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Master's Thesis

社會責任投資之可能性：歐盟投資人觀點之社會
責任投資與傳統投資績效之比較（2014-2018）

**Sustainable investment: A comparison of sustainable and
systemic banks' performance from an investor perspective in
European Union (2014-2018)**

Student: Alice Tharaud

Advisor: Professor Carol Lin

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研究生：譚艾莉

Student: Alice Tharaud

指導教授：林月雲

Advisor: Carol Lin



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Abstract

Sustainable investment: A comparison of sustainable and systemic banks' performance from an investor perspective in European Union (2014-2018)

By

Alice Tharaud

Increased concern regarding environmental, social and governance (ESG) issues have created a new type of investment opportunities that promotes a more sustainable economy. This thesis aims to study the performance of the cash and cash equivalents asset class from an investor perspective, by comparing the sustainable and systemic banking industry. Many studies were conducted about other asset classes such as mutual funds, stocks, and bonds, in Europe and the United States. However, this thesis enriches the current literature by also analyzing an under-researched asset class, concentrating on European Union and adding a new aspect to the definition of performance: interest rates.

Through literature review, quantitative analysis and interviews this research put in comparison sustainable and systemic banks' performance from an investor perspective.

However, this study is subjective on the writer's point of view as much as on the data availability and the interviewees' declaration. Last but not least, the analysis and recommendations provided are only consistent for the period (2014 to 2018) and is highly dependent on the sample and the choice of variables.

Keywords : (Sustainable Investment), (Banking), (European Union), (Performance), (Cash and Cash Equivalents), (Savings)

TABLE OF CONTENTS

| | |
|--|-----------|
| 1. Introduction..... | 1 |
| 2. Literature review | 5 |
| 2.1. Sustainable investment globally | 5 |
| 2.1.1. History | 5 |
| 2.1.2. Investment strategies and firms' best practices..... | 8 |
| 2.2. Sustainable investment in Europe..... | 13 |
| 2.2.1. Regulations and key figures..... | 13 |
| 2.2.2. Market study and asset allocation..... | 17 |
| 2.3. Sustainable investments' performance: the banking industry..... | 21 |
| 3. Research Methodology | 27 |
| 3.1. Assumptions..... | 27 |
| 3.2. Sample description..... | 28 |
| 3.3. Data collection | 29 |
| 3.4. Calculations..... | 31 |
| 4. Results and analysis | 35 |
| 4.1. Banks' structural performance | 36 |
| 4.2. Banks' accounts interest rates as a proxy of performance | 46 |
| 4.3. Banks, present and future: An interview of Mrs. Andrea Palmer (Triodos) | 50 |
| 5. Discussion and limits | 53 |

| | |
|------------------------------|-----------|
| 6. Conclusion | 58 |
| 7. Bibliography | 60 |
| 8. Appendices | 63 |



List of Figures, Tables and Graphs

| | |
|--|----|
| Figure 1 : Strategies termination (GSIA report) | 8 |
| Figure 2: ESG score range, Thomson Reuters..... | 9 |
| Figure 3: Climate regulations timeline, State Street..... | 14 |
| Figure 4: SDG investing, Bridges Venture Spectrum of Capital | 16 |
| Figure 5: ROE. A comparison between ethical and systemic banks - Fondazione Finanza Etica | 25 |
| Table 1: Evolution of ROAA | 36 |
| Table 2: Evolution of ROAE..... | 38 |
| Table 3: Evolution of equity to total assets..... | 40 |
| Table 4: Evolution of loans to total assets | 42 |
| Graph 1: Evolution of ROAA..... | 37 |
| Graph 2: Evolution of ROAE | 39 |
| Graph 3: Evolution of equity to total assets..... | 41 |
| Graph 4: Evolution of loans to total assets | 43 |
| Graph 5: Ratios five-year average | 45 |

1. Introduction

In 1896, following the works of several European scientists, Svante Arrhenius, a Swedish physicist, was the first one to quantify the effect of global warming due to the natural greenhouse effect. Since the industrial revolution, gases emissions kept on rising with a quick acceleration starting in the eighties, leading to an artificial increase in the world's temperature. Meanwhile, almost forty years ago, structured awareness was raised worldwide by scientists about environmental issues. It became obvious that our economic model was not suitable for our planet. What could have been considered during the previous years as isolated incidents were, in fact, the premises of a silent and terrible environmental crisis.

From the eighties to nowadays, governments have tried to implement new laws and discussed global agreements, such as the Paris Agreement. Unfortunately, the discussions take long time, and the outcomes do not fit the emergency of the situation. Even in the best scenario, we are still far from remaining under the objective of 1.5-degree Celsius global temperature augmentation. Hence, governments should not be the only ones to deal with the climate change issue, as everyone from the companies to the individuals live on the same planet, are and will be impacted. There is no planet B. Unfortunately, one of the worst default of humans is avidity. But as a Native American said: “When the last tree is cut down, the last fish eaten, and the last stream poisoned, you will realize that you cannot eat money”. Indeed, a report sent to United Nations in April 2019 mentioned that we are officially in the 6th mass extinction the Earth has faced in its history. The last one provoked the dinosaurs’ disappearance. Thus, a joint effort from both companies and individuals is required.

Since the eighties, with a boost starting in years 2000, corporate social responsibility (CSR)

became from a broad idea delegated upstage to an entire service like marketing or accounting in most of the big companies. With the emergence of the Internet and social media, branding awareness has never been as easy and companies suffering from scandals endure huge losses such as Volkswagen scandal in 2015. The CSR's definition given by Investopedia says that: "Corporate social responsibility (CSR) is a self-regulating business model that helps a company be socially accountable to itself, its stakeholders and the public [...] companies can be conscious of the kind of impact they are having on all aspects of society including economic, social and environmental". Even if several studies showed the impact of irresponsible behaviors on companies' performance (Grossman, 2005), it is not easy to measure and even less predict the cost of such behavior.

