

Audit Market Concentration and Auditor's Industry Specialisation: An Empirical Evidence in Malaysia^{1 2}

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Industry specialisation refers to the concentration of auditors' work within specific industries. Past studies show that industry specialisation exists in the US (e.g., Danos & Eichenseher, 1982; Eichenseher & Danos, 1981; Rhode, Whitsell, & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967) and Australia (e.g., Craswell, Francis & Taylor, 1994; Craswell & Taylor, 1991). These studies recognised that industry specialisation is an important dimension to the audit market. It is argued that industry specialisation has positive impact on costs and product quality. This study extends previous studies by examining the practice among Big 6 and non-Big 6 audit firms in Malaysian. In addition, the study also investigates features that characterise the clients. The results show that Big 6 audit firms acquire more than 60 percent of the audit service market share in almost all industries and their market share expands over time. The results also show that none of the Big 6 firms specialises in only one industry. Big 6 firms provide services to more than 10 percent of the client in three to five industries. The results indicate that the Big 6 firms increase their market share by expanding their market to other industries.

Key words: audit market concentration, auditor's industry specialisation, audit fee, audit service, market share

Pengkhususan industri merujuk kepada penumpuan kerja juruaudit dalam industri tertentu. Kajian lepas melihat pengkhususan pasaran audit dan pengkhususan industri juruaudit di beberapa negara termasuk Amerika Syarikat (contoh, Danos & Eichenseher, 1982; Eichenseher & Dano, 1981; Rhode, Whitsell, & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967), dan Australia (contoh Craswell, Francis & Taylor, 1994; Craswell & Taylor, 1991). Kajian ini mendapati pengkhususan industri merupakan dimensi penting

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kepada pasaran audit. Pengkhususan audit dikatakan mempunyai kesan positif kepada kos dan kualiti produk. Kajian ini merupakan lanjutan kajian lepas dengan melihat amalan di kalangan firma audit 'Big 6' dan 'non-Big 6' di Malaysia. Kajian ini juga memeriksa ciri klien. Keputusan kajian menunjukkan bahawa firma audit 'Big 6' menjalankan lebih 60 peratus daripada pasaran khidmat audit dalam hampir semua industri dan pasaran mereka semakin meningkat. Keputusan kajian juga menunjukkan bahawa tiada firma 'Big 6' mengkhusus hanya dalam satu industri. Firma 'Big 6' menyediakan khidmat kepada lebih 10 peratus klien dalam tiga hingga lima industri. Keputusan kajian menunjukkan firma 'Big 6' meningkatkan syer pasaran mereka dengan memperluas pasaran mereka ke industri lain.

Kata kunci: penumpuan pasaran audit, pengkhususan industri audit, yuran audit, perkhidmatan audit, bahagian pasaran

Auditors' industry specialisation, which refers to the concentration of auditors' work by the type of industry, has been recognised in previous auditing research in the US and Australia. The increasing concern among providers of audit services in the US has drawn much attention since more than 30 years ago (Mautz & Sharaf, 1961). Regulatory agencies, such as the United States Federal Trade Commission and the Australia Trade Practice Commission, perceive industry specialisation as an element of monopoly or market power. However, it was argued that industry specialisation has positive impact on costs and product quality as a result of economy of scale (e.g., Craswell & Taylor, 1991).

More evidence of increasing suppliers concentration was given subsequently in the US (e.g., Fried & Schiff, 1981; McConnell, 1986), in Australia (e.g., Craswell, 1988; Craswell, Francis & Taylor, 1994), and in the UK (e.g., Moizer & Turley, 1987). A greater emphasis on industry specialisation within the audit firm aims at achieving a more efficient and effective manner of allocating economic resources through providing auditors with the knowledge required for the audit of a particular industry. This development may affect audit firms in terms of their planning and management strategy. For example an emphasis on industry specialisation training to develop industry expertise is necessary for the improvement of auditor performance. The predominance of audit service market share by, then, Big 8 firms³ appears to be a common feature for countries such as Australia and the US. Although there was much research in this area in other countries, none was done in Malaysia. Evidence of audit practices in the Western

³The Big 8 firms are Arthur Anderson & Co.; Arthur Young & Co.; Ernst & Ernst; Haskins & Sells; Lybrand, Ross Bros & Montgomery; Oeat, Marwick, Mitchell & Co.; Price Waterhouse & Co.; and Touche, Ross, Bailey & Smart.

countries such the US, the UK, and Australia may not be generalised to Malaysia. Environmental factors, such as economy, business, culture, and regulation, surrounding the audit in Malaysia differ from those in the Western countries (Perera, 1989). Differences in environmental factors are expected to have caused differences in the development of auditing profession in Malaysia. The objectives of this study are, therefore, to provide empirical evidence on the market distribution of audit service among the Big 6 and non-Big 6 audit firms⁴, and the industry specialisation of those firms. The study will also examine the characteristics of audit clients. This information is important for the profession in planning for the future expansion strategy. Findings of this study will provide a platform for further research in Malaysia.

