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Mandatory audit rotation and audit market concentration—evidence from Poland[1]

Magdalena Indyk[2]

Abstract: The new audit regulation came into force in Poland in 2017 and imposed mandatory audit rotation. The new regulation aims to strengthen the auditor's independence but it might also affect concentration on the audit market. The aim of this paper was to analyse whether mandatory audit rotation has a potential to reduce the audit market concentration in Poland. The sample included 198 capital groups with the parent company listed on the Warsaw Stock Exchange. The own compilation was prepared based on the audit opinions which included information about appointed audit firms in the period 2011-2017 (1,386 observations in total). The paper includes the analysis of audit tenures, their length, frequency of changing the audit firm and direction of the changes (to Big-4 or to Non-Big-4). The results showed that the biggest capital groups tend to appoint Big-4 audit firms and if they change auditor—they choose another firm from the Big-4. Additionally, the high number of short-term tenures (up to five years) suggests that Big-4 firms have strong bargaining power and they benefit more from the rotation of the clients rather than from their retention. The findings significantly contribute to the hypothesis that mandatory audit rotation will not reduce the concentration on the audit market in Poland. The findings might be valuable for the regulators and supervisory authorities responsible for the monitoring of the concentration level on the audit market.

Keywords: audit reform, mandatory audit rotation, audit tenure, audit market concentration.

JEL codes: D43, K2, L11, M42.

Introduction

The new audit regulation is a result of the last 10-years of intense work to strengthen public trust towards the audit profession. The discussion itself about mandatory audit rotation is not new and has been carried out over a long time.

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However, the last financial crisis in 2007 showed that there is a doubt whether auditors can be really treated as independent experts whose opinion on the financial statement brings value. There was a question about auditors' independence but also about the quality of their work and due care taken.

The EU regulators decided to construct the audit reform on two flagship solutions: mandatory audit rotation and the general prohibition of non-audit services. The main objective of these solutions was to reduce the long-term dependence on a particular audit firm and to reduce excessive reliance on fees if additional non-audit services were provided by the same audit firm. At the same time there is an ongoing discussion about the dominant position of four biggest audit firms (the so called Big-4) and whether mandatory audit rotation will improve the competitiveness on the audit market.

The aim of this paper was to analyse whether mandatory audit rotation has a potential to reduce the concentration on the audit market in Poland. It is interesting taking into consideration that Poland implemented the most restrictive approach towards mandatory audit rotation among all EU member states which is five years (compared to ten years in the majority of EU countries). In order to perform the analysis, the own compilation was prepared based on the audit opinions issued on the consolidated financial statements. The sample included 198 capital groups which had the parent company listed on the Warsaw Stock Exchange (e.g. on the Main Market) in the period 2011-2017. The total sample included 1,386 observations. As one audit firm might have served the client for several years it was necessary to determine complete audit tenures which sometimes required a check as to when the audit tenure started. As a result, 433 audit tenures have been identified and 235 changes between audit firms have been noticed.

The collected data enabled the analysis of the capital groups' profile, the length of audit tenures and frequency of changes. The analysis presented also the Big-4 concentration in a sample, the length of audit tenures with Big-4 firms and direction of changes in the case of auditor's switching (to Big-4 firm or to Non-Big-4 firm).

There are two main findings of this paper. Firstly, the 44 biggest capital groups, which represent 66% of total analysed group assets, are audited by Big-4 firms and in the case of auditor change—they appoint another auditor from the Big-4. On the other hand, 68 capital groups loyal only to Non-Big-4 firms represent only 3% of total analysed assets. This finding contributes to the hypothesis that mandatory audit rotation might not reduce the concentration on the audit market as regardless of the imposed rotation the biggest capital groups will choose a firm from the Big-4. Secondly, the results of the paper show that Big-4 firms are the most active and present in the group of short-term tenures (one to five years) which suggests that their strong position on the market does not result from a client's retention but from the rotation of clients in the short term and their strong bargaining power during the tendering.

The remainder of this paper is as follows. Section 1 presents the literature review, the key aspects of mandatory audit rotation and hypothesis development. Section 2 focuses on data collection, empirical research and findings. Section 2 is divided into two sub-sections presenting separately the characteristics of the capital groups and the characteristics of the audit firms.

1. Literature review and hypothesis development

1.1. The new audit reform—implementation of the EU Regulation

Mandatory audit rotation has been previously discussed more as a matter of ethics. The concept of audit rotation is still strongly promoted by organisations such as ACCA[3]. The IESBA[4] Code of Ethics recommends audit partner rotation as a safeguard to reduce the familiarity and self-interest threats which might occur due to a long audit tenure (IESBA, 2018, Article 540.2, 540.5). However, the list of good practices is not sufficient to enforce the rules in the audit world.

There were attempts in the past to regulate the audit profession as a law. It is worth remembering here, e.g., the Sarbanes-Oxley Act in the US or the EU Directive 2006/43/EC. The turning point was, however, the financial crisis in 2007 which revealed that the audit profession is far from perfect. For this reason the European Commission published in 2010 the Green Paper "Audit Policy: Lessons from the crisis" (The Green Paper, 2010) which was a channel to lead discussion about the role of the audit profession and possible improvements. The real milestone was the EU Directive 2014/56/EU (2014) with the EU Regulation 537/2014 (2014) issued "on specific requirements regarding statutory audit of public-interest entities". The Regulation addresses the main concerns and threats to the auditor's independence such as: excessive audit fees, provision of non-audit services and too long audit tenure. In order to enhance the auditor's independence, one of the imposed solutions is mandatory audit rotation (both in terms of the statutory auditor and audit firm) with the maximum audit tenure of ten years and mandatory "break period" of four years afterwards (The Regulation, 2014, Article 17). It is, however, possible to extend the audit tenure if certain conditions are met.

