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EXPLORING AND UNDERSTANDING THE DETERMINANTS OF AUDIT OPINIONS: EVIDENCE FROM THE ANGOLAN BANKING SECTOR (2010-2018)

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Abstract

This Work Project analyses 182 external audit opinions of 30 banks operating in Angola from 2010 to 2018, with the aim of exploring and understanding how and to what extent the economic and legal contexts, and the auditor and bank's characteristics determine the type of audit opinion issued. The findings reveal that a modified opinion is determined by the bank's size and the amount of impairments recognised. Moreover, the transition to IFRS contributed to the emergence of modified opinions in banks in Angola while being audited by a BIG 4 does not determine the type of audit opinion issued.

Key Words: Angola, Audit Opinion, Banking Sector, Financial Reporting.

1. Introduction

Angola covers an area of circa 1,247 thousand square kilometres in Southwestern region of Africa, being the second largest country in the African continent with an estimated population amounting to 17,992 thousand, according to the latest census of 2014 (SADC, 2019). The country faces substantial development challenges, which include *"reducing its dependency on oil (…), diversifying the economy and improving governance, public financial management systems and human development indicators."* (WORLD BANK, 2019).

Accounting provides information for decisions, planning and control (Hopper, Lassou and Soobaroyen, 2017; Hopper, Tsamenyi, Uddin and Wickramasinghe, 2012), being crucial for developing countries with urgent need to meet development challenges. Notwithstanding, studies on accounting for African countries are scarce (Lassou, Hopper and Ntim, 2017), due to its complex political economy (Harris, 1975; Harrison, 2004 and 2005). The association between the banking sector[1] and economic growth of Africa is confirmed (Balcilar, Gupta, Lee and Olasehinde-Williams, 2018). Thus, research related to the Angolan banking sector and accounting, auditing or financial reporting issues, may foster economic growth of the country. This is an objective of the Angolan President, João Lourenço (IMF, 2018) that can be attained by providing reliable and useful information to stakeholders, including investors, and boosting transparency and consequently encouraging investments in the country.

The purpose of financial reporting is to *"provide information about the financial position, performance and cash flows of an enterprise that is useful to existing and potential investors, lenders and creditors in making economic decisions"* (Elliot and Elliot, 2015, 21), and the financial statements of an organization together with the external audit report and the audit opinion expressed there, are key parts of such information. An audit opinion is the *"opinion expressed by the auditor on whether the financial statements are prepared, in all material*

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[1] For the purpose, see the study of Balcilara ⓡ al. (2018): The banking sector is characterized using *global financial development variables* available in a database from THE WORLD BANK.

respects, in accordance with an applicable financial reporting framework" (ISA 700, 2009, §7). This formal expression of an auditor's professional judgement informs shareholders, investors and stakeholders in general.

Exploring and understanding the determinants of audit opinions in the Angolan banking sector addresses the recent claims for urgent research on *African Accounting and Development* by Lassou ⓡ al. (2017). Moreover, the regulation which applies to financial reporting of banks operating in Angola has recently changed. The International Financial Reporting Standards (IFRS) substituted the domestic regulation and should be adopted for the periods of reporting ending in 2016 onwards (*Law* No. 06/2016 in *Diário da República de Angola,* 2016), and so, the impact of the adoption of IFRS in the Angolan banking sector is relevant for research.

This Work Project (WP) contributes to the scarce knowledge about African countries, by adding to the literature a unique research on auditing and financial reporting practices in Angola. It extends the literature by providing evidence and new insights about the determinants of the audit opinions issued by external auditors in the Angolan banking sector.[2]

The WP proceeds as follows: Section 2 introduces the economic and legal context of the country and the regulatory framework of financial reporting and auditing in the Angolan banking sector between 2010 and 2018. Section 3 reviews the literature about determinants of audit opinions and depicts the Angolan context. Section 4 outlines the research questions and describes the methodology, sample and data. Section 5 comprises the preliminary data analysis about the determinants of audit opinions, while section 6 presents and discusses the results and their validity. Section 7 concludes the WP, highlighting the main contribution and recommendations of the research, limitations found and suggestions for future research.

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[2] This WP proposal was approved for presentation to the *XVII CICA International Congress of Accounting and Auditing,* held in Oporto, on 7-8 November 2019, in the special track 'Research projects in Accounting, Auditing and Financial Reporting. It was also submitted to the *XIX Conferência & Doctoral Colloquium Grudis* (2020).

2. Economic and Legal Framework

The economic and legal context of Angola, namely, regulation about auditing and financial reporting that applies to the Angolan banking sector are matters of utmost importance for exploring and understanding the determinants of the audit opinions.

The Angolan Economy and Banking Sector

Angola became an independent country in 1975. Being a former Portuguese colony for centuries, Angola has been highly influenced by the country. In fact, the Angolan legal system, such as the financial reporting and tax regulation, are still based on the Portuguese law and 71.2 per cent of the population speaks Portuguese, which is the official language in Angola (CIA, 2019). The country had experienced a 27-year civil war till 2002 but made substantial economic progress afterwards. However, the country still faces social-economic problems, including poverty, illiteracy, corruption and claims for investment (THE WORLD BANK, 2019).

The Angolan economy is characterized by an unstable GDP growth and high inflation rates[3] *(See Chart 1)*. In 2017, National Bank of Angola (BNA) adopted a restrictive monetary policy to anchor inflation (IMF, 2018). In 2016 the inflation rate was 30.69 per cent, while in 2018 it presented a value of 19.63 per cent. The BNA governor stated that "*the financial system must create conditions for banks to be the "engine of the economy*"", by *"supporting the productive sector with the financing of projects that allow Angola to export other products and increase the base of foreign currency."* (ANGOP, 2017).

Chart 1 - Inflation Rate and GDP Growth of Angola *(2010-2018)*
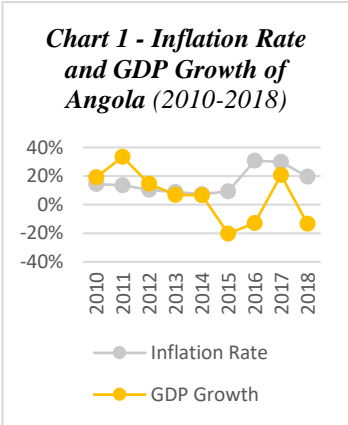
Banks play a key role in financial intermediation in Angola, raising resources and granting credits to individuals, companies and the State. As of 2018, the financial sector represented 57.7 per cent of the Angolan GDP. (IMF, 2018). In Angola, banks may only operate when authorized by BNA[4], which regulates and supervises banks' activity. From 2010 to 2018, BNA authorized 32 banks

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[3] *See Appendix 1* to observe the annual GDP growth and Inflation Rate in Angola for the years 2010 to 2018.
[4] See *Appendix 2* for the list of banks authorized to operate in Angola, between 2010 and 2018. Abbreviation is also provided for the name of the banks in *Appendix 2.*

to operate[5]. A significant state presence characterizes the Angolan banking sector (IMF, 2018)[6].

Financial Reporting Standards

The President of Angola has been taking further steps towards transparency and the raise of investments. The mandatory adoption of the IFRS (*Law* No. 06, *Diário da República de Angola,* 2016) in the financial reporting of banks in Angola is an example of Angolan administration efforts for fostering transparency, economic growth and attract investors of a global economy, knowing that the purpose of the IFRS is to "*bring transparency, accountability and efficiency to financial markets around the world*" (IFRS, 2019).

From 1st January of 2016 onwards, the IFRS, issued by the International Accounting Standards Board (IASB), substituted the CONTIF *(Plano de Contas das Instituições Financeiras,* Accounting Plan for the Financial Institutions), the domestic accounting regulation specific for the banking sector in Angola, that had been in force since 2010 (*Law* No. 9, BNA, 2007)[7] and had been mandatory until 2016. Banks operating in Angola that fulfilled at least one criterion[8] within size, international status or being listed in a regulated market, should have adopted IFRS for financial reporting in 2016. The other banks should have adopted IFRS no later than 2017.

The IFRS is a set of financial reporting standards "*designed to apply to the general-purpose financial statements and other financial reporting of profit-oriented entities*" (IFRS, 2019). Contrary to the CONTIF, IFRS is not a sectorial accounting plan specific for banks. One important difference between these two regulatory frameworks regards the measurement basis in financial reports: while CONTIF is based on historical cost, IFRS mostly accepts fair value valuation; consequently, the adoption of the later by Angolan banks caused changes in results and assets'

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[5] In June of 2018, the ECO's license to start operations, that has been valid for 18 months, has expired and therefore, the bank has never exercised in Angola although it was authorized to (BNA, 2018).

[6] As of 2018, the Angolan state has a direct part in three banks (BPC, BCI and BDA) and an indirect part, through SONANGOL, in BAI, BE, BFA e BCGA. SONANGOL is the national oil company, a state concessionaire which regulates the oil sector in Angola. (IMF, 2018).

[7] The CONTIF substituted the PCIF *(Plano de Contas das Instituições Financeiras,* Accounting Plan for the Financial Institutions), issued by the BNA (*Law* No. 13, BNA, 1999) and in force until 2009.

[8] The criteria are set in *Law* No.06/2016: i. bank with Individual Total Assets, in 2015, above 300,000 Millions of Kwanzas; ii. being a bank or a subsidiary of a bank with securities traded in a regulated market; iii. being a subsidiary of a bank with headquarters outside Angola or a national bank with a subsidiary located outside Angola.

values presented by them. The total value of the Assets in the Angolan banking sector reduced by four per cent after the adoption of IFRS (Ferreira, 2019).

Additionally, according to IAS 29, Angola is considered a hyperinflationary economy in the years 2016 to 2018 thus, financial statements are required to "*be expressed in current units of currency*" and restated "*using the change in a general price index*" (IFRS, 2019). In CONTIF, the condition of a high inflation rate was not considered for the financial reporting.

Auditor and Audit Opinions

Since 2002, external auditing of financial statements is mandatory for banks operating in Angola (*Law* no.38, Diário da República de Angola, 2000). The Law of Financial Institutions of Angola set a four-years period of mandatory external auditor rotation (*Law* no.13, BNA, 2005).[9] On the one hand, long periods without auditor rotation compromise the auditors' independence and the objectivity of the audit opinion issued; on the other hand, the non-auditor rotation leads to specialization of knowledge which improves the audit work (Qawqzeh, Endut, Rashid, Johari Hamid and Rasit, 2018).

Nine external auditors were authorized by the Angolan Capital Market Authority (*Comissão de Mercado de Capitais*) to issue the audit opinion of banks in Angola for the years 2010 to 2018[10], from which four are the *BIG 4* companies[11]. Three of the *BIG 4* are related to the corresponding ones in Portugal[12], which is an outward sign of the Portuguese influence in the Angolan auditing and financial reporting domains.

