



# Empirical evidence of the effect of mandatory audit firm rotation on market concentration in South Africa

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**Dates:**

Received: 01 July 2024

Accepted: 10 Dec. 2024

Published: 05 Mar. 2025

**How to cite this article:**

McGregor, D.J. & Malambe, L.X., 2025, 'Empirical evidence of the effect of mandatory audit firm rotation on market concentration in South Africa', *South African Journal of Economic and Management Sciences* 28(1), a5808. <https://doi.org/10.4102/sajems.v28i1.5808>

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**Background:** The audit market in South Africa is dominated by the Big Four audit firms, which decreases competition and may result in reduced productivity, innovation and economic growth.

**Aim:** This study analyses the auditor rotations from June 2017 to April 2023 to determine whether mandatory audit firm rotation (MAFR) has reduced audit market concentration by decreasing the dominance of the Big Four in favour of medium-sized audit firms.

**Setting:** The audit regulator in South Africa has raised concerns about the dominance of the Big Four. As a response, the audit regulator implemented an MAFR ruling. While the courts have set aside the MAFR ruling, the audit regulator still plans to pursue MAFR, believing it is an effective response mechanism.

**Method:** The study uses content analysis for inspecting the financial statements and Stock Exchange News Service announcements for audit tenure and details regarding the change of auditors for the Johannesburg Stock Exchange Top 100 companies. The proportion of entities audited by the Big Four and medium-sized audit firms is calculated from 2017 to 2023.

**Results:** The dominance of the Big Four increased as only three out of the 57 rotations observed resulted in an entity moving from one of the Big Four to a medium-sized audit firm.

**Conclusion:** The empirical evidence gathered shows that MAFR was ineffective in reducing market concentration.

**Contribution:** The results and recommendations of this study are relevant for the audit regulator to consider evaluating whether it should continue to pursue MAFR as a mechanism to reduce market concentration.

**Keywords:** auditing; audit firm tenure; audit market concentration; Big Four audit firms; content analysis; Independent Regulatory Board for Auditors; mandatory audit firm rotation; medium-sized audit firms.

## Introduction

Only 2 months after mandatory audit firm rotation (MAFR) – a ruling which enforces a rotation on audit firms with a prescribed audit tenure. Further details regarding the MAFR ruling are discussed in the 'Background on mandatory audit firm rotation' section – became effective, the Supreme Court of Appeal passed a judgement on 31 May 2023 declaring that MAFR be set aside. The court ruled that the Independent Regulatory Board for Auditors (IRBA) acted beyond the powers conferred on it in terms of the *Auditing Profession Act No 26 of 2005 (APA)* when it announced its intention on 01 June 2017 to implement MAFR in South Africa (East Rand Member District of Chartered Accountants and Another v Independent Regulatory Board for Auditors and Others 2023). Following the court's decision, Imre Nagy, the Chief Executive Officer of the IRBA, welcomed the court's verdict and expressed appreciation that the judgement was based on a legal technicality and should not cast doubt on the value of the MAFR ruling in achieving its objectives (Nagy 2023).

The main aim of the MAFR ruling was to strengthen audit quality by reducing the familiarity threat to independence created when auditors and their clients have a longstanding relationship. One of the secondary objectives of the MAFR rule was to reduce concentration in the South African audit market (IRBA 2016), thereby increasing competition in the audit market. Competition improves productivity and innovation among firms, leading to economic growth (OECD 2014).

**Note:** Additional supporting information may be found in the online version of this article as Online Appendix 1.

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The audit regulator has expressed concern about the dominance of the Big Four in the audit market and views MAFR as a way of increasing competition between the Big Four and medium-sized firms, thereby reducing market concentration (IRBA 2016).

The IRBA thus plans to address the legal issue on which the MAFR ruling was set aside (Nagy 2023), a decision that suggests that the IRBA believes that MAFR is still an effective mechanism to reduce market concentration.

Several stakeholders, however, have expressed concern about MAFR further increasing concentration due to the entities listed on the Johannesburg Stock Exchange (JSE), which would be defined as public interest entities (PIE) in terms of the MAFR ruling, simply rotating from one Big Four auditor to the next. The perception that large entities should only be audited by the Big Four reduces the ability of medium-sized auditors to compete with the Big Four for the audits of PIEs and it threatens the effectiveness of MAFR in reducing market concentration (Harber & Marx 2019).

Based on evidence from the European market, which continues to be dominated by the Big Four after the implementation of MAFR in 2016, McGregor and Carpenter (2021) speculate that a similar pattern is likely to be seen in South Africa. The implementation of MAFR may, therefore, have a negligible effect on reducing market concentration in South Africa. There, however, is little to no empirical evidence to support the claims of MAFR reducing market concentration in South Africa.

This study, therefore, aims to gather evidence about the auditor rotations of PIEs to answer the following research question:

After becoming effective on 01 April 2023, has MAFR reduced market concentration in the South African audit market by causing public interest entities to rotate from the Big Four to medium-sized audit firms?

In order to answer the research question posed in this article, content analysis was used on the financial statements and Stock Exchange News Service (SENS) announcements of the Top 100 JSE-listed companies as of 01 August 2022. The MAFR ruling required audit firms of PIEs with an audit tenure equal to or exceeding 10 years to rotate on or before 01 April 2023 (IRBA 2016). As such, all audit firm rotations between 01 June 2017 and 01 April 2023 – the period between the date when MAFR was first announced to be implemented by the IRBA and the date it became effective – of the Top 100 JSE-listed companies as of 01 August 2022 were analysed to ascertain whether listed entities rotated between the Big Four or whether they rotated from a Big Four to a medium-sized entity.