So, to try to measure how "responsible" is an enterprise, some complex tools like the ESG (Environmental Social Governance) combined score in Thomson Reuters and strategies were created. Environmental, social and governance are the three score's components that define the level of responsibility of a company. Added to this, another parameter, the ESG controversies score pools ten categories of controversies. The ESG score and ESG controversies combined, make the ESG combined score composed of more than 400 measurements making all types of public companies comparable. The ESG combined score is not a static measure as it is refreshed every week and keep on track companies' actions, announcements, and scandals. Even if all the public companies are not listed, Thomson Reuters is constantly adding new indexes, listing 6750+ firms worldwide and 1200+ in Europe (Thomson Reuters, 2019). This score was used in most of the previous works to define whether or not a company could be considered as a sustainable entity.

But why should a company invest money to get a good ESG score? According to the shareholder wealth maximization theory, companies should only concentrate on making profits to increase their share price and to offer dividends. This is the own aspect that should affect shareholders in accordance with this theory. But, ESG combined score is used by many investors in their decision-making process nowadays. We can identify several reasons why people consult this measure. First, people get willing to make a good impact and are tired of hearing of environmental, social and governance scandals from the firms which are part of their portfolio. Secondly, these scandals increase their portfolio's volatility and often decrease their expected returns. Thirdly, it becomes clearer for everyone, and even more for younger generations, that our lifestyle must drastically change if we simply want to survive. So, if you are an investor and you can be part of a positive change while having good returns, and it is as easy to buy and sell these assets as the systemic ones, why would not you want to invest your savings in? These reasons explain the appearance of sustainable investment. Socially responsible investments (SRI), also called responsible investments (State Street, 2018), consider the environment, social and governance criteria while generating positive returns and making a good impact.

With half of the world SRI's assets value, reaching around €14.1 trillion in 2018 (Global Sustainable Investment Alliance report, 2018), Europe is one of the main hubs in sustainable investment for a long time with €476 billion value of ESG funds. Almost half of the world's green bonds are listed in Luxembourg (State Street, 2018). Furthermore, Europe demonstrates a fast growth in its SRI assets' value which should keep on growing with the new sustainable finance proposals from the European Commission. Moreover, it offers diversified sustainable choices in terms of asset classes: cash and cash equivalents (through sustainable banks) fixed

income, public equities and mutual funds. In the context of this thesis, cryptocurrencies will be put aside as it is still a debate rather it is, or not an asset. In any way, cryptocurrencies are actually not financial assets and belong to another standard (IFRS Interpretations Committee, 2019), and this thesis will rely on it.

Hence this study will focus on the banking industry, loans and deposits because it is the main category of cash and cash equivalents an individual can have access to. The aim of this thesis is to show whether or not sustainable banks' performance in European Union makes sustainable banks an interesting opportunity from an investor's perspective studying the years 2014 to 2018. A comparison with systemic banks in European banks, their competitors, will be done to assess sustainable banks' performance.

To do so, in the first part of this research, the literature review will be used as a framework to get a better understanding of sustainable investment and highlight the existing literature on the chosen topic. The second part will be the research methodology presenting the assumptions, the sample description, the data collection, and the calculations. In the third part, the results and analysis will display a comparison between sustainable banks and systemic banks' performance between 2014 and 2018. In this research, the words responsible and ethical will be considered as synonyms of sustainable while referring to sustainable banks. As well as systemic and systemic while referring to systemic banks. Finally, the discussion will compare this thesis' results to previous works findings in Europe and in the rest of the world. It will also emphasize the limits of the study and provide some recommendations for further research on this topic.

2. Literature review

At first, the following literature aims to present the previous studies done about sustainable investment in the world and more specifically in Europe. It intends to design a framework that will help the reader of this paper to understand the challenges and outcomes of the ensuing study. Thus, it starts from a global perspective to progressively concentrate on Europe. In a second time, it will focus on the existing literature about cash and cash equivalents and the banking industry's performance

2.1. Sustainable investment globally

In the first subsection of this literature review, the history of sustainable investment will be introduced from its emergence to nowadays. Then, a more complex definition of sustainable investment will be provided by analyzing the strategies and best practices of sustainable finance. In the second subsection, an overview of the legal frameworks and some key figures in Europe will be displayed to enable to analyze the market situation and provide a first examination of the implementation of socially responsible investments (SRI) assets in retail investors' portfolio.

2.1.1. History

Socially responsible investing (SRI) refers to any investment strategy which aims to reach both financial performance and positive environmental and social change (Polivka, 2013). At first, in 1960, SRI was more oriented towards the social aspect, as awareness about the greenhouse effect and climate change only started to be raised in the eighties. The first concerns in the modern era about social issues were towards civil rights, gender equality, and labor conditions. These first actions were not about investing in social companies that were implementing new innovative policies, but rather boycotting some specific corporations judged for their bad

behaviors. As an example, SRI had an important role at the end of Apartheid in South Africa in 1994. There was a lot of pressure on fund managers during this period to make them avoid investing in firms operating in South Africa.

