A Work Project, presented as part of the requirements for the award of a Masters Degree in Management from NOVA – School of Business and Economics

# *The Impact of Mandatory Adoption of the International Financial Reporting Standards on the Cost of Equity: Evidence from Angolan Banks*

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A project carried out on the Master in Management Program, under the supervision of Professor Leonor Ferreira and Professor Fernando Cardoso

May 23th, 2018

**Abstract**

In 2016, the Angolan banking sector mandatorily adopted the International Financial Reporting Standards (IFRS). Its effects on the cost of equity, exceedingly high in Angolan banks and a key variable to attract investors, are controversial, with some literature suggesting it decreases after the adoption. This paper examines the impact of mandatory IFRS adoption on the cost of equity, in Angolan banks in the period 2012-2016. The results show that the adoption of IFRS is not relevant in explaining the cost of equity, on the short-term, contrary to other company-specific variables, such as size, leverage, ROA, auditors' opinion and ownership concentration.

**Keywords:** Angola, Banking sector, Cost of equity, IAS/IFRS, mandatory adoption

## 1. Introduction

Until 2014, Angola was one of the fastest-growing economies in Sub-Saharan Africa, with an annual average Gross Domestic Product (GDP) growth of 10.3%. With oil representing around 75% of government revenue and 95% of all exports, the Angolan economy is highly dependent on a single and volatile industry[1]. Recognizing that depending solely on oil is no longer a viable development option, the Angolan government is trying to strengthen other industries by attracting foreign investment.

An attractive business environment is necessary, which is a challenge to Angola[2]. With corruption present in all levels of business and government[3], there is low confidence in the markets, a high cost of capital and a severe lack of transparency. One way through which the government is

[1] As a consequence of the sharp decline in oil prices, the whole economy suffered and the GDP fell 20%, in 2015 (Euromonitor International 2018).

[2] According to the Ease of Doing Business Rankings of 2017, Angola ranked 175 out of 190 countries (The World Bank 2018), being one of the most difficult countries to do business, in areas such as getting credit, trading across borders, enforcing contracts and resolving insolvency.

[3] According to the Corruption Perception Index of 2017 (Transparency International 2018), Angola ranks 167 out of 180 countries, being perceived as one of the most corrupt countries in the world.

trying to attract investors is by opening a stock market[4] and adopting global accounting standards, the International Financial Reporting Standards (IFRS), in its banking sector, in 2016.

In current markets, most businesses and investors diversify their portfolios and expand operations through cross-border investments. Hence, the demand for a set of universal standards, to which all the participants in the market abide, has grown exponentially (Banco Nacional de Angola 2014). The International Accounting Standards Committee (IASB) started in the early 2000s issuing a set of high-quality International Financial Reporting Standards (IFRS). By 2005, most European countries and others around the world already required its use by financial institutions. The IFRS Foundation's goal is to provide *"a high quality, internationally recognized set of accounting standards that bring transparency, accountability and efficiency to financial markets around the world"* (IFRS Foundation 2018). Transparency, by increasing comparability and quality of financial information; accountability, by providing investors with information on how managers are handling their capital; and efficiency by reducing the cost of capital and reporting costs. The mandatory adoption of IFRS in the Angolan banking sector arose from the efforts the country is making towards positioning the banking sector as the "economy's engine", as the governor of the Angolan National Bank, *Banco Nacional de Angola (BNA),* emphasized in 2017 (ANGOP 2017).

The economic effects of mandatory adoption of IFRS are a controversial subject, however. There is still no consensus on its effects, among the accounting community. While some believe it increases the transparency, quality and relevance of reported information, thereby enhancing international investment and reducing the cost of capital (Ionasçu, et al. 2014), others defend that the benefits of adopting new standards may not outweigh the costs (Thompson 2016). The impact

[4] It has not opened yet but there is already a secondary market for public debt.

of adopting IFRS on the cost of equity, for example, is one of the most divisive subjects. A critical variable for investors, this particular issue is of paramount importance in developing countries, in which the cost of equity and the demand for foreign investment is higher and the capital markets are less developed. Especially in Africa, the subject is even more undeveloped, as research on the area is very scarce. Therefore, this paper fills this void by analyzing the impact of the IFRS adoption on the cost of equity, in Angolan banks. It will help standard setters and decision makers in the process of choosing whether to adopt IFRS.

This Work Project analyzes the evolution of the cost of equity in Angolan banks in order to identify the country and the company-specific factors that may influence it, with a special focus on the effects of the mandatory adoption of IFRS. The results of an ordinary least square (OLS) regression model showed that the variables with greater influence on the cost of equity were the banks' size, leverage, profitability, auditors' opinion and ownership concentration. In contrast, the adoption of IFRS, dividends, effective tax rate, auditor, managers' independence and the macroeconomic variables (GDP, inflation rate, free-interest rate and corruption index) did not influence the cost of equity.

The paper is structured as follows: Section 2 introduces the theoretical framework regarding the cost of equity and the contextual background concerning the banking sector and financial reporting in Angola. Section 3 reviews the literature on the effects of the mandatory adoption of IFRS, with special emphasis on the cost of equity. Section 4 outlines the research questions, the research model tested in this research, the sample, and data. Section 5 presents and discusses the results. Section 6 concludes with a summary of the main findings, contribution, limitations and suggestions for future research.

## 2. Theoretical Framework and Contextual Background

*Cost of equity: concept, estimation and determinants*

The cost of equity is the rate of return required by investors, for the capital they invest in a company (Brealey, Myers and Allen 2010)[5]. Several models can estimate the cost of equity, each with its advantages and limitations. Among the models to estimate the cost of equity, are the Capital Asset Pricing Model (CAPM), the Price Earnings Growth model (rPEG) and the Gordon's Dividend Growth model.

The CAPM calculates the cost of equity by adding the risk-free rate of return to the market risk premium, adjusted to the company's sensitivity to the market, symbolized by *beta*[6]. However, this model is not able to explain expected returns in detail or to capture both the firm and market-specific risk, as it does not eliminate information asymmetry (Fama and French 1992). Moreover, for the estimation of the *beta*, which is a risk measure of exposure to the market, a regression between the banks' returns and the market is required, which is not available for Angolan banks.

Most researchers refer to the Price Earnings Growth model, rPEG, as the best proxy for the cost of equity (Lee, Walker and Christensen 2008, Patro 2014, Castillo, Menéndez and Orgaz 2014). This model, developed by Easton in 2004, estimates the expected return, as perceived by the market, taking into consideration its perception of a firm's risk, as well as the rate of change in abnormal earnings growth (Easton 2004)[7]. The simplified formula for the model is presented in Appendix A. The use of this model requires earnings' estimation, limiting its use when those estimates do not exist. To the best of our knowledge, there is no previous application of the rPEG

[5] This minimum threshold can be the cost of equity, cost of debt or weighted average cost of capital (WACC), whether a company chooses to finance its operations through equity, debt or both, respectively.
[6] Beta is calculated by dividing the covariance of the returns of a certain bank with the returns of the market by the variance of the market returns.
[7] The rPEG is an adaptation of the PEG model, by relaxing some of its assumptions and acknowledging the importance of earnings' short-term forecasts in the estimation of the cost of equity.

model to Angolan companies, probably due to the lack of analysts' short-term forecasts on their earnings.

One approach to the estimation of the cost of equity that does not require any analyst estimation of future earnings is the Gordon's Dividend Growth model, shown in Appendix B. In this model, the value of a company is calculated by discounting the dividends expected for the following year in perpetuity, using the cost of capital (Damodaran 2003). By rearranging the formula, the cost of equity can be isolated but it can be only computed in firms that pay dividends.

