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1918 · 2018

INAUGURAL LECTURE

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Professor at the University of Stellenbosch Business School

Will mandatory audit firm rotation reduce audit market concentration in South Africa?

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Inaugural lecture delivered on 29 September 2020

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Biography of author

Nicolene Wesson has held the position of professor at the University of Stellenbosch Business School since 1 July 2018. She was the first woman to be promoted to full professorship at the Business School. Nicolene is a chartered accountant, with a master's degree in Taxation and a PhD in Finance, both from Stellenbosch University.

She lectured for 14 years at the School of Accountancy of Stellenbosch University, where she taught Financial Accounting to students in the Chartered Accountancy stream, and joined the Business School in 2013, where she mainly lectures MBA students on evaluating annual reports. She has supervised over 50 master's and two PhD candidates, has published more than 20 articles in accredited journals and is a co-author of accounting textbooks.

Her research interests entail share repurchases, dividend payouts, executive remuneration and the South African audit firm landscape. Her PhD, obtained in 2015, as well as subsequent research on share repurchases, informed the amendment and interpretation of South African legislation, namely the Companies Act, the Income Tax Act and the Johannesburg Stock Exchange Listings Requirements, pertaining to share repurchases.

Nicolene is married to Derick and they have two sons, Ernst (24) and Daniël (19).

Will mandatory audit firm rotation reduce audit market concentration in South Africa?

1. INTRODUCTION

In response to the global financial crisis of 2007–2008, the audit profession has introduced tighter regulations, as has been the case after each successive crisis in the auditing or business sphere (Hay, 2015). Global regulatory responses have included the formulation of international auditing standards to improve audit quality, the expansion of audit reports and country-specific regulations on limiting non-audit services and mandating audit firm rotations.

Mandatory audit firm rotation (MAFR) is a contentious topic that frequently resurfaces in debates on remedies to address audit quality. The differing views on MAFR are, however, evident when comparing the stance on audit rotation in the United States of America (USA) and the European Union (EU), with the USA deciding against implementation, while the EU implemented MAFR in 2016.

Audit firm tenure is central to the debates on MAFR. On the one hand it is argued that longer audit firm tenure represents an increased likelihood of familiarity, even friendship, and dependence on an audit client, and therefore a likely lower-quality audit, while on the other hand, the view is held that longer audit firm tenure represents greater knowledge of a company's business and a higher-quality and more efficient audit (Corbella, Florio, Gotti & Mastrolia, 2015). The fact that the market for auditing in many countries is concentrated in a small number of suppliers – the so-called Big 4 audit firms, namely PricewaterhouseCoopers (PwC), Deloitte, Ernst & Young (EY) and KPMG – has added to the debate on MAFR. It is argued that audit quality could be low in oligopolistic markets because of clients' lack of auditor choice and the limited degree of competition (Bleibtreu & Stefani, 2018), as opposed to the view that audit market concentration is a natural and permanent global phenomenon, driven by economies of scale, a global footprint and prior mergers of audit firms (Velte & Stiglbauer, 2012).

Jurisdictions introducing MAFR therefore generally argue that it is a measure that would strengthen independence and decrease audit market concentration, while non-adopters of MAFR stress the importance of auditors' learning curve and the effect thereof on audit quality and audit fees (Bleibtreu & Stefani, 2018).

Empirical evidence on whether MAFR is an effective measure is, however, limited, mainly because there are so few practical situations where it has been enforced (Hay, 2015). Most research on audit firm rotation is conducted in jurisdictions where voluntary rotation is applicable, which may affect the reported results, as voluntary rotation is often in respect of troubled companies (e.g. companies that are susceptible to fraud, that are financially distressed or that are in disagreement with their auditor's opinion) (Casterella & Johnston, 2013). Audit-related research is also mostly based on the experience of developed countries, with research from developing countries being scant (Hay, 2017).

South Africa is a developing country with a dual economy and shares characteristics with both developed and developing countries (Grant, Harber & Minter, 2018), providing a unique opportunity to add to the debate on MAFR. The country was ranked number 1 in the world for high auditing and reporting standards by the World Economic Forum for seven consecutive years (2010–2016), but has subsequently dropped to number 30, mainly in response to the decline in investor confidence in the country (*Accounting Weekly, 2017*). In an attempt to restore investor confidence, the South African Independent Regulatory Board for Auditors (IRBA) perceives its role as important to enhance the reputation of South Africa as an investment market and to increase economic growth in this country (IRBA, 2020).

On 5 June 2017, IRBA announced that MAFR will be effective in South Africa for all public interest entities for financial years commencing on or after 1 April 2023, with the objectives of enhancing auditor independence and to allow for accelerated transformation and deconcentration in the audit profession (IRBA, 2017a). In the motivation for MAFR, IRBA conceded that the period for which MAFR has been implemented in other jurisdictions, except for Italy, is too short to state empirically whether it is an effective measure. The stance of IRBA (2017c) was that research alone does not inform regulation and that empirical evidence is not required when investor protection is compromised. The present study aimed to address a gap in knowledge by conducting evidence-based research into one of the three stated focuses of MAFR in South Africa, namely audit market concentration, for the eventual purpose of contributing to the development of policy in response to current issues.

This study contributes to literature on audit market concentration and audit firm tenure in a developing country with a dual economy. To the author's best knowledge, this is the first study to explore the expected effect of MAFR on audit market concentration in South Africa, based on observed trends in audit firm rotations and audit firm tenure. Insights obtained from this study can therefore inform stakeholders (including regulators) on whether additional measures are required to mitigate possible unintended consequences of MAFR prior to the implementation thereof in 2023.

The remainder of this paper is structured as follows: In the second section, a literature review provides a background of global evidence of the relationship between audit quality, MAFR and audit concentration; a description of the audit concentration measures generally applied; and a view of the South African regulatory environment pertaining to audit firm rotations. The third section describes the methodology applied, while the results are discussed in the fourth section. In the final section, the researcher draws a conclusion on the anticipated effect of MAFR on audit market concentration in South Africa, provides recommendations and sets out the limitations of the study as well as areas for future research.

2. LITERATURE REVIEW

The enhancement of audit quality and auditor independence is at the heart of MAFR. Audit quality is difficult to define, with the International Auditing and Assurance Standards Board refraining from defining the concept, rather providing a framework of factors that contribute to audit quality (Hay, 2015). A definition frequently applied in literature is that of DeAngelo (1981), stating that audit quality represents the joint probability that a given auditor will both discover a breach in a client's accounting system and report the breach. When evaluating the independence of an auditor, two dimensions of independence are considered, namely independence of mind, ensuring that professional scepticism, professional judgement and the objectivity of the auditor remain unimpaired; and independence in appearance, referring to a reasonable third party's perception (IRBA, 2014).