The Polish regulators implemented the EU stipulations in 2017 through the amended "Act on Statutory Auditors, Audit Firms and Public Oversight" (The Act, 2017). EU member states are allowed to introduce more restrictive requirements if in their opinion it would be more beneficial. The most significant difference in the Polish adaptation is the maximum audit tenure imposed

[3] ACCA (Association of Chartered Certified Accountants) is an international, professional accountancy body.

[4] IESBA (International Ethics Standards Board for Accountants) is an independent board which develops and issues ethical standards for accountants.

by the regulators—which is five years (The Act, 2017, Article 134). This is the shortest allowed audit tenure across all EU member states (only four countries decided to shorten the audit tenure to seven or nine years with other countries implementing a ten year period) (Accountancy Europe, 2019). Additionally, the key audit partner is allowed to serve in Poland no longer than five years with the "break period" of three.

1.2. Audit tenure and rotation—literature review

Based on the Scopus database[5], 397 articles have been selected for the literature review[6]. These articles are related to different aspects of audit rotation. Using the VOSviewer tool[7], it was possible to create a keyword map presenting the main areas of focus in terms of audit rotation[8] (see Figure 1).

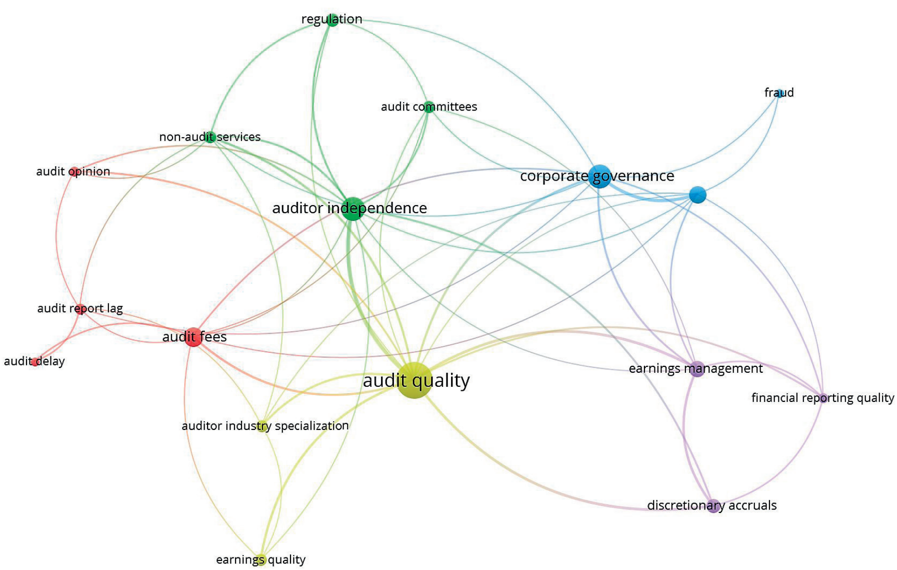

Figure 1. Keywords associated with audit tenure and mandatory audit rotation
Source: Own elaboration using the Vosviewer tool and the list of articles downloaded from the Scopus database.

[5] https://www.scopus.com/ - access provided by Warsaw School of Economics (https://brama.sgh.waw.pl/), accessed January 5, 2019.

[6] Searching query as of 5 January 2019 included the following key phrases occurring in a title or an abstract or as a keyword: *mandatory audit rotation, mandatory auditor rotation, mandatory audit firm rotation, mandatory audit partner rotation, audit rotation, auditor rotation, audit firm rotation, audit partner rotation, audit tenure, audit partner tenure, audit tenure, auditor tenure, audit firm tenure*.

[7] http://www.vosviewer.com/download, accessed 5 January 2019.

[8] The analysis presents the keywords which occurred at least 5 times.

Based on the keyword map, it can be concluded that audit tenure or audit rotation are analysed in conjunction with four core aspects (represented by the four largest spots), i.e, audit quality, auditor independence, corporate governance and audit fees. The map presents also five interrelated clusters out of which it is reasonable to distinguish four (see Table 1).

Table 1. The summary of the identified clusters

Cluster	Name	Explanation
Clusters A and B	audit tenure and audit quality	The authors usually use client earnings management and level of discretionary accruals as a proxy for audit quality (in the meaning that a too high level of accruals might be an indicator of management's manipulation on earnings and poor auditor work). The authors attempt to answer the question whether the long-term relationship with the auditor may impair the audit quality.
Cluster C	audit tenure and audit fee	Too high audit fees on the one hand or audit firms' deliberate lowering of fees (lowballing) in the audit sector on the other may lead to the termination of the audit contract. In this cluster the authors analysed also the impact of the audit opinion (especially in the case of the qualified one) and the impact of the delays in opinion reporting.
Cluster D	audit tenure and auditor's independence	The common aspects in this cluster are non-audit services and different regulations applicable to the whole audit profession. It is justifiable as there is a broad discussion about formal regulations which prohibit non-audit services and enhance the auditor's independence.
Cluster E	audit tenure and client's corporate governance	It is believed that the existence of an audit committee can strengthen the client's internal control environment and may have an impact on the cooperation with the external auditor. Audit committees have also an increasing power in terms of the selection of audit firm.

