# Auditor Industry Specialization and Concentration: Evidence from Kingdom of Saudi Arabia

#### Khaled Slamen Yaslam Aljaaidi and Shamhrir Bin Abidin

College of Business, University Utara Malaysia, Malaysia aljaydi\_khaled@yahoo.com

(Received 12.07.1430H., and Accepted 18.09.1431H.)

Abstract. This study is conducted to investigate the audit practice among Big4 and Non-Big4 audit firms in Kingdom of Further, the study also examines clients' characteristic and their market distributions among audit firms. This study uses audit firm industry market share measure as a proxy for audit firm's industry specialization. Sources of data have been retrieved from annual reports of listed companies in Saudi Stock Exchange (Tadawal). The results show that Big4 audit firms acquire, on average, 68.5% of the audit market share in almost all industries and their market share expands over time. The results also show that audit specialization by industry among audit firms in Saudi Arabia does not exist because Big4 audit firms provide a wide range of audit services to different clients in different industries rather than they offer specialized services to particular industries. As a result, audit firms in Saudi Arabia perform audit services based on general knowledge gained rather than an industry specific knowledge.

*Keywords:* Audit Market Concentration, Auditor's Industry Specialization, Market Share, Clients' Characteristics, Saudi Stock Exchange.

#### 1.0 Introduction

Researches concerning Kingdom of Saudi Arabia market have been ignored for decades in the past particularly because of the restrictions imposed into the foreign stock ownership, the lack of common accounting and auditing regulations, and uncertainty of economic and political conditions (Bley and Chen, 2006; Al-Shammari, Brown, and Tarca, 2008).

However, Kingdom of Saudi Arabia has recently implemented a large number of strategies and policies that transfer them to the market-orientation economy. Consequently, local, regional, and foreign investors have found the gulf region as a profitable business environment for their projects (Bley and Chen, 2006; Al-Shammari, Brown, and Tarca, 2008; Bley and Chen, 2006; Al-Hussaini and Al-Sultan, 2008; Gulf Base, 2009). In the light of the rapid shift and growth in the economic development of Kingdom of Saudi Arabia, an increased demand has been placed for the auditing services in away that financial information provided by companies must be assured by auditors (Aksu, Onder, and Saatcioglu, 2007; Armstrong, 1987).

It has been claimed that auditor industry specialization is considered a key goal to be achieved by the majority, if not all, of the large audit firms. Moreover, specialization is also looked at as one of five top issues facing the auditor industry. Consequently, specialized audit firms gain advantages from specialization such as market share, profits, audit quality, or merely the maintenance of market share in a competitive environment. Importantly, specialized audit firms try to strive in the unstable audit markets by increasing quality (by making investments in personnel, technologies, and control systems) (Simunic and Stein, 1987) and/or reducing costs (Hogan & Jeter, 1999) which is know as differentiation strategy (Casterella, Francis, Lewis & Walker, Further, Owhoso, Messier & Lynch (2002) indicated that specialized auditors are able to detect errors and they contribute to the credibility of the financial statements (Simunic and Stein, 1987). And, Carcello and Nagy (2002) reported that specialized auditors are less likely to be exposed to the SEC enforcement. By the same way of token, Balsam, Krishnan & Yang (2003) highlighted that clients of specialized auditors are less likely to disclose discretionary accruals and more likely to disclose earnings response coefficients (Balsam et al., 2003).

On the other hand, some concerns have been expressed over the impact of concentrations on competition in the audit market. might be a domination of the audit market for clients in certain industries and a conflict between auditing and consulting units (Hogan & Jeter, 1999). Further, Kwon (1996) suggested that specialization is difficult to be observed in concentrated industries where companies look for privacy and confidentiality more than they look for specialized preferences. Therefore, they will choose audit firms not of their competitors. However, there is a dominance of audit services by the Big4 audit firms in US, UK, and Australia. This dominance is characterized as taking a common feature in the recent time (Iskandar, Maelah & Aman, 2000). Despite that fact that there is much research conducted on this area in US, UK, Australia, and Malaysia, a study about the audit market of Saudi Arabia does not exist. Evidence audit practices found in the Western and other developing countries may not generalized to the context of Saudi Arabia because of the differences in the environmental factors such as economy, business, culture, and regulations. Consequently, differences in the environmental factors are expected to cause differences in the audit market practices. Thus, the objectives of this study are to investigate the audit practice among Big4 and Non-Big4 audit firms in Kingdom of Saudi Arabia and to examine clients' characteristic and their market distributions among audit firms. This study is a significant contribution to the auditing profession in Saudi Arabia and the findings of this study are expected to provide a useful source of research in Saudi Arabia.

This paper is organized as follows. The second section provides the literature review followed by the research methodology in the third section. Results of the study are discussed in section four followed by the conclusion in section five.

#### 2.0 Literature Review

#### 2.1 Issues in Audit Markets

In the marketplace of every country, there are several types of auditors categorized based on brand name reputation such as Big Four; first-tier international firms, second-tier international firms, and local firms (DeFond, 1992). Initially, Wallace (1985) suggested three reasons for audit services' demand. (1) Companies demand audits as a device to reduce agency cost that occur because of self interested behavior and

information asymmetry. This reason of auditing demand is called "the agency (stewardship) demand." (Jensen and Meckling, 1976; Ng, 1978; Simunic and Stein, 1987; Watts, 1977; and Watts and Zimmerman, 1983; Francis and Wilson, 1988). Francis and Wilson (1988) indicated that there is a positive correlation between the agency costs and the demand for higher-level audit quality; (2) Companies demand audits especially quality audit as a signal of management honesty and quality, and a reduction in the agency costs through the monitoring function. This reason of auditing demand is called as "the information demand." (3) Companies demand audits as a response to the fact that investors and creditors are indemnified against financial losses because there is what called "the auditors' professional liability exposure. This reason of auditing demand is called "the insurance demand."

Consistent with Wallace (1985), some prior studies significantly reported that auditors represent a key role in the economy (Leong *et al.*, 2003) as they perform a high quality audit that contributes to improving the precision of the credibility to accounting information. Consequently, this performance will increase the level of confidence among stakeholders in based their decisions on reliable disseminated financial statements (Simunic and Stein, 1987; Becker, DeFond, Jiambalvo and Subramanyam, 1998; Arens and Loebbecke, 2000).

Moreover, the good decision made about selecting the right external auditor by companies is a significantly important process particularly because this issue concerns about testifying the company's financial statements accuracy and reliability (DeAngelo, 1981) in an environment business that is characterized by complexity of business structure, globalization activities, and remoteness of finance providers (Armstrong, 1987). In the same line, Koh and Woo (2001) suggested empirically that a deeper understanding of the major factors influencing the auditor selection can enhance the credibility of the audit function. And, in general, findings of these studies can also facilitate the construction of selection models.

Further, Wallace (1981) demonstrated empirically that audit quality performed to the company's internal processes could achieve the following benefits. First, improve operational efficiency and effectiveness. Second, detect any malfeasance conducted and attest the

accountability and stewardship of company's management (Chandler, Edwards, & Anderson, 2008). Third, enhance the level of compliance with the legal and regulatory constraints. Finally, involve the company into several market activities. Furthermore, it is strongly evidenced by prior studies that high-quality audit decreases the level of information asymmetries and agency conflicts between managers and owners that will consequently enhance capital markets' functions (Jensen and Meckling, 1976; Palmrose, 1986; Watts and Zimmerman, 1990; Francis and Wilson, 1988; Craswell *et al.*, 1995).

Given the important role of the external auditors in the economy and markets, however, auditors' role is changing over the time to meet both local and global demands for their audit services (Armstrong, 1987; Chandler, Edwards, & Anderson, 2008). There is also an increasing competition among auditors in the marketplace for providing services (Chow, Kramer, and Wallace, 1988; Akresh, Loebbecke, and Scott, 1988; Stanny, Anderson, and Nowak, 2000). This competitiveness has been considerably concerned for investigation by accounting profession, regulators, and academic researchers (Clatworthy, Mellett, and Peel, 2000; Sands and McPhail, 2003) because yet, all auditors are significantly demonstrated to not offer the same level of services (Stanny, Anderson, and Nowak, 2000) that are considered unobservable tasks and, therefore, they are difficult to be objectively evaluated (DeAngelo, 1991). Similarly, an empirically evidence indicated that auditors generally perform multiple levels of audit work and different levels (Joyce, 1976; Ashton, 1990). Importantly, Lazer et al. (2004) reported empirically that new auditors are more likely to conduct a restatement to mitigate litigation risk and to signal higher audit quality than the former auditors are. Abdel-Khalik (1993) reported that the perceived value of audit differs across companies. Consequently, the demand for audit service will considerably vary based on the companies' circumstances.

It is also further evidenced that audit firms differ on the bases of price, reputation (DeAngelo, 1991; Hermanson *et al.*, 1994), services (Danos and Eichenseher, 1982), privacy preferences (Dey, 2006), industry experience and specialization (Kwon, 1996; Simunic and Stein, 1987; Hogan & Jeter, 1999; Solomon *et al.*, 1999; Bedard and Biggs, 1991; Wright and Wright, 1997; Owhoso *et al.*, 2002; O'Keefe *et al.*,

1994; Carcello and Nagy, 2004; Balsam *et al.*, 2003; Krishnan, 2003; Dunn and Mayhew, 2001; Mayhew and Wilkins, 2003) and services (Danos and Shields, 1981), among each other. An important aspect of the different types of the external auditors is that companies are capable to show their preferences among those auditors in which these preferences are different between them and that they can be classified into broad patterns (Francis, Maydew, and Sparks, 1999).