In order to prevent skewing the sample by merely choosing banks that pay dividends, we will use an adjusted version of this model, based on earnings instead of dividends. Every year's net income can either be distributed to shareholders or retained by the company for reinvestment. The original formula considers that the return for investors is restricted to dividends. However, very often banks do not pay dividends but increase their equity by retaining earnings, which by itself raises the value of the company. In our proposed adjusted version of the model, we consider that the future payout to shareholders is accounted for in how much profit the bank is making each year:

$$Re = \frac{EPS_0}{BV} + g \qquad [1]$$

In which, *Re* is the cost of equity; $EPS_0$ are the earnings per share, in moment 0; *BV* is the book value per share of each bank; $g$ is the earnings growth rate. We calculate the expected growth rate by averaging the historical growth rates and assuming it remains constant in perpetuity. The book value is used, instead of the market value, because there is no stock market in Angola.

The cost of capital is also perceived by investors as a signal of a company's risk, and it can be derived from country-specific factors, such as political and economic conditions, or from company-specific factors, such as size, profitability, leverage, dividends, enforcement quality and corporate governance practices.

*Contextual Background: The Angolan banking sector and its financial reporting*

The fall in oil prices and fragility of the national currency caused the inflation rate to spike to excessive levels[8]. In response, BNA increased the reference interest rates and mandatory reserves in national currency, from 25 to 30 percent. Though the Angolan economy is going through a phase of stagnation, the banking sector continues growing and developing. In 2016, the electronic means of payment, the number of Automated Teller Machines (ATMs), payment terminals, transactions, employees, counters, clients' deposits, net income and assets increased, following the trend of the previous five years (KPMG 2016). Recent developments that are influencing the industry are the overall increase in the population's literacy and education, bringing new challenges to the market, and the adoption of IAS/IFRS (Deloitte 2017).

In 2014, *Banco Nacional de Angola* (BNA), the governmental entity responsible for the Angolan banking supervision, released a plan for the full convergence of the national accounting systems to the IFRS. The national accounting system for banks (*Plano Contabilístico das Instituições Financeiras,* CONTIF), was replaced in order to comply with the recommendations of international financial institutions and to improve the comparability and transparency of information on a global scale (Banco Nacional de Angola 2014).

In a first phase, as part of the gradual adoption process, from 2016 onwards Angolan banks that met at least one of the following five criteria were required to report under IFRS: (i) banks with assets above 300,000 million Kwanzas; (ii) banks listed on the stock exchange; (iii) banks with subsidiaries domiciled abroad; (iv) a subsidiary of a company domiciled abroad, with headquarters in Angola; (v) subsidiaries of an institution that met any of the previous criteria. Any

[8] Inflation rate in Angola rose from 10.3% in 2015 to 34.7% in 2016 (The World Bank 2018).

bank that met at least one was obliged to report under IFRS[9]. Other banks could voluntarily report under IFRS, from January 2016 onwards (IFRS Foundation 2017). In the second phase, from 2017 onwards, the obligation to report under IFRS extended to all banks operating in Angola. Acknowledging the predicaments banks would face when adopting the new standards, BNA also released instructions on how to overcome them. It set a plan based on three main pillars: training of employees, adaptation of control procedures and adequacy of information systems[10].

This research analyzes periods in which it compares information reported under two different accounting standards. Thus, it is important to highlight the key differences between them. As required by IFRS 1[11], Angolan banks are obliged to make transitioning adjustments to their financial statements and report the previous year's reconciliation of shareholders' equity and net income, under the two methods. The two most relevant accounts in the adjustments were *Impairments* and the *Effective Tax rate*[12] (Deloitte 2017).

As it is shown in Appendix C, the total adjustments in the Angolan banks that adopted IFRS, amounted to a decrease in Equity of 10 billion Kwanzas and a decrease in Net Income of 5 billion Kwanzas, in 2015 (Deloitte 2017). However, these amounts only represent a decrease of 2.17% and 4.27% of the values reported under CONTIF. These accounting changes bring implications to the calculation of the cost of equity. As it is estimated by dividing EPS (Net Income) for the BV (Equity), it is slightly lower under IFRS.

[9] Before 2016, no Angolan bank applied IFRS in their financial reporting and only one bank (*Banco Comercial Angolano*) reported voluntarily in 2016.
[10] *Banco de Desenvolvimento de Angola* and *Banco de Poupança e Crédito*, two state-owned banks, were required to report under IFRS in 2016 but did not comply.
[11] IFRS 1 - First-time Adoption of International Financial Reporting Standards.
[12] In 2015, the adjustments to impairments had a negative impact of 6.823 and 4.186 million Kwanzas in the Shareholder's Equity and Net Income, respectively. The most significant effect of the effective tax rate adjustments was in customer loans, with a negative impact of 6.157 and 1.928 million Kwanzas in the shareholder's equity and Net Income, respectively.

## 3. Literature Review

There is plenty of normative and empirical literature on the adoption of IFRS, but still no consensus was achieved on whether its benefits outweigh the costs. This section reviews the stream of literature regarding IFRS adoption and its impact on the cost of equity, as to understand the implications of adopting these reporting standards.

There is controversy on whether international standards are applicable to developing countries, which already struggle to sustain their own regional accounting standards (Thompson 2016). In fact, some developing countries, which adopted the IFRS, suffered many institutional, enforcement and technical challenges when implementing them (United Nations 2008). Institutional problems happened, for example, in countries in which previous regulations that were not properly adjusted, directly contradicted IFRS guidelines, often regarding the presentation of information[13]. Enforcement problems emerged mostly in countries with high corruption levels, in which the rule of law was undermined by private interests. Technical problems were generally a result of language barriers, increased costs in training and lack of expertise in the field of international standards, both in the private sector and regulatory bodies[14]. Moreover, the impact of using IFRS goes beyond accounting, affecting all areas of business, such as tax, human resources and information management (Deloitte 2008).

These complications make it even harder to collect any benefit from using global standards. However, studies also show the adoption of such standards brings advantages to the economy, even in developing countries. Regarding Foreign Direct Investment (FDI), several papers present evidence that countries adopting IFRS often benefit from an increase of global investors'

[13] In Pakistan, the surplus on revaluation of fixed assets was demonstrated after capital and reserves, which directly contradicts IAS 16 directive to attribute it to equity.
[14] In Kenya, IAS were implemented in 1999 but there is still a lack of professionals qualified on the field of IFRS today.

confidence in the financial statements which results in an increase of FDI inflows (Okpala 2012, Lungu, Caraiani and Dascălu 2017). Other reported benefits are higher quality, transparency, comparability and reliability of financial reports, increased market efficiency, better corporate governance practices, with some studies, showing a decrease in the cost of capital (Nobes and Parker 2004, Albu and Albu 2012).

Despite previous research confirming the voluntary adoption of IFRS decreases the cost of capital (Leuz and Verrecchia 2000), there is controversy regarding the effects of mandatory adoption of IFRS in the cost of capital. Some researchers conclude that the cost of capital decreases after mandatory IFRS adoption (Li 2010), whereas others find little evidence of any association (Barth, Landsman and Lang 2006) or suggest it is only noticeable in countries where institutions have incentives to be transparent and the rule of law is properly enforced (Daske, et al. 2008, Albu and Albu 2012). The prevailing theory is that the adoption of IFRS increases the disclosure of reliable and comparable information in contrast to domestic standards, more so in developing countries (Okpala 2012). Studies have revealed direct and indirect links between the increase in quality of information reported and decrease of the cost of capital (Lambert, Leuz and Verrecchia 2007).

Provided that Angola is a developing country seeking foreign investment and to strengthen the banking sector[15], the effects of adopting IFRS and the expected decrease in the cost of equity would highly benefit the Angolan economy. However, to the best of our knowledge, this topic has not been studied before. Thus, this Work Project, contributes to the literature by adding evidence on the effects of the mandatory adoption of IFRS in the cost of equity, in Angolan banks.