Auditors in Angola base their audit reports on the International Standards of Auditing (ISA) issued by the International Auditing and Assurance Standards Board (IAASB). These standards "*enhance the quality and consistency of practice throughout the world and strengthen public*

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[9] Article 84th, No. 5 of Angolan Law of Financial Institutions*:* The external auditor cannot provide services to one bank for longer than four years and can only be hired again by that bank after an equal period had passed.
[10] *Appendix 3* provides the list of auditors authorized by the Angolan Stock Market Authority and the years when they effectively operate, from 2010 to 2018.
[11] The *BIG 4* refers to the four largest firms in the world which provide accounting and auditing services: DELOITTE, KPMG, PWC, E&Y – (Accountingverse, 2018).
[12] PWC Angola, KPMG Portugal and E&Y Angola.

confidence in the global auditing and assurance profession" (IAASB, 2019). According to ISA 700, the auditor shall express *"an opinion on the financial statements drawn from the audit evidence obtained"* and clearly express that opinion *"through a written report that also describes the basis for that opinion"* (ISA 700, 2009, §6 and §16).

"The auditor shall express an unmodified opinion when the auditor concludes that the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework" (IAASB, 2009). When an unmodified opinion cannot be expressed, the auditor shall modify his opinion according to ISA 705 (IAASB, 2009)[13]. The distinction between *Modified* and *Unmodified* opinion is relevant for the characterization of the type of audit opinion, which this WP aims at exploring and understanding its determinants, based on evidence from the Angolan banking sector, for the years between 2010 to 2018.

3. Literature Review

Prior empirical literature in auditing focuses on the auditors and the audit opinions they issue.[14] The lack of consensus in the findings of prior studies justifies the need for more research and the purpose to test similar variables under different conditions.

Regarding the auditors, issues such as concentration of the audit market and auditor rotation have been examined. The high concentration in the audit market means that the market is dominated by a few big audit firms - the *BIG 4*. In 2010, the total market share of the *BIG 4* exceeded 90 per cent of the listed companies in European Union (European Commission, 2010), and this fact has been a matter of concern to various authors[15] who questioned auditors' independence. The heavy regulation and the too many audit requirements which apply to listed companies result in an inelastic demand as regards the audit market. Nevertheless, the *BIG 4*

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[13] See *Appendix 4* to understand the different types of modified opinions according to ISA 705. An opinion may be modified depending on the *"nature of matter giving rise to the modification"* and on the *"auditor's judgement about the pervasiveness of the effects or possible effects on the financial statements"* (IAASB, 2009)
[14] *Appendix 5* contains table 9, summarizing the reviewed empirical literature.
[15] Beattie (2012), Benau and Moctezuma (2017), Grosu, Robu and Istrate (2015); Tommasetti, Santos, Macedo and Neto (2018); Tsipouridou and Spathis (2012); Qawqzeh Ⓣ al. (2018).

manage to gain most of the market share competing on price and service quality[16] (Beattie, 2012). According to Benau and Moctezuma (2017, 1), *"the specialization (...) of the audited companies, the economies of scale, the structured audit methodologies, the demand for the audit service with differentiated quality and the demand of an auditor with reputation"* are factors that make clients opt for *BIG 4*. These characteristics foster *BIG 4* to reach more clients and increase audit tenures[17], which most times may only be interrupted by legislation about mandatory rotation of auditors. Regarding auditor's association to the type of opinion, there is no consensus in literature. Tommasetti ⓡ al. (2018) concluded that there is a negative relationship between the presence of a *BIG 4* and the issuance of a modified opinion, while Tsipouridou and Spathis (2012) settled that *BIG 4* are more likely to issue unqualified reports, and Gaeremynck, Meulen and Willekens (2008) recognised that *BIG 4* are more likely to issue modified opinions. Grosu ⓡ al. (2015) confirms that the type of auditor and the type of audit opinion are associated.

Regarding company's characteristics, a few empirical papers analyse its association with the type of audit opinion. The results are distinct, and early studies focuses in specific countries - Laitinen and Laitinen (1998) found, based on a sample from Finish large companies, that the issuance of a modified opinion is associated to company's characteristics, namely low profitability and high indebtedness. Notwithstanding, Gaeremynck ⓡ al. (2008) found that solvency, but not liquidity nor profitability, is positively associated to the quality of financial reporting and, consequently, to the audit opinion issued. Jinyu and Xin (2009) concluded, based on a sample of 30 companies of Shanghai and Shenzhen stock markets, that solvency and poor operating ratios have a negative relation with the type of audit opinion issued, while profitability influences it positively. Omid (2015) found, based in a sample of firms listed on the Tehran Stock Exchange, that profitability and size are determinants of the type of audit opinion.

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[16] According to Beattie (2012), price in the audit market is proxied by audit fees and service quality relates to the existence of an office in the clients' city and the ability of the auditor to provide non-audit services as well.
[17] Audit tenure is the number of exercise-periods that an audit firm audits one client.

Furthermore, a study based on a sample from Romania concluded that *"the transition to the IFRS contributes to a significant change in the emergence of a certain auditing opinion"* (Grosu ⓡ al., 2015, 87), namely, unmodified audit opinions in the case of Romania.

The literature about financial reporting and auditing based on samples from African countries is scarce and few studies about Angola exist. Specifically, research about auditors and the audit opinions they issue, to the best of our knowledge, were seldomly done, despite the claim of stakeholders, including investors, for such type of information. Almeida (2019) studied the quality of financial reporting in the Angolan banking sector, through a descriptive analysis of the external audit reports issued throughout the years 2010 to 2017. Its main conclusions refer to the rising number of unmodified audit opinions in Angola, excluding 2017, when hyperinflation originated a high number of modified opinions.

This WP expands Almeida's research and responds to the claims of Lassou ⓡ al. (2017), and of the Angolan baking sector stakeholders, including investors, and contributes to the academia by providing useful insights on the determinants of the audit opinions in the Angolan banking sector, in the years 2010 to 2018. The study carried out is singular as it is applied to the Angolan banking sector and considers unique features of the context of this country, such as the ownership of the banks, the recent transition to IFRS and the economic situation of hyperinflation in the country, which are important variables to explore and understand as determinants of the audit opinions.

4. Research Design, Sample and Data

Research Questions

This WP aims at exploring and understanding how and to what extent the economic and legal context and the auditor and bank's characteristics determine the audit opinion issued. Thus, four research questions (RQ) were outlined as follows:

RQ 1: *How did the audit opinions issued in the Angolan banking sector evolve throughout the years 2010 to 2018?*

RQ 2: *Who issued the audit opinions in the Angolan banking sector in the years 2010 to 2018? Is the audit market concentrated? Is there auditor rotation?*

RQ 3: *How is the audit opinion issued in the Angolan banking sector between 2010 and 2018 associated to the economic and legal context of the country, the characteristics of the bank and the characteristics of the auditor?*

RQ 4: *How do the economic and legal context, the characteristics of banks and the characteristics of the auditor determine the audit opinion issued in the Angolan banking sector between 2010 and 2018?*

Methodology

To answer to the outlined RQ, this WP uses univariate, bivariate and multivariate analysis. Univariate descriptive statistics such as frequencies, measures of central tendency (mean and median) and variability (standard deviation, minimum and maximum value) are used to describe banks characteristics and explore data about the audit opinions (RQ1), and the auditors in the Angolan banking sector, highlighting the audit market concentration and the auditor rotation (RQ2). Bivariate analysis, namely correlation coefficients, are computed to identify the association between the explanatory variables and the type of audit opinion issued (RQ3)[18].

Moreover, this WP adopts a binomial multiple logistic regression (MLR)[19] (RQ4) to understand the various explanatory variables as determinants of the type of audit opinion[20]. The dependent variable - *Type of Audit Opinion*, from now simply named OPINION, is a dichotomic variable, that assumes the two following possible values: *zero* if the OPINION is Unmodified and *one* if it is Modified. The economic and legal context of the country (proxied by GDP GROWTH, INFLATION and FINREPORTING), the bank's characteristics (SIZE[21], ROA, IMPAIRMENTS, SOLVENCY and SHAREHOLDER) and the auditor's characteristics (BIG 4 and AUDITORROTATION) are the explanatory variables that this WP aims at understanding how and to what extent they influence the Audit Opinion issued (see *Equation 1*). In each variable, *i* stands for bank *i,* assuming values between 1 to 30 and *j* stands for year *j*, varying between 2010 and 2018.

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[18] A matrix of significant correlations (for a five per cent level of significance) was computed using the coefficient of Pearson for the correlation within and between numeric and categorical variables which are binary. The correlation between numeric and categorical variables which are non-binary was not computed. The correlation between the categorical variables which are non-binary was computed using Cramer's V coefficient (v*).*

[19] The use of binomial MLR is recommended when the dependent variable has a binary nature. The independent variables may be categorical or not. MLR determines the probability of occurrence of an event.

[20] Prior literature also used the Audit Opinion as the dependent variable, namely Gaeremynck, ⓡ al. (2008), Grosu ⓡ al. (2015), Jinyu and Zhao (2008), Laitinen and Laitinen (1998), Omid (2015), Tommasetti ⓡ al. (2018) and Tsipouridou and Spathis (2012),

[21] For the purpose of answering RQ 4 of this WP, the size of the bank is proxied by the logarithm of the total assets in order to eradicate the effect of the large amplitude of values in the analysis.

Equation 1: $OPINION_{ij} = \alpha_0 + \beta 1_{ij}FINREPORTING_{ij} + \beta 2_j GDPGrowth_j + \beta 3_j INFLATION_{j} + \beta 4_{ij}SIZE_{ij} + \beta 5_{ij}ROA_{ij} + \beta 6_{ij}IMPAIRMENTS_{ij} + \beta 7_{ij}SOLVENCY_{ij} + \beta 8_{ij}SHAREHOLDER_{ij} + \beta 9_{ij}BIG4 + \beta 10_{ij}AUDITORROTATION_{ij} + \varepsilon_{ij}$

Thus, the following hypothesis are tested in Equation 1:

$$
\begin{bmatrix} H0:\ \beta 1_{ij} = 0 \\ H1:\ \beta 1_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 2_{j} = 0 \\ H1:\ \beta 2_{j} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 3_{j} = 0 \\ H1:\ \beta 3_{j} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 4_{ij} = 0 \\ H1:\ \beta 4_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 5_{ij} = 0 \\ H1:\ \beta 5_{ij} \neq 0 \end{bmatrix}
$$

$$
\begin{bmatrix} H0:\ \beta 6_{ij} = 0 \\ H1:\ \beta 6_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 7_{ij} = 0 \\ H1:\ \beta 7_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 8_{ij} = 0 \\ H1:\ \beta 8_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 9_{ij} = 0 \\ H1:\ \beta 9_{ij} \neq 0 \end{bmatrix}
\begin{bmatrix} H0:\ \beta 10_{ij} = 0 \\ H1:\ \beta 10_{ij} \neq 0 \end{bmatrix}
$$

Appendix 6 lists the variables used in this WP, as well as their proxies, and identifies prior studies which have selected the same variables. All the data in the WP was analyzed using the version 16 of STATA®, a software for statistics and data science.

Sample and Data

The data sources for this WP were the websites of each of the 30 banks authorized to operate in Angola in the period 2010 to 2018, which have made data available.[22] For each bank, the dependent variable (OPINION) and the independent variables were retrieved from the external auditor report, as well as, from the annual financial report. In the case of GDP GROWTH and INFLATION, data was retrieved from *statista.com*. All data was hand-collected by the researcher and a unique database was created[23]. This WP extends the database of Almeida (2019)[24], adding one year (2018) in analysis and additional variables that characterize the economic context of the country (GDP GROWTH, INFLATION), and another one that characterizes the auditor (AUDITOR ROTATION). The database is made public and may be used in future research.