This paper is divided into five sections. The second section provides the literature review followed by description of research methodology in the third section. Results of the study are discussed in section four. The analysis is divided into three parts. The first part provides descriptive statistics on audit market share between the Big 6 and non-Big 6 audit firms as well as the market distribution among the Big 6 firms. The second part examines the characteristics of audit clients. The third part determines the nature of industry specialisation in Malaysia. Section five provides the conclusion and implication of the research findings.

Prior Research

There have been a number of studies on auditors' industry specialisation particularly among the Big 8 firms in countries such as the US, UK, and Australia. Zeff and Fossum (1967) provide statistics on the nature and scope of activities of large public accounting firms in the US. Based on 639 companies from 38 industrial categories, the study found that, the Big 8 firms audited 92.7 percent of the companies whose revenue comprised 94.8 percent of the total. The results reflect the predominance of the Big 8 public accounting firms in large US industries with one firm owed its position to one or two immense clients. Price Waterhouse & Co. was the leader in food products, machinery-industrial, meat and dairy products, office equipment, oil, rubber fabricating and steel. Haskins & Sells was the leader in autos, chemicals and containers; Coopers & Lybrand in metal-aluminium-copper-fabricating, and telephone; Ernst & Ernst in auto parts; Peat, Marwick & Co. in electronic-electrical; and Touche, Ross, Bailey & Smart in

⁴The Big 6 firms are Cooper & Lybrand, Arthur Anderson, Peat Marwick, Price Waterhouse, Ernst & Young, and Delloite & Tohmatsu. The other audit firms are categorised as non-Big 6.

retail trade-department stores, and mail order. Overall, Price Waterhouse & Co. led the positions on all the criteria.

Rhode, Whitsell and Kelsey (1974) replicated the study and found that there was no significant change in client-industry concentration for large public accounting firms over the period between 1964 and 1971. The study uses 1971 sales, assets and net income figures from companies audited by the Big 8 firms. The results show that the Big 8 firms audit 93.8 percent of the large US industrial companies whose revenue comprises 96.45 percent of the total revenue of all industrial companies. For the non-Big 8 firms, the number of clients audited during the same period declined from 7.34 percent to 6.13 percent and their share of revenue declined from 5.20 percent to 3.55 percent. The predominance of the Big 8 firms was greater in some industries particularly industrial, retailing, and transportation. In 1971, Price Waterhouse & Co still led in all categories as it did in 1964.

Schiff and Fried (1976) used a more comprehensive measurement of concentration across industries to further confirm the dominance of the Big 8 audit firms in the US. The study involves a greatly expanded population and sample size by including 650 companies, classified into 34 industries. The study confirmed the dominance of the Big 8 audit firms in the US. The Big 8 firms audited about 91.6 percent of these companies, whose revenues represent 95.5 percent of the total operating revenues. The dominance by the Big 8 was apparent to a similar degree in the industrial areas i.e., merchandising, transportation and utilities. Price Waterhouse was the first in all of the categories.

Eichenseher and Danos (1981) expanded the client population sevenfold to include firms in 54 industries with at least 40 corporations in each industry to obtain a more comprehensive measurement of concentration. The concentration was determined in terms of the percentage of total activity in an industry, which was accounted for by the four most active companies. The results showed that auditor concentration existed in many industries although the levels of concentration were not as high as those suggested in the earlier works. This study found that over 90 percent of the industries observed appeared to have four or fewer CPA firms receiving at least 50 percent of the revenues deriving from clients in the industry.

Three main factors affecting client industry market share are found to be the firm intra-industry market share, overall market share and the regulatory nature of the client industry (Danos & Eichenseher, 1982). Although larger CPA firms have increased their overall market share but their industry-specific market share in "non-regulated" industries has eroded. Results of past studies suggest that industry specialisation characterises the audit service market in the US over the years since 1960s.

Craswell and Taylor (1991) re-examined concentration of audit market in Australia with the objective to provide additional evidence on the market structure for audit services with specific concern for specialisation by auditors for the period 1982 to 1987. Client-industry specialisation was determined based on the number of the industry clients audited, or the accounting firm's total industry audit fee. The variation in market share across different types of client groups would be consistent with client-industry specialisation. Hence, the auditor's competence was measured in terms of the extent to which the audit firm specialised in particular types of clients. Clients from within a defined industry group were presumed to present similar audit problems, which in turn require a set of audit skills specific to that industry. The results reveal that the Australian market displayed a market variation in audit firm concentration across groups of relatively homogeneous clients. This occurs within subsets of the Big 8 accounting firms (Craswell & Taylor, 1991).