2.1 Mandatory audit firm rotation and audit quality

A variety of approaches to and experiences with MAFR has been observed (Ewelt-Knauer, Gold & Pott, 2013). Some countries (e.g. Italy and Oman) have in the past implemented MAFR in all listed entities; others (e.g. Poland, Serbia, Slovenia and Peru) apply MAFR only in certain industries (e.g. insurance and governmental entities), while many countries have abolished MAFR after some time of practising it (e.g. Canada, Austria, Singapore, South Korea, Spain, Greece, Latvia and the Czech Republic) (Ewelt-Knauer *et al*., 2013; Lennox, 2014). Many countries have opted for audit partner, rather than audit firm, rotation as a measure to enhance audit quality (Ewelt-Knauer *et al*., 2013). From the top 20 countries ranked by the World Economic Forum, only six EU countries and China still apply MAFR (Harber, Marx & De Jager, 2020).

The USA has mitigated auditor dependence concerns by passing the 2002 Sarbanes Oxley Act, which limits the amount and scope of non-audit services conducted by the auditor and requires audit partners to rotate every five years, while also requiring the disclosure of the name of the engaging audit partner as from 4 December 2013 (Tepalagul & Lin, 2015).

The USA did not adopt the MAFR rule, as it was perceived not to be the most cost-efficient way to strengthen independence (Bleibtreu & Stefani, 2018). The future adoption of MAFR in the USA is considered unlikely (Fontaine, Khemakhem & Herda, 2017).

The EU, on the other hand, announced in May 2014 that MAFR would be applicable to public interest entities, effective from June 2016. Rotation after a maximum of 10 years (plus an additional 10 years if public tendering was conducted or an additional 14 years in respect of joint audits) would be required, with a cooling-off period of four years (Bleibtreu & Stefani, 2018). Besides these prescripts, the EU applies restrictions on the amount and scope of non-audit services, while mandatory audit partner rotation (after five consecutive years) and the disclosure of the name of the engaging audit partner are also applicable (Francis, Michas & Seavey, 2013).

Evidence of the impact of MAFR on audit quality and auditor independence is inconclusive (Casterella & Johnston, 2013; Ewelt-Knauer *et al*., 2013). There is some evidence that audit firm rotation may have a positive impact on 'independence in appearance', but evidence of the positive impact of audit firm rotation on 'independence in mind' is lacking, and even in some instances reporting an adverse effect (Ewelt-Knauer *et al*., 2013). Cross-country studies on audit firm tenure have in general concluded that long tenure does not negatively affect audit quality (Garcia-Blandon, Argilés-Bosch & Ravenda, 2020a; Tepalagul & Lin, 2015). The effect of audit firm tenure on audit quality was found to vary based on audit firm size: shorter tenure was associated with lower audit quality (Garcia-Blandon, Argilés-Bosch & Ravenda, 2020b), while Big 4 audit firms showed higher audit quality when compared to non-Big 4 audit firms (Riccardi, 2019).

Lennox (2014) and Casterella and Johnston (2013), however, caution that studies on the effect of MAFR on audit quality often have the shortcoming that, when based on voluntary (as opposed to mandatory) rotation data, the direction of the causality between audit firm tenure and audit quality is not easily determinable. These authors also question the suitability of 'abnormal accruals' (which are often used to measure earnings) as a measure of audit quality.

When reviewing results from studies using mandatory rotation data, studies from Italy (Cameran, Francis, Marra & Pettinicchio, 2015; Corbella *et al*., 2015), South Korea (Kwon, Lim & Simnett, 2014) and Spain (Harris & Whisenant, 2012) showed mixed results. Lower earnings quality during the first three years following rotation was evident for Italian clients of the Big 4 audit firms during the period 2006–2009 (Cameran *et al*., 2015), while Corbella *et al*. (2015) reported increased audit quality in the first year of the new audit engagement for Italian clients of non-Big 4 audit firms (with no observed effect on audit quality for Big 4 audit firm clients) during the period 1998–2011. Harris and Whisenant (2012) reported an improvement in audit quality following the introduction of MAFR in South Korea and Spain, with Kwon *et al*. (2014) reporting an increase in audit fees in the Korean audit market over the total period of MAFR (2006–2010), without an observable positive effect on audit quality. In Italy, where MAFR has been applied since 1975, it was found that MAFR was costly, with abnormally high fees being charged subsequent to the initial engagement lowballing as well as abnormally higher fees being charged by the outgoing auditor (Cameran *et al*., 2015). In a study reviewing 24 academic studies on MAFR, Casterella and Johnston (2013), however, found that studies applying mandatory (as opposed to voluntary) rotation data do offer some support for MAFR.

Experiences from specific countries may, however, not be generalised to other countries owing to unique institutional features in these countries (e.g. the audit firm retention policy applicable in Italy and South Korea, and the fact that Spain abolished MAFR before the first rotation was meant to occur) (Lennox, 2014). It is also recognised that the observed negative effect of MAFR in Italy (where approximately 30 audit firm rotations per annum are carried out) might be even greater in countries with larger audit markets and audit clients, such as the USA and other EU countries. It might therefore be difficult for larger audit markets to absorb the sheer number of audit rotations in an MAFR regime (Cameran *et al*., 2015).

Cognisance of differences in audit markets should therefore influence the interpretation of results of MAFR studies. Not only do regulatory environments pertaining to auditor independence (and audit quality) differ, but results from studies based on voluntary rotations also cannot be generalised to a MAFR setting. A key policy question for countries applying audit partner rotation remains whether mandatory audit partner rotation is an effective substitute for MAFR (Lennox, 2014).

2.2 Audit market concentration and audit quality

Increased audit market concentration is a global phenomenon that has resulted from not only large audit firm consolidations in the late 1980s and 1990s, but also the collapse of Arthur Andersen in 2001, and the exit of many small audit firms from the audit market for listed clients (due to tightening of regulations pertaining to listed entities) (Choi, Kim, Lee & Sunwoo, 2017). The Big 4 audit market concentration mainly arose in response to market forces, specifically the demand from investors for high-quality audits and the ability to undertake complex audits across the world (Malis & Brozovic, 2015).

Regulators remain apprehensive that the dominance of a few large audit firms might diminish competition in the audit market, and hence cause cartel pricing and a deterioration of audit quality (Choi *et al*., 2017). Investors, too, have raised concerns as to whether this level of concentration results in lower-quality audits and lower investment protection, and they question whether financial markets could recover if one of the Big 4 audit firms failed or exited the market (Harris, 2017).