The findings of this article provide empirical evidence to support the negligible effect of MAFR on market concentration

because the Big Four continued to dominate the market after the announcement of the ruling in South Africa. Furthermore, the findings of this article provide evidence to support the claims of Harber and Marx (2019) and McGregor and Carpenter (2021) regarding the insignificant effect of MAFR on audit market concentration in South Africa.

The empirical findings of this article are important for the IRBA to consider in evaluating whether to continue to pursue MAFR as a mechanism to reduce audit market concentration by addressing the legal issues on which the Supreme Court of Appeal set aside the MAFR ruling. Therefore, the IRBA will need to ensure that it has the legal authority to mandate a rotation of audit firms. Otherwise, any future rulings enforcing a rotation of audit firms may also be challenged in the courts and set aside. Addressing the legal issues related to the implementation of MAFR will be a time-consuming and costly initiative, and it may be worth the IRBA considering other mechanisms to reduce market concentration and improve audit quality in South Africa in light of the negligible effect of MAFR on market concentration.

## Literature review

### Introduction

Mandatory audit firm rotation is an emerging area of research in South Africa and, consequently, there is a limited body of knowledge on this topic. Studies have been performed on MAFR and the impact it will have in South Africa on audit quality (Ndaba, Harber & Maroun 2021), directors' ability to discharge their duties (McGregor & Carpenter 2021) and the financial effects on auditors (Harber & Maroun 2020). A few international studies have also been performed on MAFR and the impact of the rule on audit quality (Cameran, Prencipe & Trombetta 2016) and industry concentration (Bleibtreu & Stefani 2018). However, a limited number of studies have focussed on the impact on market concentration in South Africa. Wesson (2021) analysed audit market concentration from 2010 to 2018, mainly focussing on the period leading up to the IRBA's announcement to implement MAFR in South Africa. The study findings supported the dominance of the Big Four. Harber and Marx (2019) interviewed several audit practitioners to gather their views on the effect of MAFR. These participants expressed that MAFR will not decrease market concentration. This study, therefore, contributes to the limited body of knowledge on this topic by gathering empirical evidence for the period between the announcement of the IRBA's intention to implement MAFR in South Africa and the date the MAFR became effective. To the authors' best knowledge, at the time of writing, this is the first study to engage with this specific topic in a South African context.

This literature review covers three main themes. Firstly, it provides the theoretical foundation and background regarding the MAFR ruling. Secondly, market concentration in South Africa and international audit markets are considered. Lastly, the effect of MAFR on market

concentration is discussed, considering evidence from the EU, where MAFR has been introduced, and the likely outcome for the South African audit market.

## Mandatory audit firm rotation ruling

The first theme addresses the theoretical foundation and background regarding the MAFR ruling.

### Theoretical foundation

A company's financial statements are prepared by management, who act as the agent on behalf of the shareholders in running the company. Management, therefore, has more information about the entity's performance, which creates information asymmetry. This practice results in the need for an audit (Ardhani, Subroto & Hariadi 2019).

This agency conflict creates the need for an independent auditor who provides assurance to stakeholders regarding the company's performance. The quality of the audit performed is compromised if there are threats to the auditor's independence because the auditor is more likely not to identify and report irregularities (Tepalagul & Lin 2015).

The IRBA has attributed weakened auditor independence to long audit tenure, and the implementation of MAFR was intended to strengthen auditor independence and further reduce market concentration (IRBA 2016). The accounting profession's reputational loss due to audit firms' involvement in fraud has exacerbated the issue, as noted with former accounting giants Arthur Anderson and KPMG in 2017 (Gavious 2007). This practice has resulted in a lack of public trust for auditors, and their independence has been questioned, thus, prompting the IRBA to implement MAFR.

### Background on mandatory audit firm rotation

The IRBA issued a consultation paper in 2016 that outlines several issues in South Africa's audit market, such as low audit quality, transformation in the audit profession and market concentration (IRBA 2016). In their consultation paper, the IRBA (2016) expressed concern over auditor independence weakened by the close relationship between the external auditor and management of the client, arising from a longstanding relationship between the audit firm and the client.

The MAFR ruling, thus, was announced by the IRBA to address the concerns related to low audit quality by imposing an enforced rotation on audit firms of PIE in South Africa whose audit tenure was equal to or exceeded 10 consecutive years before or on 01 April 2023 (IRBA 2017). A PIE is defined as either a listed entity, an entity that is required to be audited by regulation or legislation in line with the same independence requirements that apply to the audit of a listed entity, or an entity that is a public interest entity as defined by regulation or legislation (IRBA 2023). The audit firm is eligible for reappointment 5 years after being rotated (IRBA 2017).

A public interest entity that is jointly audited – where two or more audit firms are appointed to perform the audit (IRBA 2021) – is only required to rotate one of the auditors if both firms have had an audit tenure of 10 years or more when MAFR became effective (IRBA 2017). The other audit firm will be granted an additional 2 years before it is required to rotate (IRBA 2017).

The enforced rotation of audit firms of PIEs is designed to achieve the objectives of MAFR. The IRBA views MAFR as a way of reducing the dominance of the Big Four by allowing medium-sized firms such as BDO, PFK Octagon, Grant Thornton and Mazars (IRBA 2020) to be considered in the tendering process for large listed companies, thereby increasing competition in the audit industry.

