

Conclusion :In order to analyze and align the findings of the present study with the results of previous studies, the outcomes of each hypothesis are compared with prior research to analyze the strengths and weaknesses of different models. This comparison shows how the results of this study align with findings from similar studies in areas such as the impact of the client type (governmental) for private companies, auditor characteristics, and institutional factors on audit fees. Additionally, this table analyzes the conceptual and empirical alignment of the findings, pointing out new evidence derived from this research. The alignment with previous studies enhances the validity of the results and the conceptual model of the research, helping to better understand the phenomenon of price discrimination in the audit services market.

Table 5-2: Comparison of Hypothesis Results with Previous Research

Hypothesis	Findings	Explanation	Conclusion	Previous Research
Main Hypothesis	Government contracts lead to increased audit fees.	Government clients require more disclosure, supervision, and pose higher risks for auditors.	Government client type is the main factor in price discrimination.	Dow et al. (2023): Examining the impact of dependency on governmental clients on audit service costs. Afniya et al. (2022): The relationship between institutional complexities and audit service pricing. Sun et al. (2021): The impact of institutional sensitivity and operational complexities on audit fees.
First Sub-hypothesis	Dependence on governmental contracts increases	Government contracts are more complex and have	The degree of dependence on client type	Nego et al. (2020): Impact of regulatory structure and data complexities on audit service pricing in governmental and private sectors. Cameron et al.

Hypothesis	Findings	Explanation	Conclusion	Previous Research
	audit fees, while dependence on private contracts decreases them.	more requirements, while private contracts are more competitive.	significantly influences pricing.	(2024): Comparing audit costs in governmental and private sectors based on contract structures. Palmrose (1998): "Cost reimbursement contract" model in governmental institutions and its effect on increasing audit fees. Kenya (2023): Proposals for restructuring governmental contracts to control costs.
Second Sub-hypothesis	Auditor expertise reduces the difference in audit fees between governmental and private clients.	Expert auditors are less influenced by legal and institutional structures.	Auditor expertise is one of the key factors controlling price discrimination.	Vaez et al. (2015): The role of auditor expertise in reducing information risk and its impact on audit fees. Donatella et al. (2020): The impact of auditor expertise in more accurate pricing in governmental contracts.
Third Sub-hypothesis	In larger auditing firms, the effect of governmental contracts on audit fees is reduced.	Larger firms with more advanced infrastructure and greater bargaining power reduce costs.	Firm size is a key factor in reducing price discrimination.	Salman & Setiani (2023): Analyzing the impact of audit firm size on price pressures from governmental contracts. Simonick (2024): The role of large audit firm scales in reducing price discrimination in audit service pricing in the public sector.
Fourth Sub-hypothesis	Auditor change strengthens the relationship between contract type and audit fees.	Auditor change increases information risk and requires greater transparency.	Auditor change strengthens price discrimination in governmental contracts.	Tanya (2023): Examining the impact of auditor change on information risk and audit service pricing. King (2024): Analyzing changes in audit fees and pricing following auditor changes, especially in the public sector. Kenya (2024): The effect of auditor change on pricing and price discrimination in governmental contracts.

5-4. Research Limitations

1. Impact of Macro-Economic Conditions: Some of the data in this study pertains to years when the Iranian economy was affected by international sanctions and the COVID-19 crisis. These conditions may have had a significant impact on contract patterns and revenues, potentially influencing the relationship between contract type and audit fees.
2. Weakness in Corporate Governance Maturity: In Iran, corporate governance structures and the performance of audit committees are still in the early stages, which could challenge the accuracy of analyses related to governance features and how audit fees are determined.
3. Lack of Data Adjustment for Inflation: The financial data extracted from financial statements were analyzed without adjusting for inflation. Due to the high inflation rate in recent years, these data may not have accurately reflected economic realities. An analysis of the inflation effect could have provided better insights into the relationship between variables.

5-5. Practical Recommendations Based on Research Findings

1. Specialized Auditors for Government Contracts: Private companies with governmental clients should employ auditors with expertise in their specific industry to reduce audit risk and mitigate price discrimination.
2. Collaboration with Large Auditing Firms: Companies should collaborate with large and experienced auditing firms to leverage higher capabilities in managing the complexities of governmental contracts.
3. Periodic Auditor Rotation: Purposeful rotation of auditors can increase transparency and reduce audit costs.
4. Utilization of Smaller Firms in Private Contracts: Private companies can benefit from using smaller, specialized auditing firms with lower costs for their audit services.
5. Aligning Auditor Characteristics with Government Company Structures: Auditor selection should be based on expertise, size, and stability, particularly in large and governmental companies.
6. Improved Reporting Transparency in Government Companies: Government

companies should enhance the transparency and efficiency of their financial reporting and disclosure processes to reduce audit risk.

7. Redesigning Tariff Systems: Regulatory bodies should redesign audit fee structures based on client type and auditor characteristics.
8. Enhancing Transparency of Government Contracts: Government entities should make their financial contracts with listed companies more transparent to avoid additional costs arising from information asymmetry.
9. Distinction in Audit Pricing: Auditing firms should consider the differences between governmental and private clients when setting their service fees.
10. Cost-Benefit Analysis Before Government Contracts: Before entering into contracts with the government, companies should conduct a thorough analysis of the anticipated audit costs.

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