[15] In April 2018, the Angolan Finance Minister Archer Mangueira, requested the help of the International Monetary Fund in developing a program for economic policy coordination, in its continuous efforts to attract Foreign Direct Investment (Negócios 2018).

## 4. Research Design

This Work Project aims to understand which factors influence the cost of equity in Angolan banks, with a special focus on the impact of the mandatory adoption of IFRS. Hence, it analyses the evolution of the cost of equity, focusing on the banking sector, as it is currently the only sector mandatorily reporting under IFRS, in Angola.

Apart from studying the impact the adoption of IFRS had on the cost of equity, this paper also analyzes other variables that may influence the cost of equity. These variables can be grouped into company-specific variables (size, leverage, profitability, dividends, effective tax rate, enforcement quality and corporate governance practices) and country-specific variables (GDP, inflation rate, risk-free interest rate and level of corruption). This Work Project addresses the three following Research Questions (RQ):

RQ1: *How did the cost of equity in Angolan banks evolve over time?*

To answer RQ1, the cost of equity is estimated over the periods 2012-2016 for every bank in the sample, using an adjusted version of the Dividend's Growth Model, and a descriptive statistical analysis (univariate and bivariate), in order to characterize its evolution and identify the factors that are associated with the cost of equity (correlation analysis)[16].

RQ2: *What changed in Angolan banks when the IFRS were adopted?*

The objective of RQ2 is to understand how the cost of equity was affected by the adoption of IFRS and how the variation in other variables may have influenced its impact. This question focuses on the years 2015 and 2016 and separates the data between banks, which adopted and did not adopt IFRS. It analyzes how the variables changed in that period, in order to find differences and similarities between them.

[16] Data was prepared and analyzed in an excel file, which is also a contribution of this research, seen as aggregate information of the Angolan banking sector is scarce. It can be used for researchers in the future.

RQ3: *How do the country and company-specific variables impact the cost of equity of Angolan banks?*

The third RQ aims to understand the relation between the mandatory adoption of IFRS and the cost of equity. Based on prior research (Li 2010, Castillo, Menéndez and Orgaz 2014), we ran an OLS regression, in SPSS. The dependent variable is the cost of equity and the independent variables are the adoption of IFRS (yes/no) and the other variables that are also expected to influence this cost, as detailed below. The regression model is as follows:

$$re = \beta_0 + \beta_1 IFRS + \beta_2 Assets + \beta_3 Counters + \beta_4 Leverage + \beta_5 ROA + \beta_6 DPS + \beta_7 Tax + \beta_8 BigFour + \beta_9 Opinion + \beta_{10} Admin + \beta_{11} CEO + \beta_{12} Con + \beta_{13} GDP + \beta_{14} Inf + \beta_{15} Interest + \beta_{16} Corruption + \varepsilon \quad [2]$$

Where *re* is the cost of equity. The company-specific variables are: *IFRS*, a binary variable equal to one for the banks which adopted IFRS; *Assets*, logarithm of total assets; *Counters*, number of bank counters; *Leverage*, debt to equity ratio; *ROA*, return on assets; *DPS*, dividend per share; *Tax*, effective tax rate; *BigFour*, a binary variable equal to one if the bank is audited by a Big Four firm; *Opinion*, a binary variable equal to one if the auditor's report is qualified; *Admin*, percentage of shares owned by managers; *CEO*, a binary variable equal to one if the Chief Executive Officer (CEO) owns shares; *Con*, the ownership concentration. The country-specific variables are: *GDP*, the Angolan Gross Domestic Product; *Inf*, the inflation rate in Angola; *Interest*, the risk-free interest rates in Angola; *Corruption*, the index of corruption in Angola. ε is the random error.

Details on the variables are presented in Appendix 1, namely their proxies, the expected sign of the coefficient, formula and source from the literature review. As the cost of equity is a continuous variable, regressions with categorical or count variables were automatically excluded and the multiple linear regression was chosen (OLS), as it is an effective method to implement,

analyze and interpret[17]. This Work Project also adds to the literature by including as variables the dividends, effective tax rate, independence of administrators and CEOs, and risk-free interest rates, which as far as we know, have not been considered before.

*Sample Description*

There are currently 30 banking institutions authorized to operate in Angola[18], 13 of which adopted IFRS in 2016 and 17 which did not (Banco Nacional de Angola 2018). As information on these banks is scarce in databases, all data was hand collected from the individual annual reports of each bank, available at the banks' websites. The research covers a period of five years, from 2012 to 2016. The latter is the most recent year with available financial reporting data and for periods before 2012 only ten banks had their financial statements available. This range provides a four-year span before the mandatory adoption of IFRS and the first year of adoption of those standards. However, some banks were not included in the sample according to the following criteria. One bank (*EcoBank*) was excluded because, although authorized to operate in Angola, it had not yet started operations in 2016. Of the 29 banks currently operating in Angola, 11 banks do not have their financial statements available online, for the whole or part of the selected period. Moreover, two state-owned banks (*Banco de Desenvolvimento de Angola* and *Banco de Comércio e Indústria*) were removed, as they behaved differently from the other banks and were outliers[19]. Therefore, the final sample of this paper narrowed to 16 banks, 11 of which adopted IFRS. Appendix D shows the composition of the initial and final samples, which include 30 and 16 banks, respectively.

[17] Its limitations are: it oversimplifies the relationship between two variables (in most situations variables do not behave linearly); results may be dubious when the sample does not have a normal distribution (that is solved for large samples); it is extremely sensitive to outliers (which has been partly solved by the removal of two banks with clear outlier results).
[18] Of which three are state-owned and 27 are private banks.
[19] The two banks had negative returns for most of the five years, from 2012 to 2016.

*Data Analysis*

A preliminary descriptive statistical analysis of the independent variables, both univariate and bivariate analysis (correlation), offers a brief overview of the characterization of Angolan banks. The banks' size, leverage, profitability, dividends, effective tax rate, enforcement quality and corporate governance practices are set as independent variables for the banks' risk and specific characteristics and the macroeconomic variables are set to account for the country's features.

Regarding *size*, Angolan banks in the sample are highly concentrated. In 2016, the assets of the five largest banks represented around 78% of the total assets of the sample and eight banks had assets above 300 million Kwanzas. The average assets in the sample have been increasingly growing from 2012-2016, growing 20.9% in 2016[20]. The number of counters, another indicator of bank size, are also very concentrated and have been steadily growing throughout the same period.

The *leverage*, measured by the debt to equity ratio, is exceptionally high in Angolan banks, meaning banks fund their activities mainly through debt. However, this ratio consistently decreased from 2014 to 2016, reflecting a change in the capital structure of the Angolan banks towards more equity-oriented funding. The sample average was 9.61 in 2014 and 8.28 in 2016.

*Profitability* of Angolan banks, inferred from the ROA, is exceptionally volatile and disperse. In 2016, the most profitable bank was *Banco VTB África, S.A.*, with a return of 18.89%, and the least efficient was *Banco Angolano de Negócios e Comércio S.A.*, with a return of -2.23%, the only bank with negative returns.

The *dividends per share* announced by the banks are a measure of shareholders' expectations on their future earnings and have increased in value. In 2016, half of the banks in the sample announced they would pay dividends the following year and all of them were reporting under IFRS.

[20] The sample shows values similar to those of KPMG's "Analysis of the Angolan Banking Sector", suggesting the sample in this paper is a good approximation to the whole sector.

The *Effective tax rate* was included to account for the fiscal effect, as the cost of equity is measured after tax[21]. The average effective tax rate of Angolan banks in the sample in 2015 and 2016 was 14% and 4%, respectively. It is lower than the nominal corporate income tax rate set in the Industrial Tax Code, that was 30% in both periods (Osório and Cruz 2016).