But SRI, as we know it nowadays, emerged in the middle of the eighties after huge disasters such as Bhopal and Exxon Valdez. The Bhopal and Exxon Valdez were a huge scandal at a time when scientists were raising concerns about the threat of an environmental crisis. On March 24th, 1989, Exxon Valdez, an oil tanker struck the Gulf of Alaska spilling 37 metric tons of oil. Even if this kind of incidents is not isolated, this accident is considered as one of the most dramatic ecological disasters caused by humans ((Encyclopaedia Britannica, 2019). At the same time, other industries such as tobacco, fast food, clothing, and chemical industry began to be criticized for their negative social and environmental impact. Some companies faced some share value losses or less enthusiasm from investors as awareness grew. SRI gained also more and more popularity as the Internet developed at the end of the nineties, beginning of 2000. Indeed, it allowed individuals to get to have access to information much more easily. In 1990, SRI mutual funds became sufficiently numerous and popular to create an index to measure their performance. The Domini Social Index constituted of 400 large capitalization U.S. corporations becoming the first SRI benchmark (Domini, 2019). These firms were chosen based on many environmental and social and environmental criteria. This index is still active nowadays and the company became more diversified with Domini Impact Equity Fund, Domini Impact International Equity Fund and Domini Impact Bond Fund's holding (Domini, 2019).

During the financial crisis of 2008, many questions arose about the world's economic interdependence and highlighted two major points: the role of central banks in the society's green transformation and the critical role of investors.

In 2008, the crisis was so severe that the world needed to find some culprits. Lehman Brothers, Goldman, Moody's were all designated as the main culprits of this huge crisis. But they were not the only ones to be pointed at, central banks were also criticized for not having been able to safeguard the economy (Goodhart, 2011; Eichengreen, 2011; Buiters, 2012). In the following years, their roles, duties and obligations towards obviously the economic, but also the environmental and social issues were discussed (United Nations Environment, 2017). As some of the top entities of financial authorities, central banks need to incorporate environmental risks into their frameworks to properly ensure financial stability. However, it may not be one of their core functions to use their elaborated instruments to support green finance investment. Indeed, economic stability and ecological transition can be conflicting objectives. The instruments they need to achieve environmental goals without jeopardizing their economic goals may not be currently effective enough. Hence, central banks' role should be clearly defined and limited, in the environmental field, to an assessment of climatic risks and an encouragement to all the other financial institutions and regulators to act more sustainably and ethically.

Indeed, the lack of ethics and corporate social responsibility in the business policies were especially pointed at by the public opinion. Changing our business practices to a more sustainable model could not only have a positive impact on the Earth, so limiting the climate change risks, but it could also be a crucial factor to get over the financial crisis or to be at least less affected (Lins, 2017). If the role of investors is as much considered, it is because they are the ones who make the market. Indeed, companies that invest in corporate social responsibility perform better or not during a period of financial distress, if investors believe companies do, investors will invest in SRI, making the value of these firms rise. Thus, a positive difference between traditional companies and sustainable firms will definitely appear, making SRI seem

better investments in the actual economic situation (Polivka, 2013)

2.1.2. Investment strategies and firms' best practices

In 2016, the GSIA gives a more technical definition of sustainable investment including the notion of portfolio management and selection. To properly manage a portfolio and select the ESG factors to include in, some strategies can be implemented: negative/exclusionary screening, positive/best-in-class screening, norms-based screening, integration of ESG factors, sustainability-themed investing, impact/community investing, corporate engagement and shareholder action (Global Sustainable Investment Alliance, 2018). The largest sustainable strategies, related to the assets value they manage, are negative screening (\$15,023.26Bn), ESG integration (\$10,369.01Bn) and corporate engagement and shareholder action (\$8,365.29Bn).

| Eurosif | GSIA-equivalent | PRI-equivalent | EFAMA-equivalent |
|---|---|--|--|
| Exclusion of holdings from investment universe | Negative/exclusionary screening | Negative/exclusionary screening | Negative screening or Exclusion |
| Norms-based screening | Norms-based screening | Norms-based screening | Norms based approach (type of screening) |
| Best-in-Class investment selection | Positive/best-in-class screening | Positive/best-in-class screening | Best-in-Class policy (type of screening) |
| Sustainability themed investment | Sustainability-themed investing | Sustainability themed investing | Thematic investment (type of screening) |
| ESG integration | ESG integration | Integration of ESG issues | - |
| Engagement and voting on sustainability matters | Corporate engagement and shareholder action | Active ownership and engagement (three types): Active ownership Engagement (Proxy) voting and shareholder resolutions | Engagement (voting) |
| Impact investing | Impact/community investing | - | - |

Figure 1 : Strategies termination (GSIA report)

Negative/exclusionary screening like other screening strategies is an avoidance strategy. It involves not investing in particular industries (such as alcohol, nuclear power, tobacco...), countries (such as countries in conflict, countries that do not respect human rights) and activities (such as gambling, animal testing,). To do so, databases from some software like Thomson Reuters or Bloomberg can be used to choose advanced filters showing only the assets respecting some predefined criteria.