Source: Own elaboration.

Based on the clusters presented in Table 1 it can be noted that this paper contributes to the D cluster and in particular to the regulation part. The new regulation concentrates obviously on the auditor's independence aspect in the context of audit fees and prohibition of non-audit services. However, it is worth noting that there are three specific research opportunities which the new regulation brings:

1) its potential impact on audit market concentration with the current Big-4 dominant position;
2) the role of an audit committee, its impact on the client's internal controls and the potential audit fee reduction;

3) the more active Audit Oversight Commission with the right to verify audit engagement quality and to execute sanctions in the case of identified breaches.

This paper focuses on the first aspect which will be explored through three research sub-questions:

1. Why is it important to discuss the regulation and mandatory audit rotation?
2. What are the arguments for and against mandatory audit rotation?
3. How do the researchers approach the topic of mandatory audit rotation in the context of market concentration so far?

1.3. The audit regulation and its potential consequences

Researchers, who attempt to explore the audit profession in their research papers, usually concentrate on the internal aspects such as: audit quality, the auditor's independence or audit firm's and audit client's characteristics. This paper proposes to look at the audit profession from a different perspective.

Firstly, it concentrates on the expectations raised by the regulators and on their decisions in the form of a legal regulation which can be formally executed. Consequently, an imposed regulation may bring real intended or unintended, positive or negative consequences. As an example of consequences resulting from the implementation of a law, Morawska, Prusak, Banasik and Woźniak-Jęchorek (2019) examined the Polish bankruptcy and reorganisation law which is structured in the form of the pro-creditor's model. However, the business practice shows that the applications for bankruptcy are submitted too late which means that it is almost impossible to recover the debt. Additionally, in the case of a late submission, the possible sanctions can significantly increase the transaction costs. *Per analogiam,* the implementation of the audit regulation may result in unexpected consequences and mandatory audit rotation may not reduce the audit market concentration due to other internal mechanisms occurring in business practice. What is more, mandatory audit rotation may result in potentially higher switching costs (e.g. the costs related to the change of audit firm) which constitute a part of the transaction costs (Myntti, 2019, p. 40).

Secondly, some researchers attempt to estimate an optimal audit firm tenure, e.g. the length of the tenure which ensures that the maximum audit quality has been achieved. Referring to the learning curve, audit quality should increase in early years as the auditor gains knowledge and understanding about the client's environment and business processes. Therefore, the audit tenure should not be too short in order to ensure benefits related to the theoretical increase in audit quality but it should not be too long to avoid impairment of the auditor's independence due to a familiarity threat (Velte & Loy, 2018). Choi, Lim and Mali (2017) found that longer audit tenures and switches to the Big-4 audit firms positively influence audit quality whereas mandatory audit rotation has a negative impact. Brooks, Cheng, Johnston and Reichelt (2017) estimated the optimal length of the audit contract which is: 24 years for the countries with the high investor protection level and 14 years if the level is low. Their findings may suggest that: (1) imposed mandatory rotation after five years may result in lower audit quality and (2) a stronger investor protection regime may act as a substitute for shorter mandatory audit rotation.

1.4. Arguments for and against mandatory audit rotation

The proponents of mandatory audit rotation underline that a long-term relationship between an audit firm and a client might damage the auditor's independence as the auditor may start identifying himself with the interests of the management rather than with the public interest. Additionally, as audit quality tends to decrease over time, a long-term tenure may also impair the auditor's objectivity and professional scepticism (Hoyle, 1978, p. 70). According to Bronson, Harris and Whisenant (2016, p. 3), mandatory audit rotation breaks the economic bond as the auditor may sacrifice his independence and reporting quality in order to maintain the relationship with the client who pays a fee. Arel, Brody and Pany (2005, p. 37) suggest that auditors may also view the audit as a repetition of previous engagements. A too long relationship with the client may lead to anticipation of the result rather than to objective evaluation. Therefore, audit rotation may ensure "the fresh look" and a more critical approach. Hoyle (1978, p. 72) provides an argument that mandatory audit rotation would increase competition between the audit firms as they will need to improve themselves constantly in order to attract new clients. The Italian experience shows that frequent rotations may lead to lower audit fees which might support the argument for increasing competition on the audit market (Ewelt-Knauer, Gold, & Pott, 2012, p. 7).