### Market concentration

The second theme of market concentration is now considered. Market concentration refers to the degree to which a small number of firms offer services or products in a given market (OECD 2018). Market concentration may be considered as one measure of competition or rivalry between companies in a market (Velte & Stiglbauer 2012). The low intensity of competition in a highly concentrated market increases the risk of inequality among firms due to the risk of anti-competitive behaviour and high profits for larger firms in the industry due to higher prices (Kamolane & Odendaal 2021).

In the audit industry, high market concentration increases the risk of low audit quality and high audit fees for companies, particularly in industries that require expertise (Kamolane & Odendaal 2021). An oligopoly consisting of the Big Four has been observed in the audit market in several jurisdictions, including the European market (Velte & Stiglbauer 2012). The Big Four also dominate the audit market in the United States of America, and remaining firms face significant barriers to competing with the Big Four to audit large, listed entities (Francis, Michas & Seavey 2013).

South Africa is no exception to this oligopoly. Harber and Marx (2019) suggest that the Big Four audited many JSE-listed PIEs, and only about 4% of these entities were audited by non-Big Four firms in October 2016. This opinion is supported by Kamolane and Odendaal (2021), who observed a high market concentration in each industry among JSE-listed entities in the years 2013, 2016 and 2019, evidenced by a high Concentration Ratio (CR) and a high Herfindahl-Hirschman Index (HHI), which are two measures of market concentration. Furthermore, in 2016, the Big Four firms collected about 94% of total audit fees from JSE-listed companies (Wesson 2021). For companies operating in specialised industries, such as the banking sector, limited audit firms may be available to rotate to. For instance, Deloitte, KPMG, and PwC have audited listed clients in the banking sector for the longest period and presumably have developed specialised knowledge in the sector (McGregor & Carpenter 2021). If a listed bank was forced to rotate from

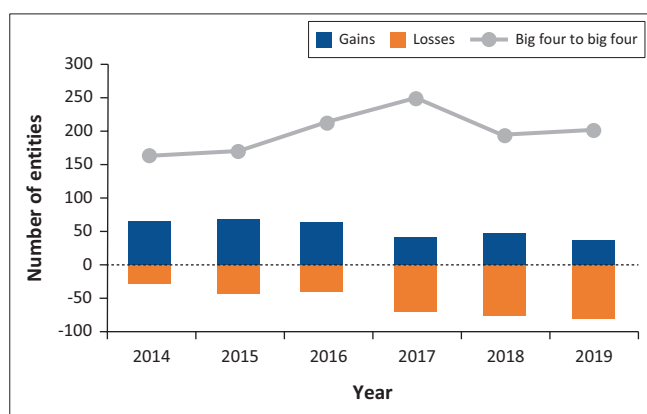
Deloitte, KPMG or PwC, they only have two options if they still wanted a Big Four audit firm with specialist knowledge in the sector. The bank's options may be limited further if any audit firm has provided non-assurance services, such as regular bookkeeping services, that will prohibit the audit firm from accepting an appointment in terms of section 90 of the *Companies Act No 71 of 2008* (McGregor & Carpenter 2021). Evidently, South Africa's audit market is highly concentrated.

According to the IRBA (2016), there are sufficient audit firms to allow for adequate rotation outside the Big Four. However, no concrete evidence has been provided by the IRBA to support this claim (McGregor & Carpenter 2021).

### Mandatory audit firm rotation and its effect on market concentration

The last theme deals with MAFR and its effect on market concentration. The IRBA's decision to implement MAFR in South Africa was influenced by the European Union's (EU) decision to introduce MAFR into Europe in June 2016 (IRBA 2016). Auditors of public interest entities in the EU are required to rotate after 10 consecutive years. However, an extension of up to 20 years may be allowed if a public tender process is conducted (Audit Analytics 2020). There has been an increased number of audit firm rotations since the implementation of MAFR in the EU market (see Figure 1), with Big Four firms losing about 30 clients per year between 2016 and 2019 and only gaining about 20 clients (Audit Analytics 2020).

The Big Four, therefore, have lost more clients than they have gained and it appears that entities are rotating from the Big Four to medium-sized firms. However, the change from Big Four to medium-sized audit firms has not been significant (McGregor & Carpenter 2021). The implementation of MAFR appears to have had no impact on market concentration levels in the listed entities' market, with the Big Four's market share increasing by 2% between 2014 and 2019 (Audit Analytics 2020).



Source: Audit Analytics, 2020, *Monitoring the audit market in Europe: December 2020*, viewed 17 March 2021, from <https://blog.auditanalytics.com/monitoring-the-audit-market-in-europe/>

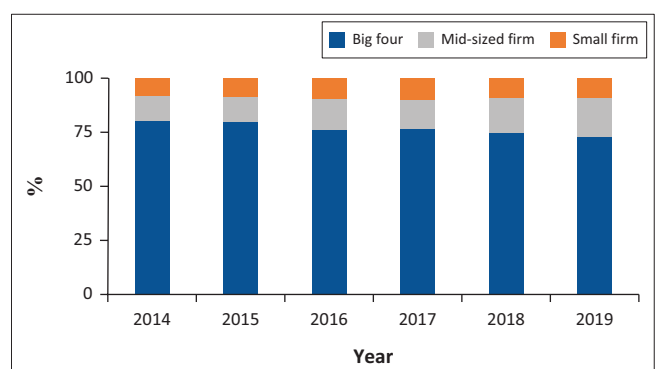
**FIGURE 1:** Audit client gains and losses for the Big Four in the European audit market since mandatory audit firm rotation was implemented.