The reasons for adopting this type of strategies are numerous. Firstly, you may want to avoid putting your money in assets or firms that do not match your values. Meanwhile, you can protect your reputation and be transparent to your shareholders (in the case of a fund manager). Secondly, you may prefer to avoid some precise risks.

| Score Range | Grade |
|------------------------------|-------|
| 0.0 <= score <= 0.083333 | D - |
| 0.083333 < score <= 0.166666 | D |
| 0.166666 < score <= 0.250000 | D + |
| 0.250000 < score <= 0.333333 | C - |
| 0.333333 < score <= 0.416666 | C |
| 0.416666 < score <= 0.500000 | C + |
| 0.500000 < score <= 0.583333 | B - |
| 0.583333 < score <= 0.666666 | B |
| 0.666666 < score <= 0.750000 | B + |
| 0.750000 < score <= 0.833333 | A - |
| 0.833333 < score <= 0.916666 | A |
| 0.916666 < score <= 1 | A + |

Figure 2: ESG score range, Thomson Reuters

ESG integration strategy is the strategy using ESG criteria such as ESG score to decide rather or not investing in some stocks, funds, etc. When choosing to use ESG score on Thomson Reuters, three main categories are considered: environmental, social and governance. These topics can be declined in several sub-topics: resource use, emissions and innovation for the environmental component, workforce, human rights, community, product responsibility, for the social component and finally, management, shareholders and CSR strategy for the governance component. Then, when all the measures are compounded, Thomson Reuters attributes a grade ranged between A+ and D-. This score is calculated by giving some weights to each sub-topic (between 4.5% for CSR strategy and

human rights to 19% to management). The calculation of this metric is then based on the performance of other companies using a percentile score formula (Thomson Reuters, 2019).

Hence, the objectives of an ESG integration strategy are as follow. Firstly, considering the increasing pressure on social and environmental factors, it can be interesting to have your portfolio covered by the risk of new regulations. Secondly, investing in a “niche” market (even if SRI can be less and less considered as a niche viewing their actual market value) and discovering underestimated assets can be lucrative. Thirdly, it is possible to focus only on sustainable investments that you can talk about to your relatives without being ashamed of participating in some unpopular activities.

The third most profitable strategy is corporate engagement and shareholder action. It differs from the others as it is applied by the firm. Individuals can only find out if the company follows this engagement and decide or not to invest in. This strategy aims to empower shareholders by letting them fill proposals presented after, to the board of directors. Then, it will discuss and add some key points on it during meetings. Thus, some proposals are co-written by shareholders and the board of directors. At the end of this process, shareholders vote for or against these proposals following ESG guidelines. This gives to the investor the unique opportunity to make a positive change from an ethical, green and strategic perspective. It also encourages more responsible business practices, including both the ESG and transparency parameters into consideration. Furthermore, it makes the company more attractive to all the investors seeking more transparency.

An increasing number of firms understands the matters of climate change and the associated risks. In the same time, an important number of potential and actual investors also understand

them and asks for more transparency. Hence, different innovative CSR practices emerged during the past decades around the world (Strandberg Consulting, 2005)

The first important theme is the CSR strategy development. This includes the creation of a CSR department and training of CSR awareness in employees. This department is in charge of shifting a company's mindset about sustainable activities from a cost to an opportunity for the future (minimize a risk category, use of resources, identify win-win solutions). Then, as the younger generations in developed countries ask for more meaning in their jobs, CSR can be used as a good incentive to attract new performant talents that would make the company more profitable.

The second theme is stakeholder's engagement which means a transparent and sincere dialogue with them to, for example, select suppliers who target carbon neutral production activities. Stakeholders for a company encompass customers, shareholders, suppliers, employees, local environment and authorities. All together can implement some innovative environmental and ethical policies that would benefit all of them.

The third topic to raise is competition across companies to get rewarded for their efforts in sustainable development. As an increasing part of firms have already implemented the ideas written above, some of them try to be ranked as leaders (best-in-class) by some environmental institutions or NGOs to differentiate themselves from their competitors. This practice is interesting as long as these efforts do not just fit the exigencies of some kind of CSR "award" and are made in the purpose of attracting some new investors or customers, but rather in a long-term time horizon perspective.

The same reasoning for entities involved in some charity programs can be applied. Nestlé will be our example to underline this point. The group suffered from many scandals since its creation (Smith, 2015) and even more with the development of social media. While going on Nestlé's website (Nestlé, 2019), in the CSR tab, this statement can be found: "Nestlé promotes nutrition education and physical activities among school children in rural areas through the Nestlé Healthy Kids (NHK) program and the Knowledge Sharing (KNHK) program. We have also set up purified drinking water tanks and sanitation facilities for girls in village schools to support the continued education of children". But in another part of the website, the "Ask Nestlé", a question is asked about child labor in the cocoa plantation in Ghana and Ivory Coast. This question was asked in 2017 and may be due to the child slavery scandal for which a lawsuit was filed against the group in 2012. Even if Nestlé does not own the plantations, it was accused of "tacitly supporting child slavery" and "violating its own labor code" by the Fair Labor Association (FLA). The answer to the previous question is not conclusive: "No company sourcing cocoa in Ivory Coast and Ghana can fully remove the risk of child labor in its supply chain". Then, in the rest of the answer, Nestlé explains its actions to tackle child labor in the cocoa industry (building schools, cooperation with NGO and associations, reports to local authorities). This example is one of the numerous that can be found concerning firms, but also banks, insurances companies, financial intermediaries which adopt a strategy of "green-washing" to satisfy the public opinion (Giraud, 2019). Thus, it is capital to differentiate best practices for sustainable finance and green-washing marketing strategy.

Last but not least, best practices can have similarities and differences across entities such as banks, financial services, asset management and insurance companies. Raising awareness about SRI education to employees, students and customers is one of the key best practice that can be

encountered in every financial related structure. Indeed, education is always the key to change. Therefore, some customs are also specific to each entity. Insurances companies begin to assess public risks such as health, pollution, climate change, etc. while asset management firms invest in high social and environmental projects. Banks establish sustainability screens on their portfolio and create new concepts such as “smart growth”.

To conclude, strategies for investors and best practices for companies emerged in the near past and more innovation can be expected in the coming decade (Strandberg Consulting, 2005). Even though finance remains the most reluctant sector to operate the necessary changes for the ecological transition, many actions appear from the different actors involved thanks to a global wake-up call. Sustainable investment is one of the key ways to drastically modify our economy and is particularly present in Europe.