Audit market concentration is evident in most Western economies (Malis & Brozovic, 2015). In a study covering 22 non-USA developed countries, Riccardi (2019) found that 67% of companies in Europe and Australia are audited by Big 4 audit firms. Based on market capitalisation, more than 90% of the EU and USA markets are audited by the Big 4 audit firms (Ottaway, 2013). France, where joint audits are mandatory, is the only big European economy where non-Big 4 audit firms have a sizeable market share (Malis & Brozovic, 2015). Many fast-growing emerging economies have more open audit markets and reveal less Big 4 audit firm dominance (e.g. Big 4 audit firm concentration represents 41% in India and Croatia and only 14% in China), while Odesa and Agubata (2019) reported that 67% of the Nigerian market is audited by the Big 4 audit firms (mirroring the concentration evident in most developed economies).

Despite regulatory concerns, evidence is inconclusive on the association between audit market concentration and audit fees and quality (Choi *et al*., 2017). In a countrywide study of 42 countries for the period 1999–2007, Francis *et al*. (2013) found a positive association between audit quality and audit market concentration, while increased concentration within the Big 4 audit firm group was found to be negatively associated with audit quality. In another study (Choi *et al*., 2017) of 17 countries for the period 2004–2015, a significant positive association was found between audit market concentration and audit fees. However, this positive association was only evident in countries with a weaker regulatory environment and was more pronounced among clients of non-Big 4 audit firms (Choi *et al*., 2017). As concluded by Francis *et al*. (2013), the regulatory concern should therefore be the dominance of one or two Big 4 audit firms rather than a concentration of supply by the Big 4 audit group.

Although MAFR is proposed as a possible solution to reduce audit market concentration, empirical evidence indicates an increase rather than a decrease in audit market concentration in response to MAFR. A decrease in market competition (hence an increase in audit market concentration) was experienced in South Korea in response to MAFR (Ewelt-Knauer, Gold & Pott, 2012), while Narayanaswamy and Raghunandan (2019) also found that MAFR is associated with higher audit market concentration in India. In anticipation of the implementation of MAFR in the EU, Bleibtreu and Stefani (2018) applied a static model to EU audit clients and concluded that regulators' goals of simultaneously addressing client importance and audit market concentration with MAFR are in direct conflict. A reduction in market concentration, but an increase in client dependence (hence a decrease in audit quality), was foreseen for the post-MAFR EU audit market (Bleibtreu & Stefani, 2018). Indyk (2019), however, reported an increase in the Big 4 audit firm concentration in Poland (being the EU member state that applies the shortest allowed tenure, i.e. five years) subsequent to the implementation of MAFR. It is anticipated that the EU MAFR rule, combined with the strong limits on the provision of non-audit services to EU audit clients, may influence audit firms to end the audit engagement and retain the (generally more rewarding) non-audit services of a client, consequently decreasing the number of audit firms competing for a client (and further increasing audit market concentration) (Garcia-Blandon *et al*., 2020a; Indyk, 2019).

2.3 Audit market concentration measures

The measures of audit market concentration mainly entail the concentration ratio (CR), the Herfindahl-Hirschman index, the Gini coefficient and the Lorenz curve (Malis & Brozovic, 2015).

In an audit context, the CR measures the percentage of the entire reference amount that is allocated to the *n* biggest audit firms. CR4 is most commonly reported and calculates the sum of the market share of the four largest audit firms (Malis & Brozovic, 2015). The reference amount to calculate the CR can be based on various metrics, including number of clients, audit fees and market capitalisation. Because audit fees are not publicly disclosed in all jurisdictions, surrogates for audit fees include client revenues or client assets (Beattie, Goodacre & Fearnley, 2003). Client numbers as a reference amount is regarded as insufficient and is generally applied as an auxiliary variable (Velte & Stiglbauer, 2012).

The Herfindahl-Hirschman index calculates the sum of the squares of the market shares of all market participants. The Gini coefficient summarises the inequality in the market, as derived from the Lorenz curve (Malis & Brozovic, 2015). The Lorenz curve is therefore a relative measure that merely graphically represents the frequency distribution (Velte & Stiglbauer, 2012).

Oligopoly is deemed present when, at most, three audit firms have a market share exceeding 50% or at least five audit firms have a market share above 66.6% (Velte & Stiglbauer, 2012). A monopoly position is assumed if one audit firm has more than a third of the market share (Velte & Stiglbauer, 2012).

2.4 South African mandatory audit firm rotation experience

MAFR, with a maximum allowed tenure of 10 years, will be applied to public interest entities for financial years commencing on or after 1 April 2023 (IRBA, 2017b). An audit firm of a public interest entity that has a tenure of 10 or more consecutive financial years before the financial year commencing on or after 1 April 2023 will therefore be required to rotate and will only be eligible for reappointment after a cooling-off period of five years. The only transitional provision is in respect of joint audits where, if both audit firms have a tenure in excess of 10 years at the effective date of MAFR, only one firm is required to rotate, while the other firm will be granted an additional two years before rotation is required.

In anticipation of MAFR, IRBA also required that, as for reporting periods ending on or after 31 December 2015, the audit firms of public interest entities disclose their tenure in the audit report of the entity (IRBA, 2015). In addition, as from 20 September 2017, the decision to rotate audit firms was more transparent, with all companies listed on the Johannesburg Stock Exchange (JSE) required to announce the termination or resignation of the auditor and the reason therefore via the Securities Exchange News Service (SENS) of the JSE by no later than the end of the business day following the decision to terminate or the receipt of the resignation (JSE, 2017).

The MAFR rules of South Africa are perceived as more onerous than the EU MAFR rules (PwC, 2017). Apart from the proposed MAFR in South Africa, mandatory audit partner rotation after five years and the disclosure of the name of the engaging audit partner – as in the EU – are also applicable in this country. There is, however, no strict requirement regarding the external auditor's non-audit service delivery in South Africa, apart from the Companies Act (RSA, 2008) requirement pertaining to the responsibility of the audit committee to assess the independence of the external auditor and approve the nature and extent of non-audit services delivered before recommending the appointment of the auditor to shareholders. Since the adoption of the new Companies Act (RSA, 2008) in May 2011, disclosure of audit fees in the annual report is no longer a requirement in the South African regulatory environment.

IRBA (2017a) stated that the objectives of MAFR in South Africa were to enhance auditor independence and to allow for accelerated transformation and deconcentration in the audit profession. The transformation objective is to promote black economic participation in the audit profession and the deconcentration objective is to create more opportunities for small and mid-tier audit firms to enter certain markets. Motivations for introducing MAFR included the observed long audit firm tenure of JSE-listed firms (i.e. 21 JSE-listed companies having an audit tenure in excess of 50 years and the lengthiest tenure being 114 years in 2016), Big 4 audit firms dominating the audit market (i.e. Big 4 audit firm clients representing more than 90% of the market capitalisation of JSE-listed companies that had South African engagement partners that signed off their audit reports and Big 4 audit firms collecting 94% of total audit fees spent by JSE-listed companies in 2016) and especially the recent business failures and poor performance on IRBA quality reviews (IRBA, 2017c).