Abidin (2006) evidenced that growing companies are more likely to select among the Big audit firms, possibly due to the fact that the existing smaller audit firms are no longer meeting their needs. There is a high level of satisfaction exists between the company's management and the selected auditor if the management demands have been met by the auditor and the senior personnel has been engaged into the audit duties.

Specifically, it is evidenced empirically by prior research that Big audit firms provide high quality services (DeAngelo, 1991; Craswell et al., 1995; Teoh and Wong, 1993; Mutchler, 1986; Chang, Dasgupta, Hilary, and Paris, 2009) because they apply a greater level of monitor to the audited companies (Watts and Zimmerman, 1990), they have a higher reputation to protect themselves (DeAngelo, 1991), and they have deeper pocket to stand for litigations (Dye, 1993). In the same manner, it is empirically reported that Big audit firms charge higher audit fees (Francis and Simon, 1987; Moizer, 1997; Simon and Francis, 1988), lower amounts of discretionary accruals (Francis et al., 1999), lower litigation risks (Palmrose, 1988), higher levels of compliance with auditing standards (Krishnan and Schauer, 2000; O'Keefe et al., 1994), higher levels of earnings response coefficients (Teoh and Wong, 1993), lower level of audit errors (Geiger and Rama, 2006; Bedard and Biggs, 1991; Wright and Wright, 1997; Owhoso et al., 2002), more warns before financial distress (Lennox, 1999; Knechel and Vanstraelen, 2007), and lower levels of underpricing of IPOs (Titman and Trueman, 1986; Beatty, 1989).

Equally important, Hansen (2007) demonstrated that the Big Four could not be treated as a homogeneous group. There are three factors influencing the company's choice among the Big Four. For instance, large-sized companies choose PriceWaterhouseCoopers (PWC), small sized-companies with low current ratios and high growth choose Deloitte

and Touche (DT), while small sized-companies with high level of current ratios choose KPMG. Therefore, companies may prefer to choose the largest of the Big audit firms or the greatest industry specialization. However, Nusbaum (2007) indicated that Non-Big audit firms call for government intervention to increase their share in the market by encouraging investors to have their financial statements audited at local audit firms when appropriate. Therefore, in the audit market, Big audit firms have more value than non-Big audit firms. Further, capital markets perceive the audit conducted by Big audit firms as a higher in quality performance (Mayhew and Wilkins, 2003).

Moreover, it is argued by Johnson and Lys (1990) that Big audit firms may not audit small local companies because it is a waste resources from the point of view of the Big audit firms. While, audit firms auditing small unregulated companies may not be able to use the audit fee charged in the purpose of improving audit quality.

Furthermore, mixed evidence on the issue of audit market has been found in the Europe context. For instance, it has been highlighted in the setting of Belgium that earnings management is not anymore constrained by Big audit firms rather than smaller audit firms (Vander Bauwhede, Willekens, and Gaeremynck 20003; Sercu, Vander Bauwhede, and Willekens, 2006) that restrain income-decreasing accruals. It is also found that, in general, there is no difference between the audit reports issued by Big audit firms and that issued by non-Big audit firms and, in some cases, it was found that Big audit firms issued stringent audit reports when problems were difficult to be settled down (Gaeremynck and Willekens, 2003). According to Sundgren and Johansson (2004), companies audited by Big audit firms are subject for more conservative reporting due to the use of shorter depreciation lives for assets. In addition, Sundgren (1998) reported that audit opinions are more likely to be modified by certified auditors than non-certified auditors. In terms of disclosing material errors, some studies empirically found that Big audit firms are less likely to disclose error materials (Geiger and Rama, 2006; Bedard and Biggs, 1991; Wright and Wright, 1997; Owhoso et al., 2002). By contrast, Knapp (1991) reported that Big audit firms are more likely to disclose material errors than local audit firms. Furthermore, Ashton, Willingham, and Elliott (1987) reported that some problems may occur in examining the assumption that Big audit firms perform higher quality auditing than non-Bing audit firms.

Consistent with this suggestion, Healy and Palepu (2001) indicated that there is a paucity of evidence that support this assumption. In the same line, Mansi, Maxwell, and Miller (2004) reported that the empirical evidence exists to support this assumption is limited and mixed. According to Chaney et al. (2005), there is no evidence to support the higher fee assumption in the case of auditing private companies by Big audit firms. Further, they indicated that companies choose the lower audit fee auditor in the environment where the pressure of the market is absent. While, Hermanson et al. (1994) suggested that the behavior of audit fee reduction by audit firms would not ensure to attract new audit Moreover, Culvenor, Godfrey, and Byrne (1999) argued empirically that both Big and non-Big audit firms may be categorized as firms possessing industry specialization. In addition, some studies in the context of Belgium evidenced that Big audit firms tend to modify their opinions regarding audit reports because of problems related to going concern issues (Vanstraelen, 2002).

On the other hand, some studies reported that audit fee is considered a reason influencing the management's decision over auditor choice (Pong and Whittington, 2007; Collier and Gregory, 1996; Whisenant *et al.*, 2003). In the same line with evidence, Koh and Woo (2001) did find evidence to support a similar assumption. Moreover, empirical evidence has been provided that that Big audit firms provide high audit quality than non-Big audit firms. Therefore, that is why they charge higher fees than non-Big audit firms (Willekens and Achmadi, 2003; Palmrose, 1986; Francis and Simon, 1987; Moizer, 1997; Simon and Francis, 1988). Additionally, in the context of Finland, limited evidence has been found. Also, Simunic and Stein (1987) argued that Big audit firms tend to specialize in specific audit issues because they try to monopolize the audit market in specific audit areas.

This fact goes simultaneously with an increasing number of audit failures and an increasingly litigious environment. More lawsuits were reported against auditors from 1971 to 1985 than in the entire history of the audit profession (Marxen, 1990). Woo and Koh (2001) reported empirically that the decreasing tendency of the owners and investors' confidence will lead to an environment where the purpose of auditing will be defeated and the credibility of the audit function will be undermined. And, it can also decrease and inhibit the flow of capital in the securities markets and increase the capital costs (Knapp, 1991).

Furthermore, the recent scandals of Enron, Tyco, WorldCom, etc. have decreased the confidence of financial information users and created an environment of mistrust and suspicion that have been expressed over audit firms, especially, well-known collapsed companies are audited by international well-recognized audit firms such as Andersen (Adams and Allred, 2005). While this is true about Enron/Andersen, some companies switched Andersen quickly after Andersen disclosure of the scandal, but some other companies did not until they were forced to do so by canceling Andersen's practice license. Consequently, some arguments have been examined that the companies that switched Andersen immediately after the official disclosure of fail by Andersen did so because they concern about their reputation and not about audit quality (Bewley, Chung, and McCracken, 2008). In the Kingdom of Saudi Arabia context, the number of audit failures is increasing, but there is no exact statistics of this tendency (Asiri, 2008; Joshi and Al-Mudhahki, 2001; Al-Hussaini and Al-Sultan, 2008).

#### 2.2 Audit Market in Saudi Arabia

Accounting and auditing regulations are still governed by the codes of commercial laws in all member states of the Gulf Co-operation Council (GCC) countries except for Kingdom of Saudi Arabia where Saudi Organization for Certified Public Accountants (SCOPA) was established in 1991 to work under the supervision of the Ministry of Commerce to enhance the accounting and auditing profession and all issues with correspondence to the development and upgrading of the profession (SCOPA, 2009a; Al-Gahtani, 2006). The accounting profession in Saudi Arabia is somewhat weaker if compared with that in the Western countries. Surprisingly, litigation risk is very low. To date, there has been any case of audit failure recorded during the business history of Saudi Arabia (Al-Sehali and Spear, 2004).

To some considerable extent, all the recent developments in accounting and auditing profession as mentioned earlier have changed the concept and nature of audit professional practices in Saudi Arabia. Recently, the rapid growth of the existence of the Big Four audit firms in the Saudi market also contributes to the development of audit market. However, audit profession is still subject for several shortcomings as following: (1) a weak implementation of a lot of audit professional

regulations and instructions. This environment raises many critical questions regarding the role of the audit control programs that have been implemented fully since the issuance of Resolution No. 2/2 regarding audit control in 1995 and the regulation an implementation of the professional audit practicing Law in 1991. Therefore, this situation may indicate to some deficiencies in audit regulations, standards, professional codes of conduct, and the absence of audit control programs; (2) the widespread of a low audit fee phenomenon; and (3) the Monopoly is substantially practicing by some audit firms. The recent statistics indicate that 78% of the audit firms' income (102 audit firms) in Saudi Arabia is generated by 11 audit firms where there are only 53% licensed auditors are working in them (Al-Angaree, 2004). It is worth to highlight that US; Arthur Anderson & Co (AAC) used to audit 30% of the companies incorporating in Saudi Market (Al-Abbas, 2006).