The opponents of mandatory audit rotation are more sceptical about potential benefits which rotation may bring. The majority of respondents who took part in the US GAO[9] study were of the opinion that there is no effect or even a decreased likelihood that the new auditor will detect financial reporting issues not spotted by the previous auditor. The survey highlighted also a threat of potentially higher audit fees (GAO, 2004, pp. 9, 20, 24-25). Arrunada and Paz-Ares (1997, p. 33) point out that higher audit fees are justified as both the auditor and the client must incur explicit and implicit costs during the first year of audit. Explicit costs include time needed to gain understanding about the client's processes and to assist the auditors in their procedures and evidence collection. Implicit costs relate to the relationship between an auditor and a client

[9] U.S. General Accounting Office is an independent, non-political agency which assists Congress, its committees and members in their legislative and oversight responsibilities. It carries out also legal, accounting, auditing and claims-settlement function together with providing recommendations on more effective government operations (https://www.encyclopedia.com, accessed: February 21, 2019).

which is built on mutual trust and means knowledge and information sharing, usually very confidential. Frequent auditor switching might be then harmful for both parties and encourage a client not to reveal all the company information. The opponents of mandatory audit rotation provide also empirical evidence (e.g. in Spain, Carrera, Ruiz-Barbadillo, Gómez-Aguilar, & Humphrey, 2007, p. 2) demonstrating that mandatory rotation was not even enforced on auditors. Additionally, mandatory audit rotation may lead to higher market concentration as large companies may tend to choose one of the Big-4 auditors when switching audit firms. Experience from South Korea suggests a decrease rather than an increase in market competition (Ewelt-Knauer et al., 2012, p. 8).

1.5. Mandatory audit rotation and the audit market concentration

The audit sector forms an oligopoly as the biggest audit market share belongs to the so called Big-4 firms—the group of four biggest international audit and consulting corporations: Deloitte, EY, KPMG and PWC. Over 98% of more than 600 companies from the five largest countries in Europe were audited by Big-4 firms in 2017 (The AA Report, 2017). The European Commission raised a concern that allowing the firms to be so important may lead to a serious market disruption if they fail (the Green Paper, 2010, p. 4). At the same time, the perception that these firms are "too big to fail" may potentially create the risk of moral hazard. However, the case of Arthur Andersen's fall should be a sufficient lesson from the past that "too big to fail" is rather a myth.

According to Mališ and Brozović (2015, p. 341), the most commonly examined aspects of high audit market concentration are: 1) barriers to entry for mid-sized audit firms, 2) limited choice of auditors for large companies, 3) the effect on the level of audit fees, 4) the impact on audit quality and 5) financial system vulnerability. Mališ and Brozović (2015, p. 343) underline, however, that researchers discuss also possible reforms to reduce the audit market concentration which might be: 1) mandatory audit firm rotation or mandatory joint audit, 2) regular mandatory tendering process, 3) reform of the law of unlimited liability and 4) establishment of the contingency plans for the potential demise of a Big-4 audit firm.

Although mandatory audit firm rotation is discussed as a possible solution to reduce the audit market concentration, the empirical research papers provide results indicating rather an increase than a decrease in audit market concentration. Comunale and Sexton (2005) developed the model which shows that client retention has little effect on long-term market share whereas mandatory rotation will prompt Big-N auditors to increase their effort to obtain new clients to sustain market share. Bleibtreu (2018) found that mandatory audit rotation weakens the Big-4 audit firms' market dominance only if the non-Big-4 audit firms' initial market shares are sufficiently large. If those firms have small initial market shares, rotation leads to higher concentration. Narayanaswamy and Raghunandan (2019) found that mandatory audit rotation is associated with higher audit market concentration. Gerakos and Syverson (2015) estimated that mandatory rotation after ten years would lead to consumer surplus losses of approximately \$2.7 billion and in the case of rotation after four years: \$4.7-5.0 billion losses. All the mentioned research papers and experience from business practice enable the formulation of the hypothesis that mandatory audit rotation would not reduce the concentration on the audit market in Poland.

2. Empirical research

2.1. Sample selection and data collection

This paper concentrates on public interest entities as defined in the Act on Statutory Auditors, Audit Firms and Public Oversight (The Act, 2017, Article 2.9) and in particular on the issuers of securities admitted to trading on the Warsaw Stock Exchange (WSE), i.e., on the Main Market. The sample consisted of stock-listed companies which formed a capital group in the period 2011 to 2017. The reason for choosing the capital groups is an assumption that the audit firm should devote more time and resources in order to perform the group audit, the audit of the parent company's financial statement and sometimes also the audit of subsidiaries' financial statements. Therefore, it is more

Table 2. The summary of exclusions from the initial population

No. of excluded entities	Description
68 entities	banks, investment funds, insurance companies and similar entities have been excluded as they have their own specific rules and accounting treatment; what is more, the audit firms usually separate audit services for the entities mentioned above from all other audits as the substance of the audit is different; therefore, the audit tenure for these entities should be examined separately
63 entities	missing observations because entities went public between 2013 and 2017
62 entities	missing observations (e.g. the listed company formed a capital group only during a part of an examined period)
36 entities	entities which prepared only statutory financial statements and did not form a capital group
28 entities	entities which formed a capital group but the opinion on the consolidated financial statement has been issued by the foreign audit firm
22 entities	entities which have been excluded or suspended from trading during the examined period

Source: Own elaboration.

probable that the group audit will be performed by a large audit firm (such as from the Big-4) which is important if the aim of this paper is to analyse audit market concentration.

From the initial population of 477 stock-listed companies[10] several exclusions have been made. The exclusions were necessary in order to ensure the completeness of the sample and data comparability. The particular entities were excluded due to their specificity, missing observations or specific circumstances which took place (see Table 2).

