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Ethical versus Conventional Banking performance test in 2014-2018

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I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

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Abstract

This dissertation was written as part of the MSc in Banking and Finance at the International Hellenic University.

This study investigates the performance of ethical and conventional banks for the 5-year period of 2014 to 2018. An analysis of the similarities and differences between these two banking organizational structures is examined, in order to determine the differences in both operating and financing methods applied. In addition, I refer to the findings of previous studies spanning from 1990 to now. The economic crisis of 2008 is a subject extensively analyzed in most of them.

The quantitative analysis fulfilled within this dissertation is based on studying the relative performance measures of banks for which we have more or less evidence of adopting ethical practices. Using a sample of banks of relative size and same country of origin, I built a set of 24 ethical and 25 non-ethical banks. After completing the data selection process, multiple regression processes were carried out in order to examine whether the profitability, modeled via LROAA, LROAE and LNIM, is explained by several microeconomic and macroeconomic factors. The conclusion reached clarifies that banks' profitability is not affected by their ethical profile. The question risen is whether conventional banks could be encouraged to adopt more ethical and sustainable practices.

Keywords: ethical banking, conventional banking, performance test, profitability

Manikas Ioannis
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Preface

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1. Introduction

Lately, ethical banking has been transformed in necessity rather than an environmentally favorable option. Until lately, conventional banking operation systems were the norm, leaving crucial factors of wellbeing passed by. Environmental consciousness, combined with transparency and social services, are new factors in banking operations and management and when adopted, a bank's operations are assumed to be ethical.

According to Clerck (2009), "*ethics is more than ever a subject of personal choice, behavior and responsibility*". As time passes by, environmental and social consciousness is grounded in a more caring lifestyle adopted by a growing part of the society. Eventually, people's social needs and interests are taken into account by most organizations, among which banks hold a large share. Ethical banking processes, products or services of any kind, can be a helpful tool in promoting ethical policies recognizing more human value in the society.

The importance of ethical banking is now known, leading people to reexamine their investment decisions. The effect of the financial crisis of 2008 made them even more skeptical and reluctant. More precisely, consequent bailouts and ecological damages caused by economic growth reshaped investment habits. Since the beginning of the financial crisis, banks had been called upon to operate more responsibly as will be discussed in the next chapters ([2.5](#)).

Additionally, the operations held by conventional banks through the last decade, are being reformed in a more ethical way, at least as it is depicted in relative measures of performance. An increasing number of people and companies are interested to turn for borrowing, lending and financing or have already turned to ethical finance due to the serious uncertainties of the European financial and banking sectors (Cavalito et al., 2018). Moreover, after 2008 many customers were suspicious about the fair use of their deposits. This concern led them to focus on the ethical and social values offered by ethical Banking (Climent, 2018).

The incentive of this study is to interpret the differences between the ethical and conventional banking policies and also to examine whether there are differences in the

profitability of the banking organizations in a five year period (2014-2018). Above all, we needed to know that respecting environmental and social ethics is a factor in profitability performance.

The main hypothesis of the research is:

H₀: Do ethical policies promote the level of profitability of banking entities?"

H₁: Do not ethical policies promote the level of profitability of banking entities?"

Through the hypothesis, it can be observed whether there is a significant difference in ethical and conventional banks' profitability. Moving on, considering the existence of an outperforming category, we need to determine its individual characteristics. These are:

- For the ethical banks: does investing in respect to environmental and social values rather than only on profit-maker investments motivate profitability.
- For conventional banks: does ignoring ethics in banking motivate profitability.

The comparison between the two banking policies needs to be unaffected from externalities. To minimize them, firms operating in the same sector offering the exact same services to the public were chosen. A common perception is that investing in social and environmental projects is less profitable than non-ethical projects since ethics is a substantial cost factor. If this perception held on, ethical banking could not be viable and would collapse by the start of the financial crisis of the last decade.

Throughout the years there have been studies comparing the performance of ethical and conventional banks, either as groups or individually. Several researches which will be extensively discussed in chapter [2.6](#) have concluded that there are no significant differences in profitability between these two banking organizations (Iqbal, 2001; Ariss, 2010, Hasan and Dridi, 2010; Bourkhis and Nabi, 2013) while others (Climent, 2018; Cavalito et al., 2018) concluded that conventional banks performed better in their researches.

The main contribution of this study is to promote ethical practices. The reject of the H₀ hypothesis or the scenario that ethical banks outperform the conventional ones in terms of profitability would promote more "ethical" practices to be performed by conventional banks. This outcome would benefit social welfare, as conventional banks would operate more ethical without losing in terms of profitability.

The dissertation, following this introduction, consists of five more chapters. Chapter 2 is the theoretical framework with the interpretation of the characteristics of ethical and conventional banking along with the previous studies have been conducted. Chapter 3 presents the data and the methodology that was chosen as well as the determinants which affect banks' profitability. Chapter 4 presents the analysis of the data and the interpretation of the findings while chapter 5 contains the discussion of the empirical results as they were interpreted in chapter 4. And finally, chapter 6 provides the concluding remarks as to the research questions and suggestions for future researches.

2. Literature Review

In this chapter, the meaning of ethical and conventional banking will be discussed. Furthermore, an interpretation of their similarities and differences, their affection from the last economic crisis and the comparison that have been made to them in previous studies will be made.

2.1. *Ethical banking and subcategories*

Ethical banks are banks that provide loans and invest in entities that concern about delivering positive change and are designed to make an environmental, cultural or social impact. Furthermore, they promote social justice, ethical practices, corporate social responsibility and encourage the development of the financial sector in developing countries. These banks promote especially transparency on the companies they select for investment. Ethical banks avoid getting involved in any financial practices with dishonest purposes and adopt the idea of creating value for the community (Costa-Climent and Martínez-Climent, 2018). The need for that part of banking was created since the early beginnings of banking. According to Lynch J. (1991), the lack of mutual trust between the banker and the client led a lot of times into scandals which in some cases overshadowed the high ethical standards that the bank industry promotes. Despite the importance of ethical banking and the standards it promotes, it was in 1976 that the first ethical bank, called Grameen Bank, was established in Bangladesh to help the needy by providing microcredits (Yunus, 2004).

Sustainable banking is the practice that commercial and investment banks use for sustainable development using in majority innovative banking practices. Similar to ethical banks, the operations of sustainable banking lead to environmental and social responsibility through initiatives and are widely applied to the banks' mission policy and strategies. Examples of that strategy are loans that promote environmental development with easier access to capital and less interest on borrowing.

Subcategory of ethical Banking is considered Islamic banking. Islamic banking is inherently ethical as it is based on the Islamic Shariah Law, which places social welfare as one of its main objectives (Muhamat and Nizam bin Jaafar, 2010). In other words,

this banking system is asset-based financing, with prohibitions on financing divisions that Islam prohibits as it is the interest in investments. According to Hanif (2014), Muslims left with no choice except to establish their own financial institutions under Islamic principles which are growing expeditiously in the last two decades. While ethical banking's origins are found in the 1830s, they were only a characteristic of developed economies. It took more than 130 years for the society to apprehend that ethical banking, among the rest of the ethical policies, was a necessity. (Carrasco 2006). The first Islamic bank, the Islamic Development Bank (IDB) was established in 1973 and it is growing exponentially till present-day.

Based on Saidi (2009), there are two schools of thought. The first one thinks that Islamic banking represents the more practical, advanced and acceptable form of ethical banking principles in the contemporary world while the second one believes that Islamic banking and ethical banking are not one and the same system of banking. The second's school of thought point of view is that Islamic banking operates as an effectively branded and marketed business that has only little to do with religion, ethics and ideology. In the research of Saidi (2009), was found that Islamic banking has almost all, the characteristics that ethical banks have (and will be discussed in chapter [2.3](#)), such as the guarantee for financial and social sustainability, the investment in welfare of society and the environment, the purpose to satisfy people's needs, the opportunity for participation in economic activities and investments on worthy causes and others. The only characteristic that separates ethical from Islamic banking is the fact that in Islamic banking the opportunity of the depositors to choose where their money should be invested, is not available. All the above, conclude to the result that Islamic banking is one of the most prominent forms of ethical banking. Saidi (2009), insists that the relationship between Islamic and ethical banking arises the importance of name branding and marketing as potential clients that belong to other, rival as the author says, religions will be troubled doing business with Islamic brands despite its ethical principles. Khan and Mohamed (2017), in their recent research present a different point of view and state that despite Islamic banks are viewed as ethical banks, by studying the practices of Islamic and ethical banks, suggest that there are some disagreements as only a few Islamic banks pay true attention to the social and environmental issues which are given the highest consideration in ethical banking.