The existence of Saudi joint stock companies can be traced back to the mid 1930s by the time when the first joint stock company, Arab Specifically, privatization program Automobile, was established. implemented in the early 160s have increased the rapid growth of the SSE such as the privatization of several electricity companies. In 1975, there were about 14 public companies on the Saudi ground that have existed particularly because of the rapid economic development and the Saudization program. The existence of SSM (Tadawul) stayed behind informal until 1984 when a Ministerial Committee composed of the Ministry of Finance and National Economy, Ministry of Commerce and Saudi Arabian Monetary Agency (SAMA) was formed to consider the regulation and development of the SSE (Tadawul). At the time of establishing SSM (Tadawul), the task of regulating and monitoring the market activities was authorized to SAMA. Electronic trading and settlement systems were implemented in 1988. Thereafter, the task has been passed to the Capital Market Authority (CMA) that has been established in July 2003 by the Capital Market Law based on the Royal Decree No.(M/30). The establishment of SSE (Tadawul) is carried out based on the Council of Ministers approval in March 2009 as a joint stock company (Saudi Stock Exchange, 2009a). To date, there are 136 listed companies in SSE (Tadawul) (Saudi Stock Exchange, 2009b). Due to the economic global crisis and the decrease in oil prices, market capitalization at SSE (Tadawul), the largest market in the region, experienced a decline of US\$254bn in spite the fact that 16 new listings have entered the market. The decrease in the market capitalization stood at US\$265bn in 2008 (Global Investment House, 2008). In terms of foreign investment, Saudi government encourages foreign investors to Saudi certain sectors such as energy and technology based on Investment Law issued in 2000, but it is still restricted to take local partners in some sectors too. Furthermore, the law allowed full foreign ownership of Saudi property and licensed projects in which the General Investment Authority (SAGIA) has been established to facilitate investors' procedures (Ministry of Commerce and Industry of the Kingdom of Saudi Arabia, 2009a). In comparison to the time before the year 2000, foreign investors were limited to a 49% share of joint ventures with Saudi local partners. In fact, 100% ownership is still not permissible in upstream oil, pipelines, media and publishing, insurance, telecommunications, defense and security, health services, wholesale and retail trade sectors. In the same line of encouraging foreign investments, taxes imposed into company profits are reduced from 45% to 30% (Heritage Foundation, 2009b; MEDEA, 2009).

Initially, three groups of shareholders have been determined as the major equity owners in SSE (Tadawul). The groups are: (a) the government and its agencies; (b) dominant families; and (3) the institutional investors. These three groups usually have representatives on the companies' boards of directors and consequently have better access to the internal information (Al-Shammari, Brown, and Tarca, 2008). The Central Bank in Saudi Arabia forces banks and finance and investment companies to comply with IASs referring to Saudi Arabia as a partial adopter of IASs. Importantly, the adoption would meet the extensive requirement of local and international investors to receive in depth information and make comparability among financial reports. Mainly, SSE (Tadawul) relies completely on the external audit report of the listed banks and finance and investment companies to investigate their compliance with IASs, company law and the central bank requirements. The Central Bank in Saudi Arabia works in a tie manner with the Ministry of Commerce to guarantee the required compliance. The Central Bank monitors banks as at least two registered external auditors with the Ministry of Commerce must be appointed to audit bank financial statements and report any violations with IASs compliance and other regulations to the central bank. To date, there is not any single case of violation has been reported in Saudi Arabia (Al-Hussaini and AlSultan, 2008). Recently, the rank of Saudi Arabia is number 59 among world countries in terms of economic freedom index (Heritage Foundation, 2009a).

#### 2.3 Prior Related Research

There have been some prior research on auditors' industry specialization in some countries such as US, UK, Australia, and Malaysia. Ali, Sahdan, and Rasit (2008) conducted a study on audit specialization in Malaysia. They applied audit firm industry market share measure as proxy for audit firm industry specialization. They focused on trends in industry specialization from 1999 to 2002 with data retrieved from annual reports of companies listed in Kuala Lumpur Stock Exchange. In their study, industry specialists defined as market leaders with market share greater than 20 percent of audit services (in terms of the number of clients) within a client specific industry. This study found that Ernst and Young specializing in construction and plantation, KPMG in industrial products, PricewaterhouseCoopers in finance and Arthur Andersen in Finance, plantation, technology and trading/services.

Iskandar, Maelah and Aman (2000) carried out a study on audit market concentration and auditor's industry specialization in Malaysia. They examined the practice among Big6 and Non-Big6 audit firms in Malaysia. They also investigated features that characterize the clients. They found that Big6 audit firms acquire more than 60 percent of the audit service market share in almost all industries and their market share expands over time. They also found that none of the Big6 firms specializes in only one industry. Big6 firms provide services to more than 10 percent of the client in three to five industries. They also found that the Big6 audit firms increase their market share by expanding their market to other industries.

Craswell, Francis, and Taylor (1994) investigated auditors' industry specialization of 14 industries over the period from 1982 to 1987 on the basis of the accounting firms' total industry fees. Their study separated two distinct components of audit pricing: a brand name (big 8 audit firms) premium representing returns on brand name development and maintenance; and a premium representing positive returns on investments in industry specialization or expertise. They

found a strong evidence that goes as an audit fee premium represented positive returns on investments in industry specialization, in addition to a general Big8 or brand name effect. They concluded that the demand for and the supply of industry specialization represent a further dimension of Big8 audit firm, which is an important dimension of "task-specific experience." They also provided further evidence of audit fee as a return to industry specialization in Australia, being an important dimension to the audit market.

Zeff and Fossum (1967) conducted a study to investigate the nature and scope of activities of large public accounting firms in the US. Their sample comprises of 639 companies from 38 industrial categories. They found that the Big8 audit firms perform an audit over 92.7 percent of the companies whose revenue comprised 94.8 percent of the total. Their results indicated that there was a predominance of the Big8 audit firms in large US industries with one firm owed its position to one or two immense clients. Importantly, this study is considered one of the key works that has been replicated and extended by some other studies. These include Rhode *et al.*, (1974), Schiff and Fried (1976), Dopuch and Simunic (1980, 1982), Danos and Eichenseher (1982), Beelde (1997), and Hogan & Jeter (1999).

## 3.0 Research Design

## 3.1 Research Methodology

This study uses the secondary data method to collect recent data from the annual reports of 137 companies listed in Saudi Arabia Stock Exchange (Tadawal) for the periods of 2008 and 2009. The listed companies have been categorized into 15 industries in accordance with Tadawal industry classification. The distribution of the 137 companies by type of industry is shown in Table 3.1.

#### 3.2 Source of Data

Auditors' types and names of each company have been identified from the annual reports of the companies listed in Tadawal for the years 2008 and 2009 that represent the most recent data obtained. Furthermore, auditors have been classified into Big4 (Price Water house Coopers, Deloitte Touche Tohmatsu, Ernst & Young, and KPMG) and non-Big4 audit firms based on the recent mergers of the Big audit firms.

Industry	Number of Companies	Percentage (%)
Banks and Financial Services	11	8.0
Industrial Investment	12	12
Building and Construction	13	9.5
Real Estate Development	7	5.1
Transport	4	2.9
Media and Publishing	3	2.2
Hotel and Tourism	2	1.5
Petrochemical Industries	14	10.2
Cement	8	5.8
Retail	9	6.6
Energy and Utilities	2	1.5
Agriculture and Food Industries	14	10.2
Telecommunication and Information Technology	3	2.2
Insurance	28	20.4
Multi-Investment	7	5.1
Total	137	100

Table (3.1). Categorized listed Companies on Tadawal based on Type of Industry.

This study uses the number of audit clients to determine the market share of audit services and the auditors' industry specialization. The annual amount of sales and services and total assets have been recorded. This information is used to identify the characteristics of audit clients in terms of their size and the audit firms' market share among different audit client sizes.

## 3.3 Measures of Industry Specialization

The current study uses the audit market concentration in an industry as a surrogate of industry specialization (Ali, Sahdan, & Rasit, 2008; Iskandar, Maelah & Aman, 2000; Craswell & Taylor, 1991). Previous studies have used the market share as a determination of the number of companies of an audit firm in an industry as a percentage of the total number of companies within the industry (, Sahdan, & Rasit, 2008; Iskandar, Maelah & Aman, 2000; Eichenseher & Danos, 1981; Rhode, Whitesell & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967). Thus, this study has adopted the same method in examining the audit firms' market share and their industry specialization. The higher the market share in an industry, the more the auditor concentration, which, in turn, indicates to an auditor industry specialization.

#### 4.0 Results

## 4.1 Market Share between Big4 and Non-Big4 Audit Firms

The market share of audit service among the Big4 audit firms and the Non-Big4 audit firms for each year of 2008 and 2009 has been analyzed as shown in Table 4.1 and 4.2

Table (4.1). Audit Service Market Share in 2008 by Industry among Big4 and Non-Big4 audit firms.

Industry	Big4 %	Non-Big4 %
Banks and Financial Services	100	0
Industrial Investment	49	51
Building and Construction	53	47
Real Estate Development	63	37
Transport	40	60
Media and Publishing	100	0
Hotel and Tourism	0	100
Petrochemical Industries	80	20
Cement	62	38
Retail	66	34
Energy and Utilities	50	50
Agriculture and Food Industries	53	47
Telecommunication and Information Technology	75	25
Insurance	74	26
Multi-Investment	62	38
Total	69	31

Table (4.2). Audit Service Market Share in 2009 by Industry among Big4 and Non-Big4 audit firms.