The binary variable *BigFour* was inserted as a proxy for external control and enforcement quality. By registering which banks were audited by one of the Big Four firms[22], the reliability and quality of information reported were controlled. Most firms that aim to comply with government regulation, hire the services of one of the *Big Four* firms, for their expertise in the field of IFRS. In 2016, 12 of the 16 Angolan banks in the sample were audited by one of the Big Four firms, which remained relatively constant from 2012 to 2016. In 2016, five banks received a qualified audit report, accounted for in the variable *Opinion*, and only one originated from a *Big Four* firm.

The shareholder structure influences corporate governance practices. Therefore, three variables regarding the independence of management and ownership concentration were added to the model. Only one bank in the sample is state-owned, *Banco de Poupança e Crédito*[23]. The *CEO* variable examines whether the CEO is also a shareholder, the *Administrators* variable what percentage of shares is owned by administrators and the *Concentration* variable how concentrated the shareholder structure is. Good corporate governance guidelines require managers' independence of the shareholders, to avoid agency problems. On average, in the sample, around 20% of each bank is owned by administrators, 11 of them have at least one administrator who owns shares and three of them have a CEO who also is a shareholder. Regarding concentration, large

[21] In 2014, Angola's Law No. 19/14 was endorsed, reviewing the Corporate Income Tax Code (*Código do Imposto Industrial*) and is in force since 2015. The revised tax code extended the income tax basis and decreased the tax rate from 35% to 30%. However, financial intermediation and insurance services were exempt (EY 2014).
[22] The commonly called *Big Four* firms is a reference to the four largest professional services firms in the world, which also provide audit and accounting services. They are KPMG, Deloitte, PWC and EY.
[23] *Caixa Geral Angola S.A.* is considered a private bank for this study, even though it is 51 percent owned by *Grupo Caixa Geral*, a Portuguese state-owned group.

shareholders may have a higher interest in the long-term growth and are more able to control management, but they can also take advantage of their position for their own benefit at the expense of smaller shareholders (Wilson and Schleifer 2013). In the sample, the concentration of shareholders is highly correlated with the lack of independence, meaning that Angolan banks that have less independence of management also face a higher ownership concentration.

Regarding the country-specific variables, the *risk-free rates* in Angola are an indicator of the country's risk. They gradually declined until 2014, when the oil crisis hit the country, and they increased significantly, from nine to 16 percent in two years. The market risk premium, a compensation to investors for the added risk of the market, is influenced by factors such as the economic situation of the country or its level of corruption. Angola's *GDP* suffered a sharp decline, after reaching its highest value ever recorded, due to the drop of oil prices in 2014[24]. The *inflation rate* is also a concern, having grown in 2015 and 2016, reaching 34.74% in the latter year (The World Bank 2018). Regarding *corruption*, the country is also in a worse position, declining from an already a low score of 22, in 2012, to 18 in 2016[25], in the corruption perception index.

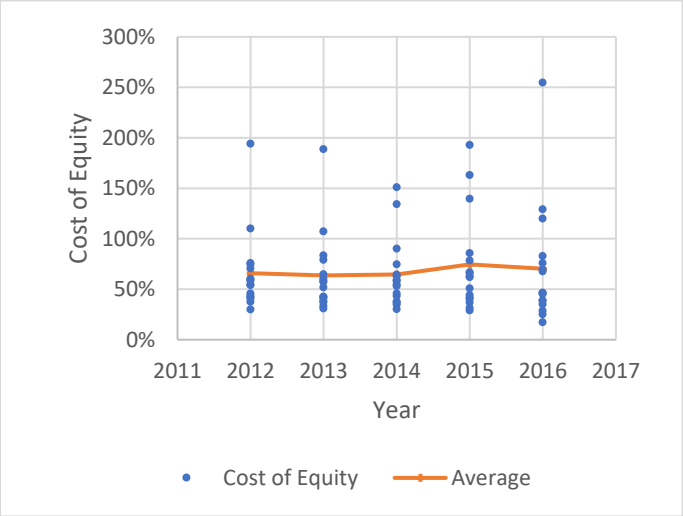
## 6. Results

*Evolution of the cost of equity (RQ1)*

Due to the country's economic and political risk, both the risk-free and market risk premium rates were exceedingly high. This resulted in the cost of equity of Angolan banks also being superior in value, in the years 2012-2016. It increased from 66% to 75%, from 2012 to 2015, and decreased to 70%, in 2016, the year of IFRS adoption. Its evolution is demonstrated in Chart I and Appendix E.

[24] Angola's GDP peaked in 2014, reaching 126.78 billion USD and declined to 95.34 billion USD in 2016.
[25] In a scale from 0 to 100, in which 0 is highly corrupt and 100 is very clean (Transparency International 2018).

*Chart I – Evolution of the cost of equity in Angolan banks*




However, this alone is not sufficient to determine a causality relationship. The research proceeds with the analysis of factors that might have influenced the cost of equity. It has stronger correlations with the (i) ROA (p=0.64); (ii) ownership concentration (p=0.53); (iii) size variables: number of counters (p=-0.37) and assets (p=-0.34). The table of correlations is shown in Appendix F.

Although it is positively correlated with the cost of equity, the ROA decreased until 2014 and increased afterward, on average. The average net income steadily grew throughout the years 2012-2016, with a more acute growth in the last year. As the banks' investments increased their profitability, the investors' required return decreased. The ownership concentration remained relatively constant throughout 2012-2016 but followed fairly the same pattern as the cost of equity. As minority shareholders lose power (higher concentration) it is natural that they require a higher return on their investment, considering the added risk. The Angolan banks' size, proxied by the log of assets and number of counters, constantly increased from 2012 to 2016 (it grew significantly more in the latter) and both are negatively correlated with the cost of equity. As growth in size often signals a good financial condition, the larger increase in the number of counters and assets coheres with the decline of the cost of equity, in 2016.

Despite the low correlation between the cost of equity and the macroeconomic variables, these are still relevant. The high level of the cost of equity in Angolan banks can be attributed to the country's economic position. High interest rates are a result of the risk of doing business in Angola.

The GDP grew strongly until 2014 (when the economic downfall began) and started declining rapidly, while the opposite happened to the inflation and risk-free rates. It would be expected that a worsening economic situation would increase the cost of equity. However, that is not observed in this study. It may be that other industries of the economy were more affected than the banking sector, or that the effects will only be seen in the long run.

A closer look into 2016, the first period of mandatory adoption of IFRS for Angolan banks, is given in the following sub-section, in order to understand the main differences between those banks that did and did not adopt IFRS and how its effect may have been influenced by the company-specific variables.

*Differences between banks that adopted IFRS and non-IFRS adopters (RQ2)*

In 2016, in this paper's sample, 11 banks adopted IFRS and five did not, with no early voluntary adoption reported. Differences were observed between these two groups of banks in respect to the cost of equity, dividends per share, enforcement quality variables and corporate governance practices, as shown in Table I. Cross-variable tables are presented in Appendix G.

*Table I. Characteristics of the Angolan banks: IFRS-adopters versus non-IFRS adopters*

| | Adopted IFRS | | Did not Adopt IFRS | |
|---|---|---|---|---|
| Average | 2015 | 2016 | 2015 | 2016 |
| **Cost of Equity** | 0.73 | 0.77 | 0.79 | 0.55 |
| **Assets** | 8.42 | 8.50 | 7.91 | 7.97 |
| **Counters** | 99.36 | 101.36 | 97.40 | 106.00 |
| **Leverage** | 9.50 | 8.43 | 7.75 | 8.00 |
| **ROA** | 0.09 | 0.10 | 0.11 | 0.09 |
| **DPS** | 1.85 | 2.77 | 0.01 | - |
| **Tax** | 0.14 | 0.07 | 0.18 | 0.01 |
| **BigFour** | 0.91 | 0.82 | 0.60 | 0.60 |
| **Opinion** | - | 0.09 | 0.80 | 0.80 |
| **Administrators** | 0.23 | 0.20 | 0.20 | 0.23 |
| **CEO** | 0.27 | 0.27 | - | - |
| **Concentration** | 0.27 | 0.26 | 0.05 | 0.05 |

The banks that adopted the IFRS had, on average, a lower cost of equity than non-adopters, in the pre-adoption period. However, after the adoption, the average cost of equity increased in the banks that adopted IFRS[26] and decreased in the ones which did not. This result is contrary to what was expected and is even more accentuated considering that banks reporting under IFRS should have lower costs of equity than if they were reporting under CONTIF (accounting wise)[27]. This is most likely a result of the method used to calculate the cost of equity. In banks which adopted IFRS, the net income increased and at a higher rate than the equity. Therefore, in banks that adopted IFRS, the cost of equity increases because shareholders require a higher return rate, even though the banks increased their net incomes. Previous literature explains that in developing countries, among other challenges such as the lack of expertise in the field of international standards and enforcement mechanisms, increased costs with the adoption may interfere with the purposed effects of adopting IFRS.