Nevertheless, Khan and Mohamed (2017) agree with Kamali (2008), that although courts look only into legal issues, the market controller in Islamic banking has the power to intervene in the market and stop immoral practices driving Islamic banking to ethical banking practices. So eventually, Khan and Mohamed (2017) conclude that Islamic and ethical banking have similar practices and standards.

Several articles are written about ethical banking, its aspects, history, the implication over the years and how it was influenced by the 2008 financial crisis. De Clerck (2009), wrote an analysis of ethical banking and the prospects it has. San-Jose et al. (2011), researched the differences that traditional bank institutes and ethical bank institutes have, as well as the individual differences between ethical banks. Harvey, B. (1995), studied about Co-operative bank, an ethical bank in the UK and the differences that it had from the other banks at that time. Biswas N. (2011), researched the benefits, the challenges and the strategic aspects when banks invest in sustainable methods (green banking). Dorasamy and Abdel-Baki (2014), created the Ethical Banking Index (EBI) and implemented data from Egypt banks concluding that Egypt banks “could adopt ethical and responsible mechanisms and policies without sacrificing shareholders’ wealth”. Callejas-Albiñana et al. (2017), researched on how customers nowadays decide more to invest in ethical banking and that ethical banking gains ground over traditional banking. Cornée (2014) research concluded, that not only the credit rating of the bank matters but also the social and environmental profile of the bank when we are trying to predict a default scenario.

2.2. Conventional banking

Conventional banking is based on man-made laws and opposite ethical banking can be considered as “non-ethical” due to the fact there are almost no limitations on financing. It is highly profit-oriented and its main source of profit is through the interest of its investments. Conventional banking is separated into subcategories as Commercial and Investment Banks in order to specify their financing strategy and target group of customers.

2.2.1. Commercial banks

Commercial banks are financial institutions that accept deposits and offer checking and saving account services, basic financial products like certificates of deposit (CDs), other long-term saving plans and provide various loans. Commercial banks are mainly used by individuals or small businesses that want to finance their operations.

Commercial banks make profit by providing loans to their customers and earning interest income from them. Types of loans a commercial bank can issue, include mortgages, auto loans, business loans, personal loans, etc. A commercial bank may specialize in just one or a few types of loans depending on their strategy or the economic trend.

Customer deposits, in all forms as CDs, checking, savings and money market accounts, provide banks with the capital needed to make loans. Customers, in this way actively lend money to the bank and are paid in interest.

2.2.2. Investment Banks

Investment banks are primarily financial middlemen, specialize in other transactions with often different customer base, as the purchase and sales of bonds, stocks, and other investments. They also provide help to corporations in making initial public offerings (IPOs) when they first go public and sell shares. In later stages of their existence, investment banks help them get debt financing, negotiate mergers and acquisitions, and facilitate corporate reorganization. Investment banks can also play a role as a broker or an advisor for institutional clients.

World's Top 8 Investment Banks in 2019 as presented by Rosenberg (2019) has mainly banks with headquarters in U.S.A and Canada as are Goldman Sachs, JP Morgan, Bank of America, Morgan Stanley and RBC Capital Markets and several others with headquarters in different Europe's countries such as Barclays, Credit Suisse, and Deutsche Bank. Their clients include corporations, pension funds, hedge funds, other financial institutions, and even governments. Many investment banks also have retail operations for small businesses and individual customers.

2.3. Similarities and Differences between ethical and conventional banking

In the next paragraphs, the similarities and differences between the way that ethical and conventional banks manage their deposits, financing decisions and investments are being discussed.

2.3.1. Deposits

Deposits are being collected from savers by all banking organizations, regardless of their operating differences. Returns are higher on long-term deposits and lower for short-term deposits as banks are able to receive higher profits from long-term investments. The key difference in how ethical and conventional banks deposit system is in the agreement of savers' risk and reward. According to Hanif (2014), under conventional institutions total risk belongs to the bank and so total reward. On the contrary, under Islamic institutions risk and reward are both shared with depositors. The reward that the depositors will get is linked with the outcomes the Islamic institutions made through the investment. Another difference in ethical banking opposed to conventional is that in ethical banking the depositors can choose or are ensured where their money is invested and the bank supplies them with information about all projects and investments that depositors' money is used for (Saidi, 2009).

2.3.2. Financing and Investments

While in deposits, it is observed a lot of similarities between ethical and conventional banking in financing and investments the rules are different. The biggest differences exist between Islamic and conventional banking. While Islamic banks want to offer the same products as the conventional banks e.g. loans (long-term and short-term), credit cards, overdrafts and various investments, they are limited by the Muslim law of not being able to charge interest. These Institutions can only provide interest-free loans and are not able to provide credit cards and overdrafts to the customers' accounts as there should be an interest rate on the amount they could borrow in order to be profitable for the institution. In the case of loans, short-term loans are forbidden, while several medium to long term loans like mortgages as available but are fulfilled through Murabaha, Bai Muajjal and Istisna'a (Islamic models of Financing). As for the investments, while conventional banks can invest or create liquidity by issuing bonds,

Islamic banks are not able to invest in government securities and bonds as these transactions are interest-based. Islamic institutions can only invest in those securities which are complied with Sharia law, through filtering of several criteria (Hanif, 2014).

Comparing the rest of ethical banks with the conventional ones the differences are slighter. While ethical banks do not have the restriction of following Shariah laws, they separate themselves in the investing part by some parameters (Saidi, 2009). These parameters include ethical banks seeking financial and social sustainability instead of just financial gains, invest in the welfare of the society and the environment opposite to the conventional banks that have no restrictions (e.g. if their borrower is an arms industry or pollutes the environment). Other characteristics which separate ethical banks' investments from the conventional ones are that ethical banks' financing decisions are made in the interest of the stakeholders and their system is designed for financing those who need credit, to use it on worthy causes opposing to conventional banks that mostly care if there is a guarantor or collateral in order to proceed with the financing of the borrower.

2.4. *The 2008 financial crisis affection on the banking system*

The recent financial crisis that occurred in the last decade created public distrust in the financial system and changed the structure of banking. People, due to lack of confidence in the conventional system found an alternative in ethical banking. An increasing number of investors, asset managers, and financial intermediaries established sustainability practices into their business (Climent, 2018). The question that arises was how banks performed during the crisis and which were more affected. Beltratti and Stulz (2012), concluded that large banks with more capital, deposits, less exposure to US real estate and less funding fragility performed better than the smaller ones. Kalemli-Ozcan et al. (2013), observed that the relationship of banking integration and output synchronization became positive during the crisis period of 2007–2009 due to the fact that the banking crisis led to the financial crisis, especially to banks and companies related to US economy. Carboni (2011), on his research on the impact of the financial crisis on ethical banking, resulted that ethical banks in Europe proved to be remarkably resilient and shown growth. The main reasons that contributed to that

growth were the low profitability that was adopted in favor of growth and the trust that clients presented to these banks in the period of crisis.

Islamic banking practices led to a large decline in profitability during the crisis. However, according to Hasan and Dridi (2010), it was at the same level as conventional banking when at the same time Islamic banks' asset growth was at least twice higher due to better diversification contributing to financial and economic stability. Bourkhis and Nabi (2013), concluded that Islamic and conventional banks had no significant differences in the effect of the economic crisis, even the fact that Islamic banks outperformed conventional ones in some areas, as they report that Islamic banks were mimicking the conventional ones in strategic decisions.,

2.5. *Conventional banks infiltrate into ethical banking*

Conventional banks have made an effort to become more sustainable. Sustainable banks, meaning conventional banks, started to promote sustainable development and innovative banking practices as presented in chapter [2.1](#). These banks try to "infiltrate" into ethical banking territory by promoting an ethical and environmentally friendly profile in order to be more attractive, taking a share of ethical banking clients. A huge effort has been devoted in the last years in order for conventional banks to achieve sustainable development (Bouma et al., 2017).