Industry	Big4 %	Non-Big4 %
Banks and Financial Services	100	0
Industrial Investment	75	25
Building and Construction	57	43
Real Estate Development	100	0
Transport	50	50
Media and Publishing	100	0
Hotel and Tourism	0	100
Petrochemical Industries	83	17
Cement	64	36
Retail	66	34
Energy and Utilities	50	50
Agriculture and Food Industries	54	46
Telecommunication and Information Technology	75	25
Insurance	62	38
Multi-Investment	57	43
Total	68	32

The numbers in Tables 4.1 and 4.2 represent the percentages of the number of audit client from the total number of company in the industry. These percentages reflect the market share of the Big4 and Non-Big4 audit firms within each industry in 2008 and 2009.

Table 4.1 and 4.2 show that, in total, the Big4 audit firms in Saudi Arabia dominate about 69 and 68 percent of the audit of Tadawal listed companies during the period of 2008 and 2009 respectively. Specifically, the dominance of the Big4 audit firms occurs in 2008 in all industries except for industrial investment, transport, hotel and tourism and energy and utilities. In 2009, there is also a dominance of the Big4 audit firms in all industries except for transport, hotel and tourism, and energy and utilities.

The results indicate that audit services in Saudi Arabia is largely provided by Big4 audit firms. It is suggested that the Big4 audit firms' market share becomes stronger over time. The period under consideration in this study is limited to two years because of the availability of the data retrieved from the annual reports of the listed companies in Tadawal. The findings of this study is consistent with those in the US (Danos & Eichenseher, 1982; Eichenseher & Danos, 1981; Rhode, Whitsell & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967), in Australia (Craswell, Francis & Taylor, 1994; Craswell & Taylor, 1991), and in Malaysia (Ali, Sahdan, & Rasit, 2008; Iskandar, Maelah & Aman, 2000). However, the percentage of the dominance of the Big4 in Saudi Arabia, that is on average 68.5 percent, is lower that of US and Australia, that is on average 90 percent. This situation exists due to the competitiveness of audit market and small market share dominated by small audit firms (Maelah and Aman, 2000).

Performing a t-test of independent sample to examine the level of difference domination between the number of the Big4 and Non-Big4 audit firms. The results indicate to a significantly different domination of the audit services of the Big4 than the domination of the Non-Big4 (at p = .000).

### 4.2 Market Share among Big4 audit Firms

Audit service market of Big4 has been analyzed to indicate that the audit market is not quite equally distributed among the Big4 audit firms as shown in Tables 4.3 and 4.4.

Industry	Price Water house Coopers	Deloitte Touche Tohmatsu	Ernst & Young	KPMG
Banks and Financial Services	32	18	32	18
Industrial Investment	8	33	0	8
Building and Construction	13	33	7	0
Real Estate Development	0	13	50	0
Transport	20	0	20	0
Media and Publishing	33	67	0	0
Hotel and Tourism	0	0	0	0
Petrochemical Industries	0	33	33	14
Cement	13	13	23	13
Retail	0	33	33	0
Energy and Utilities	0	50	0	0
Agriculture and Food Industries	7	20	13	13
Telecommunication and Information Technology	50	25	0	0
Insurance	5	24	27	18
Multi-Investment	0	13	38	13
Total	14	24	23	8

As shown in Table 4.3 and 4.4, the highest market share in Saudi Arabia' audit market has been dominated by Deloitte Touche Tohmatsu in 2008, acquiring 24%. However, Ernst & Young has maintained the highest market share in 2009, acquiring 22%. The second audit firm dominating the market share in 2008 was Ernst & Young, acquiring 23% of audit market share. While in 2009, Deloitte Touche Tohmatsu maintained 20% of the Saudi's audit market share. Therefore, it is evidenced that there is a strong competitiveness between Deloitte Touche Tohmatsu and Ernst & Young in acquiring the highest audit market share in Saudi Arabia. Furthermore, the third and the forth ranks in maintaining the highest audit market share were dominated by the same Big4 audit firms during the periods of 2008 and 2009, Price Water house Coopers and KPMG respectively.

Industry	Price Water house Coopers	Deloitte Touche Tohmatsu	Ernst & Young	KPMG
Banks and Financial Services	32	14	32	22
Industrial Investment	54	17	0	4
Building and Construction	14	29	7	7
Real Estate Development	0	20	80	0
Transport	25	0	25	0
Media and Publishing	33	67	0	0
Hotel and Tourism	0	0	0	0
Petrochemical Industries	0	26	50	7
Cement	13	13	25	13
Retail	0	44	22	0
Energy and Utilities	0	50	0	0
Agriculture and Food Industries	7	7	27	13
Telecommunication and Information Technology	50	25	0	0
Insurance	9	22	20	11
Multi-Investment	0	14	43	0
Total	17	20	22	9

Table (4.4). Distribution of Market Share among Big4 Audit Firms in 2009.

## 4.3 Listed Companies' Characteristics

Listed companies' characteristics of both Big4 and Non-Big4 audit firms have also been further analyzed in terms of their revenue size and total assets' size. Specifically, size of revenue refers to the amount of sales of goods or services generated by listed companies in Tadawal for the periods of 2008 and 2009 and size of total assets refers to the amount of total assets acquired by listed companies in Tadawal for the periods of 2008 and 2009. For the purpose of this study, seven listed companies have been excluded from this analysis due to the unavailability of the required data for the both years 2008 and 2009.

## 4.3.1 Distribution of Size of Revenue between Big4 and Non-Big4

The numbers in Tables 4.5 and 4.6 represent the percentages of the market share of size of revenue between Big4 and Non-Big4 for the both periods of 2008 and 2009.

Table (4.5). Distribution of Revenue between Big4 and Non-Big4 in 2008.

To decadors	Market Share of Size of Revenue		
Industry	Big4 %	Non-Big4 %	
Banks and Financial Services	100	0	
Industrial Investment	46	54	
Building and Construction	71	29	
Real Estate Development	53	47	
Transport	52	48	
Media and Publishing	100	0	
Hotel and Tourism	0	100	
Petrochemical Industries	95	5	
Cement	65	35	
Retail	95	5	
Energy and Utilities	94	6	
Agriculture and Food Industries	97	3	
Telecommunication and Information Technology	55	45	
Insurance	96.02	3.98	
Multi-Investment	81	19	
Total	79	21	

Table (4.6). Distribution of Revenue between Big4 and Non-Big4 in 2009.

To do of the	Market Share	of Size of Revenue
Industry	Big4 %	Non-Big4 %
Banks and Financial Services	100	0
Industrial Investment	50	50
Building and Construction	64	36
Real Estate Development	51	49
Transport	81	19
Media and Publishing	100	0
Hotel and Tourism	0	100
Petrochemical Industries	97	3
Cement	58	42
Retail	95	5
Energy and Utilities	94	6
Agriculture and Food Industries	97	3
Telecommunication and Information Technology	53	47
Insurance	98	2
Multi-Investment	99	1
Total	82.5	17.5

Tables 4.5 and 4.6 show that, in total, the Big4 audit firms in Saudi Arabia perform an audit of about 79 and 82.5 percent of the revenues of Tadawal listed companies during the periods of 2008 and 2009 respectively. Particularly, the dominance of the Big4 audit firms occurs

in 2008 in all industries except for industrial investment and hotel and tourism, whereas the latter one is fully audited by Non-Big4. Furthermore, the dominance of Big4 in 2009 takes place in all industries except for the industrial investment and hotel and tourism, whereas, the latter one is dominated fully by the Non-Big4.

The results indicate that audit services in Saudi Arabia is largely provided by Big4 audit firms and the majority of clients of Big4 are listed companies generating the large amounts of revenues. The results also show that, except for industrial investment and hotel and tourism, the Big4 firms have shown an increasing concentration in large size of revenues for the both years of 2008 and 2009.

## 4.3.2 Distribution of Size of Revenue among Big4 Audit Firms

Market share of size of revenue among Big4 audit firms has also been analyzed to indicate that the market share of revenue is not quite equally distributed among the Big4 audit firms as shown in Tables 4.7 and 4.8.

As shown in Table 4.7 and 4.8, the highest market share of size of revenue has been maintained by Deloitte Touche Tohmatsu in 2008, acquiring 25%. However, Ernst & Young has maintained the highest market share of revenue in 2009, acquiring 33.5%. The second audit firm dominating the market share of revenue in 2008 was Price water house Coopers, acquiring 23%. While, in 2009, Deloitte and Touch Tomatsu maintained 18.3% of the market share of size of revenue. The third domination of the size of revenue was maintained by Enrst and Young in 2008, acquiring 21% and by PricewaterhouseCoopers in 2009, acquiring 18.2%. Finally, KPMG has maintained the lowest domination of the size of revenue in both periods of 2008 and 2009.

It is evidenced that, in 2008, there is a strong competitiveness between Price Water house Coopers and Deloitte Touche Tohmatsu in auditing the listed companies that generate the large sizes of revenues. However, in 2009, Ernst & Young has taking the competitiveness in acquiring the largest market share of auditing the listed companies generating the largest amounts of revenue.

Table (4.7). Distribution of Revenue among Big4 in 2008.