Dividends per share in banks that adopted IFRS amounted to 2.77 thousand Kwanzas on average, whereas the non-IFRS adopters did not pay any dividends. As the payout ratio was kept relatively constant in every bank and the net income increased in 2016, so did the dividends.

Regarding the enforcement quality, banks which adopted the IFRS presented higher efforts than non-IFRS adopters, as a larger portion of them hired services from reliable international auditors and had a significantly lower percentage of qualified reports. However, it is also shown that, even though outperforming in this category, the banks that adopted IFRS worsened their reporting quality in 2016, presenting a higher level of qualified reports. This may be an indicator that, even though the standards were applied, they may not have been done so appropriately.

[26] On eight of the eleven banks which adopted IFRS, their cost of equity increased, in 2016.
[27] If there were no adjustments when reporting in IFRS, banks which adopted the standards would have an even higher cost of equity.

In regards to the CEO variable, agency problems may appear only in banks which adopted IFRS, as the CEOs are not shareholders in the banks that did not adopt IFRS. Moreover, ownership of the banks is much more concentrated in banks that adopted IFRS. Again, this adds to the evidence that in the banks that adopted IFRS, the lack of independence of CEOs, the higher concentration and the increased number of qualified reports, may have interfered with the expected reduction of cost of equity related with the IFRS adoption.

*Factors that impact the cost of equity of Angolan banks (RQ3)*

An OLS regression, including all the variables previously considered important in explaining the cost of equity, the company-specific variables (IFRS, firm size, leverage, ROA, DPS, effective tax rate, enforcement quality and corporate governance practices) and country-specific variables (GDP, inflation rate, risk free interest rate and level of corruption)[28], was run and the results are presented in Appendix H. However, to ensure that only the variables that maximize the relevance of the model were included, we applied the Backwards[29] method, which did not include the country-specific variables. Table II and Appendix I show the results of this regression. The F-test, which tests whether the regression used fits the data, considers this model significant and the Adjusted coefficient of determination ($R^2$), which determines what percentage of the dependent variable variance is explained by the model, amounts to 68.9%.

*Table II – Backward Regression*

**Coefficients**

| Model 2 | Unstandardized Coefficients | | t | Sig. |
|---|---|---|---|---|
| | B | Std. Error | | |
| (Constant) | -2.670 | .768 | -3.476 | .001 |
| Assets | -.288 | .095 | -3.033 | .003 |
| Counters | -.002 | .001 | -3.655 | .000 |
| Leverage | .020 | .007 | 2.741 | .008 |
| ROA | .070 | .008 | 8.744 | .000 |
| BigFour | .078 | .075 | 1.043 | .300 |
| Opinion | .321 | .086 | 3.739 | .000 |
| Administrators | -.002 | .001 | -1.205 | .232 |
| CEO | .111 | .079 | 1.394 | .168 |
| Concentration | .012 | .002 | 5.537 | .000 |

[28] For a significance level of five percent, variables should have a p-value lower than 0.05 to be considered relevant.
[29] The Backwards method, a tool offered by SPSS, consists on removing variables until the model with the best fit is found.

This model shows the highest adjusted R squared and lowest standard error possible. Of the nine variables inserted in the updated model the statistically significant variables ($p$-value < 0.05) are company characteristic variables, namely banks' size (Log of Assets ($p$=0.003), Number of counters ($p$=0.000)), leverage (Debt to equity ratio ($p$=0.008)), profitability (ROA ($p$=0.000)), auditors' opinion ($p$=0.000) and ownership concentration ($p$=0.000).

With everything else constant, when the log of assets *($\beta$=-0.288)* or number of counters *($\beta$=-0.002)* increase one unit, the cost of equity is expected to decrease by 28.8% or 0.2%, respectively. Regarding leverage, when the debt to equity ratio *($\beta$=0.02)* increases one unit, the cost of equity is expected to increase 2%. These results are in line with the literature. Researchers predict that investors of larger and less leveraged firms require lower returns. As they perceive them to be more established and have a lower risk of default, the cost of equity decreases (Li 2010, Patro 2014).

Regarding profitability, with everything else constant, when the ROA *($\beta$=0.07)* increases one unit, the cost of equity is expected to increase 7%. Previous research found opposite results, as a higher ROA signals investors a superior profitability and as a result, market shares increase and the cost of equity decreases (Castillo, Menéndez and Orgaz 2014). However, in this paper, book values were used and, when the net income increases the cost of equity also increases, because equity increases at a lower rate than the income.

Regarding the enforcement quality, with everything else constant, when the Opinion *($\beta$=0.321)* of the audit report is qualified, the cost of equity is expected to increase 32.1%. To the best of our knowledge, this variable was never considered in previous research on this topic. However, the results verify the hypothesis that banks with qualified audit reports, have lower enforcement and reporting quality and therefore have a higher cost of equity.

In terms of corporate governance practices, with everything else constant, when the ownership concentration *($\beta$=0.012)* – the median value of the three shareholders with the highest number of

shares – increases one unit, the cost of equity is expected to increase 1.2%. As predicted, banks with lower ownership concentration have more financial reporting incentives and higher enforcement mechanisms, reducing its cost of equity (Lee, Walker and Christensen 2008).

## 6. Conclusion

The purpose of this Work Project was to understand the impact of mandatory adoption of IFRS on the cost of equity, in Angolan banks. The literature suggests IFRS bring more transparency, reliability and quality to financial reporting practices, but there is still much controversy regarding its real impact on the cost of equity. Even more in African developing countries, in which research on the area is scarce. This research contributes to the literature by adding empirical evidence of the impact of adopting IFRS in the cost of equity, in Angolan banks, and evidence of other country and company-specific variables that influenced the cost of equity.

The cost of equity in Angolan banks is exceedingly high. It continuously increased from 2012 to 2015, until it decreased in 2016, the year of IFRS adoption. A closer insight at the adoption period determined that, unexpectedly, banks that adopted IFRS increased their cost of equity. Previous literature explains that certain challenges, such as the lack of expertise in the field of international standards and enforcement mechanisms, may interfere with the purposed effects of adopting IFRS in developing countries. The results show that banks that adopted IFRS had a significant increase in qualified reports by their auditors, suggesting they were not properly applied.

The results of the OLS regression show that the adoption of IFRS does not explain significantly the cost of equity in Angolan banks, at least in the short term. Other factors such as dividends, effective tax rate, auditor, managers' independence and the macroeconomic variables are also not relevant. Nonetheless, the company-specific variables banks' size, leverage, ROA, auditors' opinion and ownership concentration are significant in explaining the cost of equity of Angolan

banks. Furthermore, the cost of equity decreases when the banks' size increases and when the leverage ratio, ROA, qualified opinion and ownership concentration of banks decrease. These results, with the exception of ROA, are in line with the literature on the topic.