The data collection process aimed to prepare the own compilation based on the auditor's opinions published on the companies' websites.[11] The opinions were used to determine which audit firm was appointed for the annual audit of the consolidated financial statement and to spot a change of audit firm. In order to determine the whole audit tenure, it was sometimes necessary to check when the appointment started in the past. It should be noted that this paper relates only to the audit tenure as meant by the relationship between an audit firm and a capital group with a stock-listed parent company. It means that it was beyond the scope as to which audit firm was appointed before the parent company went public. The final sample included 198 capital groups and 1,386 observations. Table 3 summarizes the data collection process for one capital group in a sample.

Table 3. Data collection—one example out of 198 capital groups in the sample covering period 2011-2017

Parent company	First year on WSE	Year ended	Audit firm	Big-4	Audit tenure	Explanation
Orange Polska Spółka Akcyjna	1998	2011	Deloitte	1	3	Deloitte, a Big-4 audit firm, was appointed in 2009 and selected as an audit firm for consecutive five years. Therefore, the entire audit tenure lasted six years in this case
		2012	Deloitte	1	4	
		2013	Deloitte	1	5	
		2014	Deloitte	1	6	
		CHANGE				
		2015	EY	1	1	In 2015 there was a change in an audit firm. EY, also a Big-4 audit firm, was appointed by Orange Polska
		2016	EY	1	2	
		2017	EY	1	3	

Source: Own elaboration based on collected data from the audit opinions.

[10] This is the number of WSE stock-listed companies in 2017 when the initial sample has been determined.

[11] Stock-listed companies are obliged to publish annual financial statement together with the independent auditor's opinion: Disclosure requirements (https://www.gpw.pl/disclosure-requirements, accessed February 14, 2019).

As presented in Table 3, the collected data enabled the identification of audit firms, audit tenures and the moment of change. Finally, 433 audit tenures have been identified together with 235 changes between audit firms. The last step was to divide the audit firms into a sample between Big-4 audit firms and Non-Big-4. The final results were gathered in an Excel database.

2.2. Initial observations based on the collected data

Based on the initial analysis 433 audit tenures have been divided into three categories:

- agreements which definitely ended between 2011 and 2016 and the company decided to change audit firm (235 cases);
- agreements which in 2017 lasted more than five years and should have been terminated in 2018 (64 cases). According to the Act on Statutory Auditors, Audit Firms and Public Oversight, the audit firm appointed by public interest entities should be rotated after five years (The Act, 2017, Article 134). It is applicable to audits of financial statement for the financial years beginning after 31 December 2017 (The Act, 2017, Article 284.2);
- agreements which in 2017 lasted less than five years and possibly did not result in change of the audit firm (134 cases).

From all audit tenures data shows that 319 audit tenures (73.7%) lasted up to five years. However, in the case of 26 capital groups the audit tenure was counted from the year the company went public (and became a public interest entity). It means that the same audit firm might have been appointed earlier (before the Initial Public Offering) and the real audit tenure might be slightly longer.

The first impression might be that the majority of capital groups from the selected sample preferred shorter audit tenures and decided to rotate the auditor more frequently (which would be a good sign from the regulatory perspective). However, audit tenure and audit firm rotation should be analysed in more detail. Therefore, the analytical part consists of two sections: the characteristics of the capital groups (their profile, the length of audit tenures and frequency of audit firm rotation) and the characteristics of the audit firms (the Big-4 concentration in a sample, the length of audit tenure with Big-4 firms and the direction of change in the case of auditor switching, e.g. to Big-4 firm or to Non-Big-4 firm).

2.3. The characteristics of the capital groups

The sample covered 198 capital groups with the parent company listed on the Warsaw Stock Exchange. As presented in Figure 2, the length of the parent company's trading activity oscillated between 7 and 28 years. It suggests that the analysed capital groups should be experienced and familiar with disclosure and reporting requirements which involves also cooperation with external auditor (see Figure 2).

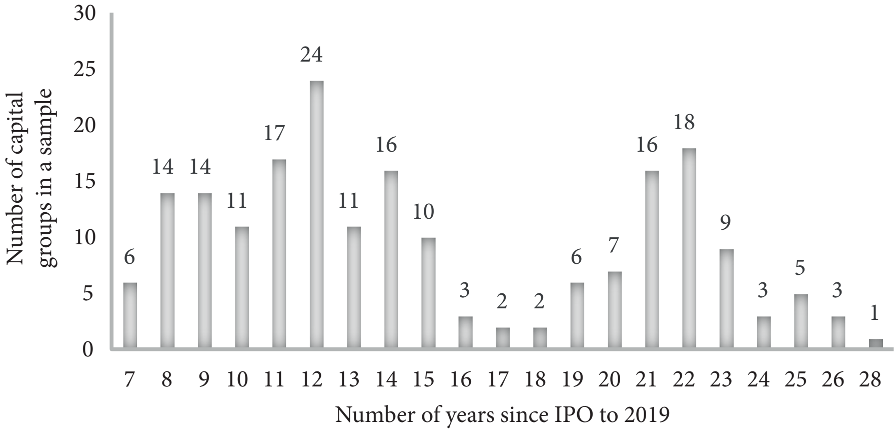

Figure 2. Parent company's length of activity on the WSE counting from IPO date to 2019

Source: Own elaboration. IPO dates have been collected from the WSE website (https://www.gpw.pl/spolki on 21 February 2019).

The capital groups represent 57 different activity classes.[12] By grouping similar classes together it can be observed that four sectors predominate: 37.9% of capital groups represent the production sector (mainly chemical-, metal- and paper-based), 20.7% buildings and constructions (including building-related services, selling and management), 8.6% wholesale distributors and 6.6 % IT and software.