Craswell, Francis, and Taylor (1994) evaluated auditors' industry specialisation for 14 industries over the period 1982 to 1987 on the basis of the accounting firm's total industry fees. The 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 specialisation or expertise. The study found strong evidence that an audit fee premium represented positive returns on investments in industry specialisation, in addition to a general Big 8 or brand name effect. It was concluded that the demand for, and the supply of, industry specialisation represent a further dimension of Big 8 audit, which is an important dimension of "task-specific experience." The study provided further evidence of audit fee as a return to industry specialisation in Australia, being an important dimension to the audit market.

From the purchaser perspective, it is found that clients discriminate between the Big 8 CPA firms. Clients can systematically differentiate between the Big 8 suppliers of the services (Schockley & Holt, 1983). The qualitative attribute for the differentiation is the industry expertise variable. It appears that industry specialisation has become the strategy of increasing strength among large CPA firms. The audit firm with optimal investment in knowledge will be able to attain a cost-efficient delivery of high quality audit services (O'Keefe, King, & Gaver, 1994). The O'Keefe, King & Gaver (1994) study of audits of governmental units in the US found that a lack of industry specialisation has resulted in the non-compliance with Generally Accepted Auditing Standards (GAAS). They argued that compliance with GAAS reporting standards requires knowledge of Generally Accepted Accounting Principles (GAAP), some of which is industry-specific. Audit firms with multiple clients in an industry have greater economic incentives to

acquire industry-specific knowledge. Hence, they specialise in the acquisition of knowledge. It was concluded that audit firm' specialisation in an industry increases audit quality. The variation in audit quality across the auditor's clients in an industry should decrease with its industry specialisation.

The findings consistently provide strong evidence of industry specialisation among audit firms. The Big 8 firms were found to dominate the audit of large companies and their predominance was greater in certain industries. This trend has been stable over time. An industry specialisation among auditors is also well recognised in other related studies in auditing including auditor selection, auditor switching and audit service differentiation. These findings suggest that there is a relative degree of specialisation among the Big 8 firms and stability of the specialisation over time. Thus, similar phenomenon has developed in countries discussed above with an expectation of an improvement in audit quality. It is expected, therefore, that the same exists in Malaysia.

Research Methods

Sample

TABLE 1

Distribution of companies across industries

Industry	No. of Companies	Percentage (%)
Consumer	53	13.6
Industrial	83	21.3
Construction	25	6.4
Trading	65	16.7
Finance	49	12.6
Hotels	6	1.5
Properties	60	15.3
Plantation	38	9.7
Mining	8	2.1
Trust	3	0.8
Total	390	100.0

This study collected data from annual reports of 390 companies listed in the Kuala Lumpur Stock Exchange (KLSE) for the period between 1991 to 1996. The companies were categorised into ten industries in accordance with the KLCE industry classification. The distribution of the 390 companies by type of industry is presented in Table 1.

Data

Names of auditors for each company were identified from the annual reports. Auditors were classified into Big 6 and non-Big 6 audit firms. This study did not use the current identification of audit firms by Big 5 and non-Big 5 because the period covered by the study was before the merger between Price Waterhouse and Coopers & Lybrand.

The annual amount of audit fee for each company was recorded. Information on the number of audit clients was used to determine the market share of audit services and the auditors' industry specialisation. In addition, the amount of total revenue of each company was recorded. This information was used to analyse the characteristics of audit clients in terms of their size.

Measures of Industry Specialisation

This study used audit market concentration in an industry as the proxy of industry specialisation. A similar approach has been used in previous studies (e.g., Craswell & Taylor, 1991). In past studies, market share is commonly determined on the basis of the number of clients of an audit firm in an industry as a percentage of the total number of companies within the industry (e.g., Eichenseher & Danos, 1981; Rhode, Whitsell, & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967). This study adopted the same basis to examine audit firms' market share and their industry specialisation. High market share in an industry indicates the auditor concentration in that industry, which in turn reflects auditor industry specialisation.

Results

The results are discussed in three parts. Part one presents the market share of the Big 6 and non-Big 6 audit firms. Part two discusses the market share among the Big 6 audit firms followed by the presentation on characteristics of audit clients in part three. Finally industry specialisation is presented in part four.

Market Share between Big 6 and Non-Big 6 Audit Firms

The market share of audit service among audit firms for each year between 1991 to 1996 was analysed. The result is presented in Table 2. Each column indicates the number of audit clients for the Big 6 and non-Big 6 audit firms in each industry. The number within parenthesis represents the percentage of the number of audit client from the total number of company in the industry. These

figures reflect the market share of the Big 6 and non-Big 6 audit firms within each industry.

Table 2 shows that, in total, the Big 6 firms in Malaysia dominate about 60 percent of the audit of KLSE listed companies in each year during the period under study. The dominance of the Big 6 firms in the audit market share occurs in all industries except for finance and hotel industries. In these two industries, Big 6 firms audit only about 45 percent and 40 percent of all companies respectively.

The result also shows that during the period the overall market share of the Big 6 increases from 57.2 percent in 1991 to 65.1 percent in 1996, which is an increase of about 7.9 percent over a period of six years. The increase occurs in almost all industries.