The period of analysis ranges from 2010 to 2018, because 2010 is the period when CONTIF has started to be applied in the financial reporting of banks in Angola, and 2018 is the most recent year with available data. However, throughout the years of study, external auditor and annual financial reports of some banks are not publicly available. Out of the 218 total expected observations, only 182 external audit and annual financial reports were obtained for analysis,

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[22] There were 32 banks in the population of authorized banks to operate in Angola in the period of 2010 to 2018, from which two have no available data throughout the years in analysis, and thus, the final sample includes observations from 30 banks. Additionally, the number of banks included in the research each year is not constant because some banks have initiated or stopped to operate during the period of analysis. (See *Appendix 2*)

[23] Data was retrieved from individual and consolidated annual financial reports, depending on the availability.

[24] I would like to acknowledge Almeida for facilitating the use of his database for the purpose of this WP.

leading to an overall 83% coverage of data. Notwithstanding, the coverage improved year after year throughout the period of analysis, from 45% in 2010 to 100% in 2018. — See *Appendix 2.*

The fact that all the 2018's external auditor and annual financial reports of the banks were publicly available before the end of September 2019 demonstrates an improvement towards transparency in financial reporting of Angola, meeting the demand of the current administration of the President João Lourenço, to boost foreign investment in the country.

5. Data Analysis

Bank's Characteristics

Banks can be characterised by several variables, such as its size, the origin of its capital, and solvency and profitability ratios.

The SIZE of banks in Angola year after year assumes a large amplitude of values when proxied by total assets. The minimum value of total assets from the sample was registered in 2010 (before IFRS) by BCH, while BAI registered the highest amount of assets from the sample in 2018 (after IFRS) - *See Table 1.*

An asset has an impairment loss if the recoverable amount of such asset stands below its book value, and the difference between the two values is recognized as an expense for the company. However, a reversal of impairment may occur when the amount recognized as an impairment, or part of it, is recovered. In the banking sector, IMPAIRMENTS are an indicator of credit risk, as the assets of banks are essentially the credits granted. The highest amount of reversal of impairments was registered in 2016 by BCH, and the maximum level of impairments loss registered was in 2018, by BE, meaning that the bank has high unrecoverable amounts related to its assets *(See Table 1).* 5.5% of the observations had reversals of impairments and 5% were registered between 2016 and 2018.

Return on Assets (ROA) explains the efficiency a company has in generating profit from the use of its total assets. ROA is used to assess profitability of the banks in Angola in this WP,

as a proxy to banks' performance[25]. 23 per cent of the observations show a negative ROA, while the majority (77%) of the observations managed to generate profit. In 2015, BIR registered the lowest ratio from the sample, being the less efficient bank, while, in 2018, the SCBA registered the highest ratio. - *See Table 1.*

The Solvency Ratio expresses the aptitude of a firm to meet its long-term liabilities and obligations. In 2018, SCBA had the lowest ratio from the sample, being negative. In 2017, the BOCLB, in its first year of operation, registered the highest ratio from the sample. - *See Table 1.* Only 1% of the observations had a negative solvency ratio[26], meaning that, overall, banks in Angola had the ability to meet its obligations throughout the period of analysis.

	in Millions of Kwanzas		*in %*		
	Total Assets	**Impairments**	**ROA**	**Solvency Ratio**	
Mean	332,6	5,7	1%	84%	
Std Deviation	463,0	12,4	9%	714%	
Std Error	34,3	0,9	1%	53%	
Median	114,2	0,9	2%	15%	
Maximum	2.044,6	77,9	27%	9561%	
Minimum	0,7	-0,3	-67%	-232%	

[27]

Table 1 – Descriptive Statistics of the Independent Variables that Characterize the Banks *(2010-2018)*

Regarding bank's ownership, between 2010 to 2018, three banks out of the 30 analysed had the Angolan State as major shareholder. However, as of 2018, five major commercial banks (BAI, BPC, BFA, BMPA and BE) were directly or indirectly controlled by Isabel dos Santos (BTI, 2018), who is also a shareholder of SONANGOL, a state concessionaire. Thus, the ownership of banks in Angola, as of 2018, is characterized by a significant State presence.

Economic and Legal Context

As mentioned in *Section 2*, during the years of analysis, the Angolan regulation about accounting and financial reporting changed from the national plan (CONTIF) to the IFRS.

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[25] The use of ratios allows for comparison between banks, regardless of size, as it eradicates the effect of the amplitude of values of the Total Assets amount.
[26] The solvency ratio of BAIM in 2015 is negative (-17%) and the same happen with SCBA (-232%) in 2018.
[27] One Kwanza equals to 0.0019 euros, according to *XE.com*, as of 3rd of January of 2020.

Thus, during the period of analysis, two periods of time are identified: the period when CONTIF is in force (2010-2016), and the period after (2016-2018), when IFRS became mandatory for banks financial reporting in Angola. 64% of the total audit opinions observed were issued on financial reports prepared according to CONTIF, while 36% are part of financial reports which adopted the IFRS. In 2016, the year of transition from CONTIF to IFRS, half of the banks implemented IFRS, while from 2017 onwards, all the banks adopted IFRS, therefore complying with the law's requirements – *see Table 2*.

| Year Standards	2010	2011	2012	2013	2014	2015	2016	2017	2018
CONTIF	9	12	17	19	20	26	13	0	0
IFRS	0	0	0	0	0	0	13	27	26
TOTAL OF BANKS	9	12	17	19	20	26	26	27	26

Table 2 – The Usage of CONTIF *versus* IFRS by Banks in Angola *(Number of banks, 2010-2018)*

Furthermore, as briefly described in *Section 2*, Angola has faced unstable GDP GROWTH and high INFLATION rates during the years in analysis. The inflation rates registered higher values during the last three years, when IFRS were adopted and fully applied (2016-2018).

6. Results

Audit Opinion (RQ1)

As mentioned in *Section 2*, two types of audit opinions can be issued: *Modified* and *Unmodified*. Throughout the horizon of analysis, there have been 92 modified audit opinions (51%) and 90 unmodified audit opinions (49%) in the Angolan banking sector (*See Chart 2*).

Chart 2 - Total Modified and Unmodified Opinions (2010-2018)
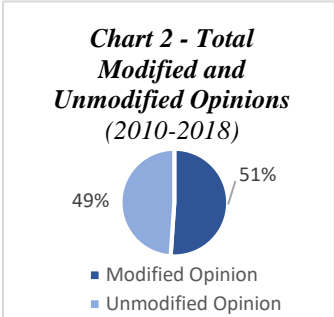
However, the number of unmodified opinions was superior to the number of modified opinions from 2010 to 2016, while in 2017 and 2018, 93% of the audit opinions issued were modified *(See Chart 3)*.

Chart 3 - No. Modified and Unmodified Opinions issued per year (2010-2018)
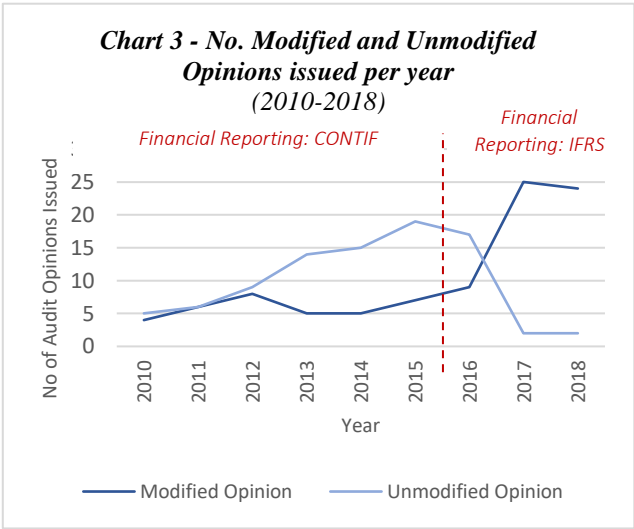
Between 2010 and 2018, the main reasons mentioned to justify a modified audit opinion of

banks in Angola were non-compliance with financial reporting standards (35%) and issues regarding Impairments (21%).[28] However, in 2017 and 2018, the two years when IFRS were utterly in force, 69% and 70% of the total basis for the modified opinion, respectively, derived from non-compliance with the financial reporting standards. These results are contradictory to the research of Grosu ⓡ al. (2015), as, in fact, in the Angolan banking sector, the transition to IFRS did contribute to a significant change in the emergence of modified audit opinions.

These results might be explained by the fact that banks in Angola have still not made the necessary changes in their business processes to fulfil the IFRS requirements (Deloitte 2019). As seen in *Section 2*, banks in Angola should apply IAS 29, but did not comply with this requirement, and auditors signal this fact. Banks did not adopt this standard on their own initiative, following the instructions of the Angolan Association of Banks (*Associação Angola de Bancos*, ABANC) and BNA, who have stated that, "*the conditions to consider Angola a hyperinflationary country are not met*" (ABANC, 2018). It is important to notice that the restatement of the financial statements demanded by IAS 29 would impact banks' financial position and results, deteriorating banks' profitability and solvency ratios, and possibly fright potential foreign investors, essential for Angola to develop and face its challenges.

Auditor, Audit Market Concentration and Auditor Rotation (RQ2)

As mentioned in *Section 2*, external auditors need to be authorised by BNA to operate in Angola. Nine auditors were identified in the period 2010-2018 in the Angolan banking sector: the four *BIG 4* group and five other auditors. It is worth noticing that the various auditors exercised as external auditors in different periods throughout the whole horizon of analysis.[29] In these periods, KPMG issued the highest number of audit reports (40 audit opinions) and issued audit opinions in every year of analysis. Between 2010 and 2018, AUDICONTA had not issued

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[28] See *Appendix 7* to access the different issues that modified the audit opinions issued in the Angolan banking sector, within 2010 and 2018.
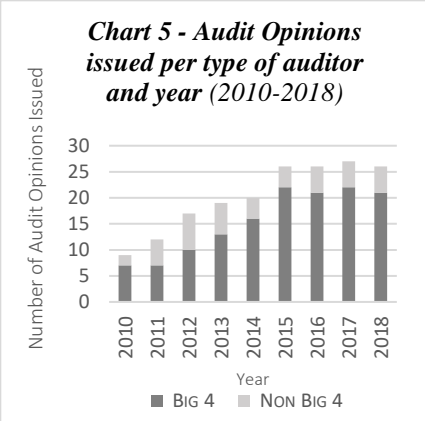[29] See *Appendix 8* to see the number of external audit reports issued per auditor, per year.

any audit report and C&S only issued one audit opinion, in 2018. From 2010 to 2018, 76% of the 182 audit opinions analysed were issued by the BIG 4 and 24% by five NON-BIG 4 *(See Chart 4).*

Chart 4 - Audit Opinions issued per type of auditor (2010-2018)
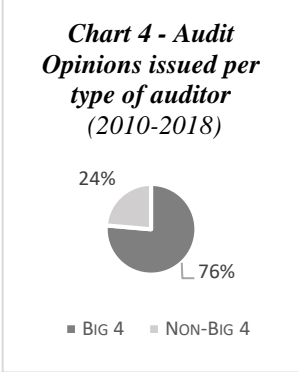
However, the distribution has been more balanced in 2011, when BIG 4 have only issued 58% of the 12 audit opinions. In the years of 2016, 2017 and 2018, BIG 4 issued 81% of the 26, 27 and 26 audit opinions of the banks in Angola, respectively *(See Chart 5).* These frequencies show that the Angolan audit market is highly concentrated in the BIG 4 companies, which is in line with results reported in previous literature (European Commission, 2010; Beattie, 2012; Benau and Moctezuma, 2017).