Thus, the Big Four audit firms still dominate the European market, despite the implementation of MAFR, as public interest entities rotated from one Big Four firm to the other (McGregor & Carpenter 2021). The domination of the Big Four over medium-sized and small firms in the EU audit market is still evident (see Figure 2). McGregor and Carpenter (2021) speculated that a similar trend may be seen in the South African audit market. Thus, the implementation of MAFR by the IRBA may have a negligible effect on market concentration in South Africa.

The dominance of the Big Four is also observed in other regions of the EU where MAFR was implemented before 2016. One example is Italy, which has implemented MAFR since 1975. The Italian market, however, is as concentrated as other member states and is dominated by the Big Four (De Jong, Hijink & in 't Veld 2020).

Another EU region where MAFR was implemented before 2016 is the Netherlands. The Audit Regulation was adopted in the Netherlands in 2014, introducing MAFR for public interest entities from June 2020/2023 (De Jong et al. 2020). An empirical study in the Netherlands shows that MAFR has not achieved the goal of improving concentration in the audit market, as the Big Four still have dominance in the market (De Jong et al. 2020).

The dominance of the Big Four in the market is exacerbated by the implementation of MAFR because the rule limits the choice of auditor for these large PIEs to one of the other Big Four audit firms. Given the trends of the Big Four dominance in the EU, a similar pattern could be observed in South Africa, whereby the implementation of MAFR would not decrease market concentration, contrary to IRBA's expectations (McGregor & Carpenter 2021). In South Africa, several audit partners believe that MAFR will result in large entities simply rotating between the Big Four, which will increase market concentration (Harber & Marx 2019). This situation could be due to the characteristics and perceptions of the Big Four audit firms. The Big Four have an international footprint, a fact which is necessary to audit a large entity operating in various locations worldwide (McGregor & Carpenter 2021).



Source: Audit Analytics, 2020, *Monitoring the audit market in Europe: December 2020*, viewed 17 March 2021, from <https://blog.auditanalytics.com/monitoring-the-audit-market-in-europe/>

**FIGURE 2:** Market concentration levels in the European Union audit market following the implementation of mandatory audit firm rotation.

Medium-sized accounting firms have access to fewer resources, fewer employees and a smaller global footprint (International Federation of Accountants [IFAC] 2018). There is concern about the ability of medium-sized firms to audit large JSE-listed entities due to the complexity of group companies and the larger scale of the audit (Wesson 2021). It, therefore, is unlikely for public interest entities audited by one of the Big Four to risk appointing a medium-sized firm due to MAFR, because there is an expected degree of skill and experience that medium-sized firms may not possess (Harber & Maroun 2020).

Furthermore, the smaller firms do not have the required global presence that audit committees prefer, a component that is known to improve the efficiency of the audit and reduce costs (Wesson 2021). It is expected that although medium-sized firms will be allowed to tender for the audit of PIEs, they will not be appointed – due to companies preferring the Big Four audit firms for their global presence, resources, skill and experience (McGregor & Carpenter 2021) – and, thus, will not achieve the aim of reducing market concentration (Harber & Maroun 2020).

In addition, stakeholders generally perceive the Big Four as the superior auditors for large, listed multinational entities due to the depth of resources available to conduct these audits (Gray & Ratzinger 2010). Stakeholders further agree that an audit from one of the Big Four has a ‘cachet’ which carries monetary value in the markets (Gray & Ratzinger 2010). Audit committee members prefer the Big Four to audit large entities due to their access to the relevant resources, skills and experience required for a successful audit (Wesson 2021). Audit committees and shareholders of large entities may be reluctant to appoint a medium-sized firm as the auditor due to the perceived reduced access to resources, limited experience and the negative impact this practice will have on the audit quality (Wesson 2021). Thus, when considering the characteristics and perception of the Big Four audit firms, when an entity moves from a non-Big Four firm to a Big Four firm, a positive signal is sent to the financial market (Gray & Ratzinger 2010). The rotation between the Big Four will increase market concentration because the PIEs will only have three other choices for auditor appointment (Harber & Marx 2019), thus not alleviating the IRBA’s concern regarding the dominance of the Big Four in the South African audit market (IRBA 2016).

The prior reviewed literature has noted the dominance of the Big Four in audit markets, both locally and internationally. One of the aims of MAFR is to reduce the market concentration of the Big Four by enforcing a rotation on the audit firms of all PIEs with an audit tenure exceeding 10 consecutive years. However, evidence in the EU showed that the dominance of the Big Four continued after MAFR was introduced. Many academics speculate that a similar pattern will be observed in the South African audit market following the announcement to implement MAFR in South Africa due to medium-sized audit firms not having the necessary resources, global

footprint and perceived value of the Big Four in terms of auditing PIEs.

## Methodology

### Sample selection

The JSE Top 100 companies list of August 2022 was used as the sample for this study. As these entities are listed, they are PIEs as defined (IRBA 2023) and, thus, provide a proxy for PIEs in South Africa. The JSE Top 100 companies list is not readily available on the JSE’s website; it was obtained from the Bloomberg (2022) database. The list of the Top 100 JSE companies as of 01 August 2022 is included in Table 1-OA1 (see Online Appendix 1).

Once the list of the JSE Top 100 companies was obtained, each company was verified as being a listed JSE company by matching its name to those appearing on the listed companies on the JSE website.

### Data collection and analysis

#### Introduction

This section first describes how audit firm rotations relevant to this study were identified. The procedures for calculating the proportion of entities audited by the Big Four are then discussed, followed by how the change in market concentration is analysed. Lastly, considerations relevant to joint audits are presented.