The results show that audit services in Malaysia is largely provided by Big 6 firms. The Big 6 firms' market share becomes stronger over time. The finding is consistent with those studies in the US (e.g., Danos & Eichenseher, 1982; Eichenseher & Danos, 1981; Rhode, Whitsell, & Kelsey, 1974; Schiff & Fried, 1976; Zeff & Fossum, 1967), and in Australia (e.g. Craswell, Francis, & Taylor, 1994; Craswell & Taylor, 1991). However, the percentage of the Big 6 market share in Malaysia is much lower, that is on average 62.47 percent, compared to more than 90 percent in the US and Australia. This could be attributable to the competitiveness of audit market due to the limited market size being shared among large number of small audit firms.

A t-test of independent sample was performed to see whether the difference between the number of Big 6 and non-Big 6 audit clients is significant. The results show that Big 6 market share for each year is significantly higher (at $p = .000$) than non-Big 6 market share of audit services.

TABLE 2
Audit service market share by industry among Big 6 and non-Big 6 audit firms

Industry	1991		1992		1993		1994		1995		1996	
	B6	NB6	B6	NB6	B6	NB6	B6	NB6	B6	NB6	B6	NB6
Consumer	53.5 (23)	46.5 (20)	54.2 (26)	45.8 (22)	57.1 (28)	42.9 (21)	63.3 (31)	36.7 (18)	64.6 (31)	35.4 (17)	62.5 (25)	37.5 (15)
Industrial	69.8 (44)	30.2 (19)	70.1 (47)	29.8 (20)	70.0 (42)	30.0 (18)	77.6 (59)	23.4 (17)	77.6 (59)	22.4 (17)	71.7 (43)	28.3 (17)
Construction	62.5 (10)	37.5 (6)	60.0 (12)	40.0 (8)	45.2 (15)	34.8 (8)	66.7 (16)	33.3 (8)	69.6 (16)	30.4 (7)	64.7 (11)	35.3 (6)
Trading	64.6 (21)	35.4 (17)	69.2 (36)	30.8 (16)	68.4 (39)	31.6 (18)	66.1 (39)	33.9 (20)	75.0 (45)	25.0 (15)	78.7 (37)	21.3 (10)
Finance	40.0 (14)	60.0 (21)	40.0 (16)	60.0 (24)	42.5 (17)	57.5 (23)	38.5 (15)	61.5 (24)	48.9 (23)	51.1 (24)	46.9 (15)	53.1 (17)
Hotels	25.0 (1)	75.5 (3)	40.0 (2)	60.0 (3)	50.0 (2)	50.0 (2)	60.0 (3)	40.0 (2)	50.0 (3)	50.0 (3)	40.0 (2)	60.0 (3)
Properties	54.52 (4)	45.5 (20)	56.5 (26)	43.5 (20)	63.3 (31)	36.7 (18)	59.3 (32)	40.7 (22)	57.1 (32)	42.9 (24)	54.3 (25)	45.7 (21)
Plantation	61.1 (22)	38.9 (14)	62.9 (22)	37.1 (13)	62.9 (22)	37.1 (13)	64.9 (24)	35.1 (13)	72.2 (26)	27.8 (10)	78.3 (18)	21.7 (5)
Mining	62.5 (5)	37.5 (3)	62.5 (5)	37.5 (3)	62.5 (5)	37.5 (3)	62.5 (5)	37.5 (3)	75.0 (6)	25.0 (2)	66.7 (4)	33.3 (2)
Trust	66.7 (2)	33.3 (1)	66.7 (2)	33.3 (1)	66.7 (2)	33.3 (1)	66.7 (2)	33.3 (1)	66.7 (2)	33.3 (1)	50.0 (1)	50.0 (1)
Total	57.2 (166)	42.7 (124)	59.9 (194)	40.1 (130)	61.9 (203)	38.1 (125)	63.8 (226)	36.2 (128)	66.9 (243)	33.1 (120)	65.1 (181)	34.9 (97)

Note:

- Each cell contains the percentage of the number of clients for each type of audit firm from the total number clients for both types of audit firms.
- The number within parentheses indicates the number of audit clients in the year from 1991 to 1996 for Big 6 and non-Big 6 firms in each respective industry.