Several international (conventional) banks, by realizing the potentials of Islamic banking in terms of commerciality and profit, adopted and embraced the Islamic banking concept and the number of institutions that operate along the Islamic jurisprudence has been multiplied (Ariss, 2010). Some of the most popular international banks that adopted and recognized the growth potential by developing Sharia-compliant products, Islamic subsidiaries or local offices called "Islamic windows", are HSBC, J.P. Morgan, the Lloyds, Standard Chartered, Citigroup and others. According to Muhamat and Nizam bin Jaafar (2010), the United Kingdom was also attracted by Islamic banking culture and started preparations on setting up Islamic financial components in their financial system, making an Islamic financial center in the heart of Europe.

2.6. Previous studies

The purpose of the studies presented in this chapter is to cover the results from three different time periods (1990 to 1998, 2000 to 2006 and 2011 to 2016) and along with the results from the time period of economic crisis as mentioned in the previous chapters (2.4) to observe how ethical and conventional banks performed in the past.

Iqbal (2001), made a study comparing Islamic and conventional banking in the 20th century and more specifically from 1990 to 1998. The author took a sample of 12 Islamic and 12 conventional banks with the same number of the exact countries and by using trend and ratio analysis, emerged several new results at that time. The first result was, according to the author, that Islamic banking faced a gradual slowdown in the growth comparing to the 1980s but justified as expected, as the industry was leading to a maturity phase. The second result was that the performance of Islamic banks through several key ratios was fairly satisfactory due to the good capitalization, the profitability and the stability of these banks. However, in the research, it appeared not to be very cost-effective in their operations. The third result was that Islamic banks when compared to conventional banks, outperformed the second in almost all areas and in almost all years (Iqbal, 2001). The fourth and last result from this study was that Islamic banks are not suffering from excess liquidity in opposition to standard beliefs. On the other hand, conventional banks had several advantages opposing Islamic banks. For instance, in the 1990s conventional banks started offering Islamic products in order to attract more customers. Moreover, the conventional banks' depositors are guaranteed their principal amounts, lowering their risk comparing to Islamic banks'. In that way, the depositors of Islamic banks would demand a higher return rate in order to bear the risk.

Ariss (2010), researched competitive conditions in Islamic and conventional banking on a global level in the years 2000 to 2006 and assessed the implications of prevailing structures on bank profitability. According to the author, the market power bears serious implications for the financial stability of the institutions and a competitive condition is more likely to affect bank performance and efficiency. In contrast with the study of Iqbal (2001), Ariss (2010) assumed that there is a global market for Islamic financial services which is not geographically limited and different from conventional banking. The final sample was 58 Islamic and 192 conventional

banks from the same 13 countries. The outcome of the research was that Islamic banks allocate a greater share of their assets to financing loans than conventional banks, implying greater exposure to credit risk. On the other hand, Islamic banks seemed to have lower financial risk due to higher capitalization levels. However, in the research, there were no significant differences in the profitability levels across Islamic and conventional banks mainly affected by high competition which drives to low profitability. The author concluded that conventional banks invest into Islamic countries even if they are not profitable in order to follow their customer strategy and attract investors from all over the world and these investments provide better financial diversification on conventional banks' derivatives and are more resilient in externalities as was the recent financial crisis. Abdul-Majid et al. (2010), in their study, confirmed that most of the conventional banks that operate in Muslim countries where Islamic banks are the majority, do perform less efficiently than Islamic ones with of course exceptions as in Malaysia, Tunisia and Jordan.

Cavalito et al. (2018), in their report comparing a total of 21 European ethical and 15 European conventional banks in the 5-year period 2011-2016 concluded to the result that ethical banks outperformed the conventional ones in growth. More specifically, the ethical banks had a better growth rate than conventional ones at total assets, loans, deposits, net equity and net income with conventional banks showing a negative growth rate in total assets and net income the same time period. The authors resulted that for that time period, European ethical banks were more oriented to offering social services to the economy, had a stronger capital position, were profitable, less volatile and less risky.

Alsina (2002) and Climent (2018) researches, concluded that ethical banks should make bigger profits than conventional banks do. However, the profits that ethical banks made in these researches were lower than those that conventional banks did due to three reasons. The first reason was that many investments, which were highly profitable were being rejected by the fact that there was no speculation and had social and environmental costs. The second reason was that ethical banks tended to make long-term investments as social projects need time to take off which led the return of investment not to be immediate. And the third reason was that ethical banks faced greater risks and had additional costs as these banks did not ask loan guarantees and

required additional costs with the technical follow-ups, the procurement and the due diligence costs.

3. Data analysis and methodology

In Europe, such as the rest of the world, most banks are expected to operate in an ethical manner. Reaching the subject in a far more scientific way, there are criteria to be met, to characterize the operation of a bank as ethical.

«The S&P Environmentally & Socially Responsible Indices» are measures of stock performance in terms of environmental and social sustainability. The indices exclude organizations of certain sectors that come against the notion of ethics, such as fossil fuel heavy industries, organizations associated with the production and sale of tobacco, cluster bombs, landmines, nuclear and other military armaments. The sample of ethical banks is chosen from the included ones in the index of Environmental & Socially (E&S). A prerequisite for a company (bank in this case) to be included in the index is first, its presence in the S&P 500 Index, second, to be classified as a bank by the Global Industry Classification System (GICS®) and third, not to be based in the excluding categories as mentioned above. Next, SAM Corporate Sustainability Assessment (CSA) is responsible for the assessment for the companies that want to be included in the Dow Jones Sustainability Index (DJSI) and the newly created S&P Dow Jones Indices (S&P DJI) ESG index family. DJSI were the first global indices tracking the financial performance of leading sustainability-driven companies worldwide, created in 1999. Companies have to meet several criteria yearly. Based on them, they receive scores formed mainly by the percentile rankings they achieve and the weight attributed to every question. SAM applies then an integration method to combine economic, environmental and social criteria focusing on long-term shareholders' value before reaching the score.

The criteria that SAM Corporate Sustainability Assessment Annual Scoring & Methodology Review (2019) applied to evaluate bank industry in economic, environmental and social dimension, includes corporate governance, risk & crisis management, codes of business conduct (codes of ethics), tax strategy, sustainable finance, information security/cybersecurity & system availability, anti-crime policy & measures, privacy protection, environmental reporting, operational eco-efficiency,

climate strategy, social reporting, human capital development, human rights, financial inclusion and others.

3.1. Ethical sample

The sample includes banks listed in the Dow Jones Sustainability World Index (2019). In that index, only the top companies of each sector and each region are being concluded. The number of banks included in the index is 25. Two of them operate in North America, one in the US (the Bank of America Corp) and one in Canada (the Toronto Dominion Bank). Five of them operate in South America and most particularly, four in Brazil (the Banco Bradesco SA, the Banco do Brasil SA, the Itau Unibanco Holding SA and the Itausa - Investimentos Itau SA) and one in Colombia (the Bancolombia SA). Europe has eight banks operating in four countries, two in France (the BNP Paribas SA and the Societe Generale SA), one in Italy (the Intesa Sanpaolo SpA), one in the Netherlands (the ABN AMRO Bank NV) and four in Spain (the Banco Santander SA, the Banco Bilbao Vizcaya Argentaria SA, the CaixaBank SA and the Bankinter SA). In Asia, there are seven banks in total, out of which three in Taiwan (the E.Sun Financial Holding Co Ltd, the First Financial Holding Co Ltd and the Taishin Financial Holding Co Ltd), two in Thailand (the Kasikornbank PCL and the Siam Commercial Bank PCL) and last two in South Korea (the KB Financial Group Inc and the Shinhan Financial Group Co Ltd). And finally, in Australia, there are three banks (the Australia & New Zealand Banking Group Ltd, the National Australia Bank Ltd and the Westpac Banking Corp).