Subsequent to the decision to implement MAFR in South Africa (which was promulgated in June 2017), the debate was fuelled by the auditing irregularity exposure of one of South Africa's Big 4 audit firms, KPMG, towards the end of 2017. This audit failure and possible elimination of a Big 4 audit firm raised the spectre of a serious market disruption. A spike in reported audit firm rotations followed, based on SENS announcements of audit firm rotations after 2017, but IRBA commented that it appears that the spike was only in part attributable to KPMG replacements, as companies disclosed the anticipated MAFR as the main reason for their rotation (Buthelezi, 2019).

Research on audit firm rotations, audit firm tenure and audit market concentration in the South African market is scant, mainly because data on audit firm identity and audit firm tenure are not available in any commercial financial database. Grant *et al*. (2018) identified 29 audit firm rotations when studying the effect of voluntary audit firm rotations on audit fees for JSE-listed companies for the period 2000–2010. Although the study was descriptive in nature, evidence of a fee discount in the first year of the new audit engagement, with some evidence of fee increases in the second year of the new engagement in respect of companies changing to non-Big 4 audit firms, was found. Studies on audit fees in the post-2010 period are affected by audit fees no longer being publicly available as a consequence of the amended Companies Act (Grant *et al*., 2018).

In anticipation of MAFR in South Africa, Welch, Harber and Minter (2017) explored the annual report disclosure practices on audit firm tenure prior to the introduction of the audit tenure disclosure rule in December 2015, which was based on the premise that disclosure of audit firm tenure allows stakeholders to assess auditors' independence on whether shareholders should consider replacing them. It was found that only 15 of the top 100 JSE-listed companies disclosed audit firm tenure prior to December 2015; disclosure was provided mainly to adhere to regulatory requirements pertaining to companies' dual listing status (Welch *et al*., 2017). These researchers reiterated that the disclosure of audit firm tenure in annual reports was an important mechanism to strengthen the auditor's 'independence in appearance'.

A survey study on stakeholder perceptions of MAFR was conducted in 2017 (with responses collected between August 2017 and November 2017), in which Harber and Marx (2019; 2020) explored the perceptions of auditors, chief executive officers and audit committee chairs of the top 100 JSE-listed companies of the effects of MAFR in South Africa in respect of the three focus areas of MAFR in this country, namely audit quality (Harber & Marx, 2020), black economic empowerment (i.e. transformation) and audit market concentration (Harber & Marx, 2019), as well as the financial effect of MAFR (Harber *et al*., 2020). In respect of audit quality, respondents concurred that business failures in South Africa are not attributed to audit quality being compromised (but rather to auditor error) and that MAFR will impair audit quality (Harber *et al*., 2020). In respect of transformation and audit market concentration, respondents anticipated that MAFR will reduce audit firms' capacity to pursue transformation initiatives (owing to the additional costs that MAFR will impose on audit firms) and that MAFR will increase audit market concentration (Harber & Marx, 2019). Findings on audit market concentration include the reluctance of audit committees and shareholders of large listed companies to appoint non-Big 4 audit firms as auditors, based on the lack of resources, skills, experience and international presence of non-Big 4 audit firms compared to Big 4 audit firms. Furthermore, specialisation in some sectors, where not even all Big 4 audit firms are equally experienced, would cause such sectors to have only one or two appointable audit firms (Harber & Marx, 2019; 2020). Although Harber *et al*. (2020) reported an anticipated increase in audit costs (for audit firms) under an MAFR regime, the reluctance of audit committee chairs to allow the increase led to mixed results on the anticipated effect of MAFR on audit fees. The financial effect of MAFR on audit firms and their clients (i.e. mainly the cost relating to the tendering and appointment process and additional staff time spent on explaining the business to the incoming auditor) was, however, seen as substantial by all respondents (Harber *et al*., 2020).

Harber *et al*. (2020) recommend that, owing to the unintended consequences of MAFR, IRBA should withdraw the MAFR regulation before the effective date or that IRBA initiate more engagement opportunities with audit industry participants to address their concerns prior to the implementation date.

The review of South African literature on audit firm rotations, audit firm tenure and audit market concentration in the South African market therefore showed that studies mainly focused on earlier periods in which MAFR was not an envisaged regulation (Grant *et al*., 2018) or were based on surveys conducted in the year that the MAFR regime was promulgated (Harber *et al*., 2020; Harber & Marx 2019; 2020) and mainly focused on the top 100 JSE-listed companies (Harber *et al*., 2020; Harber & Marx 2019; 2020; Welch *et al*., 2017). The present study aimed to add to literature by assessing the actual audit firm landscape (based on disclosures on audit firm identity and audit firm tenure) over a period that incorporates the pre-promulgation and post-promulgation of MAFR and covering all size categories (i.e. top 40, medium, small and fledglings) of JSE-listed companies. The disclosure of audit firm tenure (as from 2016) will be interpreted as a signal to stakeholders of the 'independence in appearance' of the audit firm to assess whether to replace the audit firm in anticipation of the MAFR regulation (Buthelezi, 2019, Welch *et al*., 2017).

Based on global and South African literature reviewed, the study therefore hypothesises that South African audit market concentration will increase subsequent to the implementation of MAFR. With Big 4 audit firms showing the same dominance in the South African audit market as in developed countries, it is expected that the global evidence (on increased audit market concentration subsequent to MAFR) will be mirrored in South Africa. This expectation is also supported by evidence of South African audit market stakeholders' perspectives (Harber *et al*., 2020; Harber & Marx, 2019).

3. METHODOLOGY

3.1 Sample selection

The sample for the study comprised all companies listed on the JSE for the period 2010–2018 that employed South African engagement partners to sign off their audit reports. The sample companies were public interest entities to which the disclosure of audit firm tenure (effective from financial years ending on or after 31 December 2015) was applicable and the MAFR rules (effective from financial years commencing on or after 1 April 2023) were to apply. Delisted companies were included to eliminate survivorship bias.

The names of all companies listed on the JSE for the period 2010–2018 were extracted from the IRESS Expert financial database and compared to the Profile Stock Exchange Handbook of the JSE for completeness. Table 1 shows that a total of 508 companies were listed on the JSE for the period 2010–2018.