Market Share among Big 6 Audit Firms

TABLE 3

Distribution of market share among big 6 audit firms

Audit Firms	1991	1992	1993	1994	1995	1996
Cooper & Lybrand	10.3 (31)	9.9 (32)	9.9 (34)	10.7 (38)	11.0 (40)	10.8 (30)
Arthur Anderson	4.7 (14)	6.2 (20)	9.1 (31)	9.3 (33)	14.0 (51)	14.4 (40)
Peat Marwick	14.0 (42)	14.8 (48)	14.0 (48)	13.8 (49)	13.5 (49)	12.2 (34)
Price Waterhouse	12.3 (37)	12.3 (40)	12.3 (42)	11.3 (40)	11.3 (41)	11.2 (31)
Ernst & Young	17.0 (51)	16.4 (53)	17.5 (60)	17.8 (63)	15.7 (57)	15.5 (43)
Delloite & Tohmatsu	0.3 (1)	0.3 (1)	0.6 (2)	0.8 (3)	1.4 (5)	1.1 (3)
Total Big 6	58.7 (176)	59.9 (194)	63.5 (217)	63.8 (226)	66.9 (243)	65.1 (181)
Non-Big 6	41.3 (124)	40.1 (130)	36.5 (125)	36.2 (128)	33.1 (120)	34.9 (97)
Total	100.0 (300)	100.0 (324)	100.0 (342)	100.0 (354)	100.0 (363)	100.0 (278)

Note:

- Each cell contains the percentage of the number of clients for each type of audit firm from the total number clients.
- The number within parentheses indicates the number of audit clients in the year from 1991 to 1996.

The analysis of audit service market of Big 6 audit firms shows that the market is not quite equally distributed among the Big 6 firms. Table 3 shows that in terms of the number of audit client, Ernst & Young has maintained the highest market share during the period 1991 to 1996. Peat Marwick has the second highest market share followed by Price Waterhouse and Coopers & Lybrand. Delloite & Tohmatsu and Arthur Anderson acquired only 0.3 percent and 4.7 percent of the audit service market respectively in 1991.

Over the period between 1991 to 1996, the market distribution among Big 6 firms has become more balanced. In 1996, Delloite & Tohmatsu and Arthur Anderson have increased their market share to 1.1 percent and 14.4 percent respectively. Coopers & Lybrand has maintained almost similar market share over this period. Except for Delloite & Tohmatsu, Arthur Anderson and Coopers &

Lybrand, a decrease in market share has also occurred among all the Big 6 audit firms contributing to a more equal distribution of market share among these firms. Table 3 provides more details on audit service market share among the Big 6 audit firms and the movement during the period between 1991 to 1996.

Characteristics of Clients

Further analysis was made on the characteristics of the Big 6 and non-Big 6 audit firms' clients in terms of size of audit fee and revenue. Size of audit fee refers to the amount of fees paid by the clients for the audit services received while size of revenue refers to the amount of sales of goods or services generated by audit clients. Results of the analysis of each aspect are discussed in the following paragraphs.

Size of Audit Fee

For the purpose of this study, the size of audit fee was arbitrarily classified into three categories: (1) small for audit fee less than RM10,000; (2) medium for audit fee between RM10,000 to RM100,000; and (3) large for audit fee greater than RM100,000.

The distribution of audit clients into each category of audit fee between the years 1991 to 1996 is summarised in Table 4. The table shows that, on average, 79.5 percent of audit clients are in the medium audit fee category and 6.17 percent are in the large category. During the period under study, the total percentage of clients in these categories has gradually increased by about 7 percent while the percentage of clients in the small size audit fee category has decreased. This finding suggests that the size of audit client is becoming larger in terms of audit fee. It also means that more listed companies are paying higher audit fee.

Table 4

Overall percentage of client for each category of audit fee

Year	Small	Medium	Large
1991	19%	76%	5%
1992	21%	74%	5%
1993	16%	79%	6%
1994	14%	81%	6%
1995	12%	88%	6%
1996	13%	79%	9%
Average	15.83%	79.50%	6.17%

Further analysis was done to evaluate the share of client audit fee between Big 6 and non-Big 6 for each audit fee category. The results are summarised in Table 5.

TABLE 5

Percentage of client for audit fee size category by type of audit firm

	1991	1992	1993	1994	1995	1996
Small						
Big 6	16.7	16.9	12.8	10.5	9.7	10.3
Non Big 6	23.1	26.8	21.0	18.8	15.3	17.5
Medium						
Big 6	79.8	78.8	82.5	84.1	86.1	83.4
Non Big 6	70.6	67.8	71.8	74.2	76.3	76.1
Large						
Big 6	4.6	4.8	4.7	5.5	3.8	6.3
Non Big 6	6.0	5.5	7.3	7.1	8.6	12.3

Table 5 shows that audit fee for the Big 6 firms mostly come from the medium range. Their market share of 79.8 percent in 1991 has increased to about 83.5 percent in 1996. Similarly, a big percentage of audit fee for non-Big 6 firms comes from the medium category, i.e. 70.6 percent in 1991 and 76.1 percent in 1996. However, non-Big 6 firms have high market share in the small and large categories. The percentage of concentration in the medium and large audit fee categories grew by one third for the Big 6 and by half for non-Big 6 firms. Further analyses using t-test of independent sample show that the difference in the audit market share for Big 6 and non-Big 6 firms is statistically significant (at $p = .000$).