Chart 5 - Audit Opinions issued per type of auditor and year (2010-2018)

Auditor rotation is regulated in Angola, as mentioned in *Section 2*. 37 auditor's rotation occurred between the years 2010 and 2018 in banks in Angola[30], in which only the BIG 4 group managed to complete full periods of four years of auditing (the maximum duration allowed by law). Concluding, BIG 4 remain with their clients for a longer period, provoking the concentration of the audit market on them.[31] Out of the BIG 4, KPMG retained more clients (57%) through the four years of auditing than its competitors, having a longer audit tenure.

Assessing the execution of the law that establishes the maximum period of four years for an auditor to remain with a client, during the period in analysis, KPMG has remained with one of its clients[32] for more than a four years period. It is the only external auditor that has infringed the law which dictates the mandatory audit rotation dating back to 2005. Non-audit rotation can compromise the independence and the objectivity of the external auditor (Qawqzeh ℗ al., 2018).

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[30] The first year of operation of a bank is also the first year of the auditor in that bank, thus it was not considered that auditor rotation exists in such case.
[31] PWC has successfully completed five audit cycles out of the 11 initiated in the years in analysis, which means 45% of their audit clients remained with them for the full mandate of four years. DELOITTE managed to have a similar percentage (43%), while E&Y remained with 25% of its clients for the full period of auditing allowed. E&Y was the auditor to have initiated the most audit mandates (12).
[32] KPMG has completed five years of exercise with FINIB, from 2012 to 2016.

**Association between Independent Variables and the Audit Opinion (RQ3)** [33]

In order to analyze how and to what extent the economic and legal context, and the auditor and bank's characteristics are associated to the type of audit opinion issued in the Angolan banking sector, coefficients of correlation (r and v) between independent variables and the OPINION were computed:

Economic and Legal Context and Audit Opinion

The economic context variables, namely GDP GROWTH (v=0.54; p-value=0.000) and INFLATION (v=0.54; p-value=0.000), are associated to the OPINION, meaning that the macro-economic environment of the country the bank is in, strongly influences the audit opinion issued. There is also a positive and significant association between the OPINION and the variable FINREPORTING (r=0.38; p-value=0.000), which characterizes the legal context of the country regarding financial reporting, meaning that, in the years 2010 to 2018, the audit opinion of a bank in Angola is more likely to be modified when the IFRS are applied.

Auditor Characteristics and Audit Opinion

Despite the concentration of the Angolan audit market on the *BIG 4 (RQ2)*, there is evidence that they have remained independent. It is not possible to say that there is a direct association between the auditor who issues the opinion (*BIG 4* or *NON-BIG 4)* and the OPINION issued (*non-significant r*=0.08; p-value=0.255), since the number of each type of audit opinion issued per type of auditor within the years of 2010 and 2018 for the Angolan banking sector is balanced

Chart 6 - Type of Audit Opinion vs Type of Auditor (2010-2018)
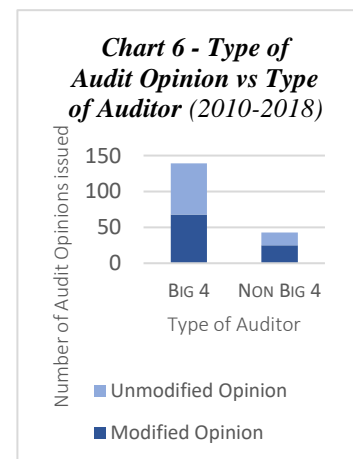
(*See Chart 6)*. Besides, being a year of AUDITORROTATION does not influence the type of audit OPINION issued (v=0.12; p-value=0.116). As there is not a large period without auditor rotation, imposed by law, independence and objectivity of the external auditor are not compromised.

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[33] See *Appendix 6* for the complete list of variables considered on the WP and *Appendix 9* for the Outputs from STATA® for the correlations between these variables and the respective p-values.

Bank Characteristics and Audit Opinion

There are positive and significant associations between the OPINION and the variables IMPAIRMENTS(r=0.22;p-value=0.011) and SHAREHOLDER (r=0.29;p-value=0.000), which means that having a high amount of recognized impairments or having the Angolan State as the main shareholder increases the chance of receiving a modified opinion. Variables SIZE (r=0.01), ROA (r=0.05), SOLVENCY (r=0.08) are not significantly *per se* associated to OPINION (p-values >0.05).

Determinants of the Audit Opinion (RQ4)

To explore and understand how the type of opinion is determined (RQ 4) in the Angolan banking sector between 2010 and 2018, the output for the MLR of *Equation 1* was obtained:

```
Logistic regression                              Number of obs   =       182
                                                 Wald chi2(10)   =     38.83
                                                 Prob > chi2     =    0.0000
Log pseudolikelihood = -88.957026                Pseudo R2       =    0.2948


                            Robust
      Opinion      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

  FINREPORTING   2.410908   .7330267    3.29   0.001     .9742021    3.847614
     Inflation   .588654    3.260559    0.18   0.857    -5.801924    6.979231
     GDPGrowth   2.350895   1.133669    2.07   0.038     .1289449    4.572845
          SIZE  -1.090092   .3024005   -3.60   0.000    -1.682787   -.4973982
           ROA   .959896    1.874637    0.51   0.609    -2.714324    4.634116
   IMPAIRMENTS   7.77e-08   3.65e-08    2.13   0.033     6.22e-09    1.49e-07
      SOLVENCY   .0596157   .1045413    0.57   0.569    -.1452815    .2645129
   SHAREHOLDER   2.545221   .9628206    2.64   0.008     .6581279    4.432315
          BIG4   .4446446   .5814033    0.76   0.444    -.694885     1.584174
AUDITORROTATION  .876756    .5017345    1.75   0.081    -.1066256    1.860138
         _cons   6.697154   2.273075    2.95   0.003     2.242009    11.1523
```

Table 3 – Output from STATA®[1] for the Binomial Logistic Regression Analysis Model (*Equation 1*)

The model tested is significant (Prob>Chi2 = 0.0000) when determining the audit opinion issued in the Angolan banking sector in the years 2010 to 2018. Assuming a level of confidence of 95 per cent, the following variables are significant in the model: FINREPORTING (p-value=0.001), GDP GROWTH (p-value=0.038), SIZE (p-value=0.000), IMPAIRMENTS (p-value=0.033) and SHAREHOLDER (p-value=0.008). However, the other variables in the model, namely INFLATION, ROA, SOLVENCY, BIG 4 and AUDITOR ROTATION, are not significant (p-value>0.05), meaning that these variables do not determine the type of audit opinion issued.

In order to test the robustness of the model of Equation 1, a strategy of modulation was performed. Different and successive models were tested, pulling out one non-significant variable at a time from the original model. In all the different models, the non-significant variables remained non-significant, while the significant variables have kept significant. Thus, a final model that comprises only significant variables was outlined. – *See Equation 2*.

Equation 2:

$OPINION_{ij}=\alpha0+\beta1_{ij}FINREPORTING_{ij}+\beta2_{j}GDPGrowth_{j}+\beta4_{ij}SIZE_{ij}+\beta6_{ij}IMPAIRMENTS_{ij}+\beta8_{ij}SHAREHOLDER_{ij}+\varepsilon_{ij}$

The output for the *Equation 2* was obtained:

```
Logistic regression                      Number of obs    =        182
                                         Wald chi2(5)     =      42.37
                                         Prob > chi2      =     0.0000
Log pseudolikelihood = -91.310381        Pseudo R2        =     0.2761


                        Robust
     Opinion      Coef.   Std. Err.      z     P>|z|     [95% Conf. Interval]

 FINREPORTING   2.443233   .4500768    5.43   0.000     1.561099    3.325368
    GDPGrowth   2.426452   1.108818    2.19   0.029     .2532081    4.599696
         SIZE   -.96836    .2652117   -3.65   0.000    -1.488165   -.4485546
  IMPAIRMENTS   7.17e-08   3.14e-08    2.28   0.022     1.01e-08    1.33e-07
  SHAREHOLDER   2.654127   .9535007    2.78   0.005     .7853003    4.522954
        _cons   6.148333   2.016447    3.05   0.002     2.196169     10.1005
```

Table 4 – Output from STATA®[1] for the Binomial Logistic Regression Analysis Model *(Equation 2)*

Thus, the estimated model that determines the audit opinion issued in the Angolan banking sector between 2010 and 2018 is the following:

Equation 3[34]:

$$OPINION_{ij}=6.15 + 2.44_{ij}\overset{\wedge}{FINREPORTING_{ij}}+2.43_{j}\overset{\wedge}{GDPGrowth_{j}}-0.97_{ij}\overset{\wedge}{SIZE_{ij}}+0_{ij}\overset{\wedge}{IMPAIRMENTS_{ij}}+2.65_{ij}\overset{\wedge}{SHAREHOLDER_{ij}}$$

In the Angolan banking sector, an *OPINION* is more likely to be modified if the financial reporting standards *(FINREPORTING)* applied are the IFRS, as discussed in RQ1. This result is not in line with Grosu ⓡ al. (2015) who concluded for Romania that accounting standards adopted determine the emergence of unmodified audit opinions. Also, when the economy of the country is growing *(*GDP GROWTH*)* the audit opinion is more likely to be modified for banks in Angola. Balcilar ⓡ al. (2018) concluded that the association between economic growth and banks performance is strong in Africa. The audit opinion is based on the financial statements that reflect the bank's performance; thus, it is expected that the audit opinion is associated to the economic growth of the country, which is in accordance to the findings of Balcilar ⓡ al. (2018).

Regarding IMPAIRMENTS, the results show that it is positively associated to the OPINION issued by the external auditor, meaning that having high impairments, i.e., high level of credit risk, slightly increases the likelihood of receiving a modified opinion. However, from 2010 to 2018, 21% of the issues that justify the modified opinions are related to impairments, because amounts recognized are either insufficient, wrongly computed or impossible to assess. Thus,

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[34] See Appendix 10 to see figure 1, which represents the final model design, correspondent to Equation 3.

the results obtained may be biased as the amounts of impairments recognized in 34 analysed audit opinions were considered incorrect by the external auditor. To the best of our knowledge, the amount of impairments has not been tested as a determinant of an audit opinion in prior research. Thus, it is worth noticing the contribution of this WP, by adding to the literature this new variable as a determinant of audit opinions in the Angolan banking sector.

Throughout the analysed years, an audit opinion is more likely to be modified if the main SHAREHOLDER of the bank is the Angolan State *(See Chart 7)*. However, the results for the variable SHAREHOLDER do not contemplate the fact that SONANGOL (a State related entity) has indirect participations in four commercial banks (as of 2018) – *See Section 2*, thus, the influence of the State as a major shareholder is limited by the scope of classification of the variables of this WP.