Table 1: Number of sample companies researched

Total number of companies listed on the JSE	508
Less: Companies with non-South African engagement partners	(87)
Less: Companies with joint auditors	(5)
Less: Companies with missing data	(1)
Final number of sample companies used in this study	415

A total of 87 companies were identified as having non-South African engagement partners signing off their annual reports owing to being registered outside South Africa and/or having a primary listing on a stock exchange other than the JSE. These 87 companies were excluded from the study sample. The remaining 421 companies included five companies that appointed joint auditors during the entire target period. These five companies were excluded from the sample to ensure comparability when calculating audit firm tenure and audit firm rotation. One company had missing data on the CR variables and was excluded. The final study sample therefore comprised 415 companies, represented by 2 703 company year observations.

3.2 Data collection and data analysis

Data on South African auditor firm identity and audit firm tenure are not available in any commercial financial database. Audit firm identities were therefore hand-collected from audit reports in the annual reports of each company per reporting period. Audit firm tenure disclosures were captured from audit reports in annual reports covering the financial years commencing on/after 31 December 2015. Most companies disclosed only audit firm tenure, in line with the disclosure rule of December 2015, as from their 2016 reporting periods. Annual reports were retrieved from the IRESS database (product: Library).

Audit market concentration was calculated by applying the CR, as this measure is the most reported concentration measure based on its ease of calculation and understanding (Pong, 1999; Velte & Stiglbauer, 2012). The CR4, CR5, CR6 and CR7 values were calculated per year for the period 2010–2018, representing the market share of the largest group of four, five, six and seven audit firms, respectively. The CR values were calculated on the basis of three reference amounts, namely number of clients, total assets and market capitalisation. Audit fees could not be used, because all companies do not disclose their audit fees in the annual report, in line with the non-mandatory disclosure of audit fees in the South African regulatory environment. Total assets (including intangibles) and market capitalisation were retrieved from the IRESS Expert database.

The expected effect of MAFR on audit market concentration was based on the observed audit firm rotation and audit firm tenure behaviour in the period subsequent to the introduction of the 2015 audit tenure rule, on the premise that this disclosure on 'perceived auditor independence' motivated audit firm rotations in anticipation of MAFR (Buthelezi, 2019; Welch *et al*., 2017).

Audit firm rotations were identified on the basis of a change in name of audit firms that signed off the audit report per reporting period. Audit firm changes due to audit firm mergers were not categorised as an audit firm rotation, in line with the tenure disclosure rule pertaining to a predecessor audit firm (IRBA, 2017b). Owing to the SENS announcements on change of auditors, effective from 20 September 2017, mainly relating to audits for the 2018 financial year (and subsequent years), these announcements were not used as the primary source to collect audit firm rotation data. The SENS announcements were, however, captured and compared to newly appointed auditors (as disclosed in the relevant audit report) to ensure completeness of data.

Audit firm rotations were divided into pre-2016 and post-2015 rotations, based on audit firm rotation category (i.e. Big 4 to Big 4, non-Big 4 to non-Big 4, Big 4 to non-Big 4 and non-Big 4 to Big 4), audit firm size (i.e. Big 4 and non-Big 4), company size (top 40, medium, small and fledgling) and audit firm tenure (short, medium, long) to ascertain the expected effect of MAFR on audit market concentration.

The company size classifications (top 40, medium, small and fledgling) were obtained from indices received from the JSE. AltX companies were included in the fledgling classification. Audit firm tenure was categorised as short (three years or fewer), medium (four to eight years) and long (nine years or more), in line with the methodology applied in earlier research (Johnson, Khurana & Reynolds, 2002; Riccardi, 2019).

The significance of the changes in audit market concentration and in audit firm rotations was tested by applying generalised estimating equations (GEE), mixed model of analysis of variance (ANOVA) and chi-square statistical tests. A 5% level of significance was applied.

4. RESULTS

4.1 Descriptive statistics

The descriptive statistics of the sample data are displayed in Table 2. The number of JSE-listed companies (clients) varied between 272 and 325 companies per year during the period 2010–2018. Audit firm tenure, as disclosed in the period 2016–2018, was on average 17 years, with a median of 10 years in 2016 and 2018 and a median of eight years in 2017. At least half of the companies therefore already had an audit tenure of 10 years in 2018 and needed to rotate their auditors before or at the effective date (in 2023) of MAFR. The maximum audit tenure was extremely high (at 116 years in 2018), but SENS announcements on audit firm rotations showed that this company had rotated its auditors after 2018. The large difference between the average (mean) and median values for the total assets and market capitalisation figures indicated that a few very large companies were included in the sample data, as became evident in the reported maximum values.

4.2 Audit market concentration

Table 3 displays the CRs per year for the Big 4 audit firms (CR4), the five largest firms (CR5), the six largest firms (CR6) and the seven largest firms (CR7). The Big 4 audit firms comprised PwC, Deloitte, EY and KPMG, while Grant Thornton, Mazars and BDO were added when calculating CR5, CR6 and CR7, respectively.

The CR4 figures in Table 3 are comparable to CRs reported for most developed countries (Riccardi, 2019). In 2018, approximately 68% of clients were audited by Big 4 audit firms, with clients' assets and market capitalisation representing 95% and 96% of the total market, respectively.

When comparing the CR4 figures over time, the number of clients showed an increasing trend, while the asset and market capitalisation ratios fluctuated between 93% and 97% over the period. A slight increase in concentration was evident when comparing 2015 (the year in which audit firm tenure disclosures were introduced) to subsequent periods, which may indicate that the visibility of audit firm tenure may have motivated companies to change their auditors and replace them with Big 4 audit firms. The results from the GEE test (at a 5% level of significance) confirmed that the number of Big 4 audit clients increased significantly in 2017 and that the number of Big 4 audit clients in 2017 and 2018 was significantly higher than the number of Big 4 audit clients in 2015.

The CR7 figure indicated that seven audit firms audited more than 90% of the number of South African clients in 2018. Based on market capitalisation, five audit firms audited approximately 99% of the audit market in 2018. The CR5 ratio in excess of 66.6% (Velte & Stiglbauer, 2012) deemed oligopoly to be present in the South African audit market. When comparing the CRs on number of clients over time, the CR5, CR6 and CR7 ratios showed a steeper increase than the CR4 ratio, but this trend was not evident when comparing 2015 to subsequent periods (where a small increase was evident only in the CR7 ratio, as opposed to the larger increase in CR4), which supports the observation of post-2015 rotations mainly being awarded to Big 4 audit firms. Apart from the fact that the results from the GEE test (at a 5% level of significance) confirmed a significant increase in number of Big 4 audit clients as from 2017, the GEE results also showed (at a 1% level of significance) a significant decrease in the 2018 number of clients for Grant Thornton (identified as the fifth-largest audit firm in the analysis) and a significant increase in the 2018 number of audit clients of BDO (identified as the seventh-largest audit firm in the analysis). The South African merger of most of Grant Thornton's offices with those of BDO has therefore led to BDO becoming a larger mid-tier audit firm.