Assuming five year intervals it can be expected that each capital group changed auditor at least once and one of the changes should be visible in the examined period 2011-2017 which covers seven years. Data surprisingly showed that 38 capital groups (19.2%) did not change their audit firm at all during the period 2011-2017. They have been divided into three groups (see Table 4).

As presented in Table 4, Group 1 includes fifteen capital groups which seem not to have changed audit firm since the parent company's IPO. The difference of one year between the length of activity on the WSE and audit tenure results mainly due to the fact that the company went public during the year (after the issuance of the audit opinion which was not yet required to be published). The most spectacular case is the Agora company which had the same audit firm for nineteen years. Group 2 presents the capital groups which changed audit firm at least once but still the examined audit tenure seems to be substantial (between nine and even nineteen years). Group 3 includes the capital groups with a parent company present on the stock exchange between 12 and 21 years with the examined audit tenure of seven and eight years which suggests that

[12] Activity classification was prepared based on European classification of economic activity.

Table 4. Capital groups which have not changed the audit firm during the period 2011-2017

Group 1			Group 2			Group 3		
Company—a parent company	Activity on WSE (in years)	Audit tenure (in years)	Company—a parent company	Activity on WSE (in years)	Audit tenure (in years)	Company—a parent company	Activity on WSE (in years)	Audit tenure (in years)
Agora	20	19	KG Efekt	26	19	KCI	21	8
GTC	15	14	Indykpol	25	18	ZUK ELZAB	21	8
J. W. Construction	12	11	Asseco Poland	21	15	Gobarto	16	8
Wojas	11	10	Orbis	22	10	Bioton	14	8
Aplisens	10	9	Pamapol	13	10	Comp	14	8
Arctic Paper	10	9	Boryszew	23	9	Grupa Lotos	14	8
Asseco SEE	10	9	BBI Development	22	9	DOM Development	13	8
Tesgaz	10	9	Impexmetal	22	9	Rafako	25	7
CFI Holding	9	8	Skotan	20	9	Apator	22	7
CPD	9	8	LC Corp	12	9	Alchemia	21	7
JHM	8	7	Oponeo.pl	12	9	ZASTAL	12	7
Toya	8	7	Mirbud	11	9			
Solar	7	7						
Vantage Dev	7	7						
Work Service	7	7						

Source: Own elaboration based on data collected from audit opinions and WSE website (IPO date).

the company changed the auditor at least once. It should be noted that all three groups show an audit tenure of longer than five years. They are also dominated by two sectors: production (42.1%) and building and construction (34.2%) with the appearance of two smaller sectors: IT and software (7.9%) and retail distributors (5.3%).

Contrary to the capital groups which have not changed audit firm at all, there are fifteen capital groups (7.6%) which in the period 2011-2017 changed audit firm three or four times. In this group it can be observed that 97% of audit tenures was short-term (one to five years). In only two cases were audit tenures longer than five years (see Table 5).

Table 5. Capital groups which changed the audit firm 3 or 4 times between 2011 and 2017

Company—a parent company	Activity on WSE (in years)	Number of audit firm changes	Audit tenures (in years)						
			1	2	3	4	5	6	7
			frequency of a particular audit tenure						
Simple	19	4	2	2		1			
ERG	14	4	2	3					
Bumech	10	4	3	1		1			
Sare	8	4	3	2					
PPH Kompap	23	3	3			1			
Wikana	22	3	1	1	1		1		
Mennica Polska	21	3	1	2				1	
Korporacja Budowlana Dom	18	3	2	1	1				
CD Projekt	17	3	1	2	1				
Decora	14	3		3					1
Famur	13	3	2	1	1				
UNIMA 2000 Sys. Tel.	13	3	2	1		1			
FO Rafamet	12	3	3				1		
Delko	10	3	1	1	2				
ZUE	9	3	2		2				
		Total	28	20	8	4	2	1	1
			44%	31%	13%	6%	3%	2%	2%

Source: Own elaboration based on data collected from audit opinions and WSE website (IPO date).

Eliminating the anomalies the remaining part of the analysis includes 145 capital groups which in the period 2011-2017 decided to change audit firm once or twice. It is possible to distinguish here two particular sub-groups:

- Group 1: 73 capital groups (37% of the entire sample) which changed audit firm once or twice but one of the tenure was longer than five years. It shows that still there is a significant part of the capital groups which had experience with the audit firm of longer than five years and even longer than ten years. However, it should be noted that 31 capital groups changed their auditor after long-term tenures in 2016 which means that 2017 was simply the first year of a tenure with a new audit firm.
- Group 2: 72 capital groups (36% of the entire sample) which in the period 2011-2017 had only short-term experience (up to five years) with the auditor.

The results of the analysis showed that 85 capital groups (43%) had only short-term experience with the audit firm, 44 capital groups (22%) had both long-term and short-term experience, 31 capital groups (16%) had mainly long-term experience with a tenure until 2016 and 38 capital groups (19%) had solely long-term experience. Mandatory rotation after five years might then be a significant change to those audit clients who preferred a longer audit tenure. The regulators concentrate mainly on the audit firms but they do not consider potential consequences from the client's perspective who may treat the audit in the short term only as a "tick the box" exercise and the fulfilment of legal requirements.