3.2. Non-ethical sample

The above banks will be compared to 25 non-ethical banks, aka banks that did not qualify to be part of Dow Jones Sustainability World Index or individual smaller region categories of this index such as Asia Pacific, Chile, Emerging markets, Europe, MILA and North America indices. These banks are chosen from the same countries as the ethical sample respectively. It is worth noting that the unethical ones share similar characteristics with the ethical banks, at least in terms of total assets (size) for 2018. Two of them are again from form North America, one from the US (the JPMorgan

Chase & Co) and one from Canada (the National Bank of Canada). Five of them are from South America and most particularly, four from Brazil (the Caixa Economica Federal, the Banco Votorantim, the Banco Safra and the BANRISUL) and one from Colombia (the Banco de Bogota). Europe has eight banks from four countries in total, two from France (the Credit Agricole and the BPCE Group), one from Italy (the Unicredit SpA), one from the Netherlands (the Cooperative Rabobank UA) and four from Spain (the Banco de Sabadell, the Ibercaja Banco, the KutxaBank and the Unicaja Banco). Asia has seven banks in total, in which three were in Taiwan (the Hua Nan Commercial Bank, the Land Bank of Taiwan and the Shanghai Commercial and Savings Bank), two in Thailand (the Bangkok Bank and the Krung Thai Bank) and last two in South Korea (the NongHyup Financial Group and the Woori Financial Group). And finally, Australia with three banks (the Bank of Queensland, the Macquarie Bank and the Bendigo Bank).

3.3. Data

The final sample contains 49 banks, 24 ethical and 25 non-ethical since the Itaúsa - Investimentos Itau SA and the Itau Unibanco Holding SA are the same organization (parent-subsidiary) so they were considered as one. The data that were needed as will be presented in the next chapter (3.4), was extracted from the BankFocus database via the International Hellenic University (IHU) library. The macroeconomic variables as the GDP growth variable, GDP per capita and inflation indices were extracted from the International Monetary Fund (IMF) database. The data are with yearly frequency for years 2014 to 2018 (5 years). The sample selection ended in a total of 245 observations dated yearly for five years (2014 to 2018). The analysis was performed with EViews 10 software.

3.4. Determinants of bank profitability

In this chapter, we define and explore the dependent and independent variables used in the analysis. These variables are proven to be bank performance and profitability determinants. As Found in the literature, bank profitability determinants are divided into two categories: the internal or bank-specific variables and the external

or macroeconomic variables (Molyneux and Thornton, 1992; Staikouras and Wood, 2004; Pasiouras and Kosmidou, 2007). The first category (microeconomic) is related to bank characteristics and decision-making and the second one (macroeconomic) is related to the economic circumstances.

3.4.1. Dependent variables

This empirical research aims to explain the dependent variable which is the banks' profitability through different independent factors using an econometric model. The question rising is which variables explain better the banks' profitability. There had been different studies that examined bank profitability with different variables as RoE (return on equity), RoA (return on assets), NIM (net interest margin), ROAA (return on average assets) and other market-based variables. RoE, as seen in many papers, has failed during the last economic crisis to determine which banks performed better, as it does not take into account the financial leverage and has exposed banks to higher levels of unexpected risk. RoA, on the other hand, calculates the profits generated from bank assets, without measuring the off-balance-sheet activities, making it an unreliable measure. In this study, the banks' liquidity is examined through ROAA, ROAE and NIM in order to get an overall and robust indication regarding the relationship between liquidity and profitability. (Staikouras and Wood, 2004; Kosmidou et al. 2005; Pasiouras and Kosmidou 2007; Shen et al., 2009; Dietrich and Wanzenried, 2011).

ROAA

Return on average assets (ROAA) is defined as one of the most important variables in measuring bank performance and is expressed as a percentage of the bank's net income divided by the average total assets of it. In this analysis, LROAA is going to be used as the natural logarithm of the return on average assets. More specifically, it is calculated as the percentage of net profits a bank has after being tax divided by the average total assets (Kosmidou et al. 2005). The difference between the return on average assets and the return on assets is that the first one is being used in order to control the differences in the value of assets that may occur within the fiscal year.

ROAE

Return on average equity (ROAE) is a ratio that measures the performance of a company based on its average shareholders' equity outstanding. Its role is similar to that of ROAA since it measures the performance of a bank. It is expressed as a percentage calculated by dividing net income over the average shareholders' equity. In this analysis, LROAE is going to be used as the natural logarithm of the return on average equity. It shows the percentage of profit that banks generate over the average money the shareholders invested (equity) that certain fiscal year. There are several studies that used ROAE as a dependent variable (Shen et al., 2009; Dietrich and Wanzenried 2011). Dietrich and Wanzenried (2011), concluded that the ownership status of a bank does not affect the bank's profitability when measured by the ROAE, so ownership has not been considered.

Net interest margin

Net interest margin (NIM) is a ratio that measures how successful a bank manages the income of its investments compared to its expenses. It is expressed as a percentage and it is calculated dividing net interest income over the total earning assets. In this analysis, LNIM is going to be used as the natural logarithm of the net interest margin. Kosmidou et al. (2005) and Marozva (2015) researches, resulted that the ratio of liquid assets to customer and short-term funding was negatively related to net interest margins. Demircuc-Kunt and Huizinga (1999) research concluded the opposite only to be revised in Demircuc-Kunt et al., (2003), indicating a negative relation. Dietrich and Wanzenried (2011) study came to the conclusion that net interest margin focuses more on the profit earned on interest activities than ROAA and that during crisis larger banks had lower net interest margins than the medium or small sized ones. Several other researchers connected profitability with NIM (Shen et al. 2009; Ferrouhi 2014; Marozva 2015).

3.4.2. Independent variables

In this study, the independent variables which influence the dependent variables are the bank measurements that the literature describes as the specific that influences the banks' profitability.

Microeconomic variables

Microeconomic or bank-specific variables are these variables that describe and measures the internal behavior of the banks as an individual economic unit.

Total assets

Bank's total assets define the size of a bank has. In this analysis, LSIZE is going to be used as the natural logarithm of the total assets. Bank size is one of the most frequently used independent variables as it shows the effect of the bank's size on its performance. Previous researches showed that bank size has a positive mark on its performance meaning that the higher the total assets of the more profitable it will be (Dietrich and Wanzenried, 2011; Menicucci and Paolucci, 2016; Chowdhury et al., 2017). Dietrich and Wanzenried (2011), researched that banks with higher capital-to-asset ratios are considered safer and less risky than banks with lower capital ratios. Higher capitalized banks are safer during economically difficult times. The funding costs object to the creditworthiness of a bank. Controversially, Pasiouras and Kosmidou (2007) found that the size of a bank has a negative impact on profitability as in their sample, the smaller banks performed better than the bigger ones.

Net loans to total assets

Net loans to total assets ratio is used as a proxy for credit risk. It is a representation of a bank's liquidity. It is defined as a percentage ratio of loans to total assets. In this analysis, LNLTTA is used as the natural logarithm of the net loans to total assets. The higher the ratio is, the more illiquid the bank is. In that sense, banks should set a maximum LNLTTA value in order to avoid liquidity problems. On the other hand, the higher the net loans to total assets ratio is, the riskier these banks are, so they could be more profitable. Molyneux and Thornton (1992), reported that there is a negative relationship between liquidity risk and bank profitability. Staikouras and Wood (2004), observed loans to asset ratio to be inversely related to banks' returns on asset. They state, that since loans are riskier and have a greater expected return someone would expect net loans to total assets ratio to have a positive relationship with banks' performance. However, these banks have to pay higher costs for their funding, reducing profitability as they rapidly increase their loan book requirements. Maudos and De Guevara (2004), expect that firms specializing in granting loans to be

more exposed to credit risk, so net loans to total assets ratio is expected to have a positive affection on the NIM, the same affection Demirguc-Kunt and Huizinga (1999) found. As a result, the expected relationship between the net loans to total assets ratio and profitability is uncertain.