Chart 7- Type of Opinion vs Main Shareholder (2010-2018)
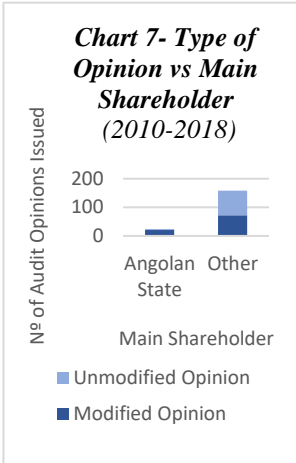
The results obtained in the model regarding the non-significance of the variable *BIG 4* are not in line with the literature - Tommasetti ⓡ al. (2018), Tsipouridou and Spathis (2012), Gaeremynck ⓡ al. (2008), Grosu (2015) – since, as refered in *section 3*, these authors mention different significant associations between the type of auditor and the type of audit opinion.

As seen in RQ3, it is not possible to conclude on any either positive or negative relationship between the presence of a *BIG 4* company and the audit opinion issued in the Angolan banking sector. Also, the fact that the auditor rotated in that year does not influence the opinion issued.

Observing *Chart 8*, E&Y has issued more modified opinions, while KPMG has issued more unmodified opinions. The result regarding E&Y may be explained by the concept of *audit reporting conservatism*, which translates into the fact that an auditor compensates for risk exposure by "*lessen the likelihood of failing to issue a modified report when appropriate*" (Francis and Krishnan,

Chart 8 - Type of Opinion per BIG 4 Auditor (2010-2018)
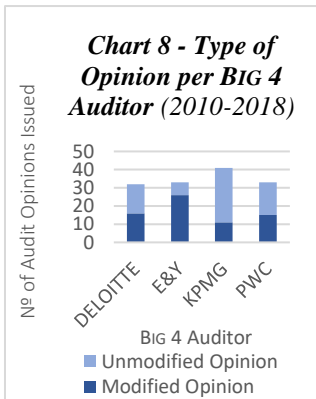
1999, 135) increasing the number of modified opinions. However, this concept is contradicted by studies mentioning that BIG 4 auditors have a higher tendency to issue unmodified opinions, due to their client characteristics, and not to audit quality *per se*, since "*clients of BIG 4 are usually larger in size, with international orientation, and adjust more to (…) the implementation of IFRS, which lowers the likelihood of receiving a qualified opinion*" (Tsipouridou and Spathis, 2012, 74). This later study justifies the result for KPMG. In fact, the variables BIG 4 and SIZE are positively and significantly associated (r=0.23; p-value=0.003 – *see Appendix 9*), thus, in Angola, banks audited by BIG 4 are larger in size, which is expected to lower the likelihood of receiving a modified opinion according to Tsipouridou and Spathis (2012). In Angola, bank's SIZE negatively influences the type of audit opinion issued, *i.e.,* the larger a bank is, the less likelihood of its opinion to be modified. This conclusion is also in line with Omid (2015), who also found size to be determinant of a modified audit opinion. Nevertheless, the results do not demonstrate that larger banks have adjusted more to the implementation of IFRS, as non-compliance with the financial reporting standards is the most frequent reason for modified opinions in 2017 and 2018, regardless of bank's size.

The results showed that neither profitability (proxied by ROA) or SOLVENCY are determinants of the audit opinion issued for banks in Angola between 2010 and 2018. Thus, it is not possible to conclude about either positive or negative relationship between the profitability, or solvency, and the audit opinion issued. This is in line with the conclusion of Gaeremynck *et* al. (2008) regarding profitability. However, concerning solvency, results are not consensual, as Gaeremynck *et* al. (2008) found it to be positively associated to the type of audit opinion issued, while Jinyu and Xin (2009) concluded that the solvency of a company has a negative relation with the audit opinion issued.

Overall, this WP reveals that a modified opinion is determined by the bank's size and the impairments recognised while being a BIG 4 company does not determine the type of audit

opinion issued neither does the fact that there is auditor rotation in the year. The transition to IFRS contributed to the emergence of modified audit opinions in the Angolan banking sector. Having the Angolan State as the major shareholder or being in a stage of economic growth increases the likelihood of receiving a modified opinion.

7. Conclusion

This WP used a binomial multiple logistic regression model to build a *prediction* model to explore and understand how and to what extent the economic and legal context of the country, and the auditor and bank's characteristics determine the audit opinion issued. The WP explores 182 annual financial and external audit reports of 30 banks in Angola from 2010 to 2018, from which 51% include modified audit opinions.

The MLR model suggests that the adoption of international financial reporting standards, *i.e.,* the transition to IFRS in the Angolan banking sector, in 2016, significantly contributed to the emergence of modified opinions, from 7 modified opinions in 2015 (the last year when only CONTIF was in force) to 25 in 2017 (the first year when only IFRS was in force), from which 100% are caused by non-compliance with standards. In the Angolan banking sector, an audit opinion is determined by the bank's size, impairments recognised and main shareholder being the Angolan State. Profitability and solvency were not found to be determinants of the type of audit opinion issued. Although the Angolan audit market is highly concentrated in the *BIG 4* companies, the results reveal auditor's independence, as an audit opinion in Angolan banking sector is not determined by the type of auditor nor being a year of auditor rotation.

This WP has some limitations. The audit opinion is based on the auditor's professional judgement and the way he decides to classify in the audit report the issues regarding the exercise of the bank found during the audit may bias the analysis.[35] Furthermore, changes in the measurement basis of assets following the adoption of IFRS from 2016 onwards, may cause

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[35] The unfulfillment of the conditions of the IAS 29, regarding the issue of hyperinflation, was determined as a basis for a qualified opinion in all the audit reports that had a modified opinion in the year of 2018, except for one issued by CROWE, who classified the same issue as an emphasis of matter.

disparities in the value of assets that are being compared. Also, in periods of hyperinflation, *"the current and prior period financial information may not be comparable"* (E&Y, 2018).

Regarding external auditors, the recommendation is for them to maintain an independent behaviour when issuing their audit opinion, regardless of the characteristics of the bank and regardless of being year of auditor rotation. In order to reduce the number of modified opinions that can derive from the non-compliance with the international financial reporting standards, it is recommended that the Angolan professional body of accountants and auditors (*Ordem dos Contabilistas e Peritos Contabilistas de Angola*) offer training on the IFRS and continue to promote actions that boost enforcement and transparency in the financial reporting banking sector. It is also expected from BNA and ABANC to suggest practices that promote the full adoption of IFRS, giving instructions to the banking sector to comply with norms.

The database build for the WP is a contribution to the academia, as it is made public. Future researchers can extend this database. New variables related to the internal audit report may be incorporated in the database in order to understand if the opinion differ from the one of the external auditors. New variables that characterize the bank or the auditor, may also be considered. To explore the reasons for non-compliance with IAS 29 could also add to the scarce literature related to IFRS use in Angola, as well as, to study the impact of IFRS 9, that must be applied mandatorily from 2019 on and is about the methodology for calculating impairments, because the second most frequent reason in modified opinions are issues related to impairments.

This WP contributes with useful analysis and insights of the reality of Angola on accounting, auditing and financial reporting, which is relevant either for major institutions of the country, such as BNA that regulates the banking sector, and for potential investors that are key to help the country meet its developing challenges and boosting economic growth.

8. References

- ABANC. 2018. "Classificação de Angola como Economia Hiperinflacionária no Âmbito da Norma Internacional de Contabilidade 29 (IAS 29)" Accessed July 30 2019. http://www.abanc.ao/content/files/parecer_abanc_norma_internacional_de_contabilidade_nic_29_2018__vf.pdf
- ANGOP. 2017. "Angola: Banking sector must be engine of economy" Accessed November 19,2019. https://www.angop.ao/angola/en_us/noticias/economia/2017/3/14/Angola-Banking-sector-must-engine-economy,b6ffa423-9f09-4d4e-93f9-626b48f714fc.html.
- Associação Angolana de Bancos. 2014. "Compatibilidade entre o PCIF e CONTIF" Accessed July 18 2019. http://www.abanc.ao/content/files/compatibilidade_entre_o_pcif_e_CONTIF.docx.
- _____ 2005. "Lei das Instituições Financeiras" Accessed July 18 2019. https://www.BNA.ao/uploads/%7B8d870ca1-fb6c-46a1-810f-e74284be0dbb%7D.pdf
- _____. 2016. "Princípios gerais a serem observados a partir do exercício de 2016" Accessed July 17 2019. https://www.BNA.ao/uploads/%7Be6cec560-538a-4e49-a167-1db1f75fd555%7D.pdf.
- _____ 2018. "Caducidade da autorização concedida ao ECOBANK ANGOLA, S.A." Accessed October 28 2019. https://www.BNA.ao/Conteudos/Artigos/detalhe_artigo.aspx?idc=173andidi=15970andidl=1.
- _____. 2019. "Authorized Banking Institutions in Angola by BNA" Accessed July 17 2019. https://BNA.ao/uploads/%7Bf950daf9-603a-46d4-9a34-d1847b34b6a0%7D.pdf.
- Barros, Carlos ⓡ Mendes, Zorro. 2016. "Assessing the competition in Angola's banking industry." Applied Economics, 48(30): 2785-2791; https://doi.org/10.1080/00036846.2015.1128083.
- Beattie, Vivien. 2012. "Competition Commission Statutory Audit Market Investigation: Initial review of relevant academic literature." Accessed July 31 2019. https://assets.publishing.service.gov.uk/media/5329db83ed915 d0e6000004b/initial_review_of_relevant_academic_literature_in_the_audit_market.pdf.
- Bertelsmann Stiftung's Transformation Index. 2018. "BTI 2018 Country Report Angola" Accessed July 20 2019. https://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2018/pdf/BTI_2018_Angola.pdf.
- Central Intelligence Agency. 2019. "The World Fact Book, Africa, Angola." Accessed July 20 2019. https://www.cia.gov/library/publications/the-world-factbook/geos/ao.html.
- Comissão do Mercado de Capitais. 2019. "Auditores Externos" Accessed July 18 2019. http://www.cmc.gv.ao/sites/main/pt/Paginas/gContent.aspx?mid=147andsmid=189andgID=AE
- Deloitte. 2018. "Banca em Análise". Accessed October 27 2019. https://www2.deloitte.com/content/dam/Deloitte/ao/Documents/financial-services/Bancaemanalise/Deloitte_BA2018_Completo-Digital-v09.pdf
- E&Y. 2018. "Hyperinflationary Economies". Accessed October 27 2019. https://www.ey.com/Publication/vwLUAssets/ey-devel-136-hyperinflationary-economies-updated-july-2018/$File/ey-devel-136-hyperinflationary-economies-updated-july-2018.pdf
- Diário da República de Angola, I série, nº 40. October 6 2000. "Obrigatoriedade de Contas Auditadas – Angola".
- _____, I série, n.º52, Decreto n.º 82/01. November 16 2001. – "Aprovação do Plano Geral de Contabilidade".
- _____, I Série, n.º171. October 23 2017. "Novos Modelos Declarativos".
- _____, I Série, n.º14. March 23 2001. "Lei do Exercício da Contabilidade e Auditoria – Angola".
- Elliot, Barry ⓡ Elliot, Jamie 2015. Financial Accounting and Reporting - 17th Edition, Edinburgh: Pearson Education Limited.
- European Commission. 2010. "Audit Policy: Lessons from the Crisis." Accessed July 30 2019: http://www.europarl.europa.eu/meetdocs/2009_2014/documents/com/com_com(2010)0561_/com_com(2010)0561_en.pdf
- Ferreira, Mafalda. 2019. "First-time Adoption of the International Financial Reporting Standards in Angola: Evidence from the Banking sector." NOVA SBE Work Paper.
- Francis, Jere ⓡ Krishnan, Jagan. 1999. "Accounting Accruals and Audit reporting Conservatism." *Contemporary Accounting Research*, 16: 135-165. https://doi.org/10.1111/j.1911-3846.1999.tb00577.x.
- Gaeremynck, Ann ⓡ Van der Meulen, Sofie ⓡ Willekens, Marleen. 2003. "Evidence on the Impact of Audit-Firm Portfolio Characteristics on Client Financial Reporting Quality". Department of Applied Economics KU Leuven Working Paper.
- Grosu, Maria ⓡ Robu, Ioan-Bogdan ⓡ Istrate, Costel. 2015. "Exploratory Study Regarding the Impact of IFRS on the Audit Opinion in the case of Romanian Listed Companies" *Audit Financial*, 13(127): 81-93.
- Harris, Richard, 1975. The political economy of Africa. Cambridge: Schenkman Publishing Company.
- Harrison, Graham. 2005. "THE WORLD BANK, governance and theories of political action in Africa." *British Journal of Politics and International Relation*, 7(2): 240-260 https://doi.org/10.1111/j.1467-856X.2005.00175.x
- Harrison, Graham. 2004. THE WORLD BANK and Africa: the construction of governance states. London: Routledge. https://doi.org/10.1017/S0022278X0524137X