2.2. Sustainable investment in Europe

This second part of the literature review will be geographically focused on Europe. Europe, in this section, defines the European Union members. All the regulations, figures and investment opportunities illustrated thereafter concern the states members of the European Union (EU) except specific mention.

2.2.1. Regulations and key figures

Europe is part of the 195 signatories that ratified the Paris Agreement on April 22nd, 2016. Under this agreement, the European Union take the responsibility of reporting its efforts to mitigate global warming. The first and most well-known goal set is to hold the increase in the world’s temperature at least below 2°C and idealistically below 1.5°C by 2100. The second goal is to enhance our ability to face climate change impacts while not threatening food production.

The third goal is to develop a way to make finance more in adequacy with our environment, which is basically the definition of sustainable finance and even more specifically green finance. Hence, some European organs such as the European Committee start defining a new era for finance and investment in Europe. Indeed, sustainable finance, which is nowadays only a flap of finance, will become the definition of finance in the coming decades. The main goals of the incoming regulations will be to make the current market greener rather than making grow the green market side by side with the traditional market.



Figure 3: Climate regulations timeline, State Street

Following the final report of the High-Level Expert Group (HLEG) on sustainable finance published in January 2018, the European Commission (EC) gathered on May 2018 to deliver some proposals to make the first huge step for a greener economy (State Street, 2018). These proposals aim to include more ESG instruments into institutions and retail investors’ portfolios and help them to understand better the level of sustainability of their investments. Named the “key pillars”, the main proposals are as follow. Firstly, more transparency is needed. The new financial era will not be sustainable without being transparent. As seen in the past and even still today, the lack of transparency on financial markets does not benefit the society from a social perspective.

Hence, financial institutions will have to disclose the way they include ESG in their investment strategies. Furthermore, it will be mandatory for asset managers to explain how the investment options they market as “sustainable”, “responsible”, “ethical” can actually be called like it. Secondly, to keep on helping investors to know which activities are environmental-friendly, some unified norms will be adopted named “EU classification system”.

Once this is done, clear advice will be provided by asset managers about ESG integration in the investment decision-making process, taking into account their potential customers' sustainability preferences. Finally, investors will have the opportunity to compare their SRI assets with some benchmarks which will be provided with a clear methodology. These proposals should be definitely created and adopted by 2022. Not only the future portfolio will be affected by new regulations but the roots of the “problem” themselves. Financial institutions will need to operate some drastic changes on an organizational level. Indeed, if asset managers try to attract new customers with “new and innovative sustainability strategies” meanwhile they act inconsistently with the values they market to investors, within their own company, this will have an impact. The consequences will be a loss in credibility and loss in market share.

These new laws are not only a response to the Paris Agreement requirements but also to the increasing interest and pressure from investors to shift to greener finance (Schroders, 2016) So far, investors still have more concerns about integrating SRI assets in their portfolio than asset managers. According to the Schroders Global Investor Study in 2016, only 12% of investors would not consider having a longer position on assets if they have a positive environmental or social impact against 28% of advisers. Like any market, the “customers” make the market shifts, so the number 28% may decrease to match the investors' exigencies. As evoked previously, Europe has always been a pioneer in sustainable investment and has the largest market share in SRI assets in the world. It has seen an explosion in the different SDG (Sustainable Development Goals) investing. Indeed, SDG investing (Figure 4) in Europe is usually classified based on the investment's focus, going progressively from traditional (ESG focus is absolutely not a priority) to philanthropy (ESG focus is the priority, return on investment is not mandatory) (Eurosif, 2018)

| | | SDG investing | | | | | |
|----------|--------------|--|---|--|--|---|--------------|
| | | Traditional | Responsible | Sustainable | Thematic | Impact-first | Philanthropy |
| | | Competitive returns | | | | | |
| | | ESG risk management | | | | | |
| | | | | ESG opportunities | | | |
| | | | | High-impact solutions | | | |
| Focus | Finance Only | Limited or no focus on ESG factors of underlying investments | The New Paradigm | | | Impact Only | |
| | | Focus on ESG risks ranging from a wide consideration of ESG factors to negative screening of harmful products | Focus on ESG opportunities, through investment selection, portfolio management and shareholders | Focus on one or a cluster of issue areas where social or environmental need creates a commercial growth opportunity for market-rate or market-beating returns | Focus on one or a cluster of issue areas where social or environmental need requires some financial trade-off | Focus on one or a cluster of issue areas where social or environmental need requires some financial trade-off | |
| Examples | | <ul style="list-style-type: none"> PE firm integrating ESG risks into investment analysis Ethically screened investment fund | <ul style="list-style-type: none"> Best-in-class SRI fund Long-only public equity fund using deep integration of ESG to create additional value | <ul style="list-style-type: none"> Clean energy mutual fund Emerging markets healthcare fund Microfinance structure debt fund | <ul style="list-style-type: none"> Fund providing debt or equity to social enterprises and/or trading charities | | |

Figure 4: SDG investing, Bridges Venture Spectrum of Capital

The categories considered as SDG investing are the ones in between traditional and philanthropy: responsible, sustainable, thematic, impact-first.

As in the rest of the world, Europe follows some SRI strategies that can differ a bit from other parts of the world (Figure 4). The largest investment strategies are exclusions (€10,150bn), engagement and voting (€4,857bn), ESG integration (€4,232bn) and norms-based screening (€3,147bn) in 2017 (Eurosif, 2018). The growth in percentage is less significant than between the 2013-2015 period (Eurosif, 2016) which can be explained by the higher base assets that already included SRI in its portfolio. ESG integration strategy grows the most for the period 2015 to 2017 (+27%).