2.4. The characteristics of the audit firms

The audit market in Poland is dominated by four companies called the Big-4: Deloitte, EY, KPMG and PWC. According to the report published by the Polish Audit Oversight Commission for 2017, the market share of the Big-4 was 55.70% (in particular: PWC 15.1%, EY 15.0%, KPMG 12.9% and Deloitte 12.7%). Medium-size audit firms (including BDO, Mazars, PKF, Roedl) created a group of followers which on average served 8-9% of the market. The remaining part (35-36%) included small audit firms and auditors who act as sole practitioners (The AOC Report, 2017, p. 47).

The dominant position of Big-4 audit firms is a result of the following main reasons. Firstly, they form international corporations with the potential (resources and experience) to perform an audit of the whole capital group. Secondly, Big-4 audit firms have stronger bargaining power than the competitors, e.g., they have a broad client portfolio and therefore they can show flexibility while negotiating the terms. Thirdly, Big-4 firms have a strong brand power and brand recognition on the market. Fourthly, Big-4 firms are usually appointed to advise on the most strategic transactions such as: IPOs or mergers and acquisitions. Fifthly, it is probable that Big-4 firms charge more for auditing services due to their oligopolistic position.

Out of 433 identified audit tenures, 176 audit tenures (41%) related to the Big-4 (in particular: EY 59 contracts, Deloitte 58, PWC 30 and KPMG 29). In the case of 257 tenures 71 smaller audit firms were appointed. However, in the examined sample BDO served 31 capital groups which was a comparable number to PWC and KPMG (see Figure 3).

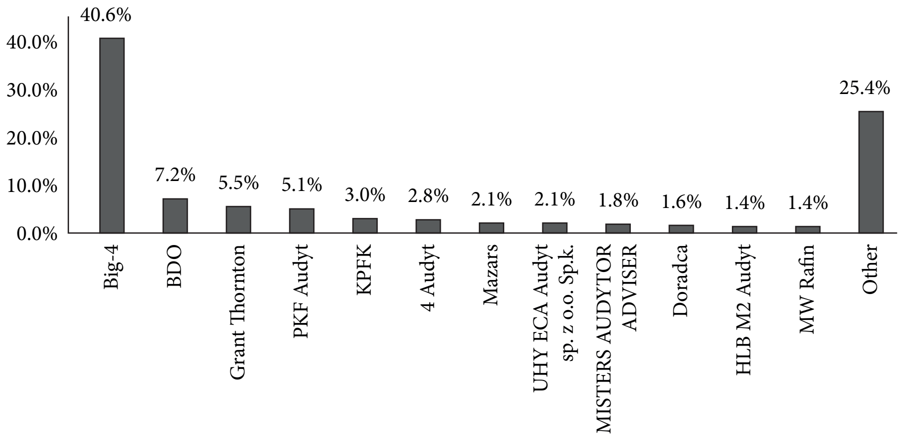

Figure 3. Audit firms' share in a sample based on the number of audit tenures in the period 2011-2017

Source: Own elaboration based on data collected from audit opinions.

In terms of very long audit tenures (between 10 and 19 years) the sample does not show any particular preference for Big-4 or non-Big-4 firms. For contracts between six and nine years there is a slightly bigger share of Non-Big-4 firms (59%). Details have been presented in Table 6.

Table 6. Audit tenures in the examined sample—a split between Big-4 and Non-Big-4 firms

Audit tenure (in years)	Number of particular tenures in a sample	Big-4	Non-Big-4
15-19	5	2	3
10-14	19	10	9
6-9	90	37	53
1-5	319	127	192
Total	433	176	257

Source: Own elaboration based on data collected from audit opinions.

According to Table 6, the most interesting part seems to be a group of short-term tenures between one and five years. Firstly, this is the biggest group in terms of audit tenures (74%). It might suggest that the real game is not to have a very long relationship with the audit firm but to take over the clients from the competitors in the short term. Secondly, there is a common view that Big-4 firms always have the "winner takes it all" position. This sample shows that in a short term Big-4 firms do not have an overwhelming position in terms of the number of contracts. It suggests that they have a potentially stronger bargaining power resulting in higher audit fees. In fact there might not be a problem with the length of an audit contract and rotation itself but with the tendering process and a problem with ensuring the proper level of audit quality in the short term.

Another important aspect is auditor switching. It is interesting to see that 108 capital groups (Group A: 46%) with the experience of Non-Big-4 audit firm preferred to choose their audit firm from this group. Similarly 53 capital groups (Group B: 23%), which chose Big-4 audit firms, seem to be loyal and rotate audit firm from one to another amongst the Big-4 group (see Table 7).

Table 7 shows also that around 25% of changes represents switching between Big-4 and Non-Big-4 firms with a stronger inflow from Non-Big-4 to Big-4 firms (Group C). Additionally, there is also a group of fourteen changes presented separately when the capital groups were partially loyal during the examined period but decided to switch to another audit firm at some point.

The analysis of the A, B and C Groups from the capital group perspective shows an interesting fact. Based on the total group assets as in the consolidated financial statements for 2017[13] data showed that the capital groups choosing only Non-Big-4 auditors are significantly smaller than the capital groups loyal to Big-4 and switchers. To be precise the total assets of 68 capital groups in Group A represent only 2.6% of the total assets analysed in the sample. On the contrary, Group B: 44 capital groups loyal to Big-4 represent 66.4% of the total analysed assets (see Table 8).