#### Identifying rotations relevant to the study

Firstly, the criteria and procedures to identify relevant rotations for this study are considered. This study adopted content analysis to examine the data needed to respond to the research question. Content analysis involves the analysis of qualitative data, such as text data, for the presence of certain keywords, phrases or theories (Hsieh & Shannon 2005). This method has been used widely in the field of integrated reporting by Stacchezzini, Melloni and Lai (2016) in determining the disclosure quality of integrated reports (Pistoni, Songini & Bavagnoli 2018) where visual content analysis was used to classify integrated reports with a proposed scoring system to assess their quality. Additionally, Marx and Mohammadali-Haji (2014) utilised content analysis to analyse the integrated and annual reports of the JSE Top 40 to identify their integrated reporting practices. Therefore, content analysis is an appropriate method for this study because it involves the analysis of information presented in the financial statements and SENS announcements of the JSE Top 100 companies.

In order to assess whether MAFR has had any effect on market concentration, this study focussed on audit firm rotations between the announcement of MAFR in South Africa (01 June 2017) and the date MAFR became effective (01 April 2023). During this period, the audit firms of PIEs would have been required to rotate in line with the MAFR ruling by 01 April 2023 if their audit tenure is at least 10 years (IRBA 2016).

The 2023 year-end financial statements for each company were downloaded from the company's website. The audit report contained in the financial statements was then manually inspected to determine the name of the appointed audit firm and also their audit tenure. This information was readily available since both the auditor's name and the audit tenure must be disclosed in the auditor's report. The auditor's name must be displayed at the end of the audit report as per paragraph 46 of the revised International Standard on Auditing 700 (IAASB 2016). The audit tenure must be disclosed in the audit report under the 'Report on Other Legal and Regulatory Requirements' paragraph per the IRBA Rule published in Government Gazette Number 39475 dated 04 December 2015 (IRBA 2015).

Once the audit tenures were obtained from the auditor's report, the tenures were then sorted into the following categories for this study:

- Audit tenures of 5 years or less
- Audit tenures longer than 5 years but less than 10 years
- Audit tenures greater than 10 years.

To facilitate the analysis, each of the categories for audit tenure was considered to determine whether the rotation observed was relevant to the period for this study. Only the first (audit tenures of 5 years or less) and last (audit tenures greater than 10 years) categories were found to be relevant for this study, as discussed in this section.

**Audit tenures of 5 years or less:** The first category is audit firms with an audit tenure of 5 years or less. If the audit tenure was 5 years or less at the end of the company's 2023 financial year, this fact would indicate that a rotation of auditors may have happened between 01 June 2017 and 01 April 2023. These are entities that likely decided to early adopt the MAFR ruling. Therefore, these rotations will be analysed further to answer the research question posed in this study.

The year in which the rotation took place was then calculated by subtracting the audit tenure (in years) from the year-end date of that company's 2023 financial year-end.

**Audit tenures longer than 5 years but less than 10 years:** The second category is audit firms with tenures of 5–10 years. If the audit tenure obtained from the audit report is longer than 5 years but less than 10 years, the rotation (if any) occurred outside the period considered for this study, because the audit firm must have been appointed before the announcement of MAFR in June 2017. These entities were not yet required to rotate their auditors in line with MAFR because they did not reach the maximum tenure allowed under the MAFR ruling. Rotations before June 2017, therefore, are not relevant for answering the research question posed in this study.

**Audit tenures of 10 years or more:** The last category is audit firms with tenures of 10 years or more. Those audit firms were required to rotate on 01 April 2023 in line with the

MAFR ruling because they have reached the maximum period allowed. Although the 2023 financial statements did not indicate a change of auditor, the SENS announcements of these companies from 01 April 2023 to the start of their respective 2023 financial year were obtained from the company's website and manually inspected to ascertain who the newly appointed audit firm was and the effective date of appointment. These rotations will also be further analysed to answer the research question posed in this study.

#### **Further information obtained if a rotation relevant to the study was observed**

Two categories of audit tenures will be further analysed. These relate to audit firms with tenures of 5 years or less and those with tenures of 10 or more years.

To corroborate the date of the rotation calculated, the SENS announcement of the company for the year in which the rotation was calculated to have taken place was obtained from the company's website and was manually inspected for an announcement regarding the change in the external auditor.

In line with the approach taken by Wesson (2021) to verify the data in the SENS announcement, the annual report in the year preceding the rotation was observed to see which external audit firm signed off on the financial statements to corroborate the information in the published SENS announcement on the company's website.

If the year of the rotation initially calculated matched the year in which the SENS announcement related to the audit firm rotation was made, the SENS announcement was manually inspected for the following information:

- the effective year of the rotation
- the previous auditor (firm name)
- the new auditor (firm name).

In instances where the information could not be obtained from the SENS announcement, the relevant audit committee report in the annual financial statements for that financial year was obtained from the company's website and manually inspected for the missing information.

The information obtained from the SENS announcements and audit committee reports, if necessary, was recorded in an Excel spreadsheet and is included in Online Appendix 1, Table 2-OA1.

#### **Calculating the proportion of entities audited by the Big Four**

Secondly, the proportion of entities audited by the Big Four was calculated. The IRBA is concerned with reducing the dominance of the Big Four in favour of medium-sized audit firms, thereby decreasing market concentration (IRBA 2016). As such, the rotation from the previous auditor to the new auditor was recorded to ascertain whether the newly appointed or previous auditor was a Big Four or medium-sized firm. This information will allow for the calculation of the proportion of entities audited by the Big Four.