Loan loss reserves to gross loans

The loan loss reserves to gross loan ratio indicate the reserves banks have made for losses as a percentage of gross loans. More specific is the percentage of money out of the total loans of a bank that has set aside in case of the borrowers' default (Kosmidou et al.,2005; Kumbirai and Webb, 2010). In this analysis, LLLRTGL is going to be used as the natural logarithm of the loan loss reserves to gross loan. If this ratio is high, it is a negative signal for a bank as it indicates that the quality of loans is low. Kosmidou et al. (2005), argue that there is no clear indication if this ratio is positive or negative to banks' performance. It can be assumed, that there is a positive relationship between risk and profits, as the risk-return hypothesis implies. On the contrary, bad asset quality may have a negative impact and more provision costs are required in order to handle these poor-quality loans. In the same research, they concluded that the loan loss reserves to gross loan ratio has a positive and significant impact on NIM but no significant relationship with ROAA.

Loan loss provision to net interest revenue

The loan loss provision to net interest revenue indicates the relationship between loss and provisions in the profit and the interest income gained during the same period. In this analysis, LLLPTNIR is going to be used as the natural logarithm of the loan loss provision to net interest revenue and expressed as a percentage. Banks make provision on non-performing loans depending on their profile. A high risk-tolerant bank invests in high-risk clients or assets with high-interest rates and a high rate of risk. That bank has to provide more loan loss provisions in order not to be afraid about credit risk in case of the client's default. In other words, it is referring to the quality of the assets each bank has to its portfolio. A negative relationship between the dependent variable and the loan loss provision to net interest revenue ratio It is expected as when banks hold a small number of risky loans, they do not have the need of a high level of loan loss provision and due to small number of risky loans, perform

better (Athanasoglou et al., 2008; Dietrich et al., 2011). At the beginning of each fiscal year, the bank's management decides (forecast) the level of loan loss provision and adjusts in order to be better prepared for a credit risk event (Athanasoglou et al., 2008).

Equity to total assets

A measure of capital adequacy as used in many studies is the ratio of equity over total assets (Staikouras and Wood, 2004; Pasiouras and Kosmidou, 2007). In this analysis, LETTA is going to be used as the natural logarithm of the equity over total assets and expressed as a percentage. A positive relation between equity to total assets ratio and bank profitability is expected as the higher this ratio is, is being interpreted that the assets are being funded by equity and not liabilities, making banks more reliable in case of unexpected events as mentioned above and will need less external funding in case of one. It determines if a bank is well capitalized for unexpected events referring to the capital that a bank keeps aside in order to absorb any shocks that it may experience in the future. Cruz-García et al. (2017) even define it as a degree risk aversion and support that risk-averse banks will set higher margins and have better profitability. On the other hand, Dietrich et al. (2011) support that with lower equity to total assets ratio a bank has higher returns but recognizes that these companies are worse-capitalized and will face greater difficulties in case of economic recessions. Safer banks may borrow more easily uninsured funds and pursue higher revenue (Staikouras and Wood, 2004).

Cost to income ratio

The cost-to-income ratio measures how efficient the bank manages its expenses (income ratio). It is the calculation of the operating costs divided by the operating income and expressed as a percentage. In this analysis, LCOTI is going to be used as the natural logarithm of the cost to income ratio. It measures the costs a bank has, including e.g. staff salaries and benefits and other expenses such as office supplies, as a percentage of income (Kosmidou et al., 2005; Pasiouras and Kosmidou, 2007). In this analysis, LCOTI is going to be used as the natural logarithm of the cost-to-income ratio. The use of it is as an indicator of the management's ability to control and maintain low the costs. In that sense, it has a negative relation with profits and margins. The higher

this ratio is, the less efficient the expenses management is and so are the bank's profits. Kosmidou et al. (2005), observed that one of the main contributors to poor profitability is the high cost-to-income ratio. Athanasoglou et al., (2008), states that banks have not managed to pass a sufficient part of the increased cost to customers, possibly due to competition forcing them to pass some of the profits too in their effort to maintain the expenses in low levels.

Macroeconomic variables

Except for the internal determinants of banks' performance mentioned in the previous section, there are some macroeconomic determinants that contribute and define further banks' profitability. The banking sector can be influenced at the macroeconomic level from the global economy indices, as well as the political environment, the structure of the financial institutions and others. In the next section the determinants of GDP growth, GDP per capita and inflation will be discussed.

GDP growth

Gross domestic product growth is a macroeconomic variable that defines the percentage change of Gross Domestic Product (GDP) from one year to another and is a variable broadly used as a measure for a country's economic growth. In this analysis, LGDPG is going to be used as the natural logarithm of the GDP growth and expressed as a percentage. A positive relationship between bank profitability and GDP growth is expected based on the literature (Demirguc-Kunt and Huizinga, 1999; Staikouras and Wood, 2004; Kosmidou et al. 2005; Kosmidou, 2008). The high GDP growth rate leads to the economy rising, which leads to higher demand for lending by individuals and companies. That forces banks to provide more loans and charge a higher margin with higher interest rates, leading to bigger banks' profitability (Athanasoglou et al., 2006). On the other hand, when the GDP growth rate decreases, banks' profitability decreases and face the risk of non-performing loans.

GDP per capita

GDP per capita is the rate that assesses the gross domestic product divided by midyear population. In this analysis, LGDPPC is going to be used as the natural logarithm of the GDP per capita and expressed as a percentage. An increase in GDP per capita can indicate economic growth and an increase in economic welfare, so it can be

measured as a variable of banks' performance. In other words, a positive association between GDP per capita and banks' profitability should be expected. According to Mendes et al. (2003) GDP per capita is positively connected with the profitability of the banks because when the economy rises, banks perform overall better. On the other hand, Flamini et al. (2009) observed GDP per capita to be insignificant with banks' profitability and performance.

Inflation

The inflation rate is another important macroeconomic variable that affects the real value of revenues, costs and interest rates. In this analysis, LINFL is going to be used as the natural logarithm of inflation and expressed as a percentage. The impact of inflation on the profitability of banks can be favorable or not. Kosmidou et al. (2005), state that according to Perry (1992), it fluctuates on whether the inflation is anticipated or not. When inflation is anticipated, banks are able to forecast it and adjust interest rates in time in order to get higher returns than their expenses. When inflation is unanticipated, the inverse relationship stands, contributing to lower profits. Previous studies of Molyneux and Thornton (1992), Athanasoglou et al. (2006) and Shen et al. (2009) support that there is a positive relationship between inflation and profitability, while Kosmidou (2008) and Bordeleau et al. (2010) found a negative relationship between inflation and profitability.

Dummy Variable

One dummy variable was constructed in order to help with handling the data of the regression analysis.

Ethical dummy

In order to separate the ethical from the non-ethical banks of the sample, I defined a dummy variable as «Ethical» (Ethical=0, Non-ethical=1).

Other variables

In order to separate the years that this research is studying, I defined variables that control for years, in order to be included in the regression analysis as a control for time as will be discussed in chapter [4.3](#).

Table 1: Variables Description

Decr.	Variable	Description	Expected sign
Dependent variables			
Profitability	LROAA	Return on Avg Assets %	NA
	LROAE	Return on Avg Equity %	NA
	LNIM	Net interest margin%	NA
Independent variables			
Bank specific	LSIZE	Tottal assets	+
	LNLTTA	Net loans to total assets %	+/-
	LLLRTGL	Loan loss reserves to gross loans %	+/-
	LLLPTNIR	Loan loss provision to net interest revenue %	-
	LETTA	Equity to total assets%	+
	LCOTI	Cost to income ratio%	-
Macroeconomic	LGDPG	GDP growth %	+
	LGPPC	GDP per capita %	+
	LINFL	Inflation %	+/-
Dummy var.	ETHICAL	Ethic variable	NA
Other var.	YEAR	Year variable	NA

4. Interpretation of findings

In this chapter, the analysis of the data will be interpreted with the methods of descriptive statistics, correlation and regression analysis.

4.1. Descriptive statistics

In the following two tables (table 2 and table 3) the descriptive statistics are summarized. They present the basic characteristics of the data in this study. They contain the means, medians, maximums, minimums, standard deviations, skewness, kurtosis etc. for all the variables used in the model for ethical and non-ethical banks.