This paper is subject to some limitations and its results depend on the methodology chosen. The rPEG model could not be used in the calculation of the cost of equity, due to the absence of analysts' estimation of future earnings, making it difficult to measure the cost of equity. An adjusted Dividend Growth model was used, substituting dividends by earnings and market values by book values. Additionally, the paper only considers the first year of IFRS adoption and does not capture the long-term effects on the cost of equity. Furthermore, the number of observations of banks that adopted IFRS was limited to one year, much smaller than the ones that did not adopt. At last, for banks that adopted IFRS and presented their 2015 and 2016 financial statements according to IFRS, it presents some accounting differences compared to CONTIF. In 2015, the data reported under both accounting standards shows banks that reported in IFRS had a lower cost of equity than when using CONTIF.

For future research, it could prove fruitful to do a similar research a few years after the adoption. With more observations of banks that adopted IFRS and more time to properly enforce them, the impact of these standards should be more noticeable. Moreover, the macroeconomic environment is paramount in explaining the exceedingly high cost of equity and its evolution. Finding different, more relevant proxies to explain it could yield interesting results. At last, if predictions on future earnings and the *beta* of each bank were calculated, this could allow a more accurate method to measure the cost of equity using the rPEG or CAPM.

The main barrier to Angola's economic progress is the absence of an attractive business environment. Though this country is making noticeable improvements, by adopting IFRS and planning to open the stock market, Angola should make larger efforts to have a workforce with

more expertise in all levels of business and avoid corruption. If the government is able to increase transparency, quality and relevance of information reported, it will enhance the confidence in the markets and decrease the cost of equity, helping the economy to develop.

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## Appendices required for the comprehension of the paper

*Appendix 1 – Variables in the regression model*

| Variable | Accounting for | Expected sign of the coefficient | Formula | Literature Review |
|---|---|---|---|---|
| IFRS | Adoption of IFRS | - | Dummy variable: equal to 1 if adopted the IFRS and 0 otherwise. | (Li 2010, Castillo, Menéndez and Orgaz 2014, Lee, Walker and Christensen 2008) |
| DPS | Expected payout to shareholders | - | $\frac{\text{Total dividends}}{\text{Ordinary shares} - \text{Own shares}}$ | a) |
| Assets | Bank size | - | Log of total assets | (Li 2010, Patro 2014, Castillo, Menéndez and Orgaz 2014, Ames 2013) |
| Counters | Bank size | - | Number of counters of each bank | This research |
| Leverage | Level of indebtedness | + | $\frac{Total\ Debt}{Total\ Equity}$ | (Lee, Walker and Christensen 2008, Ames 2013) |
| ROA | Efficiency of investments | - | $\frac{Operating\ Income}{Total\ Assets}$ | (Castillo, Menéndez and Orgaz 2014) |
| Tax | Effective Tax rate – Fiscal effect | ? | $\frac{EBT - Net\ Income}{EBT}$ | a) |
| Big Four | Quality of standards' enforcement efforts | - | Dummy variable: equal to 1 if audited by a Big Four firm and 0 otherwise | (Barth, Landsman and Lang 2006, Al-Akra, Eddie and Ali 2010) |
| Opinion | Quality of standards' enforcement efforts | + | Dummy variable: equal to 1 if the auditors' report is qualified and 0 otherwise | a) |
| Administrators | Corporate Governance practices | + | Percentage of bank shares owned by administrators | a) |
| CEO | Corporate Governance practices | + | Dummy variable: equal to 1 if CEO is also a shareholder and 0 otherwise | a) |
| Concentration | Corporate Governance practices | + | Median value of the three shareholders with the highest number of shares | (Lee, Walker and Christensen 2008) |
| GDP | Angola's Gross Domestic Product | - | Total GDP at constant prices, directly retrieved from source. | (Castillo, Menéndez and Orgaz 2014) |
| Inflation | Angola's Inflation | + | Directly retrieved from source. | (Li 2010, Castillo, Menéndez and Orgaz 2014) |
| Interest Rates | Country's general level of risk | + | Risk-free national rates, from bonds issued by the government | a) |
| Corruption | Level of Corruption in Angola | + | Corruption Index | (Riahi and Khoufi 2015, Houqe and Monem 2016) |
| a) To the best of our knowledge, this variable was included only in this research. | | | | |

Source: Banks' Annual Reports and World Bank database.

**Appendices not required for the comprehension of the paper**[30]

*Appendix A - Simplified formula of the rPEG model*

$$r = \sqrt{\frac{(EPS2 - EPS1)}{P0}} \quad [1]$$

Where $r$ = rate of return, cost of equity, $EPS_1$ = expected earnings per share in 1 year, $t = 1$; $EPS_2$ = expected earnings per share in 2 years, $t = 2$ and $P_0$ = current price per share, In year $t = 0$.

*Appendix B - Gordon's Dividend Growth model formula*

$$V0 = \frac{Div1}{RRE - g} \quad [2]$$

In which *V0* is the value of the company in moment 0; *Div1* is the dividend expected to be paid in the following year, moment 1; *RRE* is the Required Return on Equity; and *g* is the expected growth rate of the dividends. In theory, the Required Return on Equity should be the same as the cost of equity. By rearranging the formula, we can isolate the cost of equity:

$$Re = \frac{Div1}{V0} + g \quad [3]$$

In which *Re* is the cost of equity.

[30] Should not be considered for the 25 page limit.

*Appendix C - Adjustments to CONTIF in Angolan banks in 2015, in thousand Kwanzas*

| | |
|---|---|
| **Shareholder's Equity according to CONTIF** | **463,891,666** |
| Impairment of loans to customers | (6,822,711) |
| Application of the effective rate to the securities portfolio | 140,621 |
| Application of the effective rate to the customer loan portfolio | (6,157,295) |
| Application of the effective rate to the portfolio of customer deposits | (571,632) |
| Application of effective tax rate to subordinated liabilities | (47,178) |
| Annulment of assets not eligible for capitalization | (221,672) |
| Reclassification of the social fund | (10,325) |
| Deferred taxes arising from transition adjustments | 3,626,184 |
| **Total adjustments reported** | **(10,064,008)** |
| **Equity in accordance with IAS/IFRS** | **453,827,658** |
| Total adjustments as a % of Equity in accordance with CONTIF | -2.17% |