Additionally, it turns out that the capital groups from Group B are the biggest ones from the energy, mining and telecommunication sectors (see Table 8). If so, it might occur that the biggest companies will remain in the Big-4's hands, confirming their inviolable position on the market. It gives an opportunity for further research in terms of the audit fee paid by these capital groups and the impact of their size, nature of business, higher operational risk or the more complex audit to be performed.

[13] Data downloaded from EMIS financial database: https://www.emis.com/pl, access provided by Warsaw School of Economics (https://brama.sgh.waw.pl/), assessed January 17, 2019.

Table 7. Switching between Big-4 and Non-Big-4 audit firms in the period 2011-2017

				Without switching		Switchers		With switching at some point		
				Group A	Group B	Group C				
Number of capital groups in a sample	Frequency of changing the auditor	Total number of changes	From:	Non-Big-4	Big-4	Non-Big-4	Big-4	Non-Big-4	Big-4	Total
			To:	Non-Big-4	Big-4	Big-4	Non-Big-4	Non-Big-4	Big-4	
38	0	0								
104	1	104		40	36	23	5			**104**
41	2	82		40	14	13	8	3	4	**82**
11	3	33		12	3	7	4	4	3	**33**
4	4	16		16						**16**
198		**235**		**108**	**53**	**43**	**17**	**7**	**7**	235
				46%	23%	18%	7%	3%	3%	

Source: Own elaboration based on data collected from audit opinions.

Table 8. Switching between the audit firms in the period 2011-2017 compared to the capital group's size

		No. of capital groups	Total group assets as in consolidated financial statements for 2017 (in millions)			Production	Buildings	Wholesale	IT	Entertainment	Energy	Telecommunication	Management	Other services	Retail	Mining	Medical care	Hotels / restaurants	Recycling	Biotechnology
			Min	Max	Av															
A	loyal to Non-Big-4	68	11	3,938	331	23	10	8	8	4		3	3	3	2		1	1	2	
B	loyal to Big-4	44	188	72,106	8,478	15	9	5	1		6	3	1			3	1			
C	switchers	48	54	48,203	1,811	22	9	3	1	4	1		2	1	1		1	1	1	1
*	No switching	38	7	21,171	2,158	16	13	1	3	1				1	2			1		
	Total	**198**				**76**	**41**	**17**	**13**	**9**	**7**	**6**	**6**	**5**	**5**	**3**	**3**	**3**	**3**	**1**

Source: Own elaboration based on data collected from audit opinions and EMIS database.

Conclusions

The paper confirms the dominant position of Big-4 on the Polish market. The Big-4 share in the examined sample represents 41% in terms of the number of audits performed by Big-4 audit firms. However, the power of Big-4 does not lie in the number of audits but in the client portfolio which they have. It turns out that the biggest capital groups, which represent 66% of the total analysed assets, are audited by Big-4 firms and in the case of audit firm change—they appoint another audit firm from the Big-4. This finding significantly contributes to the hypothesis that mandatory audit rotation will not reduce the concentration on the audit market. It might occur that the concentration will become even stronger. The results of the paper shows that Big-4 firms are the most active and present in the group of short-term tenures (one to five years) which suggests that their strong position on the market does not result from client retention but from the rotation of clients in the short term and the Big-4 strong bargaining power during the tendering process.

The results of the paper show also that 43% of the capital groups in the sample had solely short-term experience (up to five years) with the audit firm during the period 2011-2017. On the other hand, 44 capital groups (22%) had both long-term and short-term experience, 31 capital groups (16%) had mainly long-term experience with a tenure until 2016 and 38 capital groups (19%) had solely long-term experience. In the light of the new regulation, which imposed mandatory audit firm rotation after five years, it might suggest that the relationship between the audit client and the audit firm will evolve. The regulation may bring positive changes as mandatory rotation may exert pressure on the audit firms to be more effective and efficient in the short term. It may be also a chance for audit firms to think about new technology and computer-based solutions which would support the audit. However, it may bring also negative changes as the audit clients may become reluctant to explain everything again if the audit firm changes frequently.

The author believes that the effects of the new regulation may be different to those expected by the regulators. Imposing very strict rules without consideration of the inner mechanisms may even worsen the situation. The regulation aims to improve the auditor's independence and competition on the audit market. If the biggest capital groups prefer the Big-4 firms the rotation process may strengthen the Big-4 position as the Big-4 firms may negotiate the price but they may also be able to impose it due to the power of the oligopoly. Additionally, another undesirable effect might occur if the key audit partners and managers start rotating between the Big-4 firms to follow the audit engagements. Last but not least, there is a question about audit quality. Achieving high audit quality requires time and the building of an auditor-client relationship based on mutual trust. Therefore, it gives an opportunity for further research as to whether the five year period matters in terms of audit quality.

This paper does not analyse the particular factors which might be important while choosing the audit firm. There are several determinants which require further examination such as: the impact of the audit opinion issued by the auditor, audit fees or audit client parameters (size, financial standing, etc.). The paper does not consider the effects of rotation within the audit team itself. It might occur that despite the long audit tenure the audit is performed each year by the new team which might raise a question about audit quality. Finally, the paper does not take into account the impact of external events such as: historical events or group auditor change which very often results in an audit firm's change in subsidiaries.

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