Table 2: Ethical banks descriptive matrix

ETHICAL												
	LSIZE	LROAA	LROAE	LNLTTA	LNIM	LLLRTGL	LINFL	LLLPTNIRL	LGDPCL	LGDPG	LETTA	LCOTI
Mean	19.699	-0.3450	2.2667	3.9938	0.7726	0.7345	0.3595	2.7500	10.106	0.6593	2.0008	4.0055
Median	19.887	-0.3376	2.3534	4.0628	0.6531	0.8462	0.4700	2.8335	10.284	0.9555	1.9794	4.0000
Maximum	21.649	0.7655	3.1191	4.3905	2.1403	2.3391	2.1972	3.9871	11.049	1.5476	2.5929	4.4924
Minimum	17.592	-3.6497	-0.5997	3.3140	-0.2169	-0.9289	-2.3026	0.5983	8.6655	-2.3026	1.3368	3.5699
Std. Dev.	1.1851	0.6649	0.5557	0.2833	0.5423	0.8806	0.9567	0.7298	0.7234	0.6193	0.2899	0.1694
Skewness	-0.2714	-1.6748	-2.3216	-0.8680	0.5451	-0.0780	-0.7959	-0.5634	-0.7206	-1.3551	0.0226	0.1099
Kurtosis	1.9090	9.1709	11.933	2.7190	2.4105	1.7814	4.3835	2.8862	2.2741	5.9105	2.7606	2.9419
Jarque-Bera	7.4242	246.50	506.77	15.462	7.6796	7.5462	22.241	6.4138	13.019	79.082	0.2968	0.2583
Probability	0.0244	0.0000	0.0000	0.0004	0.0214	0.0229	0.0000	0.0404	0.0014	0.0000	0.8620	0.8788
Sum	2363.8	-41.403	272.01	479.26	92.716	88.145	43.145	330.00	1212.8	79.122	240.10	480.66
Sum Sq. Dev.	167.14	52.606	36.748	9.5510	35.002	92.286	108.92	63.377	62.272	45.633	9.9979	3.4150
Observations	120	120	120	120	120	120	120	120	120	120	120	120

Table 3: Non-ethical banks descriptive matrix

	NON	ETHICAL										
	LSIZE	LROAA	LROAELNLTTA	LNIMLLLRTGL	LINFLLLLPTNIRLGDPPCLGDPG	LETTA	LCOTI					
Mean	18.799	-0.5724	2.0900	4.0500	0.6874	0.7856	0.4150	2.7066	10.069	0.6242	1.9544	4.0301
Median	18.251	-0.5379	2.1289	4.0539	0.5983	0.8011	0.5306	2.8074	10.266	0.9163	1.9021	4.0558
Maximum	21.687	1.1957	3.3429	4.4570	2.3476	2.3840	2.1972	4.7514	11.049	1.5476	2.5845	4.5055
Minimum	16.657	-3.0791	-0.2144	3.3922	-0.2758	-1.4567	-2.3026	-0.1924	8.6655	-2.3026	1.5101	3.5944
Std. Dev.	1.3284	0.7068	0.5717	0.2514	0.6009	0.9551	0.9797	0.9509	0.7324	0.6336	0.2773	0.1723
Skewness	0.7548	-0.4883	-0.8461	-0.3914	1.0454	-0.2898	-0.7372	-0.6468	-0.6004	-1.1927	0.5562	-0.5478
Kurtosis	2.4983	3.8086	5.1926	2.4979	3.3731	2.1254	4.2219	3.1086	2.0548	5.1531	2.2289	3.0736
Jarque-Bera	13.181	8.3724	39.951	4.5047	23.492	5.7329	19.097	8.7777	12.163	53.780	9.5424	6.2800
Probability	0.0014	0.0152	0.0000	0.1052	0.0000	0.0569	0.0001	0.0124	0.0023	0.0000	0.0085	0.0433
Sum	2349.8	-71.551	261.24	506.25	85.929	98.201	51.878	338.33	1258.6	78.021	244.30	503.76
Sum Sq. Dev.	218.82	61.939	40.526	7.8388	44.774	113.10	119.01	112.12	66.513	49.781	9.5374	3.6805
Observations	125	125	125	125	125	125	125	125	125	125	125	125

From the above tables (table 2 and table 3), it is observed that the average total assets (LSIZE) of the ethical banks are a bit higher than the non-ethical ones, while they have a smaller standard deviation. The LROAA, LROAE and LNIM have also a bigger average than the non-ethical ones, even if LROAA is negative in both. The std deviation for these three is also smaller in ethical banks. So, these three variables, indicate that the ethical banks of our sample had better profitability than the non-ethical banks for the years 2014 to 2018 even the fact that the best maximum value for these three variables were observed in the non-ethical banks as the best minimum for LROAA and LROAE. All the other independent variables have quite similar average values, with the standard deviation to be quite similar as well and not always in favor of one category.

4.2. Correlation analysis

In the following two tables (table 4 and table5) are presented the correlation matrices of ethical and non-ethical banks in order to see the correlation of the variables in ethical and non-ethical banks and how strong it is.

Table 4: Ethical banks correlation matrix

ETHICAL

Correlation Probability	LCOTI	LETTA	LGDPG	LGPPC	LINFL	LLLRTGL	LLLPTNIR	LNIM	LNLTTA	LROAA	LROAE	LSIZE
LCOTI	1.0000 -----											
LETTA	-0.3408 0.0001	1.0000 -----										
LGDPG	-0.2141 0.0188	0.1870 0.0408	1.0000 -----									
LGPPC	0.3232 0.0003	-0.6042 0.0000	0.1561 0.0886	1.000000 -----								
LINFL	-0.1569 0.0869	0.2002 0.0283	-0.0928 0.3131	-0.3033 0.0008	1.0000 -----							
LLLRTGL	0.0626 0.4965	0.2411 0.0080	-0.4322 0.0000	-0.6755 0.0000	0.1016 0.2692	1.0000 -----						
LLLPTNIR	-0.0806 0.3815	0.2709 0.0028	-0.3133 0.0005	-0.6377 0.0000	0.1631 0.0751	0.7666 0.0000	1.0000 -----					
LNIM	-0.2571 0.0046	0.6022 0.0000	-0.1619 0.0773	-0.7206 0.0000	0.5284 0.0000	0.4800 0.0000	0.4397 0.0000	1.0000 -----				
LNLTTA	-0.4211 0.0000	0.1261 0.1697	0.5521 0.0000	0.1248 0.1744	-0.0797 0.3867	-0.5493 0.0000	-0.3193 0.0004	-0.1547 0.0914	1.0000 -----			
LROAA	-0.4505 0.0000	0.5682 0.0000	0.0304 0.7416	-0.5793 0.0000	0.3793 0.0000	0.1248 0.1743	0.1663 0.0694	0.6354 0.0000	0.0764 0.4069	1.0000 -----		
LROAE	-0.3698 0.0000	0.1608 0.0792	-0.0706 0.4431	-0.3865 0.0000	0.3459 0.0001	0.0286 0.7563	0.0602 0.5136	0.4524 0.0000	0.0230 0.8026	0.9024 0.0000	1.0000 -----	
LSIZE	0.4307 0.0000	-0.4245 0.0000	-0.1716 0.0609	0.5915 0.0000	-0.0994 0.2796	-0.0554 0.5477	-0.1728 0.0591	-0.1391 0.1297	-0.4500 0.0000	-0.4049 0.0000	-0.2708 0.0028	1.0000 -----

In ethical banks, it is observed that in 5% probability, LROAA has an insignificant correlation with LGDPG, LLLRTGL, LLLPTNIR and LNLTTA. LROAE has an insignificant correlation with LETTA, LGDPG, LLLRTGL, LLLPTNIR and LNLTTA, while LNIM has an insignificant correlation with LGDPG, LNLTTA and LSIZE. LROAA has a lot of common insignificant correlations with LROAE while all three of them have in common LGDPG and LNLTTA. The biggest correlation is to be found between LROAA and LROAE which is expected as they both measure profitability.