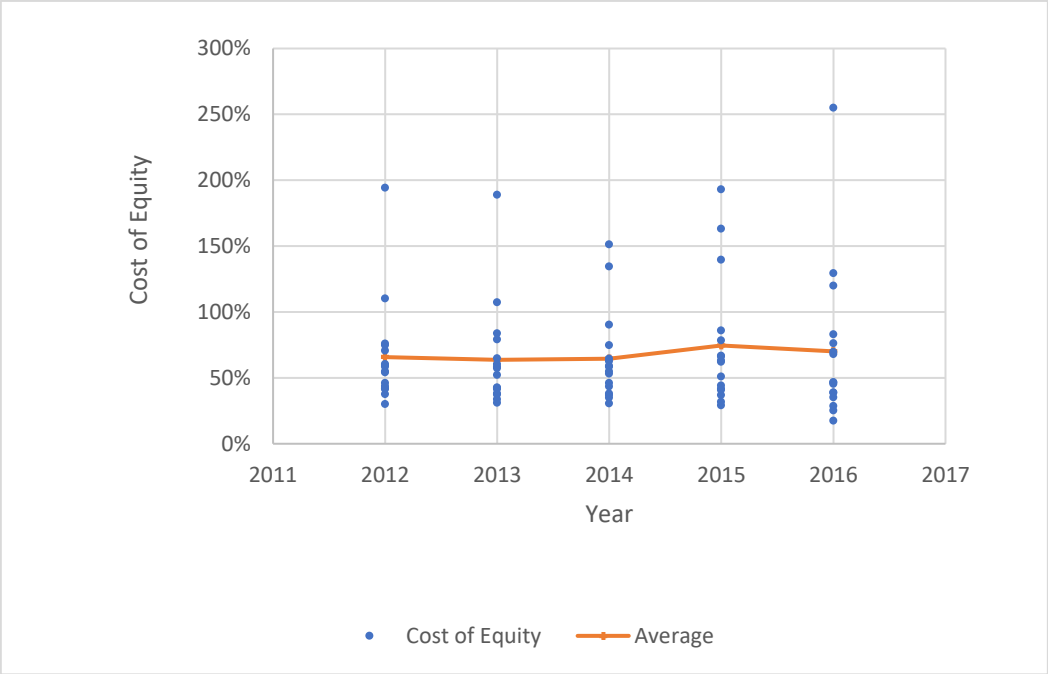
| | |
|---|---|
| **Net Income for the Year in accordance with CONTIF** | **119,775,858** |
| Impairment of loans to customers | (4,815,703) |
| Adjustment resulting from the revaluation of OT's Indexed to USD | 395,795 |
| Application of the effective rate to the securities portfolio | 107,213 |
| Application of the effective rate to the customer loan portfolio | (1,927,543) |
| Application of the effective rate to the portfolio of customer deposits | (181,141) |
| Application of the effective rate to subordinated liabilities | (25,602) |
| Annulment of assets not eligible for capitalization | 26,411 |
| Annulment of reserves of revaluation of tangible and intangible assets | (228,585) |
| Deferred taxes arising from transition adjustments | 1,533,684 |
| **Total adjustments reported** | **(5,115,471)** |
| **Net income for the year in accordance with IAS/IFRS** | **114,660,387** |
| Total adjustments as a % of Net Income according to the CONTIF | -4.27% |

*Appendix D - List of banks included and excluded from the sample*

| Name | Initials | Adopted IFRS | Sample | Reason for exclusion |
|---|---|---|---|---|
| BANCO ANGOLANO DE INVESTIMENTOS, S.A. | BAI | Yes | Yes | |
| BANCO YETU, S.A. | YETU | No | No | a) |
| BANCO ANGOLANO DE NEGÓCIOS E COMÉRCIO, S.A. | BANC | No | Yes | |
| BANCO BAI MICRO FINANÇAS, S.A. | BMF | No | No | a) |
| BANCO BIC, S.A. | BIC | Yes | Yes | |
| BANCO CAIXA GERAL ANGOLA, S.A. | BCGA | Yes | Yes | |
| BANCO COMERCIAL ANGOLANO, S.A. | BCA | Yes | Yes | |
| BANCO COMERCIAL DO HUAMBO, S.A. | BCH | No | No | a) |
| BANCO DE COMÉRCIO E INDÚSTRIA, S.A. | BCI | No | No | b) |
| BANCO DE DESENVOLVIMENTO DE ANGOLA, S.A. | BDA | No | No | b) |
| BANCO DE FOMENTO ANGOLA, S.A. | BFA | Yes | Yes | |
| BANCO DE INVESTIMENTO RURAL, S.A. | BIR | No | No | a) |
| BANCO DE NEGÓCIOS INTERNACIONAL, S.A. | BNI | Yes | Yes | |
| BANCO DE POUPANÇA E CRÉDITO, S.A. | BPC | No | Yes | |
| BANCO ECONÓMICO, S.A. | BE | Yes | No | a) |
| BANCO KEVE, S.A. | KEVE | No | Yes | |
| BANCO KWANZA INVESTIMENTO, S.A. | BKI | No | Yes | |
| BANCO PRESTÍGIO, S.A. | BPG | No | No | a) |
| BANCO MILLENNIUM ATLÂNTICO, S.A. | BPA | Yes | Yes | |
| BANCO MAIS, S.A. | BMAIS | No | No | a) |
| BANCO SOL, S.A. | BSOL | Yes | Yes | |
| BANCO VALOR, S.A. | BVB | No | Yes | |
| BANCO VTB ÁFRICA, S.A. | VTB | Yes | Yes | |
| ECOBANK DE ANGOLA, S.A. | ECO | No | No | c) |
| FINIBANCO ANGOLA, S.A. | FNB | Yes | Yes | |
| STANDARD BANK DE ANGOLA, S.A. | SBA | Yes | Yes | |
| STANDARD CHARTERED BANK DE ANGOLA, S.A. | SCBA | Yes | No | a) |
| BCS – BANCO DE CRÉDITO DO SUL, S.A. | BCS | No | No | a) |
| BANCO POSTAL, S.A. | BPT | No | No | a) |
| BANCO DA CHINA LIMITADA – SUCURSAL EM LUANDA | BOCLB | No | No | a) |
| a) Financial information partially or fully unavailable; b) Outliers; c) No activity | | | | |

*Appendix E - Evolution of the cost of equity of Angolan banks*

| Cost of Equity | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Average | 0.66 | 0.64 | 0.65 | 0.75 | 0.70 |
| Maximum | 1.94 | 1.89 | 1.51 | 1.93 | 2.55 |
| Minimum | 0.30 | 0.31 | 0.30 | 0.29 | 0.17 |
| Standard deviation | 0.39 | 0.39 | 0.34 | 0.49 | 0.59 |

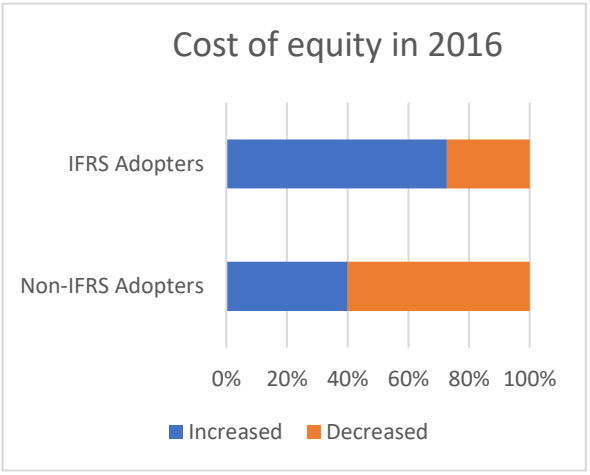


*Appendix F - Correlations between variables in the sample*

| | *Cost of Equity* | *IFRS* | *DPS* | *Assets* | *Counters* | *Leverage* | *ROA* | *Tax* | *BigFour* | *Opinion* | *Admin* | *CEO* | *Con* | *GDP* | *Inf* | *Interest* | *Corruption* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cost of Equity | 1.00 | | | | | | | | | | | | | | | | |
| IFRS | 0.08 | 1.00 | | | | | | | | | | | | | | | |
| DPS | (0.10) | 0.18 | 1.00 | | | | | | | | | | | | | | |
| Assets | (0.34) | 0.20 | 0.43 | 1.00 | | | | | | | | | | | | | |
| Counters | (0.37) | 0.05 | 0.36 | 0.78 | 1.00 | | | | | | | | | | | | |
| Leverage | 0.03 | 0.00 | (0.01) | 0.29 | 0.17 | 1.00 | | | | | | | | | | | |
| ROA | 0.64 | 0.09 | (0.21) | (0.49) | (0.31) | (0.44) | 1.00 | | | | | | | | | | |
| Tax | 0.10 | (0.14) | (0.16) | (0.28) | (0.16) | (0.16) | 0.20 | 1.00 | | | | | | | | | |
| BigFour | 0.21 | 0.12 | (0.06) | (0.07) | (0.37) | (0.13) | 0.17 | (0.16) | 1.00 | | | | | | | | |
| Opinion | 0.03 | (0.18) | (0.24) | (0.25) | 0.09 | 0.03 | (0.00) | (0.01) | (0.48) | 1.00 | | | | | | | |
| Admin | 0.19 | (0.00) | (0.01) | (0.36) | (0.20) | (0.09) | 0.32 | 0.20 | 0.06 | (0.13) | 1.00 | | | | | | |
| CEO | (0.25) | 0.05 | 0.10 | 0.12 | 0.19 | 0.15 | (0.24) | (0.10) | (0.07) | (0.09) | 0.20 | 1.00 | | | | | |
| Con | 0.53 | 0.07 | 0.34 | (0.18) | (0.18) | 0.16 | 0.24 | 0.07 | 0.11 | (0.25) | 0.35 | (0.25) | 1.00 | | | | |
| GDP | (0.05) | (0.59) | (0.10) | (0.21) | (0.10) | (0.02) | (0.07) | 0.20 | (0.13) | 0.03 | (0.04) | 0.07 | (0.02) | 1.00 | | | |
| Inf | 0.03 | 0.79 | 0.09 | 0.13 | 0.06 | (0.02) | 0.08 | (0.20) | 0.08 | 0.01 | 0.02 | (0.05) | 0.02 | (0.77) | 1.00 | | |
| Interest | 0.05 | 0.77 | 0.09 | 0.14 | 0.06 | (0.02) | 0.09 | (0.19) | 0.10 | 0.01 | 0.03 | (0.06) | 0.03 | (0.85) | 0.99 | 1.00 | |
| Corruption | (0.08) | (0.19) | (0.05) | (0.16) | (0.09) | (0.12) | (0.05) | 0.20 | (0.21) | 0.03 | (0.05) | 0.06 | (0.02) | 0.71 | (0.26) | (0.35) | 1.00 |