BDO, PFK Octagon, Grant Thornton and Mazars were defined as medium-sized firms in line with the IRBA (2020). The previous or new auditor was classified as 'Big Four' if the auditor was either one of the following audit firms: Deloitte, EY, KPMG or PwC. The data were first sorted by year of rotation and then all medium-sized firms were filtered by their name in Excel to identify and assess the nature of the rotation.

The proportion of medium-sized audit firms auditing PIEs was then calculated for each year using the total number of entities audited by the medium-sized firms (adjusted for rotations up to the end of that year) as a percentage of the total number of entities initially sampled, with the remaining proportion to arrive at 100% constituting the proportion of entities audited by the Big Four audit firms.

### Determining whether mandatory audit firm rotation has improved market concentration or not

Lastly, a comparative analysis (Beham et al. 2019) was used to analyse the differences in the proportion of the JSE Top 100 that the Big Four audited before the announcement of MAFR in 2017 to the proportion of entities that were audited by the Big Four for each year up until 01 April 2023. The percentage of entities audited by the Big Four each year was compared to those audited by medium-sized firms. If the percentage of audit firms audited by the Big Four decreased from 2017 to 2023, this fact would indicate that market concentration has improved and vice versa.

### Joint audit considerations

For the entities with joint auditors, the rotation of both audit firms was observed within the time period considered for this study. However, only one external auditor is required to be rotated by 01 April 2023, with the remaining auditor having a two-year audit tenure before being required to be rotated (IRBA 2017). If only one auditor has rotated, it was noted when the other auditor's rotation became effective to ensure it is within the two-year limit per the MAFR rule (IRBA 2017). The same procedures for data collection and analysis as described for entities not engaging in joint audits were then followed.

## Findings and discussion

### Introduction

This study's findings cover the period from June 2017 to April 2023. The market concentration in 2017, based on the announcement of MAFR in June 2017, is first discussed to establish a starting point for a comparison of the market concentration. Findings for the 57 rotations from June 2017 to April 2023 are then presented. The JSE Top 100 companies as of 01 August 2022 include 11 entities with joint auditors, as presented in Table 3-OA1 (see Online Appendix 1). All jointly audited companies had at least one of the Big Four audit firms appointed as their auditor. As such, the auditor rotations are split between those with joint auditors (11 rotations) and those without them (46 rotations) for more effective analysis.

### Market concentration upon the announcement of mandatory audit firm rotation

The market concentration upon the announcement of MAFR is now discussed. Out of the JSE Top 100 companies sampled, 95 were audited by the Big Four in 2017 when MAFR was announced (using Table 2-OA1 in Online Appendix 1). This fact aligns with the findings of Harber and Marx (2019), whereby 96% of JSE-listed PIEs are audited by the Big Four. This finding indicates the initial dominance of the Big Four firms within the JSE Top 100 companies at the start of the period under review for this study.

### Rotation of entities without joint auditors

The sample for this study consisted of 89 audit clients who were not jointly audited. There were 46 auditor rotations observed between 01 June 2017 and 01 April 2023 (Online Appendix 1, Table 2-OA1). Out of the 46 auditor rotations, only three entities or 7% had rotated from a Big Four auditor to a medium-sized auditor, thus having a negligible effect in alleviating the IRBA's concern regarding the dominance of the Big Four in the South African audit market (IRBA 2016) (see Table 1).

This low percentage suggests that the entities have rotated from one Big Four auditor to the next, a practice that will increase market concentration in line with the expectations of McGregor and Carpenter (2021). The reasons for the three companies appointing a medium-sized firm have not been disclosed in the SENS announcements or the audit committee's report. However, Steinhoff's auditor rotation was likely due to Steinhoff's involvement in accounting fraud (Reuters 2019).

Comparably, four of the PIEs rotated from a medium-sized entity to a Big Four auditor (see Table 2). The reasons for appointing the Big Four have not been disclosed in the SENS announcements or the audit committee's report.

Although the reasons for the rotations have not been specified, even if it is assumed that all these rotations were due to MAFR, it still does not provide support for the effectiveness of MAFR in reducing the market concentration of the Big Four in South Africa.

**TABLE 1:** Johannesburg Stock Exchange top 100 companies who rotated from the Big Four to a medium-sized firm between 2017 and 2023.

Name of entity	Previous auditor	New auditor	Effective date
Dischem	EY	Mazars	February 2022
Steinhoff	Deloitte	Mazars	2019
Global Trade Centre SA	EY	BDO	2019

EY, Ernst & Young.

**TABLE 2:** Johannesburg Stock Exchange top 100 companies who rotated from a medium-sized firm to the Big Four between 2017 and 2023.

Name of entity	Previous auditor	New auditor	Effective date
Netcare	Grant Thornton	Deloitte	2018
Resilient	PKF Octagon Inc.	PwC	2021
Vukile Property Fund	Grant Thornton	PwC	2018
Lighthouse Properties	BDO	PwC	2020

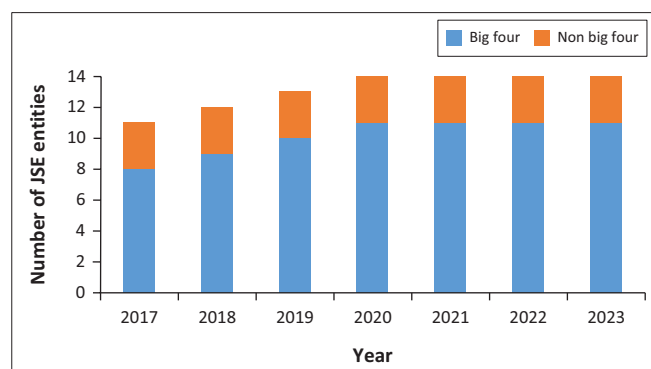
## Rotation of entities that are jointly audited