Table 5: Non-ethical banks correlation matrix

NON-ETHICAL

Correlation	LCOTI	LETTA	LGDPG	LGDPG	LINFL	LLLRTGL	LLLPTNIR	LNIM	LNLTTA	LROAA	LROAE	LSIZE
Probability	LCOTI	LETTA	LGDPG	LGDPG	LINFL	LLLRTGL	LLLPTNIR	LNIM	LNLTTA	LROAA	LROAE	LSIZE
	1.0000											

	-0.4994	1.0000										
	0.0000	-----										
	-0.1214	0.1506	1.0000									
	0.1774	0.0938	-----									
	0.4699	-0.4467	0.2111	1.0000								
	0.0000	0.0000	0.0181	-----								
	-0.1858	0.0922	-0.1665	-0.3510	1.0000							
	0.0380	0.3067	0.0634	0.0001	-----							
	-0.0898	0.1854	-0.3831	-0.6469	0.1182	1.0000						
	0.3192	0.0385	0.0000	0.0000	0.1892	-----						
	0.0313	0.0305	-0.2388	-0.4747	0.1660	0.6718	1.0000					
	0.7288	0.7354	0.0073	0.0000	0.0643	0.0000	-----					
	-0.2398	0.4692	-0.3219	-0.6964	0.5177	0.4122	0.4273	1.0000				
	0.0071	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	-----				
	-0.1032	-0.0377	0.4490	0.1221	-0.1612	-0.4100	-0.1584	-0.2193	1.0000			
	0.2523	0.6761	0.0000	0.1750	0.0724	0.0000	0.0777	0.0140	-----			
	-0.4737	0.6456	-0.0999	-0.4533	0.3094	0.0619	-0.0704	0.5457	-0.2833	1.0000		
	0.0000	0.0000	0.2678	0.0000	0.0004	0.4927	0.4356	0.0000	0.0014	-----		
	-0.3538	0.3200	-0.1971	-0.3484	0.3371	-0.0072	-0.1051	0.4450	-0.3355	0.9282	1.0000	
	0.0001	0.0003	0.0276	0.0001	0.0001	0.9366	0.2436	0.0000	0.0001	0.0000	-----	
	0.5498	-0.3110	-0.0629	0.4709	-0.5055	-0.0752	-0.0536	-0.3860	-0.2103	-0.2945	-0.2132	1.0000
	0.0000	0.0004	0.4857	0.0000	0.0000	0.4045	0.5524	0.0000	0.0186	0.0009	0.0170	-----

In the non-ethical banks, it is observed that in 5% probability LROAA has an insignificant correlation with LGDPG, LLLRTGL and LLLPTNIR. LROAE has an insignificant correlation with LLLRTGL and LLLPTNIR and LNIM have no insignificant correlations. It can also be observed that LNTTA is more significant to non-ethical banks as well as LNIM is a better variable for measuring profitability in non-ethical banks than the ethical. The biggest correlation is to be found again between LROAA and LROAE.

From the correlation analysis in tables 4 and 5, it is observed that the profitability of ethical and non-ethical banks is not measured from exactly the same factors as with a 5% probability it is observed that LROAA of ethical banks is not affected by LNLTTA variable which was found stat. insignificant when the same time it was stat. significant for non-ethical banks. The same stands for the correlation of LROAE with LETTA,

LGDPG, and LNLTTA which were not stat. significant at 5% while in non-ethical banks where stat. significant. The same again stands for the correlation of LNIM with LGDPG, LNLTTA and LSIZE which were not stat. significant at 5% while in non-ethical banks where stat. significant. The opposite, meaning a variable not to be stat. significant in correlation with LROAA, LROAE and LNIM in non-ethical banks and being stat. significant in ethical banks was not observed. Furthermore, all variables correlating with LNIM found to be stat. significant in non-ethical banks confirming the theory in chapter 3.

4.3. Regression analysis

A regression analysis was carried out for each of the three dependent variables for the years 2014 to 2018 with the dummy variable of ETHICAL in order to observe if the ethical profile of the banks was crucial to their performance and by the coefficient to observe if the ethical performed better than the non-ethical banks, the opposite, or they performed in similar ways. We applied our linear regressions to panel data for the most suitable presentation of our data.

Panel data are using both time series and cross-sectional elements. The variable of year is used (as presented in chapter 3.4.2.), in order to control for time. This is essential in order to perform correctly the analysis of the data from 49 banks in the 5-year horizon. Brooks (2014), analyzes the construction method and the benefits that panel data provides. According to his research, it is easier by using panel to analyze more complex problems rather than using the cross-sectional method. Moreover, on the contrary of using time series, using panel data a smaller run of data is needed in order to get a sufficient number of observations to handle significant hypothesis tests. Last but not least, by combining the data in this way, can also decrease the phenomenon of multicollinearity that may occurs if time series were utilized separately.

The method we will use for the panel analysis is the Ordinary Least Squares (OLS) method as Karl (2015) used. Tables 6 to 8 will be discussed below and the types for the three regressions that will be presented are:

$$\text{LROAA} = C(1) + C(2)*\text{LCOTI} + C(3)*\text{LETTA} + C(4)*\text{LGDPG} + C(5)*\text{LGDPPC} + C(6)*\text{LINFL} + C(7)*\text{LLLPTNIR} + C(8)*\text{LLLRTGL} + C(9)*\text{LNLTTA} + C(10)*\text{LSIZE} + C(11)*\text{ETHICAL} + [\text{PER}=F]$$

$$\text{LROAE} = C(1) + C(2)*\text{LCOTI} + C(3)*\text{LETTA} + C(4)*\text{LGDPG} + C(5)*\text{LGDPPC} + C(6)*\text{LINFL} + C(7)*\text{LLLPTNIR} + C(8)*\text{LLLRTGL} + C(9)*\text{LNLTTA} + C(10)*\text{LSIZE} + C(11)*\text{ETHICAL} + [\text{PER}=F]$$

$$\text{LNIM} = C(1) + C(2)*\text{LCOTI} + C(3)*\text{LETTA} + C(4)*\text{LGDPG} + C(5)*\text{LGDPPC} + C(6)*\text{LINFL} + C(7)*\text{LLLPTNIR} + C(8)*\text{LLLRTGL} + C(9)*\text{LNLTTA} + C(10)*\text{LSIZE} + C(11)*\text{ETHICAL} + [\text{PER}=F]$$

The hypothesis in this model is regarding if the ETHICAL variable is an important variable as to the profitability of the banks. So:

H₀: Ethical variable is a significant determinant of banks' profitability.

H₁: Ethical variable is not a significant determinant of banks' profitability.

Table 6: LROAA OLS regression analysis

Dependent Variable: LROAA
 Method: Panel Least Squares
 Sample: 2014 2018
 Periods included: 5
 Cross-sections included: 49
 Total panel (balanced) observations: 245

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.140406	1.410160	5.772681	0.0000
LCOTI	-0.807030	0.207921	-3.881429	0.0001
LETTA	0.955852	0.128571	7.434400	0.0000
LGDPG	-0.120541	0.058597	-2.057113	0.0408
LGDPPC	-0.486169	0.079718	-6.098581	0.0000
LINFL	0.083066	0.035146	2.363427	0.0189
LLLPTNIR	-0.067118	0.050049	-1.341036	0.1812
LLLRTGL	-0.333758	0.061821	-5.398796	0.0000
LNLTTA	-0.643586	0.149824	-4.295610	0.0000
LSIZE	0.040500	0.032543	1.244502	0.2146
ETHICAL	-0.103365	0.063956	-1.616182	0.1074

Effects Specification

Period fixed (dummy variables)

R-squared	0.616932	Mean dependent var	-0.461034
Adjusted R-squared	0.593614	S.D. dependent var	0.694565
S.E. of regression	0.442774	Akaike info criterion	1.267755
Sum squared resid	45.09122	Schwarz criterion	1.482118
Log likelihood	-140.3000	Hannan-Quinn criter.	1.354079
F-statistic	26.45821	Durbin-Watson stat	1.139880
Prob(F-statistic)	0.000000		

In table 6, the regression for the profitability is fulfilled by using as dependent variable LROAA. As we can see Prob(F-statistic) is stat. significant at 5% ($0.00 < 0.05$) and most of the dependent variables are stat. significant at 5% except for LLLPTNIR, LSIZE and ETHICAL. In other words, in this sample, the ETHICAL variable among others, was not stat. significant nor at 10% ($0.107 > 0.10$) in determining the profitability of the given banks. In this case, the H_1 : Ethical variable is not a significant determinant of banks' profitability stands for LROAA.