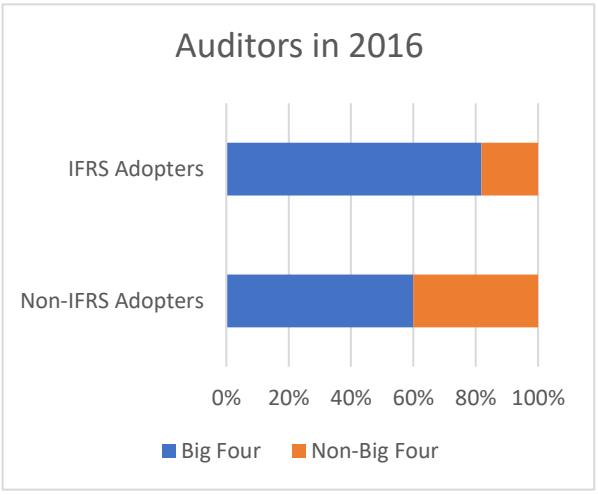
*Appendix G – Cross Variable tables in 2016*

| IFRS / Cost of equity | IFRS Adopters | Non-IFRS Adopters | Total |
|---|---|---|---|
| Increased | 8 | 2 | 10 |
| Decreased | 3 | 3 | 6 |
| Total | 11 | 5 | 16 |



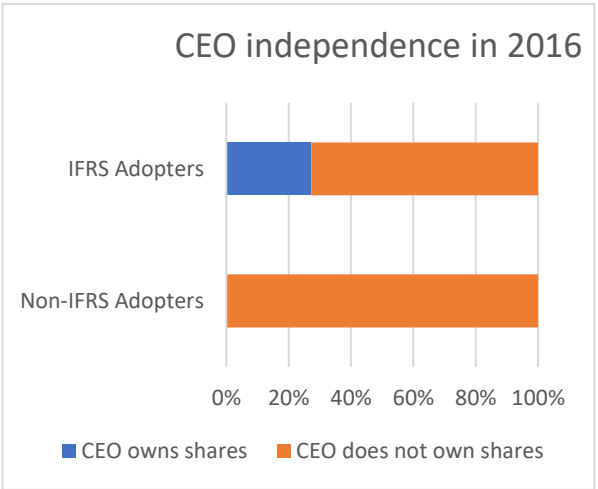

| IFRS / Costo of equity | IFRS Adopters | Non-IFRS Adopters | Total |
|---|---|---|---|
| Increased | 50,00% | 12,50% | 62,50% |
| Decreased | 18,75% | 18,75% | 37,50% |
| Total | 68,75% | 31,25% | 100,0% |

| IFRS / Auditor | IFRS Adopters | Non-IFRS Adopters | Total |
|---|---|---|---|
| *Big Four* | 9 | 3 | 12 |
| Non-*Big Four* | 2 | 2 | 5 |
| Total | 11 | 5 | 16 |




| IFRS / Auditor | IFRS Adopters | Non-IFRS Adopters | Total |
|---|---|---|---|
| *Big Four* Company | 56,25% | 18,75% | 75,0% |
| Non-*Big Four* | 12,5% | 12,5% | 25,0% |
| Total | 68,75% | 31,25% | 100,0% |

| IFRS / Independence | Adopted IFRS | Non-IFRS Adopters | Total |
|---|---|---|---|
| CEO owns shares | 3 | 0 | 3 |
| CEO does not own shares | 8 | 5 | 13 |
| Total | 11 | 5 | 16 |




| IFRS / Independence | IFRS Adopters | Non-IFRS Adopters | Total |
|---|---|---|---|
| CEO owns shares | 18,75% | 0,00% | 18,75% |
| CEO does not own shares | 50,00% | 31,25% | 81,25% |
| Total | 68,75% | 31,25% | 100,0% |

*Appendix H - Original Regression*

**Coefficients[a]**

| Model 1 | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | -2.117 | 2.542 | | -.833 | .408 |
| IFRS | .051 | .153 | .040 | .336 | .738 |
| Assets | -.336 | .113 | -.538 | -2.989 | .004 |
| Counters | -.002 | .001 | -.504 | -3.426 | .001 |
| Leverage | .017 | .009 | .178 | 1.948 | .056 |
| ROA | .069 | .009 | .724 | 7.866 | .000 |
| DPS | -.010 | .012 | -.079 | -.854 | .396 |
| Tax | .001 | .001 | .057 | .765 | .447 |
| BigFour | .099 | .087 | .106 | 1.134 | .261 |
| Opinion | .360 | .093 | .378 | 3.866 | .000 |
| Administrators | -.002 | .001 | -.103 | -1.208 | .231 |
| CEO | .138 | .088 | .132 | 1.567 | .122 |
| Concentration | .013 | .003 | .509 | 4.933 | .000 |
| GDP | -.004 | .011 | -.116 | -.333 | .740 |
| Inflation | .007 | .029 | .173 | .251 | .802 |
| Interest | -.062 | .153 | -.351 | -.403 | .688 |
| Corruption | .003 | .023 | .017 | .110 | .913 |

**ANOVA**

| Model 1 | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 11.244 | 16 | .703 | 10.947 | .000 |
| Residual | 4.044 | 63 | .064 | | |
| Total | 15.288 | 79 | | | |

**Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .858 | .735 | .668 | .2534 |

*Appendix I – Backward Regression*

**Coefficients[a]**

| Model 2 | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | -2.670 | .768 | | -3.476 | .001 |
| Assets | -.288 | .095 | -.461 | -3.033 | .003 |
| Counters | -.002 | .001 | -.493 | -3.655 | .000 |
| Leverage | .020 | .007 | .213 | 2.741 | .008 |
| ROA | .070 | .008 | .735 | 8.744 | .000 |
| BigFour | .078 | .075 | .084 | 1.043 | .300 |
| Opinion | .321 | .086 | .336 | 3.739 | .000 |
| Administrators | -.002 | .001 | -.095 | -1.205 | .232 |
| CEO | .111 | .079 | .106 | 1.394 | .168 |
| Concentration | .012 | .002 | .447 | 5.537 | .000 |

a. Dependent Variable: Cost of Equity

**ANOVA**

| Model 2 | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 11.070 | 9 | 1.230 | 20.409 | .000 |
| Residual | 4.219 | 70 | .060 | | |
| Total | 15.288 | 79 | | | |

**Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .851 | .724 | .689 | .2455 |