- Hopper, Trevor ⓡ Lassou, Philippe ⓡ Soobaroyen, Teerooven (2017). "Globalisation, accounting and developing countries." *Critical Perspectives on Accounting,* 43: 125-148. https://doi.org/10.1016/j.cpa.2016.06.003.
- Hooper, Trevor ⓡ Tsamenyi, Mathew ⓡ Uddin, Shahzad ⓡ Wickramasinghe, Danture 2012. Handbook of Accounting and Development, Cheltenham: Edward Elgar Publishing.
- Hopper, Trevor ⓡ Ntim, Collins ⓡ Lassour, Philippe 2017. "Critical Prespectives on Accounting: Call for Papers. - Special Issue: African Accounting and Development.", Accessed October 10 2019. https://www.journals.elsevier.com/critical-perspectives-on-accounting/call-for-papers/special-issue-african-accounting-and-development.
- IFAC. 2009. "ISA 700: Forming an opinion and reporting on financial statements" Accessed July 15 2019. https://www.ifac.org/system/files/publications/files/A037%202012%20IAASB%20Handbook%20ISA%20700.pdf
  _____. 2009. "ISA 705: Modifications to the opinion in the independent auditor's report" Accessed July 15. https://www.ifac.org/system/files/publications/files/A038%202012%20IAASB%20Handbook%20ISA%20705.pdf
- _____. 2009. "ISA 706: Emphasis of matter paragraphs and other matter paragraphs in the independent auditor's report" Accessed July 15 2019. https://www.ifac.org/system/files/publications/files/A039%202012%20IAASB%20Handbook%20ISA%20706.pdf
- _____. 2019. "IAASB" Accessed July 20 2019. https://www.IAASB.org.
- IFRS. 2019. "Mission" Accessed July 15 2019. https://www.IFRS.org/
- _____ 2019. "Preface" Accessed July 20 2019. http://eIFRS.IFRS.org/eIFRS/bnstandards/en/preface.pdf.
- International Monetary Fund. 2018. "Angola request for an extended arrangement under extended fund facility – press release; staff report and statement by the executive director for Angola." Accessed July 20 2019. https://www.IMF.org/~/media/Files/Publications/CR/2018/cr18370.ashx.
- Jinyu, Tian ⓡ Xin, Zhao. 2009 "Apply multiple linear regression model to predict the audit opinion." ISECS International Colloquium on Computing, Communication, Control, and Management: 303-306.
- KPMG Angola. 2016. "Análise ao Setor Bancário Angolano" Accesses October 27 2019. https://assets.kpmg/content/dam/kpmg/pt/pdf/pt-2016-angola-banking-survey-pt.pdf.
- Laitinen, Erkki ⓡ Laitinen, Teija. 1998. "Qualified audit reports in Finland: evidence from large companies." *European Accounting Review,* 7(4): 639-653. https://doi.org/10.1080/096381898336231.
- Benau, García ⓡ Moctezuma, Toscano. 2017. "Why the *BIG 4* Are Leaders in the Audit Market? A Literature Review." *Archives of Business Research*, 5(12): 227-244
- Omid, Akhgar. 2015. "Qualified audit opinion, accounting earnings management and real earnings management: evidence from Iran." *Asian Economic and Financial Review,* 5(1):46-57. https://doi.org/10.18488/journal.aefr/2015.5.1/102.1.46.5.
- PwC. 2018. "Relatório de Transparência" Accessed July 18 2019. https://www.pwc.pt/pt/quem-somos/pwc-relatorio-transparencia-2018.pdf.
- Qawqzeh, Hamza ⓡ Endut, Wan ⓡ Rashid, Norfadzilah ⓡ Johari, Razana ⓡ Hamid, Nadiah ⓡ Rasit, Zarinah. 2018. "Auditor Tenure, Audit Firm Rotation and Audit Quality: A Literature Review." *International Journal of Academic Research in Business and Social Sciences*, 8(12): 1314–1324. http://dx.doi.org/10.6007/IJARBSS/v8-i12/5229
- SADC, Statistics Year Book. 2019. "Country Context – Member State Angola". Accessed July 20 2019. https://www.sadc.int/member-states/angola/.
- Tomasetti, Roberto ⓡ Santos, Neusa ⓡ Macedo, Marcelo ⓡ Neto, Alfredo. 2018. "Relationship between Modified Audit Opinion, Earnings Management and Auditor Size: evidence from Brazil." *Pensar Contábil 20*: 50-57.
- Tsipouridou, Maria ⓡ Spathis, Charalambos. 2012. "Earnings management and the role of auditors in an unusual IFRS content: The case of Greece." *Journal of International Accounting, Auditing and Taxation:* 62-78.
- WORLD BANK. 2019. "Angola Overview". Accessed July 20 2019. https://www.worldbank.org/en/country/angola/overview.

9. Appendix

Table of Contents for Appendix:

Appendix 1: Table 5 - GDP Growth & Inflation Rate in Angola (2010-2018)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Inflation Rate	14.48%	13.48%	10.29%	8.78%	7.30%	9.16%	30.69%	29.84%	19.63%
GDP Growth	19.19%	33.40%	14.55%	6.76%	6.58%	-20.26%	-12.97%	20.77%	-13.41%

Sources:
GDP growth -https://www.statista.com/statistics/440699/gross-domestic-product-GDP-in-angola/
Inflation Rate - https://www.statista.com/statistics/440710/inflation-rate-in-angola/

Appendix 2: Table 6 - List of External Audit Reports and Annual Financial Reports Available from Authorized Banks in Angola (2010-2018)

Bank	Name of the Bank[36]	2010	2011	2012	2013	2014	2015	2016	2017	2018
BAI	Banco Angolano De Investimentos, S.A.	N	N	N	Y	Y	Y	Y	Y	Y
BANC	Banco Angolano De Negócios E Comércio, S.A.	Y	Y	Y	Y	Y	Y	Y	N	N/A
BAIM	Banco Bai Microfinanças	N	Y	Y	Y	N	Y	Y	Y	Y
BIC	Banco Bic, S.A.	N	Y	Y	Y	Y	Y	Y	Y	Y
BCGA	Banco Caixa Geral Angola, S.A.	N	N	Y	Y	Y	Y	Y	Y	Y
BCA	Banco Comercial Angolano, S.A.	Y	Y	Y	Y	Y	Y	Y	Y	Y
BCH	Banco Comercial Do Huambo	Y	Y	Y	Y	N	N	Y	Y	Y
BOCLB	Banco Da China Limitada - Sucursal Em Luanda	N/A	N/A	N/A	N/A	N/A	N/A	N	Y	Y
BCI	Banco De Comércio E Indústria, S.A.	N	N	Y	No	Y	Y	Y	Y	Y
BDA	Banco De Desenvolvimento De Angola	Y	Y	Y	Y	Y	Y	Y	Y	Y
BFA	Banco De Fomento Angola, S.A.	Y	Y	Y	Y	Y	Y	Y	Y	Y
BIR	Banco De Investimento Rural	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y
BNI	Banco De Negócios Internacional, S.A	Y	Y	Y	Y	Y	Y	Y	Y	Y
BPC	Banco De Poupança E Crédito, S.A.	Y	Y	Y	Y	Y	Y	Y	Y	Y
BE	Banco Económico	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y
KEVE	Banco Keve	N	N	N	N	N	Y	Y	Y	Y
BKI	Banco Kwanza Investimento	N	N	Y	Y	Y	Y	Y	Y	Y
BMA	Banco Millenium Angola, S.A.	N	N	N	Y	Y	Y	N/A	N/A	N/A
BMPA	Banco Millenium Atlântico, S.A.	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y
POSTAL	Banco Postal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A
PREST	Banco Prestígio, S.A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y
BPA	Banco Privado Atlântico, S.A.	N	N	N	Y	Y	Y	N/A	N/A	N/A
MAIS	Banco Pungo Andongo, S.A / Banco Mais	N/A	N/A	N/A	N/A	N/A	N	N	N	N/A
SOL	Banco Sol	N	N	Y	Y	Y	Y	Y	Y	Y
BVB	Banco Valor, S.A.	N/A	Y	Y	Y	Y	Y	Y	Y	Y
YETU	Banco Yetu	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y
SUL	Credisul - Banco De Crédito Do Sul, S.A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y
ECO	Ecobank Angola, S.A.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FINIB	Finibanco Angola	Y	Y	Y	Y	Y	Y	Y	Y	Y
SBA	Standard Bank De Angola, S.A.	N	N	Y	Y	Y	Y	Y	Y	Y
SCBA	Standard Chartered Bank Angola	N/A	N/A	N/A	N	Y	Y	Y	Y	Y
VTB	Vtb África, S.A.	Y	Y	Y	Y	Y	Y	Y	Y	Y

n.a. – When the Bank is not authorized to operate, the Audit Report is not expected.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
(a) Yearly Total Expected Observations (Initial Sample)	20	21	21	22	23	28	28	29	26
(b) Yearly Total Obtained Observations (Final Sample)[37]	9	12	17	19	20	26	26	27	26
(b)/(a) Yearly Coverage %	45.0%	57.1%	81.0%	86.4%	87.0%	92.9%	93.1%	93.0%	100%

Total Number of Expected Observations	218
Total Number of Obtained Observations	182
Total Coverage of the Final Sample (%)	83%

Source: Adapted from Almeida (2019)

[36] Select the name of the Bank in the Table 6 to access the available Annual Financial and External Audit reports.