Industry	Price Water house Coopers	Deloitte Touche Tohmatsu	Ernst & Young	KPMG
Banks and Financial Services	32	16	38	14
Industrial Investment	5	35	0	6
Building and Construction	19	39	13	0
Real Estate Development		46	4	0
Transport	40	0	12	0
Media and Publishing	7	93	0	0
Hotel and Tourism	0	0	0	0
Petrochemical Industries	0	30	48	17
Cement	12	17	25	11
Retail	0	62	33	0
Energy and Utilities	0	94	0	0
Agriculture and Food Industries	2	8	24	63
Telecommunication and Information Technology	45	10	0	0
Insurance	0.02	46	48	2
Multi-Investment	0	0	81	0
Total	23	25	21	10

Table (4.8). Distribution of Revenue among Big4 in 2009.

Industry	Price Water house Coopers	Deloitte Touche Tohmatsu	Ernst & Young	KPMG
Banks and Financial Services	36	15	40	9
Industrial Investment	8	35	0	7
Building and Construction	26	15	16	7
Real Estate Development		45	6	
Transport	56		25	
Media and Publishing	10	90		
Hotel and Tourism				
Petrochemical Industries		8	70	19
Cement	12		29	17
Retail		87	8	
Energy and Utilities		94		
Agriculture and Food Industries	2	30	65	
Telecommunication and Information Technology	46	11		
Insurance	30	48	18	2
Multi-Investment			99	1
Total	18.2	18.3	33.5	12.5

## 4.3.3 Distribution of Size of Assets between Big4 and Non-Big4

The numbers in Tables 4.9 and 4.10 represent the percentages of the market share of size of assets between Big4 and Non-Big4 for the both periods of 2008 and 2009.

Table (4.9). Distribution of size of assets between Big4 and Non-Big4 in 2008.

T J	Market Share of	Size of Revenue
Industry	Big4 %	Non-Big4 %
Banks and Financial Services	100	0
Industrial Investment	80	20
Building and Construction	69	31
Real Estate Development	76	24
Transport	52	48
Media and Publishing	100	0
Hotel and Tourism	0	100
Petrochemical Industries	96	4
Cement	59	41
Retail	79	21
Energy and Utilities	99	1
Agriculture and Food Industries	88	12
Telecommunication and Information Technology	61	39
Insurance	88.5	11.5
Multi-Investment	96.4	3.6
Total	94	6

Table (4.10). Distribution of size of assets between Big4 and Non-Big4 in 2009

Industry	Market Share of Size of Revenue		
Industry	Big4 %	Non-Big4 %	
Banks and Financial Services	100	0	
Industrial Investment	80.9	19.1	
Building and Construction	57.3	42.7	
Real Estate Development	87	13	
Transport	93	7	
Media and Publishing	100	0	
Hotel and Tourism	0	100	
Petrochemical Industries	94	6	
Cement	68	32	
Retail	82	18	
Energy and Utilities	99	1	
Agriculture and Food Industries	92.6	7.4	
Telecommunication and Information Technology	100	0	
Insurance	97.7	2.3	
Multi-Investment	98.34	1.66	
Total	97	3	

Tables 4.9 and 4.10 show that, in total, the Big4 audit firms in Saudi Arabia perform an audit of about 94 and 97 percent of the total assets of Tadawal listed companies during the periods of 2008 and 2009 respectively. Specifically, the dominance of the Big4 audit firms occurs in 2008 and 2009 in all industries except for hotel and tourism industry which is fully dominated by Non-Big4. This result indicates that audit services in Saudi Arabia is largely provided by Big4 firms and the majority of clients of Big4 are listed companies that are considered big companies in terms of their sizes of assets.

## 4.3.4 Distribution of Size of Assets among Big4 Audit Firms

Market share of size of assets among Big4 audit firms has also been analyzed to indicate that the market share of size of assets is not quite equally distributed among the Big4 audit firms as shown in Tables 4.11 and 4.12.

As shown in Table 4.11 and 4.12, the highest market share of size of assets has been maintained by Ernst and Young in 2008 and 2009, acquiring 40.5% and 36% respectively. The second audit firm dominating the market share of assets in 2008 and 2009 was Price water house Coopers, acquiring 27% and 29% respectively. The third domination of the size of assets was maintained by Deloitte Touche Tohmatsu in 2008 and 2009, acquiring 24% and 23% respectively followed by KPMG acquiring 2.5% and 9% respectively.

It is evidenced that the competitiveness among the Big4 audit firms is taking the same place from 2008 to 2009 in terms of size of assets. Ernst and Young has been ranked the first one. Price water house Coopers has ranked the second one. While, Deloitte Touch Tohmatsu has been ranked the third one followed by KPMG.

Table (4.11). Distribution of Revenue among Big4 in 2008.

	Big4 %					
Industry	Price Waterhouse Coopers	Deloitte Touche Tohmatsu	Ernst & Young	KPMG		
Banks and Financial Services	35	22	43	0		
Industrial Investment	66	11	0	3		
Building and Construction	18	40	11	0		
Real Estate Development	0	36	40	0		
Transport	44	0	8	0		
Media and Publishing	9	91	0	0		
Hotel and Tourism	0	0	0	0		
Petrochemical Industries	0	16	69	11		
Cement	20	1	26	12		
Retail	0	46	33	0		
Energy and Utilities	0	99	0	0		
Agriculture and Food Industries	1	6	26	55		
Telecommunication and Information Technology	50	11	0	0		
Insurance	0.5	41	41	6		
Multi-Investment	0	0.4	95	1		
Total	27	24	40.5	2.5		

Table (4.12). Distribution of Revenue among Big4 in 2009.

	Big4 %					
Industry	Price Water house	Deloitte Touche	Ernst &	KPMG		
	Coopers	Tohmatsu	Young	KPMG		
Banks and Financial Services	38	18	31	13		
Industrial Investment	72	5.5	0	3.4		
Building and Construction	19	17 16		5.3		
Real Estate Development	0	45	42	0		
Transport	79		14	0		
Media and Publishing	9.6	90.4	0	0		
Hotel and Tourism	0	0	0	0		
Petrochemical Industries	0	0 15		10		
Cement	23	0	31	14		
Retail	0	66		0		
Energy and Utilities	0	99	0	0		
Agriculture and Food	1.1	0.5	40	51		
Industries	1.1	0.3	40	31		
Telecommunication and	82	18	0	0		
Information Technology	32	10	U			
Insurance	55	37	2.7	3		
Multi-Investment	50	0.34	48	0		
Total	29	23	36	9		

## 4.4 Industry Specialization

Industry specialization refers to the number of audit clients being audited by an audit firm (Ali, Sahdan, & Rasit, 2008; Iskandar, Maelah & Aman, 2000; Craswell & Taylor, 1991). An audit firm that has more 10 percent share of clients in an industry is determined as an industry specialist (Ali, Sahdan, & Rasit, 2008; Iskandar, Maelah & Aman, 2000; Craswell, Francis & Taylor, 1994).

Table 4.13 shows a summary of each firm's position for the period from 2008 to 2009. Table 4.13 shows that the Big4 audit firms have specialized in the banks and financial services industry for the both periods of 2008 and 2009. For the industrial investment industry, Deloitte Touche Tohmatsu has specialized for the both years of 2008 and 2009. However, PricewaterhouseCoopers has not specialized in 2008, but it has in 2009. while, Ernst & Young and KPMG have not specialized for the both periods of 2008 and 2009. Regarding the building and construction industry, PricewaterhouseCoopers and Delotte Touche Tohmatsu have specialized in 2008 and 2009. however, Ernst & Young have not specialized for the both years of 2008 and 2009. In terms of real estate development industry, Deloitte Touche Tohmatsu and Ernst &Young have specialized for the both years of 2008 and 2009. While PricewhaterhouseCoopers and KPMG have not specialized for the both periods of 2008 and 2009. The results also show that, in the transport industry, PricewaterhouseCoopers and Ernst and Young have specialized for the both periods of 2008 and 2009. However, Deloitte Touche Tohmatsu and KPMG have not specialized for the both years of 2008 and 2009. For the media and publishing industry, PricewhaterhouseCoopers and Deloitte Touche Tohmatsu have specialized for the both years of 2008 and 2009. While, Ernst & Young and KPMG have not specialized for the both periods of 2008 and 2009. In terms of the hotel and tourism industry, Big4 audit firms have not specialized and this industry is fully audited by Non-Big4 audit firms.

Regarding petrochemical industries, Deloitte Touche Tohmatsu and Ernst &Young have only specialized for the both periods of 2008 and 2009. in terms of cement industry, the Big4 audit firms have specialized for the both years of 2008 and 2009. Furthermore, Deloitte Touche Tohmatsu and Ernst & Young have specialized in the retail industry for

the both years of 2008 and 2009. Also, Deloitte Touche Tohmatsu has only specialized in the energy and utilities industry for the both years of 2008 and 2009. For the agriculture and food industries, Ernst & Young and KPMG have specialized for the both periods of 2008 and 2009. While, Deloitte Touche Tohmatsu has only specialized in 2008. Moreover, PricewaterhouseCoopers and Deloitte Touche Tohmatsu have specialized in the telecommunication and information technology industry for the periods of 2008 and 2009. further, Deloitte Touche Tohmatsu, Ernst & Young, and KMPG have specialized in the insurance industry for the both years of 2008 and 2009. furthermore, Deloitte Touche Tohmatsu and Ernst & Young have specialized in the multi-investment for the both years of 2008 and 2009. while, KPMG has only specialized in 2008.

Table (4.13). Auditors' Industry Specialization by Number of Clients.