The concentration of audit market by Big 6 firms is further analysed and the summary is presented in Table 6. The result shows that the majority of clients of Big 6 firms are in the medium category audit fee. The result also shows that, except for Arthur Anderson, the Big 6 firms have shown an increasing concentration in the large audit fee category. Arthur Anderson increases its concentration in the medium category audit fee by 13 percent from 1991 to 1996. Coopers & Lybrand, Price Waterhouse and Ernst & Young have all shown a substantial decrease in their concentration on small audit fee category while Peat Marwick and Arthur Anderson maintain their concentration in the small audit fee category. Deloitte & Tohmatsu has not shown any concentration in the small audit fee category.

TABLE 6

Auditors' concentration by size of clients' audit fee

	1991	1992	1993	1994	1995	1996
Coopers & Lybrand						
Small	29.0	28.1	23.5	15.8	7.5	6.7
Medium	71.0	71.9	76.5	84.2	92.5	90.0
Large	0.0	0.0	0.0	0.0	0.0	3.3
Arthur Anderson						
Small	28.6	35.0	12.9	9.1	13.7	27.5
Medium	57.1	55.0	80.6	81.8	82.4	70.0
Large	14.3	10.0	6.5	9.1	3.9	2.5
Peat Marwick						
Small	11.9	10.4	10.4	14.3	10.2	8.8
Medium	85.7	87.5	87.5	85.7	89.8	85.3
Large	2.4	2.1	2.1	0.0	0.0	5.9
Price Waterhouse						
Small	13.5	12.5	11.9	12.5	12.2	6.5
Medium	81.1	82.5	83.3	77.5	78.0	83.9
Large	5.4	5.0	4.8	10.0	9.8	9.7
Ernst & Young						
Small	9.8	11.3	8.3	3.2	5.3	0.0
Medium	84.3	81.1	83.3	90.5	89.5	93.0
Large	5.9	7.5	8.3	6.3	5.3	7.0
Deloitte & Tohmatsu						
Small	0.0	0.0	0.0	0.0	0.0	0.0
Medium	100.0	100.0	100.0	66.7	75.0	50.0
Large	0.0	0.0	0.0	33.3	25.0	50.0

Size of Revenue

The size of clients' total revenue was arbitrarily classified into three categories: (1) small—for revenue less than RM100 million; (2) medium—for revenue between RM100 million to RM1 billion; and (3) large—for revenue more than RM1 billion. The distribution of audit firms by size of client revenue is summarised in Table 7. Table 7 shows that, on average, 73.45 percent of audit clients are in the category of small size revenue. On average, 4.28 percent are in the large category. The percentage of client in the small category has reduced from 76.9 percent in 1991 to 67.3 percent in 1996. On the other hand, the percentage of clients in the medium and large size revenue categories has increased from 19.9 percent and 3.2 percent in 1991 to 27.4 percent and 5.3 percent in 1996 respectively. Overall, the result shows that between 1991 and 1996 the number of clients in the small revenue category has reduced while the number of clients in the medium and large categories has increased. This result is consistent with the market share characterised by the size of audit fee suggesting that the increase in audit fee earned by audit firms over the period 1991 to 1996 was the result of the

increase in total revenue of the clients.

TABLE 7
Overall percentage of audit client in each revenue size category

Year	Small	Medium	Large
1991	76.9%	19.9%	3.2%
1992	75.7%	20.4%	5.5%
1993	75.5%	20.8%	3.6%
1994	73.8%	22.4%	3.8%
1995	71.5%	24.2%	4.3%
1996	67.3%	27.4%	5.3%
Average	73.45%	22.52%	4.28%

Data in Table 6 were further analysed to see the difference in the size of revenue between clients of Big 6 and non-Big 6 firms. The results are shown in Table 8. Table 8 shows that for each revenue category Big 6 firms have higher percentage of clients in each revenue category compared to non-Big 6 firms. The percentage of Big 6 audit clients in all three revenue categories has increased over time. Non-Big 6 firms, however, have shown a decrease in the percentage of client in the small category but an increase in the medium and large revenue categories.

TABLE 8
Percentage of client for revenue size category by type of audit firm

	1991	1992	1993	1994	1995	1996
Small						
Big 6	37.6	44.6	47.8	45.4	47.1	43.9
Non-Big 6	31.10	30.8	27.8	28.6	24.5	25.5
Medium						
Big 6	11.3	12.3	12.9	14.5	16.2	19.0
Non-Big 6	8.7	8.1	7.8	8.0	8.1	9.5
Large						
Big 6	2.6	3.2	2.1	2.7	2.9	3.9
Non-Big 6	0.7	1.6	1.5	1.2	1.4	1.5

Concentration of audit market by Big 6 firms was further analysed. The summary of the result is presented in Table 9. The result shows that for most Big 6 audit firms about 80 percent of their clients are in the small revenue category.

However, the result shows that each of the Big 6 firm has moved towards increasing their number of clients of large revenue. The results reflect an achievement by some firm such as Price Waterhouse. However, Arthur Anderson

has shown a drop in the large category client but a large increase in the medium category client. Coopers & Lybrand and Ernst & Young have both shown an increase in both the medium and large category clients. This performance in the market share may trigger the Big 6 audit firms to formulate certain strategy such as merger between firms in order to expand their market share.