[37] From 2010 to 2018, the only **reason for exclusion** from the initial sample is non-availability of the reports.

Appendix 3: Table 7 - List of Authorized External Auditors in Angola (2010-2018)

External Auditor[38]	Abbreviation used in the WP	Years of Activity
Audiconta - Peritos Contabilístas, Lda.	AUDICONTA	-
C&S – Assurance and Advisory, S.A	C&S	2018
Crowe Horwath – Auditores e Consultores, S.A.	CROWE	2010-2013 and 2015-2018
Deloitte and Touche – Auditores, Lda.	DELOITTE	2010-2018
Ernst and Young Angola, Lda.	E&Y	2010-2011 and 2014-2018
KPMG Angola - Audit, Tax, Advisory, S.A.	KPMG	2010-2018
PKF Angola – Auditores e Consultores, S.A	PKF	2010-2017
PricewaterhouseCoopers Angola, Lda.	PWC	2010-2018
UHY - A. Paredes e Associados Angola, S.A.	UHY	2011-2018

Source: http://www.cmc.gv.ao/sites/main/pt/Paginas/gContent.aspx?mid=147andsmid=189andgID=AE

Appendix 4: Table 8 - Type of Modified Opinions[39]

	Auditor's Judgment about the Pervasiveness of the Effects or Possible Effects on the Financial Statements	
Nature of Matter Giving Rise to the Modification	*Material but Not Pervasive*	*Material and Pervasive*
Financial statements are materially misstated	Qualified opinion	Adverse opinion
Inability to obtain sufficient appropriate audit evidence	Qualified opinion	Disclaimer of opinion

Source: ISA 705 - Modifications to the Opinion in the Independent Auditor's Report. (IAASB 2009)

According to ISA 706, *t*he auditor may write an Emphasis of Matter Paragraph[40] or an Other Matter paragraph[41] "*to draw users' attention, when in the auditor's judgment it is necessary to do so, by way of clear additional communication in the auditor's report*" (IAASB 2009). However, these paragraphs do not modify the opinion expressed by the auditor.

---

[38] Select the name of the External Auditor in Table 8 to access auditor's website.

[39] **Pervasive** - According to ISA 705, "*a term used, in the context of misstatements, to describe the effects on the financial statements of misstatements or the possible effects on the financial statements of misstatements, if any that are undetected due to an inability to obtain sufficient appropriate audit evidence. Pervasive effects on the financial statements are those that, in the auditor's judgment: (i) Are not confined to specific elements, accounts or items of the financial statements; (ii) If so confined, represent or could represent a substantial proportion of the financial statements; or (iii) In relation to disclosures, are fundamental to users' understanding of the financial statements.*" (IAASB, 2009).

[40] **Emphasis of Matter paragraph** - According to ISA 706, "*A paragraph included in the auditor's report that refers to a matter appropriately presented or disclosed in the financial statements that, in the auditor's judgment, is of such importance that it is fundamental to users' understanding of the financial statements.*" (IAASB, 2009)

[41] **Other Matter paragraph** – According to ISA 706, "*A paragraph included in the auditor's report that refers to a matter other than those presented or disclosed in the financial statements that, in the auditor's judgment, is relevant to users' understanding of the audit, the auditor's responsibilities or the auditor's report.*" (IAASB, 2009)

Appendix 5: Table 9 – Empirical Literature Review

Author (year)	Objective/Purpose	Results	Key Words	Sample
Almeida (2019)	Quality of financial reporting in the banking industry of Angola, through the analysis of external audit reports	*"Credit risk is not being properly reflected on the financial statements"*. There should be further analysis on the relationship between *"audit opinion and audit company, origin and type of capital"*	Angola, Audit opinion, Banking industry, Financial Reporting Quality	156 audit reports of Angolan banking Industry; 2010-2017
Balcilara, Guptad, Lee and Williams (2018)	Effect of the African Banking Sector's performance in the economic growth.	Positive association between the banking sector performance and the economic growth in Africa.	Synergistic effect, Insurance market, Banking sector, Africa, Dynamic GMM, Panel granger causality	10 African countries (Algeria, Angola, Egypt, Kenya, Mauritius, Morocco, Namibia, Nigeria, South Africa and Tunisia); 1995-2016
Beattie (2012)	Empirical investigation of determinants and consequences of concentration in the audit market.	Audit firms compete on price (audit fees), product competition (proxied by reputation - related to size, industry specialization); service quality (existence of local city office and non-audit services)		
Benau and Moctezuma (2017)	Literature review: reasons why the BIG 4 are leaders in the audit market.	Leadership of BIG 4 because of: *"Concentration of the market, Specialization (...) of the companies audited, Economies of scale, Structured audit methodologies, audit quality and reputation of the auditor.*	Audit Market Concentration Factors, Audit Services Differentiation, Auditor with Reputation.	
Ferreira (2019)	Impact of IFRS adoption in Angolan banks.	IFRS have material effects on profitability.	Angola; IFRS; First-time adoption; Banking sector.	Audit reports of Angolan banking Industry; 2015-2017
Francis and Krishnan (1999)	Concept of auditor reporting conservatism.	Auditors compensate for risk exposure lowering the threshold for issuing modified audit reports which increases the number of modified opinions and consequently lowers the *"likelihood of failing to issue a modified report when appropriate"*. BIG 6 have reporting conservatism		Large sample of U.S. publicly listed companies.
Gaeremynck, Meulen and Willekens (2008)	Measures of audit-firm losses and association with financial reporting quality. Characteristics of clients as drivers of audit quality.	Solvency characteristics positively associated with financial reporting quality. Liquidity, profitability and size are not associated to audit and financial reporting quality. BIG 4 are more likely to issue qualified opinions.		
Grosu, Robu and Istrate (2015)	Impact of IFRS adoption on the audit opinion.	Audit Opinion is associated to *"affiliation to auditor category (BIG 4 or NONBIG 4)"*. No. of Unmodified opinions increased with adoption of IFRS.	audit engagement, audit opinion, transition to IFRS, Bucharest Stock Exchange	63 Romanian listed companies on BSE, 2011-2014.
Jinyu and Xin (2009)	Multiple linear regression to audit opinion and test of effectiveness.	*"Earnings per share, Net assets per share, Total Assets Yield, Assets Liabilities Ratio, Net Profit Growth Rate, Cash Sales Ratio"* are associated to the type of audit opinion	Multiple Linear Regression; Predict; Financial Indicators; Audit Opinion	30 companies from Shanghai and Shenzhen stock markets
Laitinen and Laitinen (1998)	Logistic model to qualified audit reports.	Qualification is more likely if: *"Low profitability, high indebtedness and low growth"*.		37 publicly-traded companies (HeSE);1992-1994
Omid (2015)	Multiple Regression to audit opinions and earnings management	*"Profitability, size, experience, type of audit opinion in previous year and prior year loss"* determine the audit opinion.		2818 listed firms on the Tehran Stock Exchange (TSE); 2003-2013
Qawqzeh, Endut, Rashid, Johari, Hamid and Rasit (2018)	Effect of auditor tenure and audit firm rotation on audit quality	Long auditor tenure influences negatively the audit quality but leads to specific knowledge. Switching audit firm leads to loss of knowledge which also reduces audit quality.	Auditor Tenure, Audit Firm Rotation, Audit Quality.	
Tommasetti, Santos, Macedo and Neto (2018)	Relationship between earnings management and the audit firm size and the audit report.	Earnings Management positive relationship with qualified audit report. Negative relationship between audit qualifications and BIG 4.	Earnings Management, Discretionary Accruals, Modified (or Qualified) Audit Opinion, BIG 4.	Brazilian listed firms; 2012-2015.
Tsipouridou and Spathis (2012);	Relationship between audit opinions and earnings management	Big 4 are more likely to issue unqualified reports because: *"clients of Big 4 are larger in size, with international orientation, and adjust more to corporate governance mechanisms and the implementation of IFRS"*		Listed firms on the Athens Stock Exchange (ASE)

**Appendix 6: Table 10 – List of Independent Variables in the WP**

What does the variable characterize?	Variable	Proxy	Type I	Type II	Source of Data	Literature in which the variable was used
Legal and Economic Context	**FINREPORTING** (Financial Reporting Standards applied)		Categorical	Nominal *(0 if CONTIF, 1 if IFRS)*	Annual Financial Report	Ferreira (2019); Grosu, ⓡ al. (2015);
	INFLATION	*Annual Inflation Rate*	Categorical	Nominal	*Statista.com*	
	GDP Growth	$\dfrac{GDPn - GDPn\text{-}1}{GDPn\text{-}1}$	Categorical	Nominal	*Statista.com*	
Auditor	**BIG4** (Type of Auditor)		Categorical	Nominal *(1 if BIG 4, 0 if NON-BIG4)*	Annual External Audit Report	Gaeremynck ⓡ al. (2008); Grosu (2015); Tommasetti, ⓡ al. (2018); Tsipouridou and Spathis (2012)
	AUDITOR ROTATION (Year of Change of Auditor)		Categorical	Nominal *(1 if Yes, 0 if No)*	Annual External Audit Report	Qawqzeh ⓡ al. (2018)
Bank	**SIZE** (Size of the Bank)	*Log Total Assets*	Numeric	Continuous	Balance Sheet in the Annual Financial Report	Gaeremynck ⓡ al.(2008); Omid (2015); Tsipouridou and Spathis (2012)
	ROA (Return on Assets)	$\dfrac{Net\ Earnings}{Total\ Assets}$	Numeric	Continuous	Balance Sheet and Income Statement in the Annual Financial Report	Tommasetti ⓡ al. (2018);
	IMPAIRMENTS		Numeric	Continuous	Income Statement in the Annual Financial Report	
	SHAREHOLDER (Type of the Main Shareholder)	*Main shareholder: > 50% of share*	Categorical	Nominal *(1 if Angolan State, 0 if Other)*	Annual Financial Report and Website of the Banks	
	SOLVENCY (Solvency Ratio)	$\dfrac{Equity}{Total\ Liabilities}$	Numerical	Continuous	Balance Sheet and Income Statement in the Annual Financial Report	Gaeremynck ⓡ al.(2008); Jinyu and Xin ⓡ al.