Table 4 displays the market concentration within the Big 4 audit firm group. PwC was the largest audit firm in the South African audit market. With a market share of 25% of audit clients and a share of more than 50% in the assets and market capitalisation of the market, PwC met the criteria of a monopoly position (Velte & Stiglbauer, 2012) in the South African audit market. Its market share showed an increased trend over time and indicated that PwC may have been appointed to audit larger companies in recent years (2016–2018).

Deloitte is the second-largest audit firm in the Big 4 audit firm group. Although its client numbers have increased since 2015, Deloitte's market share based on assets and market capitalisation decreased, which may indicate that the firm was appointed to audit smaller companies in recent years (2016–2018).

Although KPMG is ranked third based on number of audit clients, its client numbers showed a decreasing trend, as opposed to that of EY, which showed an increased trend over time (2010–2018). The audit failure of KPMG in 2017 resulted in some clients sourcing replacement auditors. EY therefore may well rank third in the years following 2018. The results from the GEE test (at a 5% level of significance) confirmed that the number of KPMG clients decreased significantly in 2018.

Table 2: Descriptive statistics on audit firm tenure and client size

	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of clients	272	277	278	272	278	289	306	318	325
Audit firm tenure (years)									
Average	17.00	17.60	17.56	n/a	n/a	n/a	n/a	n/a	n/a
Median	10.00	8.00	10.00	n/a	n/a	n/a	n/a	n/a	n/a
Maximum	116.00	115.00	114.00	n/a	n/a	n/a	n/a	n/a	n/a
Minimum	1.00	1.00	1.00	n/a	n/a	n/a	n/a	n/a	n/a
Clients' total assets (ZAR'000)									
Average	27 540 106	24 389 217	22 872 653	21 453 906	17 834 829	15 491 400	12 655 517	10 816 275	11 846 305
Median	5 167 422	3 911 665.5	3 790 000	3 566 858	2 648 010	2 276 200	1 770 315	1 246 321.5	1 155 396
Maximum	815 601 000	733 583 000	672 559 000	674 508 000	611 253 000	561 304 000	443 564 000	382 203 000	845 240 000
Minimum	93	311	1	2 411	3 362	8 197	100	44	269
Clients' market capitalisation (ZAR'000 000)									
Average	18 975 918	21 436 466	16 854 777	16 560 105	15 674 631	13 329 677	11 336 772	9 024 076	8 941 750
Median	2 411 474	2 531 230	2 531 917	2 186 165	2 074 707	1 687 857	1 143 935	868 676	804 499
Maximum	1 268 711 760	1 513 802 059	882 694 924	928 297 926	632 544 744	455 876 327	235 556 388	249 009 996	217 400 739
Minimum	876	76	4 607	2 673	2 024	2 062	203	2 521	500

Table 3: Concentration ratios of the South African audit market

	2018	2017	2016	2015	2014	2013	2012	2011	2010
CR4									
Number of clients	68.01%	70.04%	68.35%	65.68%	66.43%	66.20%	64.80%	62.66%	63.89%
Total assets	94.94%	95.06%	94.92%	93.70%	94.44%	94.80%	93.91%	92.88%	94.11%
Market capitalisation	96.10%	96.72%	95.16%	93.96%	94.10%	94.54%	94.93%	95.20%	94.98%
CR5									
Number of clients	79.12%	84.42%	82.67%	80.44%	78.70%	77.00%	70.72%	68.99%	69.44%
Total assets	98.00%	98.60%	98.43%	98.63%	98.60%	98.63%	96.14%	95.61%	96.18%
Market capitalisation	98.78%	99.12%	98.08%	98.37%	98.49%	98.40%	96.74%	96.78%	96.59%
CR6									
Number of clients	83.88%	90.22%	88.45%	87.08%	86.28%	82.93%	75.99%	74.05%	74.07%
Total assets	98.52%	99.26%	99.00%	99.16%	99.14%	99.03%	96.50%	96.03%	96.52%
Market capitalisation	99.04%	99.52%	98.89%	99.09%	99.13%	98.88%	96.98%	97.12%	96.91%
CR7									
Number of clients	91.58%	93.48%	92.06%	91.14%	90.61%	87.46%	81.58%	80.06%	78.70%
Total assets	99.38%	99.78%	99.51%	99.68%	99.71%	99.51%	97.08%	96.50%	96.90%
Market capitalisation	99.69%	99.84%	99.30%	99.42%	99.51%	99.38%	97.54%	97.54%	97.36%

Table 4: Market share per Big 4 audit firm in the South African audit market

	2018	2017	2016	2015	2014	2013	2012	2011	2010
PwC									
Number of clients	25.27%	24.28%	22.02%	21.40%	20.94%	20.56%	20.39%	20.89%	20.06%
Total assets	53.12%	50.07%	47.46%	47.01%	44.24%	36.04%	35.48%	35.93%	47.49%
Market capitalisation	59.89%	59.20%	54.89%	59.48%	54.42%	39.91%	34.99%	31.56%	31.94%
Deloitte									
Number of clients	19.41%	19.20%	17.33%	16.97%	17.33%	17.42%	17.43%	17.41%	18.21%
Total assets	13.42%	15.38%	16.07%	16.59%	18.51%	21.47%	21.46%	21.49%	18.14%
Market capitalisation	12.33%	13.34%	14.60%	13.24%	16.51%	24.79%	27.35%	29.32%	30.81%
KPMG									
Number of clients	12.09%	15.58%	17.69%	16.97%	18.41%	19.16%	19.08%	18.04%	19.75%
Total assets	9.06%	10.88%	11.90%	10.03%	10.10%	15.22%	15.46%	15.38%	12.98%
Market capitalisation	7.86%	9.70%	10.24%	7.63%	7.82%	15.99%	16.37%	19.22%	17.73%
EY									
Number of clients	11.36%	10.87%	11.19%	10.33%	9.75%	9.06%	7.89%	6.33%	5.86%
Total assets	19.33%	18.73%	19.50%	20.07%	21.59%	22.07%	21.51%	20.09%	15.51%
Market capitalisation	16.53%	14.48%	15.44%	13.62%	15.35%	13.85%	16.22%	15.10%	14.50%

SENS announcements on audit firm rotations in the post-2018 period indicate that a change in the South African Big 4 audit firm group occurred in 2019. Based on number of clients, KPMG was replaced by EY as the third-largest audit firm, while BDO was ranked fourth and KPMG fifth in 2019. Whether this change in ranking will persist will need to be confirmed when analysing the published annual reports of 2019 and subsequent periods. Number of clients does not, however, denote the true market share; an analysis of assets and market capitalisation is required to confirm the market concentration effect of this merger. SENS announcements on audit firm rotations in 2019 and 2020 do, however, indicate that clients are starting to re-appoint KPMG as their auditor and that the company is recovering from its reputational tumble.