TABLE 9
Auditors' concentration by size of clients' revenue

	1991	1992	1993	1994	1995	1996
Coopers and Lybrand						
Small	78.9	80.0	78.8	80.0	71.1	61.5
Medium	17.9	16.7	18.2	17.1	26.3	34.6
Large	3.6	3.3	3.0	2.9	2.6	3.8
Arthur Anderson						
Small	85.7	80.0	80.7	78.2	77.5	76.9
Medium	7.1	15.0	16.1	18.7	20.4	17.9
Large	7.1	5.0	6.4	3.1	2.0	5.1
Peat Marwick						
Small	80.5	80.0	83.4	76.6	74.4	70.0
Medium	19.5	20.0	16.7	23.4	25.5	30.0
Large	0	0	0	0	0	0
Price Waterhouse						
Small	63.9	64.1	64.1	65.8	60.0	51.6
Medium	25.0	25.7	25.7	21.0	25.0	32.3
Large	11.1	10.3	10.3	13.1	15.0	16.1
Ernst and Young						
Small	80.0	75.0	72.7	66.5	72.0	68.5
Medium	17.8	22.9	25.5	31.6	26.0	28.9
Large	2.2	2.1	1.8	1.8	2.0	2.6
Delloitte and Tohmatsu						
Small	100	100	100	66.7	60.0	33.3
Medium	0	0	0	0	20.0	33.3
Large	0	0	0	33.3	20.0	33.3

Industry Specialisation

As mentioned earlier, industry specialisation was analysed by the number of audit clients being audited by an audit firm (Craswell & Taylor, 1991). An audit firm that has more than 10 percent share of clients in an industry was identified as an industry specialist.⁵ The summary of each firm's position for the period from

⁵ The 10 percent benchmark was used to identify industry specialisation in previous studies (e.g., Craswell, Francis, & Taylor, 1994).

1991 to 1996 is presented in Table 10. Table 10 shows that between two to five Big 6 audit firms provide audit services to more than 10 percent of the companies in any industry. For instance, in 1991, the consumer industry has three Big 6 firms (i.e. Peat Marwick, Price Waterhouse and Ernst & Young), each of which audits more than 10 percent of clients in the industry. In 1996 the industry has four Big 6 firms (i.e. Coopers and Lybrand, Arthur Anderson, Price Waterhouse and Ernst & Young), each audits more than 10 percent of the industry clients. The construction industry (1991), and the hotel industry (1991 and 1996), were the only industries that have only one Big 6 firm (i.e. Peat Marwick) auditing more than 10 percent of the industry clients.

The results show that in most industries, more than one Big 6 firms provide audit services to more than 10 percent of the industry companies. The number of industries, in which Big 6 firms audit more than 10 percent of the clients, increases over the period from 1991 to 1996. Refer to Table 10 for more details.

The results also show that each Big 6 firm has more than the 10 percent share of clients not only in one industry but also in about three to five industries. This finding suggests that Big 6 firms specialise in more than one industry. For example, in 1991 Ernst & Young has more than 10 percent market share in the consumers, industrial, trading, properties, plantation, and mining industries. In the same year, Price Waterhouse has more than 10 percent of clients in the consumer, trading, and finance industries.

The results show that the number of industry in which each Big 6 firm has more than 10 percent client increases over the period. For instance, Ernst & Young has increased from six to seven industries in which its audit clients consist more than 10 percent of the total companies within the industry.

The results suggest that, in any year, the Big 6 audit firms do not concentrate only in one industry but in a few industries. Over the period, Big 6 firms move into other industries in order to expand their market share. Hence, the number of the Big 6 audit firms with more than 10 percent market share of industry clients has increased from about two to five firms in each industry over the period between 1991 to 1996. Each firm appears to service more than 10 percent industry clients in about three to five industries. Overall, most Big 6 audit firms have increased their share of audit service market within an industry and expanded their market share into another industries.

The results suggest that the industry expertise of the Big 6 firms in Malaysia seems to be diverse. Each Big 6 firm, except Delloite & Tohmatsu, audits at least five industries with more than 10 percent clients in each industry. Delloite & Tohmatsu does not appear to serve more than 10 percent clients in any industry. The number of industry, in which each of the Big 6 firm is specialising in, appears to increase over time reflecting the market expansion strategy of the Big 6 audit firms.