Appendix 7: Table 11 – Issues mentioned on Modified Audit Opinions (*number of times each issue is mentioned in the audit opinions, per year,* 2010-2018)

Modified Opinion Issue \\ Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total	Weight
Non-compliance with Standards/Norms	0	0	0	0	0	0	1	29	24	54	35%
Impairment Issues	3	1	5	3	3	6	6	2	4	33	21%
Fixed Assets	1	3	2	0	1	3	4	3	2	19	12%
Other Assets/Liabilities	1	0	3	1	2	1	2	1	1	12	8%
Other Issues	0	1	1	0	0	1	3	4	2	12	8%
Pension Liabilities	1	1	3	0	1	1	0	1	0	8	5%
Various Limitations	0	1	3	1	0	0	0	0	0	5	3%
Bank Resolutions	1	1	1	0	0	0	0	0	0	3	2%
External Confirmation Process	1	0	0	0	0	0	1	1	0	3	2%
Going Concern	0	0	0	0	0	1	1	1	1	4	3%
Accrued Interest	1	0	0	0	0	1	1	0	0	3	2%

Source*:* Adapted from Almeida (2019)

Appendix 8: Chart 9 – No of Audit Opinions issued in the Angolan banking Sector, *per Auditor, per year (2010-2018)*
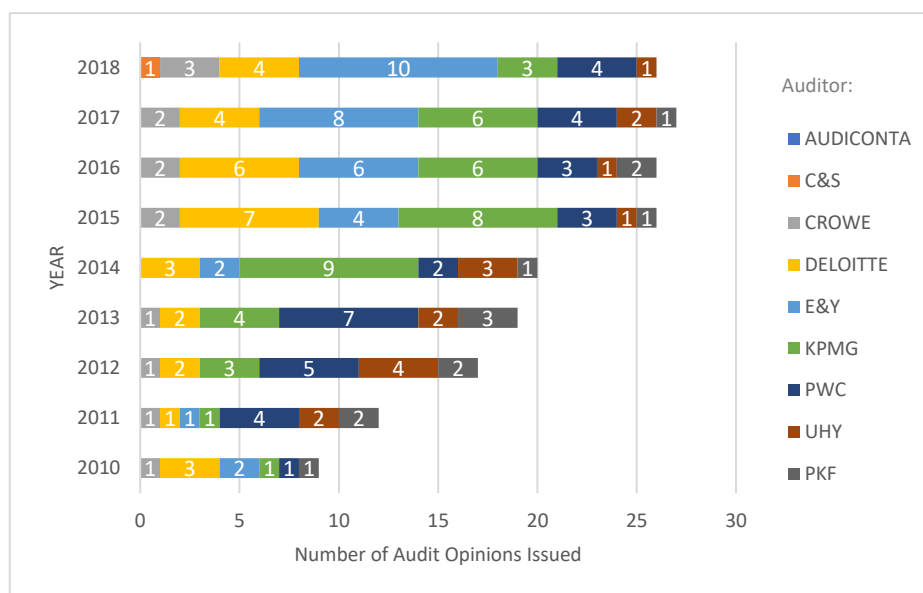
Appendix 9: Outputs from STATA ®

-Pearson's correlation coefficient (Tables 11.1 and 11.2) measures the association between two continuous variables and varies from -1 to 1. *Phi coefficient* is a measure of association for two binary variables, but *Pearson's correlation coefficient* estimated for two binary variables returns the Phi coefficient. *The point-biserial correlation* is a measure of association for one continuously measured variable and a dichotomous variable. It is mathematically equivalent to the *Pearson's coefficient* when the categorical variable is binary.
-Cramer's V (Table 11.3) is a measure of association between two categorical variables; it varies between 0 and 1.
- Since a coefficient of correlation is a measure of linear relationship between variables, it is not appropriate to compute the association between numeric variables and categorical variables with more than two categories.

Table 12.1 - Pearson Coefficient – Matrix of Correlation

```
. correlate Opinion FINREPORTING SIZE ROA IMPAIRMENTS SOLVENCY SHAREHOLDER BIG4 AUDITORROTATION
(obs=182)

              | Opinion FINREP~G    SIZE     ROA IMPAIR~S SOLVENCY SHAREH~R    BIG4 AUDITO~N
--------------+--------------------------------------------------------------------------------
      Opinion |  1.0000
 FINREPORTING |  0.3803   1.0000
         SIZE |  0.0081   0.1936  1.0000
          ROA |  0.0465   0.2536  0.2332  1.0000
  IMPAIRMENTS |  0.2174   0.0984  0.4931 -0.0327  1.0000
     SOLVENCY |  0.0802   0.1071 -0.1276 -0.1444 -0.0462  1.0000
  SHAREHOLDER |  0.2880  -0.0913  0.2958 -0.0660  0.3891 -0.0390  1.0000
         BIG4 |  0.0844  -0.0967  0.2288 -0.0245  0.1252 -0.0547  0.2802  1.0000
AUDITORROT~N  |  0.1173   0.0449  0.1060  0.0585  0.0448 -0.0519  0.0452  0.0404  1.0000
```

Table 12.2 - Pearson Coefficient, for a significance level of five per cent

```
. pwcorr Opinion FINREPORTING SIZE ROA IMPAIRMENTS SOLVENCY SHAREHOLDER BIG4 AUDITORROTATION , print(.05)

              | Opinion FINREP~G    SIZE     ROA IMPAIR~S SOLVENCY SHAREH~R            BIG4 AUDITO~N
--------------+------------------------------------------------------------    ------------------------
      Opinion |  1.0000                                                            BIG4 |  1.0000
 FINREPORTING |  0.3803   1.0000                                           AUDITORROT~N |          1.0000
         SIZE |           0.1936  1.0000
          ROA |           0.2536  0.2332  1.0000
  IMPAIRMENTS |  0.2174           0.4931          1.0000
     SOLVENCY |                                           1.0000
  SHAREHOLDER |  0.2880           0.2958          0.3891           1.0000
         BIG4 |                   0.2288                           0.2802
AUDITORROT~N  |
```

31

Table 12.3 – Cramer's V Coefficient

```
tab Opinion GDPGrowth, V
```

Opinion	-0.2026	-0.1341	-0.1297	0.0658	GDPGrowth 0.0676	0.1455	0.1919	0.2077	0.3340	Total
0	19	3	17	15	14	9	5	2	6	90
1	7	23	9	5	5	8	4	25	6	92
Total	26	26	26	20	19	17	9	27	12	182

```
        Cramér's V =   0.5365

tab Opinion Inflation, V
```

Opinion	0.0730	0.0878	0.0916	0.1029	Inflation 0.1348	0.1448	0.1963	0.2984	0.3069	Total
0	15	14	19	9	6	5	3	2	17	90
1	5	5	7	8	6	4	23	25	9	92
Total	20	19	26	17	12	9	26	27	26	182

```
        Cramér's V =   0.5365
```

Table 12.4 – Chi2-Test for Dependent Variables *vs* Categorical Variables (p-values)

```
tab Opinion FINREPORTING, chi2
```

Opinion	FINREPORTING 0	1	Total
0	74	16	90
1	42	50	92
Total	116	66	182

```
Pearson chi2(1) =  26.3239   Pr = 0.000
```

```
tab Opinion SHAREHOLDER, chi2
```

Opinion	State1 Private0 Control 0	1	Total
0	87	3	90
1	71	21	92
Total	158	24	182

```
   Pearson chi2(1) =  15.1001   Pr = 0.000
```

```
tab Opinion BIG4, chi2
```

Opinion	Big 4 Y0 N1 0	1	Total
0	72	18	90
1	67	25	92
Total	139	43	182

```
   Pearson chi2(1) =   1.2976   Pr = 0.255
```

```
tab Opinion GDPGrowth, chi2
```

Opinion	-0.2026	-0.1341	-0.1297	0.0658	GDPGrowth 0.0676	0.1455	0.1919	0.2077	0.3340	Total
0	19	3	17	15	14	9	5	2	6	90
1	7	23	9	5	5	8	4	25	6	92
Total	26	26	26	20	19	17	9	27	12	182

```
     Pearson chi2(8) =  52.3946   Pr = 0.000
```

```
tab Opinion Inflation, chi2
```

Opinion	0.0730	0.0878	0.0916	0.1029	Inflation 0.1348	0.1448	0.1963	0.2984	0.3069	Total
0	15	14	19	9	6	5	3	2	17	90
1	5	5	7	8	6	4	23	25	9	92
Total	20	19	26	17	12	9	26	27	26	182

```
     Pearson chi2(8) =  52.3946   Pr = 0.000
```

Table 12.5 – Logit Regression for Dependent Variable *vs* Numeric Variables (p-values)

```
. logit Opinion SIZE

Iteration 0:   log likelihood =  -126.1418
Iteration 1:   log likelihood = -126.13588
Iteration 2:   log likelihood = -126.13588

Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =     0.01
                                             Prob > chi2     =   0.9133
Log likelihood = -126.13588                  Pseudo R2       =   0.0000
```

Opinion	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
SIZE	.0198899	.1827658	0.11	0.913	-.3383244	.3781043
_cons	-.1364603	1.463396	-0.09	0.926	-3.004663	2.731742

```
. logit Opinion ROA

Iteration 0:   log likelihood =  -126.1418
Iteration 1:   log likelihood = -125.94341
Iteration 2:   log likelihood = -125.94337
Iteration 3:   log likelihood = -125.94337

Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =     0.40
                                             Prob > chi2     =   0.5287
Log likelihood = -125.94337                  Pseudo R2       =   0.0016
```

Opinion	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
ROA	1.055171	1.693224	0.62	0.533	-2.263487	4.37383
_cons	.0096851	.1497898	0.06	0.948	-.2838976	.3032677

```
.
. logit Opinion AUDITORROTATION

Iteration 0:   log likelihood =  -126.1418
Iteration 1:   log likelihood = -124.87853
Iteration 2:   log likelihood =  -124.8781
Iteration 3:   log likelihood =  -124.8781

Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =     2.53
                                             Prob > chi2     =   0.1119
Log likelihood = -124.8781                   Pseudo R2       =   0.0100
```

Opinion	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
AUDITORROTATION	.5930637	.3775678	1.57	0.116	-.1469557	1.333083
_cons	-.0966268	.1662848	-0.58	0.561	-.4225391	.2292855

```
. logit Opinion SOLVENCY

Iteration 0:   log likelihood =  -126.1418
Iteration 1:   log likelihood = -125.24505
Iteration 2:   log likelihood = -125.19318
Iteration 3:   log likelihood = -125.19318

Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =     1.90
                                             Prob > chi2     =   0.1684
Log likelihood = -125.19318                  Pseudo R2       =   0.0075
```

Opinion	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
SOLVENCY	.1160487	.1747327	0.66	0.507	-.226421	.4585185
_cons	-.0242777	.1571192	-0.15	0.877	-.3322256	.2836703

```
. logit Opinion IMPAIRMENTS

Iteration 0:   log likelihood =  -126.1418
Iteration 1:   log likelihood = -120.95428
Iteration 2:   log likelihood =  -120.8941
Iteration 3:   log likelihood = -120.89396
Iteration 4:   log likelihood = -120.89396

Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =    10.50
                                             Prob > chi2     =   0.0012
Log likelihood = -120.89396                  Pseudo R2       =   0.0416
```

Opinion	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
IMPAIRMENTS	5.30e-08	2.07e-08	2.55	0.011	1.23e-08	9.36e-08
_cons	-.2316747	.171602	-1.35	0.177	-.5680084	.1046589

Table 12.6 – Logit Regression BIG 4 *vs* SIZE

```
Logistic regression                          Number of obs   =      182
                                             LR chi2(1)      =     9.98
                                             Prob > chi2     =   0.0016
Log likelihood = -94.517346                  Pseudo R2       =   0.0501
```

BIG4	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
SIZE	.7215698	.2398867	3.01	0.003	.2514006	1.191739
_cons	-7.009662	1.976523	-3.55	0.000	-10.88358	-3.135749

Appendix 10: Figure 1 –Final Model Design (Equation 3)