The remaining 11 of the Top 100 JSE companies sampled are jointly audited (Online Appendix 1, Table 3-OA1). In June 2017, at the announcement of MAFR, there were nine jointly audited entities, consisting of the financial services providers, MTN, Telkom and Aspen (Online Appendix 1, Table 3-OA1). Six of these PIEs had both of their auditors as Big Four firms. The other three companies had one of their auditors as a Big Four firm, and the other auditor was a medium-sized firm (see Figure 3). Most of the jointly audited entities have only rotated one of their auditors as required by the MAFR rule (IRBA 2017), and each of them has appointed one of the Big Four as one of their joint auditors (Online Appendix 1, Table 3-OA1). The findings indicate the dominance of the Big Four in the South African audit market for joint audits within the JSE Top 100 entities.

None of the PIEs that were jointly audited by two Big Four firms in 2017 have rotated one of their auditors to a medium-sized firm. The PIEs that had appointed a medium-sized firm to be one of their auditors are those entities that already had a medium-sized auditor when MAFR was announced in 2017, except for Barloworld, which only appointed joint auditors in 2019. This finding suggests that audit committees and shareholders are hesitant to appoint a medium-sized firm as a joint auditor of a company when that entity has previously been jointly audited by two of the Big Four. Public interest entities are rotating within the Big Four, a process that does not improve competition in the audit market nor reduce market concentration as expected by the IRBA.

Aspen and Telkom are the only jointly audited companies that had rotated both auditors within the period of this study. By 01 April 2023, four companies had rotated one auditor and had appointed another new auditor; however, their appointment is effective at a date outside the time period for the study.

Furthermore, Barloworld, Sanlam and Nedbank were not jointly audited in 2017 and were audited by one of the Big Four. However, each entity appointed joint auditors during the period considered for this study. Sanlam and Nedbank each appointed two Big Four audit firms, while Barloworld



JSE, Johannesburg Stock Exchange.

**FIGURE 3:** The number of public interest entities jointly audited by Big Four and medium-sized audit firms from 2017 to 2023.

only appointed one of the Big Four as its joint auditors. Although the number of jointly audited entities increased to 11 companies in 2023, the number of medium-sized auditors remained the same. The Big Four are preferred auditors for jointly audited PIEs, and the announcement of MAFR has not reduced the concentration of the Big Four in this market (see Figure 3).

## Rotations of all entities in the Johannesburg Stock Exchange top 100

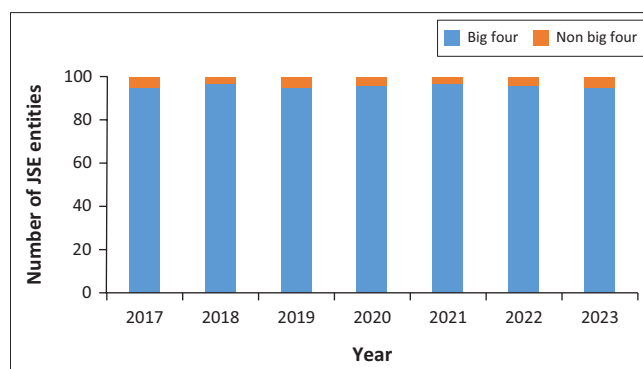
On 01 April 2023, after considering all the rotations that had taken place, 95% of the top 100 JSE-listed entities were still audited by at least one of the Big Four firms, indicating that the South African audit market is still heavily concentrated in favour of the Big Four (see Figure 4).

There has been no improvement in market concentration for the sample observed. In 2017, the Big Four audited 95% of the sample used in this study, while 95% were audited by the Big Four in 2023. The above findings indicate that MAFR has not provided the outcome desired by the IRBA of effectively reducing market concentration. Even though there are enough audit firms to allow for sufficient rotations, as stated by the IRBA (2016), medium-sized audit firms do not appear to be favoured in the tendering process for PIE audits. This rotation from one Big Four auditor to the next Big Four audit firm further increases market concentration because the PIE has only three other Big Four audit firms to consider when making their appointment. For jointly audited entities, this choice becomes two other Big Four audit firms.

Overall, the study findings indicate that the Big Four still dominate the audit market and the oligopoly continues to exist even after MAFR was announced and became effective and has not been successful in addressing the IRBA's concerns related to the high market concentration of the Big Four.

## Rotations from KPMG due to independence concerns

In 2017, KPMG was involved in several audit engagements involving the Gupta family businesses in South Africa and several public accounting scandals (Holtzblatt, Foltin & Tschakert 2020). The Gupta family had a significant political



JSE, Johannesburg Stock Exchange.

**FIGURE 4:** Concentration of Big Four versus non-Big Four audit firms of the Johannesburg Stock Exchange top 100 entities between 2017 and 2023.

influence in South Africa and engaged in 'State Capture' to expand their business (Holtzblatt et al. 2020). KPMG's association with the Gupta family led to a reputational loss, resulting in many of its clients terminating their business relationship with the firm (Holtzblatt et al. 2020).

KPMG served as the auditor of 27 entities in the JSE top 100 companies in 2017, and in 2023, they audited only 14 of those entities (including jointly audited companies) (see Figure 5).