Table 7: LROAE OLS regression analysis

Dependent Variable: LROAE
Method: Panel Least Squares
Date: 12/14/19 Time: 13:56
Sample: 2014 2018
Periods included: 5
Cross-sections included: 49
Total panel (balanced) observations: 245

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.95061	1.409269	9.189589	0.0000
LCOTI	-0.840557	0.207789	-4.045235	0.0001
LETTA	-0.043113	0.128490	-0.335533	0.7375
LGDPG	-0.124766	0.058560	-2.130552	0.0342
LGPPC	-0.488861	0.079668	-6.136226	0.0000
LINFL	0.080134	0.035124	2.281449	0.0234
LLLPTNIR	-0.073643	0.050018	-1.472337	0.1423
LLLRTGL	-0.329396	0.061782	-5.331599	0.0000
LNLTTA	-0.648605	0.149729	-4.331847	0.0000
LSIZE	0.040521	0.032523	1.245948	0.2141
ETHICAL	-0.098633	0.063916	-1.543164	0.1242

Effects Specification

Period fixed (dummy variables)

R-squared	0.431297	Mean dependent var	2.176544
Adjusted R-squared	0.396680	S.D. dependent var	0.569683
S.E. of regression	0.442494	Akaike info criterion	1.266491
Sum squared resid	45.03425	Schwarz criterion	1.480854
Log likelihood	-140.1452	Hannan-Quinn criter.	1.352815
F-statistic	12.45919	Durbin-Watson stat	1.121722
Prob(F-statistic)	0.000000		

In table 7, the regression for the profitability is fulfilled by using as dependent variable LROAE. As we can see Prob(F-statistic) is stat. significant at 5% ($0.00 < 0.05$) and that LCOTI, LGDPG, LGDPPC, LINF, LLLRTGL and LNLTTA are stat. significant in 5% and are variables that determine the profitability in terms of LROAE. The ETHICAL variable in this regression is not stat. significant not even in 10% ($0.124 > 0.10$) so the H_1 : Ethical variable is not a significant determinant of banks' profitability, stands again.

Table 8: LNIM OLS regression analysis

Dependent Variable: LNIM

Method: Panel Least Squares

Sample: 2014 2018

Periods included: 5

Cross-sections included: 49

Total panel (balanced) observations: 245

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.082986	1.023108	1.058526	0.2909
LCOTI	0.157843	0.150852	1.046347	0.2965
LETTA	0.661116	0.093282	7.087287	0.0000
LGDPG	-0.146739	0.042514	-3.451571	0.0007
LGDPPC	-0.453401	0.057838	-7.839190	0.0000
LINFL	0.208699	0.025500	8.184437	0.0000
LLLPTNIR	0.082276	0.036312	2.265804	0.0244
LLLRTGL	-0.108209	0.044853	-2.412536	0.0166
LNLTTA	0.046723	0.108701	0.429833	0.6677
LSIZE	0.101796	0.023611	4.311388	0.0000
ETHICAL	0.006067	0.046402	0.130755	0.8961

Effects Specification			
Period fixed (dummy variables)			
R-squared	0.704121	Mean dependent var	0.729160
Adjusted R-squared	0.686111	S.D. dependent var	0.573386
S.E. of regression	0.321244	Akaike info criterion	0.626038
Sum squared resid	23.73546	Schwarz criterion	0.840401
Log likelihood	-61.68963	Hannan-Quinn criter.	0.712361
F-statistic	39.09614	Durbin-Watson stat	0.396403
Prob(F-statistic)	0.000000		

In table 8, the regression for the profitability is fulfilled by using as dependent variable LNIM. As we can see Prob(F-statistic) is stat. significant again at 5% ($0.00 < 0.05$) and that LETTA, LGDPG, LGDPPC, LINF, LLLPTNIR, LLLRTGL and LSIZE are stat significant determinants at 5% for profitability depending LNIM. The ethical

variable in this regression has stat. significance of 0.8961 meaning that by this sample, the ethical character of the banks is irrelevant to the banks' profitability depending LNIM. So, the H₁: Ethical variable is not a significant determinant of banks' profitability, stands again.

It was observed that the ETHICAL variable was not stat. important in all three profitability determinants that were discussed in this study (LROAA, LROAE, LNIM) with the first two to be slightly above 10% significance and the third one to be completely insignificant. In the first two, the coefficient is "slightly" negative, meaning that if the variable was stat significant, the ethical banks have "0" in the dummy variable, would perform better. Eventually, for this sample, the H₁: Ethical variable is not a significant determinant of banks' profitability hypothesis was observed and confirmed in all dependent variables.

5. Empirical Results

The results of this study come to prove among others, the studies of Iqbal (2001), Ariss (2010), Hasan and Dridi (2010) and Bourkhis and Nabi (2013) which concluded that there are no significant differences in profitability between ethical and conventional banks. Descriptive statistics ([chapter 4.1.](#)) resulted that ethical banks performed slightly better than conventional banks. The correlational analysis ([chapter 4.2.](#)) resulted that ethical banks are not affected by exactly the same variables as the non-ethical ones in terms of profitability as these variables were found stat. insignificant. In the regression analysis, in which all the independent variables were taken upon consideration in order for the comparison to be unbiased, concluded to the result for all three dependent variables (LROAA, LROAE, LNIM) that the ethical profile of the banks' did not affect their profitability. This result opposes the results of Climent (2018) and Cavalito et al. (2018) which in their recent studies, concluded to the result that the non-ethical (conventional) banks outperformed the ethical ones.

Therefore, the answer to the hypothesis that was presented in the introduction which was whether the ethical policies promote the level of profitability of banking entities, is that the level of the profitability is not affected. Moreover, there is not a significant reason for keeping conventional banks from being more sustainable or even ethical, as mentioned in the introduction, as there would be no loss in the profitability levels.

5.1. *Limitations*

Several limitations were encountered in this analysis. A major limitation was that smaller ethical banks were excluded from the research, as they did not qualify for the S&P Environmentally & Socially Responsible Indices, due to their small-capitalization, excluding them from the indices. This limitation was handled by choosing non-ethical banks with similar total assets (as mentioned in [chapter 3.2.](#)) in order to maintain the balance. Another limitation that this study faced was the different characteristics banks had (i.e., age, life cycle, governance and stock prices) which affect the total value of the bank as well as the support and trust that customers show to them. This

limitation was handled by the diversification the banks of the sample had, not allowing these characteristics to affect the results. An interesting limitation was the macroeconomic variables that were the same for all banks in the same country, not being able to provide quite unique results in terms of profitability. A last but not least limitation was the lack of provision that would be a topic of further research.

6. Conclusions

This study investigates the characteristics of ethical and conventional banks and compares the performance they had in the years 2014 to 2018. The conclusion of this study is that the ethical profile of the banks' does not affect their profitability. Costa-Climent and Martínez-Climent (2018) foresee that conventional banking will become ethical banking in the near future. The society's (customers) demand for transparency and guarantees is the main reason for that revolution. Certain requirements that will be implemented in the financial sector by these powers will ultimately lead to ethical banking models. Overall, these results could translate to a push for conventional banks to turn into more ethical practices in favor of the environment and social welfare.

This study encountered several limitations as presented in the previous chapter (5.1). These limitations could be the topics of further research as other indices that measure ethics which include smaller-capitalized banks could be used in more extensive research. Moreover, further research could be conducted including more banks' characteristics that could affect their profitability (i.e., age, life cycle, governance and stock prices) in order to observe their affection to the ethical profile of the banks.

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