Industry		Price Water		Deloitte Touche		Ernst &		KPMG	
	house Coopers		Tohmatsu		Young				
	2008	2009	2008	2009	2008	2009	2008	2009	
Banks and Financial	1	1 1	1	1	1	1	1	1	
Services	1								
Industrial Investment	0	1	1	1	0	0	0	0	
Building and	1	1	1	1	0	0	0	0	
Construction	1								
Real Estate	0	0	1	1	1	1	0	0	
Development	U								
Transport	1	1	0	0	1	1	0	0	
Media and Publishing	1	1	1	1	0	0	0	0	
Hotel and Tourism	0	0	0	0	0	0	0	0	
Petrochemical	0	0 0	1	1	1	1	1	0	
Industries	0								
Cement	1	1	1	1	1	1	1	1	
Retail	0	0	1	1	1	1	0	0	
Energy and Utilities	0	0	1	1	0	0	0	0	
Agriculture and Food	0	0 0	0 1 0	1	1	1	1		
Industries	0			0	1	1	1	1	
Telecommunication									
and Information	1	1	1	1	0	0	0	0	
Technology									
Insurance	0	0	1	1	1	1	1	1	
Multi-Investment	0	0	1	1	1	1	1	0	

#### Note:

The number of audit firms with a market share greater than or equal to 10 percent is assigned number 1 and 0 otherwise.

The results also show that Big4 have not concentrated only in one industry but in a few industries. Generally, Deloitte Touche Tohmatsu is the most specialist audit firm. It has concentrated its audit service in all the industries except transport and hotel and tourism industries. The second specialist audit firm is Ernst and Young. It has concentrated it audit service in all industries except industrial investment, building and construction, media and publishing, hotel and tourism, energy and utilities, and telecommunication and information technology industries. The third specialist audit firm is PricewaterhouseCoopers. It has concentrated in offering its audit service to the all industries except hotel and tourism, petrochemical industries, retail, energy and utilities, agriculture and food industries, insurance, and multi-investment industries. The final specialist audit firm is KPMG. It has only concentrated in auditing six industries. These include banks and financial services, petrochemical industries, cement, agriculture and food industries, insurance, and multi-investment industries.

The results suggest that, over the period, Big4 audit firms move into other industries to expand their market share. Further, the industry expertise of the Big4 in Saudi Arabia seems to take a diversification. The Big4 audit firms have increased the number of industries they audit. This situation reflects the market expansion strategy of the Big4 audit firms (Iskandar, Maelah & Aman, 2000).

#### 5.0 Conclusion

This study has provided an empirical evidence of distribution of audit service market and industry distribution among audit firms in Saudi Arabia. This study has found that Big4 audit firms in Saudi Arabia dominate, on average, about 68.5 percent of the audit market share. This dominance becomes stronger over the time, but it is still less than 90 percent of what found in US and Australia. This study has also found that the audit market share is not equally distributed among Big4 audit firms. Specifically, the highest market share has been dominated by Deloitte Touche Tohmatsu in 2008, acquiring 24%. However, Ernst & Young has maintained the highest market share in 2009, acquiring 22%. The second audit firm dominating the market share in 2008 was Ernst & Young, acquiring 23% of audit market share. However, in 2009, Deloitte Touche Tohmatsu maintained 20% of the audit market share. Therefore, it is

evidenced that there is a strong competitiveness between Deloitte Touche Tohmatsu and Ernst & Young in acquiring the highest audit market share in Saudi Arabia. Furthermore, the third and the forth ranks in maintaining the highest audit market share were dominated by the same Big4 audit firms during the periods of 2008 and 2009, Price water house Coopers and KPMG respectively.

The results have shown that, in total, the Big4 audit firms in Saudi Arabia perform an audit of about 79 and 82.5 percent of the revenues of Tadawal listed companies during the periods of 2008 and 2009 respectively. Particularly, the dominance of the Big4 audit firms occurs in 2008 in all industries except for industrial investment and hotel and tourism, whereas the latter one is completely audited by Non-Big4. Moreover, this study has also found that, in total, the Big4 audit firms in Saudi Arabia perform an audit of about 94 and 97 percent of the total assets of Tadawal listed companies during the periods of 2008 and 2009 respectively. Specifically, the dominance of the Big4 audit firms occurs in 2008 and 2009 in all industries except for hotel and tourism industry which is completely dominated by Non-Big4.

It has also been found by this study that each audit firm from the Big4 audit firm is, at least, specialized in six industries out of 14 industries listed in Tadawal. Big4 have not concentrated only in one industry but in a few industries. Generally, Deloitte Touche Tohmatsu is the most specialist audit firm. It has concentrated its audit service in all the industries except transport and hotel and tourism industries. second specialist audit firm is Ernst and Young. It has concentrated it audit service in all industries except industrial investment, building and construction, media and publishing, hotel and tourism, energy and utilities, and telecommunication and information technology industries. The third specialist audit firm is PricewaterhouseCoopers. It has concentrated in offering its audit service to the all industries except hotel and tourism, petrochemical industries, retail, energy and utilities, agriculture and food industries, insurance, and multi-investment industries. The final specialist audit firm is KPMG. It has only concentrated in auditing six industries. These include banks and financial services, petrochemical industries, cement, agriculture and food industries, insurance, and multi-investment industries.

Therefore, it could be concluded from this study that audit specialization by industry among audit firms in Saudi Arabia does not exist. This situation is on the ground because audit firms in Saudi Arabia provide a wide range of audit services to different clients in different industries rather than they offer a specialized services to particular industries. As a result, audit firms in Saudi Arabia perform audit based on general knowledge gained rather than an industry specific knowledge. To support this conclusion, further investigation is required.

This study is still subject to some limitations. One of the limitations of this study is that this paper has reported Big4 audit firms' market shares. Thus, the results have not shown a whole picture of the all audit firms services in the Saudi audit market such as second-tier audit firms and small audit firms. Future research is required to extend the results of this research and fill in this gap. The second limitation of this study is that the time considered under investigation is limited to two periods of 2008 and 2009 due to the availability of data. Hence, future research is required to extend the results of this study by covering a range of previous years to this study and/or post-periods to this study. Finally, this study has used the number of clients to determine the audit market share and auditors' industry specialization of each audit firm. therefore, the results found in this study are limited to the methodological approach used. Future research is required to extend and confirm these results by using different methodological approaches such as the amount of audit fee, the number of time spent on audit work and average years of audit experience.

#### References

- **Abdel-Khalik, A.** (1993) Why do private companies demand auditing? A case for organizational loss of control. *Journal of Accounting Auditing and Finance*, **8**(1): 31.
- **Abidin, S.** (2006) Audit market concentration and auditor choice in the UK. Unpublished PhD Dissertation
- **Addams, H.** and **Allred, A.** (2005) Ethical Reputation, Not Fees Drive Auditor Selection At Inc. 500 Companies. *Journal of Business & Economics Research*, **3**(3).
- Akresh, A., Loebbecke, J. and Scott, W. (1988) Audit approaches and techniques. Research Opportunities in Auditing: The Second Decade, 13.
- **Aksu, M., Onder, T.** and **Saatcioglu, K.** (2007) Auditor Selection, Client Firm Characteristics, and Corporate Governance: Evidence from an Emerging Market.
- **Al-Abbas, M.** (2006) Effect of Information about Auditor Reputation and Audit Quality on Saudi Stock Market. King Khaled University, Accounting Department, Working Paper.

- **Al-Angari, H.** (2004) The Impacts of Compliance with Local Auditing Standards on Audit Firms in the Kingdom Of Saudi Arabia. *King Abul-Aziz University Journal*, **18**(1): 165-203.
- **Al-Hussaini**, **A.** and **Al-Sultan**, **W.** (2008) Development of Enforcement Mechanisms Following Adoption Of International Accounting Standards In The Gulf Co-Operation Council Member States. *International Journal of Business Strategy*, **8**(3).
- Ali, A., Sahdan, M. and Rasit, M. (2008) Audit Specialisation in Malaysia. *International Journal of Business and Management*, **3**(3): p. 91.
- **Al-Qahtani, A.** (2006) The development of accounting regulation in the GCC: Western hegemony or recognition of peculiarity? *Managerial Auditing Journal*, **20**(3).
- **Al-Sehali, M.** and **Spear, N.** (2004) The decision relevance and timeliness of accounting earnings in Saudi Arabia. *International Journal of Accounting*, **39**(2): 197-217.
- **Al-Shammari, B., Brown, P.** and **Tarca, A.** (2008) An investigation of compliance with international accounting standards by listed companies in the Gulf Co-Operation Council member states. *International Journal of Accounting,* **43**(4): 425-447.
- **Arens, A.A.** and **Loebbecke, J.K.** (2000) Auditing an Integrated Approach, 8<sup>th</sup> ed., Prentice-Hall, Englewood Cliffs, NJ.
- Armstrong, J. (1987) The forecasting audit. The handbook of forecasting, 584.
- **Ashton, R.** (1990) Pressure and performance in accounting decision settings: Paradoxical effects of incentives, feedback, and justification. *Journal of Accounting Research*, **28:** 148.
- **Asiri, B.** (2008) Testing weak-form efficiency in the Bahrain stock market. *International Journal of Emerging Markets*, **3**(1): 38-53.
- **Balsam, S., J. Krishnan, and J. S. Yang.** (2003) Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory* 22 (September): 71–97.
- **Beatty, R.** (1989) Auditor reputation and the pricing of initial public offerings. *Accounting Review*, 693.
- Becker, C., DeFond, M., Jiambalvo, J. and Subramanyam, K. (1998) The effect of audit quality on earnings management. *Contemporary Accounting Research*, **15:** 1.
- **Bedard, J.** and **Biggs, S.** (1991) The effect of domain-specific experience on evaluation of management representations in analytical procedures. *Auditing: A Journal of Practice & Theory*, **10:** 77-90.
- **Bewley, K., Chung, J.** and **McCracken, S.** (2008) An examination of auditor choice using evidence from Andersen's demise. *International Journal of Auditing*, **12**(2): 89-110.
- **Bley, J.** and **Chen, K.** (2006) Gulf Cooperation Council (GCC) stock markets: The dawn of a new era. *Global Finance Journal*, **17**(1): 75-91.
- Carcello, J.V. and A.L. Nagy. (2002) Auditor industry specialization and fraudulent financial re-porting. Presented at the Deloitte & Touche University of Kansas Symposium on Auditing Problems, May.
- Carcello, J. and Nagy, A. (2004) Client size, auditor specialization and fraudulent financial reporting. *Managerial Auditing Journal*, **19**(5): 651-668.