However, surprisingly, from the sample of Schroders Global Investor Study 2016, European investors seem to have less sensitivity than the rest of the world regarding ESG issues. Indeed, on average Europeans, when making investment decisions, give a level of importance to sustainability inferior to the rest of the world. For instance, “positive impact on the environment”

has an importance of 6.5 out of 10 compared to 6.8 globally. Also, “positive impact on local social outcomes” gets the score of 6.4 against 6.7. Similar comparisons can be done for the other categories (good corporate governance, a good record of social responsibility and a positive impact on worldwide social outcomes) (Schroders, 2016). It is also interesting to notice the disparities within Europe itself. As an example, Italians, according to this study seem more sensitive to the positive environmental impact of their investments (7.1/10) than Dutch (5.9/10). The Netherlands’ score on this topic is notably surprising as it is one of the most threatened European countries by climate change and sea level rise.

Investors’ sensitivity towards ESG issues keeps on increasing these past years. The most ESG-oriented investors are the millennials. Indeed, the younger is an investor, the more chances he has to be willing to invest in social and responsible assets (Schroders, 2016). And this is good news as in Europe, the SRI market is on an upward trend. However, in the past and still in most cases nowadays, a global offer has been provided to individuals who often do not match their specific concerns. But diversified sustainability themes options start to be offered to investors to meet their different interests, making the SRI market grow. Apart from ESG issues, the asset classes in which people want to invest also vary from one to another and need to be considered by asset managers while building portfolios.

2.2.2. Market study and asset allocation

In 2017, the European Commission alerted the European Union members about the investment gap between the level of investment needed to meet the Paris Agreement targets and reality. This gap is estimated at around €180Bn of additional investments every year until 2030 (Eurosif, 2018). Even though institutions represent the largest part of the SRI, the portion of individual investors augmented exponentially between 2013 and 2017. In 2013, retail investors

represented only 3.4% of the total SRI asset value against 30.8% in 2017. Retail investors find some advantages and disadvantages following SRI strategies (Eurosif, 2018). Financial opportunity, concerns about ESG issues, contribution to local communities, long-term and stable returns are various drivers mentioned in almost equal proportions by investors. Mistrust about greenwashing followed by the lack of viable options and qualified expertise are the main concerns about sustainable investment. Interestingly, risk management is both perceived as a driver and a threat. But the threat may come from the skepticism of asset managers honesty in general rather than SRI asset managers in particular. In all cases, individuals' share of total SRI asset value could keep on rising. Indeed, the "mythic" negative trade-off with returns present in the collective consciousness has been overturned by several recent studies (Ibunkele, 2017). In some cases, the green and the social investment could even outperform their systemic counterparts.

SRI investment options are divided in several asset classes: equity (46.45%), bonds (40%), monetary/deposits (2.59%) and other (10.96%) (Eurosif, 2018). The following section will provide some financial definitions essential for the understanding of this thesis. Equity defines the company's value. It is the difference between its assets and its debts. In investment, equity refers to corporations' stocks. Thus, stocks are shares of a company's wealth and their value depict what shareholders would get if the firm was liquidated. Bonds are part of the fixed income instruments. They are loans issued by entities such as corporations, governments, municipalities and supranational organizations bought by investors called bondholders. Supranational organizations are international groups in which authority goes beyond boundaries (Investopedia, 2019). In the case of SRI, a majority of the bonds come from corporations (60%) while 33% are issued by the government (Eurosif, 2018). They are called sovereign bonds. The

last 10% is split between municipal bonds and supranational bonds. Monetary and deposits also named cash and cash equivalents in a balance sheet, are liquid instruments like cash and deposits held in any financial institution. A new sort of “cash” instrument recently appeared on the investment horizon; cryptocurrencies. Therefore, its belonging to cash and cash equivalents class is discussed by many economic experts. Stocks, bonds and money market instruments can be components of mutual funds which are the most common investment vehicle for small investors. Money managers who operate mutual funds purchase a vast number of securities from different asset classes and various industries. Mutual funds are usually considered as one of the best options for enjoying the diversification effect and mitigating risks for retail investors (Investopedia, 2019). Indeed, mutual funds do not necessarily require to be extremely wealthy compared to other investment options such as commercial papers which are usually issued in multiples of \$100,000.

In the context of sustainable investment, SRI mutual funds have especially received interest from the financial research community. In Europe, SRI mutual funds do not outperform their conventional peers while using the best-in-class strategy (Cortez, 2014). Also, some critics were formulated about this strategy as even though it increases the diversification effect that sometimes SRI mutual funds lack, it can be controversial to use it as a “SRI” strategy. Indeed, in the best-in-class strategy, the companies with the best ESG score in each industry are selected rather or not this score is really high. This means that a company which belongs to a questionable sector but has a “less bad” impact than its competitors, could be included in a SRI mutual fund. For instance, green mutual funds, a subset of SRI funds seem to be affected by the lack of diversification of the industries’ sectors in which they are represented. Comparative analysis performed between black mutual funds (fossil energies) and green mutual funds, from

1991 to 2014 shows a performance decrease of the first ones and increase of the second ones over time (Ibunkele, 2017). This may be due to political and social pressure on environmental issues. Another significant finding is the underestimation, in the case of black mutual funds and overestimation, in the case of green mutual funds of risks. This incorrect assessment of risks has a direct impact on the level of demand of these funds and hence, their prices.