TABLE 10
Auditors' industry specialisation by number of clients

Industry	1991	1992	1993	1994	1995	1996
Consumer	3 (PM, PW, EY)	3 (PM, PW, EY)	3 (PM, PW, EY)	3 (PM, PW, EY)	3 (PM, PW, EY)	4 (CL, AA, PM, PW, EY)
Industrial	4 (CL, PM, PW, EY)	3 (CL, PM, PW)	4 (CL, PM, PW, EY)	5 (CL, PM, PW, EY)	5 (CL, AA, PM, PW, EY)	5 (CL, AA, PM, PW, EY)
Construction	1 (PM)	3 (AA, PM, EY)	3 (AA, PM, EY)	3 (AA, PM, EY)	3 (AA, PM, EY)	3 (AA, PM, EY)
Trading	2 (PW, EY)	2 (PW, EY)	2 (PW, EY)	3 (CL, PW, EY)	5 (CL, AA, PM, PW, EY)	5 (CL, AA, PM, PW, EY)
Finance	2 (AA, PW)	3 (AA, PM, PW)	3 (AA, PM, PW)	2 (AA, PM)	2 (AA, PW)	2 (AA, PM)
Hotels	1 (PM)	2 (AA, PM)	2 (AA, PM)	2 (AA, PM)	2 (AA, PM)	1 (PM)
Properties	2 (PM, EY)	2 (PM, EY)	4 (CL, AA, PM, EY)	3 (CL, AA, EY)	2 (CL, AA, EY)	3 (CL, AA, EY)
Plantation	3 (CL, PM, EY)	3 (CL, PM, EY)	2 (PM, EY)	3 (CL, PM, EY)	4 (CL, AA, PM, EY)	3 (AA, PM, EY)
Mining	3 (CL, PM, EY)	3 (CL, PM, EY)	3 (CL, PM, EY)	3 (CL, PM, EY)	4 (CL, AA, PM, EY)	3 (AA, PM, EY)
Trust	2 (CL, AA)	2 (CL, AA)	2 (CL, AA)	2 (CL, AA)	2 (CL, AA)	1 (CL)

Note:
1. The number of audit firms with a market share greater than or equal to 10 percent.
2. CL = Cooper & Lybrand, AA = Arthur Anderson, PW = Price Waterhouse, EY = Ernst & Young, DT = Delloite & Tohmatsu.

Conclusion

The study shows that Big 6 audit firms in Malaysia dominate about 60 percent of the market audit share. This dominance becomes stronger over the period although it is still less than 90 percent market dominance found in the US and Australia. The study also finds that the audit market share is not equally distributed among Big 6 firms. For instance, in 1991 Ernst & Young, Peat Marwick and Price Waterhouse acquire high market shares at the average of 16.6 percent, 13.7 percent, and 11.8 percent respectively while Delloite & Tohmatsu acquires an average of only 1.7 percent. However, a more equal distribution is observed over time. For instance, Ernst Young has reduced its market share from 17 percent in 1991 to 15.5 percent in 1996 while Delloite & Tohmatsu has increased its market share from 0.3 percent in 1991 to 1.1 percent in 1996.

During the period 1991 to 1996, there has been an apparent economic growth in Malaysia, which results in an increase in company revenues. Audit firms have benefited from it through a larger share of audit fee and a proportionate increase in their market share comprising higher number of clients. The share of audit fee has shifted from smaller to larger companies. However, this improvement does not change the overall specialisation of audit firms in the industry.

The results show that a majority of audit clients is in the medium audit fee size category and in the small revenue size category. The study finds that the number of clients with medium and large size audit fee has increased. In terms of revenue size, the number of clients in the small revenue size category has decreased while that in the medium and large revenue size category has increased. A similar trend is also observed among Big 6 audit firms.

The study has provided an empirical evidence of distribution of audit service market and industry distribution among audit firms in Malaysia. Results of this study show that, in any industry, from three to five Big 6 audit firms provide audit services to more than 10 percent of total industry clients. Audit firms move to another industry in order to expand their market. This occurs as a result of a limited market size. The merger strategy of improving market share is taken as a result of the limited overall market size within Malaysia. Hence, an increase in the market share of one audit firm may result in a decrease in the market share of another audit firm.

Hence, it can be concluded from this study that a specialisation by industry among auditors does not exist in Malaysia. Audit firms provide services to a wide range of clients in different industries rather than specialised services in any particular industry. Consequently, audit firms gain general audit knowledge rather than industry specific knowledge (Bonner & Lewis, 1990). However, further investigation is necessary to confirm this.

One of the limitations of this paper is that only large audit (Big 6) market shares were reported. Hence, the results do not provide a complete picture on the distribution of audit service market of all audit firms. Future research could extend the current analysis by examining the market share of second-tier and smaller audit firms across sub-markets and through time. This is particularly important since the smaller firms (non-Big 6) audit market share comprises an average of 40 percent of the total market of audit service. This study has used number of client as the basis for measuring the size of audit service market. This basis of measurement may not be as accurate as other basis (as stated below) to evaluate the audit service market share because it does not reflect actual amount of resources utilised in the audit of a particular company. Further research may be necessary to re-evaluate the accuracy of the methodological approach adopted in this study. Other possible methods that can be used include the amount of audit fee, the number of time spent on audit work and average years of audit experience. Similar approaches can also be adopted in determining the auditors' industry specialisation.

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