The reported results on the concentration of the South African audit market therefore indicate a significant increase in Big 4 audit clients after 2016. An increase (although not statistically significant in terms of the ANOVA tests) in CRs based on total assets and market capitalisation was also observed over time. CRs therefore mirror global empirical evidence in respect of Big 4 audit firm dominance and post-2015 trends in CRs seem to support the expectation that MAFR may increase audit market concentration. An analysis of audit firm rotations based on audit firm tenure (and comparing pre-2016 and post-2015 behaviour) is, however, required to ascertain whether an increase in audit market concentration after MAFR is to be expected and will be addressed in the subsequent section.

The reported results on the concentration of the South African audit market also point towards unintended consequences relating to audit quality and financial market stability. The negative association between concentration within the Big 4 audit firm group and audit quality (Francis *et al*., 2013) may be a reality (i.e. in respect of PwC) that needs to be addressed in the South African audit market, and investors' concerns over whether financial markets can recover from the failure, or exit, of one of the Big 4 audit firms (Harris, 2017) may not be unfounded (i.e. KPMG).

4.3 Comparing pre-2016 and post-2015 audit firm rotations

Tables 5, 6 and 7 respectively show the audit firm rotations (per audit firm rotation category and client size) affected during the period (and distinguishes between the pre-2016 and post-2015 period), the audit firm tenure reported for the 2016–2018 period in respect of all clients included in the sample and the audit firm tenure (per client size) for only the 2018 year.

Table 5 shows that a total of 141 audit firm rotations occurred during the period 2010–2018. As stated in the methodology section, these audit firm rotations exclude mergers between audit firms and joint auditor appointments. The 141 audit firm rotations were carried out by 117 companies. From Table 5 it is observed that the rotations per rotation category differ when comparing the pre-2016 and post-2015 periods. In the earlier period, non-Big 4 to non-Big 4 rotations were the dominated rotation category (representing approximately 41% of all rotations), whereas Big 4 to Big 4 rotations dominated the 2016–2018 period (representing approximately 51% of all rotations). A chi-square significance test showed (at the 1% level of significance) that the occurrence of Big 4 to Big 4 rotations increased significantly in the post-2015 period and the occurrence of non-Big 4 to non-Big 4 rotations decreased significantly in the post-2015 period. It is also evident that Big 4 audit clients mainly switched to other Big 4 audit firms, especially within the larger company size categories, whereas non-Big 4 audit clients mainly replaced their auditors with Big 4 audit firms, irrespective of the company size. The results of the post-2015 period therefore support the findings of Harber and Marx (2019) that audit committees and shareholders are reluctant to appoint non-Big 4 audit firms for large listed companies, but also provide surprising evidence that Big 4 audit firms are also the preferred choice for smaller-size companies. An increase in audit market concentration is therefore expected based on the post-2015 audit rotation behaviour.

The replacement of KPMG with other auditors during the post-2017 period (when their reputational damage would have motivated the rotations) did not affect the significance of the results reported in respect of the post-2015 rotations. Eight KPMG replacements occurred in 2018, of which two were Big 4 to non-Big 4 rotations (within the smaller company size categories) and six were Big 4 to Big 4 rotations (within the medium and fledgling company size categories).

Table 6 shows the audit firm tenure landscape of the South African audit market in respect of Big 4 as opposed to non-Big 4 audit firms for the post-2015 period (i.e. the date from which audit tenure was disclosed in annual reports). Audit firm tenure per company was categorised as short (one to three years), medium (four to eight years) and long (longer than eight years).

From Table 6 it is evident that Big 4 audit firms were predominantly the auditors of clients with long audit firm tenure. The decreasing trend in the number of Big 4 audit firm clients with long audit tenures indicates that there were audit firm rotations as from 2016 in respect of companies with longer audit tenures. The increased trend in the number of Big 4 audit firm clients with short audit tenures indicates that the audit firm rotations for the long audit tenure clients were mostly mere switches between Big 4 audit firms, as was also evident in the audit firm rotations per rotation category displayed in Table 5. The audit firm tenure landscape for non-Big 4 audit firms supports the reported trends of Table 5, namely that post-2015 audit firm rotations were predominantly switches to Big 4 (and not non-Big 4) audit firms.

Table 7 shows that approximately 206 audit firm rotations (namely in respect of 54 medium-tenure and 152 long-tenure clients) need to be carried out subsequent to the 2018 reporting period in anticipation of the 2023 MAFR rule of a maximum tenure of 10 years. Most of these rotations (approximately 66%, represented by 18 medium-tenure clients and 118 long-tenure clients) will involve the replacement of a Big 4 audit firm. Based on the post-2015 audit firm rotation trends reported in tables 5 and 6, these replacements will most probably be awarded to other Big 4 audit firms. Rotations to be affected in the non-Big 4 category mostly relate to smaller-size companies, but, as was observed in the post-2015 period in Table 5, smaller companies do not necessarily appoint non-Big 4 audit firms, nor do they necessarily switch from a non-Big 4 to another non-Big 4 audit firm. The results of Table 7 therefore support the expectation of this study, namely that increased audit market concentration is expected in an MAFR regime.

The sheer number of audit firm rotations to be carried out in the four years (2019–2022) until the effective date of MAFR (in 2023) raises the question of whether Big 4 audit firms (and the South African audit market) have the capacity to accommodate these rotations. With many Big 4 audit firms already providing additional non-audit services to companies required to rotate, the options for new Big 4 audit firm appointments may be limited. The large market share of PwC may affect its ability to accommodate audit switches, while the reputational risk attached to dealing with KPMG may negatively affect its appointment as replacement auditor. Evidence from the MAFR experience in the Italian audit market (Cameran *et al*., 2015) as well as stakeholders' perceptions of the South African audit market (Harber *et al*., 2020) has also indicated that it may be difficult for the South African audit market to absorb the cost associated with the scale of audit rotations to be carried out in anticipation of MAFR.

The results of the present study indicate that the expected increase in audit market concentration in anticipation of MAFR may pose unintended consequences for the South African audit market and the economy. Audit quality and investor protection may be at risk based on evidence of concentration within the Big 4 grouping and the possibility that one of the Big 4 audit firms may fail, while the already struggling South African economy may not be able to accommodate the disruption in the audit market.