Predicting risks and returns are the main missions of an asset manager according to the optimal portfolio theory. Choosing which assets can create the optimal portfolio that differs from an individual to another relies on two central parameters: the investor's level of risk aversion and the amount he wants to invest. The first parameter is a vital measure of the asset allocation process. Indeed, each individual has a different degree of risk tolerance that allows him to expect a certain level of return. The second parameter as we mentioned previously is essential to get the opportunity or not of investing in some assets. As evoked previously, small investors may encounter entry barriers while wishing to purchase some assets due to their wealth. Hence, balancing risk and reward and reaching the level asked by investors is the most complicated challenge of asset managers. Nowadays, in many cases, a new parameter, ESG, needs to be included in the balance making managers feel like the equilibrium they try to reach is even less stable than before. Nevertheless, rather than a risk, sustainable investing should be and begin to be considered as an opportunity. Europe has the chance to make a drastic and much-needed change to let the future generations have a future. And this will not be done without a change from traditional to sustainable investment.

2.3. Sustainable investments' performance: the banking industry

After, an introduction to responsible investments in the world and a presentation that goes more into details in Europe (best practices and strategies), this third and last part of the literature review will be concentrated on the banking industry's performance. If it is not specified, Europe, as in the previous subsection of the literature review, refers to the European Union. Furthermore, as mentioned previously, this study is concentrated on cash and cash equivalents through sustainable banks.

Often understudied by the research community, cash and cash equivalents remain an interesting option for investors wishing to have an impact without taking many risks or losing time on managing a portfolio. Cash and cash equivalents are the most liquid assets in a balance sheet. They usually refer as deposits that can be found in any financial institution such as sustainable banks, banks with CSR policy, credit unions and loan funds (Wood, 2007). They also refer to marketable securities which “are liquid financial instruments that can be quickly converted into cash for a reasonable price” (Investopedia, 2019). As part of this research, only literature about deposits and sustainable banks will be exhibited as this study will concentrate on this theme. Indeed, this is the own category of cash and cash equivalents that offer sustainable options.

With cash and cash equivalents, investors usually have a large range of options such as supporting: local and responsible companies, low-income real estate projects, education for children in undeveloped countries, environmental projects like energy transition or land rehabilitation (Wood, 2007). And these actions do not ask more effort to individuals than opening savings account in one of the sustainable banks.

Indeed, many banks in Europe are members of two organizations which embrace a more responsible vision of finance. They are called “Global Alliance for Banking on Values” (GABV) and “European Federation of Ethical and Alternative Banks” (EFEAB). The second organization is also generally called FEBEA (the French acronym), even in the English versions of its website and reports. Founded in 2009, “the Global Alliance for Banking on Values (GABV) is a network of banking leaders from around the world committed to advancing positive change in the banking sector. Our collective goal is to change the banking system so that it is more transparent, supports economic, social and environmental sustainability, and is composed of a diverse range of banking institutions serving the real economy” (Global Alliance for Banking on Values (GABV), 2019). GABV counts 53 full members and 11 partners worldwide. In the European continent, 13 financial institutions and 9 in the European Union (EU) belong to this organization. The United Kingdom (UK) banks are still considered as members of European Union banks, as the UK is still part of the EU at the time of this thesis. Indeed, the UK will only leave Europe in October 2019. All these banks follow the six GABV key principles which are: triple bottom line approach, the real economy, client-centered, long-term resiliency, transparency and culture (GABV, 2018). Two of these principles may need further description: the triple bottom line approach and the culture. Firstly, the triple bottom line approach is a commitment for the people, the planet and the prosperity. All these points are important, but the last point is worth reminding it. Indeed, most of the individuals when they think about sustainable banks perceive them as philanthropic institutions. Nevertheless, to be a sustainable company, prosperity is necessary. Secondly, culture refers to the entity’s values and how it applies them in all its processes. These values include social, cultural, environmental and economic transformation (GABV, 2018).

Another similar non-profit organization, the FEBEA founded in 2001 by 6 European banks, is only focused on Europe. Nowadays, “FEBEA federates 26 members (12 banks, 8 savings, and loans cooperatives, 4 investment companies and 2 foundations) based across 15 European countries” (FEBEA, 2019). Some members of FEBEA are also members of GABV. Indeed, FEBEA’s objectives are common to GABV’s ones. Apart from defending the cause of a more responsible finance and fairer society, supporting the exchange of information between financial managers, having a political role in EU institutions and helping its members to accomplish their goals regarding sustainability are the essential FEBEA’s ambitions. In some key financial figures, FEBEA represents in 2018, 30.5Bn euros of assets, more than 670,000 clients and 18Bn euros in loans (FEBEA, 2018). The organization’s slogan is “by the people for the people” which means that transparency and human rights are key points for the entity (FEBEA, 2017)

Even if these two organizations and the banks that composed them represent only a small part of the banking industry in terms of value and number of banks, they are pioneers in a segment of finance which has continuous and consistent growth. As evoked previously, investors are more sensitive than before to ethical and environmental issues. Hence, these banks are there to offer them the opportunity to put their money in a very safe and insured savings account, that will be dedicated to a cause they can choose. For instance, Merkur Cooperative Bank in Denmark among others offers some support accounts such as the Amnesty account, the climate account, the “save the children’s” account, the nature account and the WWF account (Merkur Cooperative Bank, 2019). A customer can choose to put his savings into one of these accounts and know exactly for what his money is used for. This type of initiatives can difficultly be found in most systemic banks, where there is little or no transparency about to whom the deposits on

savings accounts are lent to. Indeed, systemic banks suffered from many scandals over the years. One of the most emblematic concerns BNP Paribas in 2015. It was discovered in 2015, that in 1994 during the Rwandan genocide, BNP Paribas authorized the transfer of the actual equivalent of 1.14 million euros from the National bank of Rwanda to an arms broker. At this period, this type of transactions was totally forbidden by the United Nations (Gounon, 2017). This action was a violation of the embargo enforced by the United Nations. And if BNP Paribas would have asked its customers and be transparent about the use of their savings in 1994, it is likely they would not have supported this transaction. Unfortunately, this kind of transactions is more frequent than we think. What we see is only the emerged part of the iceberg.