KPMG has lost close to half of its audit clients and each of these entities has appointed one of the three Big Four firms as its new auditor. These rotations indicate that large, listed entities are inclined to rotate from one Big Four auditor to the next, which disadvantages medium-sized firms. Of the 14 clients lost by the firm, four companies – Foschini Group, Sibanye Stillwater, MAS Real Estate and African Rainbow Minerals – explicitly attributed their reason for terminating their relationship with KPMG to the allegations made against the firm in their respective audit committee reports.

Overall, the PIEs seem more inclined to appoint a Big Four auditor due to their characteristics (McGregor & Carpenter 2021; Wesson 2021) and perceptions of enhanced quality by stakeholders (Harber & Maroun 2020; Kamolane & Odendaal 2021).

## Limitations of this study

Not all entities have disclosed their reasons for not reappointing their external auditors in their SENS announcements or audit committee reports. However, even if it was assumed that the reason was due to MAFR, there was no significant decrease in the overall market concentration of the Big Four because many of the companies merely rotated to another Big Four audit firm. This finding still suggests that MAFR has not been an effective mechanism to address the IRBA's concerns related to market concentration.

## Conclusion and recommendations

The IRBA announced the implementation of MAFR in South Africa in June 2017, effective 01 April 2023. The IRBA's main

aim in implementing this rule was to strengthen auditor independence which has been weakened by long audit tenure and has created a familiar relationship between the auditor and the entity's management. A secondary objective of MAFR is to decrease market concentration in the South African audit market in which there is an oligopoly consisting of the Big Four.

Several studies have been performed on the effect of MAFR on the audit industry, including the impact on auditor independence and audit quality. Very few of these studies have focussed on the effect of MAFR on market concentration. This research article, thus, adds value to the existing literature by presenting empirical evidence on the effect of this rule on market concentration.

In order to assess the effectiveness of MAFR in decreasing market concentration, the rotations of JSE's Top 100 listed entities were analysed. The auditor rotations between 2017 and 01 April 2023 were observed to ascertain which entities have begun to rotate their auditors and which auditor they rotated to. An observation was made regarding the previous auditor and whether the PIE appointed one of the Big Four or a medium-sized firm as the new auditor. Because jointly audited entities were required to rotate at least one auditor by the effective date of 01 April 2023, the rotation of at least one auditor was observed.

There were 57 rotations within the period of this study, and of these, only three entities rotated from a Big Four auditor to a medium-sized auditor. In 2017, 95% of these PIEs were audited by a Big Four firm (entities that were jointly audited had at least one of their auditors as one of the Big Four) and on 01 April 2023, 95% of PIEs were audited by the Big Four.

These findings suggest the Big Four's dominance in the market for auditing PIEs in South Africa has not been reduced by the announcement of MAFR. Medium-sized firms are still at a disadvantage in relation to audit clients that are PIEs. This evidence supports the findings of Harber and Marx (2019) and McGregor and Carpenter (2021), who noted that MAFR is likely to have little to no effect on audit market concentration in South Africa. The evidence from this study is similar to the observations of auditor rotations in the European market, where the implementation of MAFR in 2016 had a negligible effect on the market concentration and the audit market was still dominated by the Big Four (McGregor & Carpenter 2021).

Given this study's findings, alternative measures to MAFR are needed to effectively reduce market concentration. Medium-sized audit firms must develop the necessary experience and resources to audit large PIEs. This improvement could be achieved through the increased use of joint audits. Joint audits are predominantly used in the banking sector, and South African audit firms have limited experience with joint audits outside of the banking sector

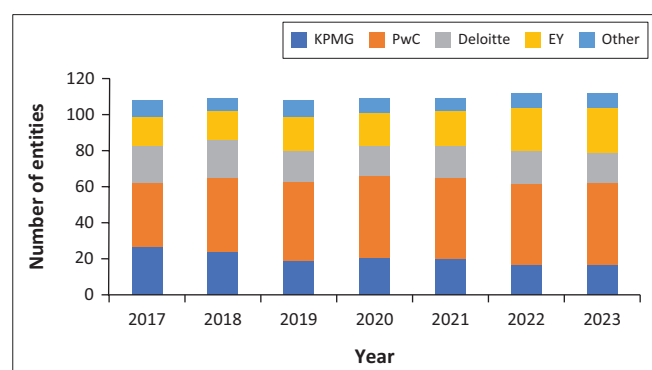


FIGURE 5: Top 100 Johannesburg Stock Exchange entities and their auditors between 2017 and 2023.

(McGregor & Carpenter 2021). The IRBA developed a guide for joint audit engagements in 2020 but could now focus on developing additional frameworks and illustrative guides to facilitate the practical implementation of joint audits outside the banking sector. This practice may allow more medium-sized firms to be appointed because it still allows the expertise and resources of one of the Big Four audit firms to be involved in the audit but creates an opportunity for the medium-sized audit firm to gain the necessary experience to audit the PIE. However, the costs and benefits associated with a joint audit should be analysed before deciding on whether joint audits may be an effective mechanism to reduce audit market concentration in South Africa. This could be a future area of research.

## Acknowledgements

This article is adapted from the second author's, L.X.M., honours dissertation at the University Cape Town, South Africa, with supervisor D.J. McGregor, received December 2022, available upon request.

## Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

D.J.M. was responsible for the writing, review and editing and L.X.M. was responsible for the concept, methodology, formal analysis, investigating, writing, visualisation and project administration.

## Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Cape Town on 12 June 2024 (COM/00901/2024). This article followed all ethical standards for research without direct contact with human or animal subjects.

## Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## Data availability

The authors confirm that the data supporting the findings of this study are available within the article.

## Disclaimer

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