Table 5: Audit firm rotations per audit firm size and client size

Rotation category	2010–2015						2016–2018						Total period	
	Number of clients	%	Client size				Number of clients	%	Client size					
			Top 40	Med	Small	Fldg			Top 40	Med	Small	Fldg	Number of clients	%
Big 4 to Big 4	13	14.13	4	3	1	5	25	51.02	3	7	4	11	38	26.95
Non-Big 4 to non-Big 4	38	41.30	0	0	4	34	7	14.29	0	0	0	7	45	31.92
Big 4 to non-Big 4	14	15.22	0	0	0	14	6	12.24	0	1	1	4	20	14.18
Non-Big 4 to Big 4	27	29.35	0	1	5	21	11	22.45	1	2	2	6	38	26.95
Total	**92**	100.00	**4**	**4**	**10**	**74**	**49**	100.00	**4**	**10**	**7**	**28**	**141**	100.00

Table 6: Number of clients per audit firm tenure length and audit firm size (2016–2018)

Tenure length	Big 4			Non-Big 4			Total		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Short tenure	49	40	31	17	21	24	66	61	55
Medium tenure	18	29	32	36	27	36	54	56	68
Long tenure	118	125	127	34	35	28	152	160	155
Total	**185**	**194**	**190**	**87**	**83**	**88**	**272**	**277**	**278**
Percentage per year	68.01%	70.04%	68.35%	31.99%	29.96%	31.65%	100.00%	100.00%	100.00%

Table 7: Number of clients per audit firm tenure length, audit firm size and client size (2018)

Tenure length	Big 4					Non-Big 4					Total				
	Number of clients 2018	Client size				Number of clients 2018	Client size				Number of clients 2018	Client size			
		Top 40	Med	Small	Fldg		Top 40	Med	Small	Fldg		Top 40	Med	Small	Fldg
Short tenure	49	5	10	11	23	17	0	0	2	15	66	5	10	13	38
Medium tenure	18	3	5	3	7	36	0	0	8	28	54	3	5	11	35
Long tenure	118	16	32	37	33	34	0	3	4	27	152	16	35	41	60
Total	**185**	**24**	**47**	**51**	**63**	**87**	**0**	**3**	**14**	**70**	**272**	**24**	**50**	**65**	**133**
%	68.01%	8.82%	17.28%	18.75%	23.16%	31.99%	0.00%	1.10%	5.15%	25.74%	100.00%	8.82%	18.38%	23.9%	48.9%

5. CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

MAFR has often resurfaced in debates on auditor independence in the aftermath of the financial crisis of 2007–2008. With the EU implementing MAFR as from 2016 and the USA deciding not to implement MAFR, the divide in opinion on whether MAFR is an effective measure to address auditor independence is evident.

In June 2017, IRBA in South Africa announced that MAFR would be applicable to public interest entities for financial years commencing on or after 1 April 2023. The objectives of MAFR were explained as the enhancement of auditor independence and the promotion of accelerated transformation and deconcentration in the audit profession. Additional regulatory reform imposed to address auditor independence included the requirement to disclose audit firm tenure (effective from financial years commencing on or after 31 December 2015) and to report transparently on the decision to rotate auditors (effective from 20 September 2017).

With information on South African audit firm tenure only recently becoming available, this study aimed to assess the possible effect of MAFR on one of the stated objectives of MAFR, namely the deconcentration of the audit profession. Data on audit firm identity and audit firm tenure of companies listed on the JSE are not available in any commercial financial database and the present study is the first to apply empirical evidence to provide insights into audit market concentration, audit firm tenure and the audit rotation landscape in South Africa.

This study was based on a sample of 415 companies listed on the JSE over the period 2010–2018, covering 2 703 company year observations. It was found that CRs in South Africa mirror global empirical evidence of most developed economies in respect of the dominance of the Big 4 audit firms, with approximately 68% of audit clients audited by the Big 4 audit firms in 2018, representing 95% and 96%, respectively, of the total assets and market capitalisation of the audit market. Within the Big 4 audit firm group, one audit firm, PwC, was found to have a monopoly (representing more than 50% of the total assets and market capitalisation) of the audit market in 2018, while a change in the Big 4 constituents after 2018 was observed, with one Big 4 audit firm, KPMG, dropping to fifth place.

A cause for concern is the finding that an excessively large number of audit firm rotations (approximately 206) need to be carried out prior to the implementation of MAFR in 2023. On the premise that the required disclosure of audit firm tenure (effective from December 2015) has motivated audit firm rotations in anticipation of MAFR, empirical evidence from the post-2015 period indicates that audit firm rotations are predominantly awarded to Big 4 audit firms and that most of the audit firm rotations to be carried out after 2018 are in respect of Big 4 audit firm clients. Indications are therefore that MAFR will further increase Big 4 audit firm concentration in South Africa. The concern is whether the South African audit market and the economy can accommodate the scale of audit firm rotations required. A monopoly within the South African audit market, the risk of an audit failure of one of the Big 4 audit firms and the struggling South African economy add to the complexity and associated risks of MAFR in South Africa.

This study concludes that South African MAFR rules will not attain the envisaged deconcentration objective. The country-specific characteristics of the South African audit market and economy call for regulators to reconsider the implementation of MAFR in this country or, alternatively, to implement additional measures to mitigate the unintended consequences of MAFR in South Africa prior to the implementation thereof in 2023.

It is recommended that IRBA considers results from the present study to inform its decision on implementing MAFR in 2023. It is acknowledged that more research is required on audit quality in the South African context, as enhancing audit quality is the ultimate objective of MAFR. If audit quality is indeed measured to be compromised, empirical evidence does not point towards MAFR as the appropriate remedy. As an alternative to MAFR, it is recommended that current South African auditor independence measures rather be strengthened and formalised, e.g. strengthening the role of the audit committee (in respect of evaluating the independence of the audit firm to be appointed) and improving the audit peer review processes by IRBA and within audit firms. It is also recommended that the transformation and audit market concentration concerns within the South African audit market rather be addressed by considering the total audit market (and not focusing only on JSE-listed companies) to provide opportunities to small and medium-size audit firms as well as to promote the consolidation of smaller audit firms into larger mid-tier audit firms (a development that is already evident as of late). However, if IRBA decides to proceed with the implementation of MAFR in 2023, it is advised that it should rather err on the side of caution by following a staggered approached to implementing MAFR, by initially only applying MAFR to certain sectors or only to joint audit engagements.

The main limitation of this study is that voluntary rotation data were applied to explore the possible effect of MAFR on audit concentration in South Africa. The reported results may therefore not represent the actual audit concentration of 2023 and subsequent periods, but do attempt to provide insights into audit concentration in anticipation of MAFR in this country.

Avenues for future research related to South African MAFR include studies to assess whether audit partner rotation is an effective measure to enhance audit quality and to ascertain the cost implications of audit rotations. Regulators are urged to reinstate the mandatory disclosure of audit fees in South Africa to allow researchers to provide insights into the costs associated with audit rotations and the effect thereof on audit quality.

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