- Casterella, J., J. Francis, B. Lewis and P. Walker (2004) Auditor industry specialization, client bar-gaining power, and audit pricing. *Auditing: A Journal of Practice & Theory* 23 (March): 123–141.
- **Chandler, R., Edwards, J.** and **Anderson, M.** (2008) Disciplinary action against members of the founding bodies of the ICAEW. *Accounting, Auditing & Accountability Journal*, **21**(6): 827.
- **Chaney, P., Jeter, D.** and **Shivakumar, L.** (2005) *Self-selection of auditors and size nonlinearities in audit pricing*: Working paper, Vanderbilt University and London Business School.
- Chang, X., Dasgupta, S., Hilary, G. and Paris, H. (2009) The effect of auditor quality on financing decisions. *The Accounting Review*, 84: 1085-1117.
- **Chow, C., Kramer, L.** and **Wallace, W.** (1988) The environment of auditing. *Research Opportunities in Auditing: The Second Decade*, 155.
- Clatworthy, M., Mellett, H. and Peel, M. (2000) Corporate governance under new public management: an exemplification. *Corporate Governance: An International Review*, **8**(2): 166.
- **Collier, P.** and **Gregory, A.** (1996) Audit committee effectiveness and the audit fee. *European Accounting Review*, **5**(2): 177.
- **Craswell, A.** and **Taylor, S.** (1991) The market structure of auditing in Australia: the role of industry specialization. *Research in Accounting Regulation*, **5**(1): 55-77.
- **Craswell, A., Francis, J.** and **Taylor, S.** (1995) Auditor brand name reputations and industry specializations. *Journal of Accounting and Economics*, **20**(3): 297.
- **Culvenor, J., Godfrey, J.** and **Byrne, G.** (1999) Modeling total accruals in an international environment: the impact of alternative measures of PPE-1985 to 1989. *Journal of International Accounting, Auditing and Taxation,* **8**(2): 289-313.
- **Danos, P.** and **Eichenseher, J.** (1982) Audit industry dynamics: Factors affecting changes in client.
- **De Beelde, I.** (1997) An exploratory investigation of industry specialization of large audit firms. *The International Journal of Accounting*, **32**(3): 337-355.
- **DeAngelo, L.** (1991) Auditor size and audit quality. *Journal of Accounting and Economics*, **3**(3): 183.
- **DeFond, M.** (1992) The association between changes in client firm agency costs and auditor switching. *Auditing: A Journal of Practice and Theory,* **11**(1): 16.
- **Dey, R.** (2006) Audit industry structure: How a client's need for privacy and industry expertise affects auditor alignment. the George Washington University.
- **Dopunch, N.** and **Simunic, D.** (1982) The competition in auditing an assessment fourth symposium on auditing research. *University of Illinois*.
- **Dunn, K.** and **Huss, H.** (2004) Mail survey reliability through follow-up mailings: the case of auditor changes. *Managerial Auditing Journal*, **19**(8): 1048-1054.
- **Eichenseher, J.** and **Danos, P.** (1981) The analysis of industry-specific auditor concentration: Towards an explanatory model. *Accounting Review*, **56**(3): 479-492.
- **Francis, J.** and **Simon, D.** (1987) A test of audit pricing in the small-client segment of the US audit market. *Accounting Review*, 145-157.
- **Francis, J.** and **Wilson, E.** (1988) Auditor changes: A joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review,* **63**(4): 663-682.

- **Francis, J., Maydew, E.** and **Sparks, H.** (1999) The role of Big 6 auditors in the credible reporting of accruals. *Auditing*, **18**: 17-34.
- **Gaeremynck, A.** and **Willekens, M.** (2003) The endogenous relationship between audit-report type and business termination: evidence on private firms in a non-litigious environment. *status: published*.
- **Geiger, M.** and **Rama, D.** (2006) Audit firm size and going-concern reporting accuracy. *Accounting Horizons*, **20**(1): 1.
- Global Investment House (2008). GCC Market Capitalization. Retrieved from the Mena Fn Website at <a href="http://www.menafn.com/rc\_Report\_Details.asp?rc">http://www.menafn.com/rc\_Report\_Details.asp?rc</a> id=16398
- **Gulf Base** (2009) GCC Economic Overview. Retrived September, 2009 from: http://www.gulfbase.com/Site/Interface/TheGCC/gccoverview.html
- **Hansen, S.** (2007) Big Four Auditor Selection: The Influence of Client Characteristics and Auditor Specialization. Seminar paper, School of Business, The George Washington University, Washington, DC 20052.
- **Healy, P. M.** and **KG Palepu** (2001) "Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature". *Journal of Accounting and Economics*, **31**(1-3), 405-440.
- **Heritage Foundation** (2009a) Ranking the Countries. Retrieved October, 2009 from: 2009 Index of Economic Freedom at: http://www.heritage.org/Index/Ranking.aspx
- **Heritage Foundation** (2009b) Saudi Arabia. Retrieved October, 2009 from 2009 Index of Economic Freedom at: http://www.heritage.org/Index/Country/SaudiArabia
- **Hermanson, R., Plunkett, L.** and **Turner, D.** (1994) A Study of the Importance of Certain Attributes To Clients' Initial Selections of Audit Firms: A Longitudinal and Stratified Approach. *Journal of Applied Business Research*, **10**, 101-101.
- **Hogan, C.E.** and **Jeter, D.C.** (1999) Industry Specialization by Auditors. *Auditing: A Journal of Practice and Theory*, **18**:1, pp.1-17
- **Iskandar, M., Maelah, R.** and **Aman, A.** (2000) Audit Market Concentration And Auditor's Industry Specialisation: An Empirical Evidence In Malaysia. *Utara Management Review*, **1**(1): 93-112.
- **Jensen, M.** and **Meckling, W.** (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, **3**(4), 305.
- **Johnson, B.T., Lys.** (1990) The market for audit services: evidence from voluntary auditor changes. *Journal of Accounting and Economics*, **12**: 281-308.
- **Joshi, P.** and **Al-Mudhahki, J.** (2001) Empirical study of compliance with international accounting standards (IAS 1) by stock exchange listed companies in Bahrain. *Journal of Financial Management and Analysis*, **14**(2): 43-54.
- **Joyce, E.** (1976) Expert judgment in audit program planning. *Journal of Accounting Research*, **14**: 29.
- **Knapp, M.** (1991) Factors that audit committee members use as surrogates for audit quality. *Auditing: A Journal of Practice & Theory*, **10**(1): 35
- **Knechel, W.** and **Vanstraelen, A.** (2007) The relationship between auditor tenure and audit quality implied by going concern opinions. *Auditing: A Journal of Practice & Theory,* **26**(1): 113-131.

- **Koh, H. and Woo, E.** (2001) The auditor-manager expectation gap in auditing. *Managerial Auditing Journal*, **16**(3): 176-188.
- **Krishnan, G.** (2003) Does Big 6 auditor industry expertise constrain earnings management? *Accounting Horizons*, **17**, 1-17.
- **Krishnan, J.** and **Schauer, P.** (2000) The differentiation of quality among auditors: Evidence from the not-for-profit sector. *Auditing*, **19**(2): 9-26.
- **Kwon, S.** (1996) The impact of competition within the client's industry on the auditor selection decision. *Auditing: A Journal of Practice & Theory*, **15**(1): 53-70.
- **Lazer, R., Livnat, J.** and **Tan, C.** (2004) Restatements and accruals after auditor changes. **Lennox, C.** (1999) Audit quality and auditor size: An evaluation of reputation and deep pockets hypotheses. *Journal of Business Finance & Accounting*, **26**(7 & 8): 779.
- **Leong, L., Huang, S.** and **Hsu, J.** (2003) An empirical study on professional commitment, organizational commitment and job involvement in Canadian accounting firms. *Journal of American Academy of Business.* **2**(2): 360-370.
- Mansi, S., Maxwell, W. and Miller, D. (2004) Does auditor quality and tenure matter to investors? Evidence from the bond market. *Journal of Accounting Research*, **42** (4).
- **Marxen, D.** (1990) A behavioral investigation of time budget preparation in a competitive audit environment. *Accounting Horizons*, **4**(2): 47.
- **Mayhew, B.** and **Wilkins, M.** (2003) Audit firm industry specialization as a differentiation strategy: Evidence from fees charged to firms going public. *Auditing: A Journal of Practice and Theory*, **22**(2): 33-52.
- MEDEA (2009) Saudi Arabia. Retrieved October, 2009 from MEDEA, European Institute for Research on Mediterranean and Euro-Arab Cooperation with the support of the Belgian Federal Public Service of Foreign Affairs at <a href="http://www.medea.be/index.html?page=2&lang=en&doc=18">http://www.medea.be/index.html?page=2&lang=en&doc=18</a>
- Ministry of Commerce and Industry of the Kingdom of Saudi Arabia (2009a)

  Foreign Investment Law (1/2000). Retrieved October, 2009 from Ministry of
  Commerce and Industry of the Kingdom of Saudi Arabia Website at

  <a href="http://www.commerce.gov.sa/">http://www.commerce.gov.sa/</a> circular/3-1.asp#1
- **Moizer, P.** (1997) Auditor reputation: the international empirical evidence. *International Journal of Auditing*, **1**(1): 61.
- **Mutchler, J.** (1986). Empirical evidence regarding the auditor's going-concern opinion decision. *Auditing: A Journal of Practice & Theory,* **6**(1): 148-163.
- **Ng, D.** (1978). An information economics analysis of financial reporting and external auditing. *Accounting Review*, 910.
- **Nusbaum, E.** (2007) *Top 10 wish list for audit research*. Current Issues in Auditing 1: C3-C9.
- **O'Keefe, T., Westort, P.R. King,** and **K. Gaver.** (1994) Audit Fees, Industry Specialization, and Compliance with GAAS Reporting Standards. *Auditing: A Journal of Practice and Theory*, **13**: 41-55.
- **Owhoso, V., W. Messier** and **J. Lynch.** (2002) Error detection by industry-specialized teams during sequential audit review. Journal of Accounting Research 40 (June): 883-900.
- **Owhoso, V., Messier Jr, W.** and **Lynch Jr, J.** (2002) Error detection by industry-specialized teams during sequential audit review. *Journal of Accounting Research*, **40**(3): 883-900.

- **Palmrose, Z.** (1988) Litigation and Audit Service Quality. *The Accounting Review*, **63**(1): 55.
- **Pong, C.** and **Whittington, G.** (2007) The determinants of audit fees: some empirical models. *Profitability, accounting theory and methodology: the selected essays of Geoffrey Whittington,* **21**(8): 166.
- **Rhode, J., Whitsell, G.** and **Kelsey, R.** (1974) An analysis of client-industry concentrations for large public accounting firms. *Accounting Review*, **49**(4): 772-787.
- **Sands, J.** and **McPhail, J.** (2003) Choice criteria of listed Australian public companies for selecting an auditor: An exploratory study. *International Journal of Business Studies*, **11**(1): 109-133.
- Saudi Organization for Certified Public Accountants (SCOPA) (2009a) About SCOPA. Retrieved October, 2009 from the SCOPA Website at: <a href="http://www.socpa.org.sa/engl/index.php">http://www.socpa.org.sa/engl/index.php</a>
- **Saudi Stock Exchange.** (2009a). About Tadawul. Retreived October, 2009 from Saudi Stock Exchange Website at:

 $\underline{\text{http://www.tadawul.com.sa/wps/portal/!ut/p/c1/04\_sb8k8xllm9}} \ msszpy8xbz9cp0os3gd \\ dwnhh0tlf1c3azmpd0dnxzadknd388jptduptiz$ 

sl8h2vaqagejkxw!!/dl2/d1/l0lhskovd0rnquzrquvnqs ehl1lcwncvzw4!/

Saudi Stock Exchange (2009b) Listed Companies. Retrieved October, 2009 from:

Saudi Stock Exchange Website at:

http://www.tadawul.com.sa/wps/portal/!ut/p/c1/

04\_sb8k8xllm9msszpy8xbz9cp0os3g

daxn3d0nnn19nazmpzxddqecdknd388jptdupts3tj9spmo\_3m3aoc\_i0mtkwsah0mt bycrl0mjhynj1wn9cp0y90aiqkxkuoinupycjdureawm5nlg!!/dl2/d1/l3djmkevd05fq kzrqmhouujoquehis9zstv3lzdftjbdvljjndiwodhrrdayqki5sjqysziwtzc!/

- **Schiff, A.** and **Fried, H.** (2005) Large companies and the big eight: an overview. *Abacus*, **12**(2): 116-124.
- Sercu, P., Vander Bauwhede, H. and Willekens, M. (2006) Post-Enron Implicit Audit Reporting Standards: Sifting through the Evidence. *De Economist*, **154**(3): 389-403.
- **Simon, D.** and **Francis, J.** (1988) The effects of auditor change on audit fees: Tests of price cutting and price recovery. *The Accounting Review,* **63**(2): 255.
- **Simunic, D.** (1980) The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, **18**(1): 161.
- **Simunic, D.** and **Stein, M.** (1987) Product Differentiation in Auditing, Auditor Choice in the Market for Unseasoned New Issues, The Canadian Certified General Accountants. *British Columbia, Canada*.
- **Solomon, I., Shields, M.** and **Whittington, O.** (1999) What do industry-specialist auditors know? *Journal of Accounting Research*, **37**(1): 191-208.
- **Stanny, E., Anderson, S.** and **Nowak, L.** (2000) Contributing factors in the selection and retention of local accounting firms. *National Public Accountant*, **45**(4): 19-21.
- **Sundgren, S.** (1998) Auditor choices and auditor reporting practices: evidence from Finnish small firms. *European Accounting Review*, **7**(3): 441.
- **Sundgren, S.** and **Johansson, C.** (2004) The effects of the auditor's professional qualification and the firm's financial health on depreciation in Finland. *Accounting And Business Research.*, **34**(2): 125-144.

- **Teoh, S.** and **Wong, T.** (1993) Perceived auditor quality and the earnings response coefficient. *The Accounting Review,* **68**(2): 346.
- **Titman, S.** and **Trueman, B.** (1986) Information quality and the valuation of new issues. *Journal of Accounting and Economics*, **8**(2): 159.
- **Vander Bauwhede, H., Willekens, M.** and **Gaeremynck, A.** (2003) Audit firm size, public ownership, and firms' discretionary accruals management. *International Journal of Accounting*, **38**(1): 1.
- **Vanstraelen, A.** (2002) Auditor economic incentives and going-concern opinions in a limited litigious Continental European business environment: Empirical evidence from Belgium. *Accounting and Business Research*, **32**(3): 171-186.
- **Wallace, W.** (1985) The Economic Role of the Audit in Free and Regulated Markets. <a href="http://raw.rutgers.edu/raw/wallace/homepage.htm">http://raw.rutgers.edu/raw/wallace/homepage.htm</a>
- **Watts, R.** (1977) Corporate financial statements, a product of the market and political processes. *Australian Journal of Management*, **4**.
- **Watts, R.** and **Zimmerman, J.** (1983) Agency problems, auditing, and the theory of the firm: Some evidence. *JL & Econ.*, **26**, 613.
- Whisenant, S., Sankaraguruswamy, S. and Raghunandan, K. (2003) Evidence on the joint determination of audit and non-audit fees. *Journal of Accounting Research*, **41**(4): 721-744.
- Willekens, M. and Achmadi, C. (2003) Pricing and supplier concentration in the private client segment of the audit market: Market power or competition? *International Journal of Accounting*, **38**(4): 431.
- **Wright, S.** and **Wright, A.** (1997) The effect of industry specialization on hypothesis generation and audit planning decisions. *Behavioral Research in Accounting*, **9**, 273-294.
- **Zeff, S.** and **Fossum, R.** (1967) An analysis of large audit clients. *Accounting Review*, **42**(2): 298-320.

# تخصص وتركيز شركات التدقيق: دراسة على سوق السعودية

خالد سليمان يسلم الجعيدي وشمهرير بن عابدين كلية التجارة – جامعة أوتارا ماليزيا aljaydi\_khaled@yahoo.com

المستخلص. تهدف هذه الدراسة إلى تحليل ممارسات تدقيق الحسابات بين شركات التدقيق العالمية المعروفة بال4 Big وبين شركات التدقيق الأخرى المعروفة بال4 non-Big وبين شركات التدقيق الأخرى المعروفة بال4 non-Big. استخدمت هذه الدراسة الحصة السوقية لشركات المسجلة التدقيق كمقياس لتخصص شركة التدقيق في القطاع التي تقوم بمراجعة حساباته. مصدر البيانات تم الحصول عليها من قوائم الشركات المسجلة في السوق المالية السعودية. نتائج هذه الدراسة تشير إلى أن معدل الحصة السوقية لشركات التدقيق العالمية تبلغ حوالي (8.5%) لجميع القطاعات المسجلة في بورصة السعودية وهي أيضا في تزايد مستمر. نتائج هذه الدراسة أيضا تشير إلى أن شركات التدقيق العالمية غير متخصصة في مراجعة قطاع محدد وذلك لأنها تقوم بتقديم خدمات التدقيق لمختلف القطاعات المسجلة في السوق المالية السعودية دون قطاع معين. بناء عليه، يمكن الإشارة إلى أن شركات التدقيق العاملة في السعودية تقدم خدمات مراجعة الحسابات في المعرفة العامة في مراجعة الحسابات وليس على المعرفة التخصصية القطاعية.