Hence, if individuals in Europe have a growing interest in sustainable investments (Schroders, 2016), it is also because they cannot accept any more unethical behaviors from their banks. However, as enunciated previously, social and environmental promotion is automatically linked to philanthropy in people's mind. A large majority of the society does not know about ethical finance and thinks, wrongly, systemic banks are its own safe and profitable option. But this is not the case. Three main criteria should be taken into account while making the decision to open a bank account: profitability, safety and return on investment. And, the members of the two associations presented above can offer satisfactory alternatives to systemic banks. Indeed, European ethical banks are "much more oriented to offering services to the real economy compared to systemic banks, they have a stronger capital position and are more profitable (in terms of ROA) and less volatile" (Fondazione Finanza Etica, 2017). Contrary to systemic banks versus ethical banks in Europe, for the period 2011 to 2016, the ethical banks' ROA (Return on Assets) which is a measure of financial performance, is almost twice the value of the systemic banks' one. Furthermore, the post-crisis ROE (Return on Equity), which is another measure of

performance, is almost the same for the two kinds of banks, whereas before the financial crisis systemic banks' ROE was almost twice sustainable banks' ROE. This gap resorbed because systemic banks have not been able to come back to the pre-crisis incredible performance, which was also at the costs of many risks. This explains the higher volatility of systemic banks' financial ratios. Opposite to sustainable banks, even during the most severe period of the subprime crisis, their ROE remained stable.

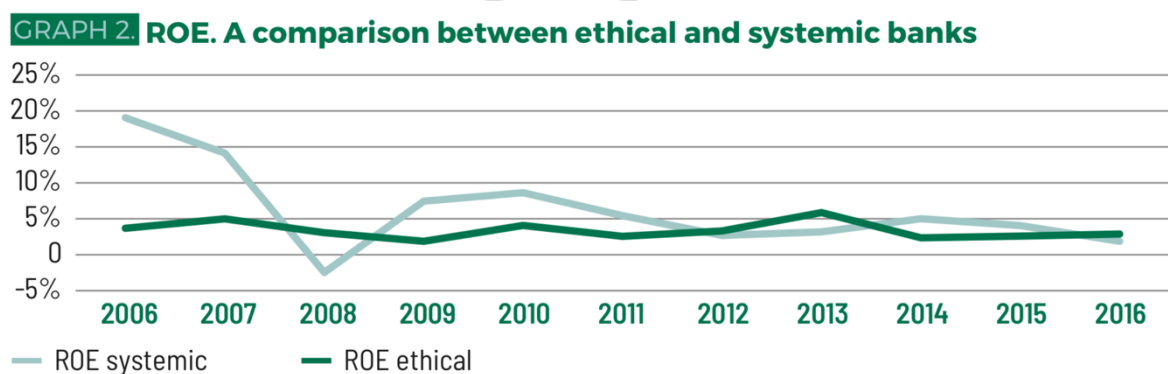


Figure 5: ROE.

A comparison between ethical and systemic banks - Fondazione Finanza Etica

Some other KPI (Key Performance Indicators) can be emphasized. Indeed, growth in total assets, loans, deposits, net equity and net income are good measures of a bank's performance over the years. All these growth measures either in the last five years or the last 10 years are in favor of sustainable banks. For example, according to the report's sample, in the past five years, the deposits' value in sustainable banks increased by four times the systemic's ones (12.55% against 3.18%). The loans' value in the sustainable banks grew by 8.53% against 0.12% for the systemic banks. These numbers are meaningful because the sample chosen by the Fondazione Finanza Etica take into consideration all the sustainable banks in Europe and the fifteen largest European banks (appendix 1). But of course, as it is only a sample and does not represent the entire banking sector in the European Union.

To conclude, nowadays, ethical banks seem to be safer and as or almost as performant as systemic banks (Fondazione Finanza Etica, 2017). These findings are essential to investors to be able to choose the proper bank to put their savings in. Last but not least, savings accounts generally offer interest rates to customers to encourage them to deposit their money at the bank. This criterion has not been studied yet and will be one of the study topics of this thesis.



3. Research Methodology

The objective of this research is to assess sustainable options' performance in cash and cash equivalents compared to their systemic counterparts' performance, in the European Union from 2014 to 2018. The own sustainable possibilities identified in this asset class are deposits (Wood, 2007). Hence, this section aims to describe the methodology used in the case of this study: assumptions, sample description, data collection, and calculations. Among other researches, this methodology is based on *the Ethical and sustainable finance in Europe* by Fondazione Finanza Etica in 2017 and *Real Economy – Real Returns: The Business Case for Values-based Banking* by GABV in 2018.

3.1. Assumptions

Considering this research's sample size, it is not possible to statistically test hypothesis. Hence, two assumptions will be studied in this thesis. The first one is: "Sustainable banks have a better financial performance than systemic banks." It is the main assumption studied by the reference article (Fondazione Finanza Etica, 2017) for the period 2006 to 2016. To do so, and as financial performance is a very broad topic, several ratios will be computed and a comparison between banks for the period 2014 to 2018 will be done. The second one is: "sustainable banks offer equivalent or better savings accounts' interest rates than systemic banks in 2018". So far, this aspect has not been studied by the research community for ethical banks in Europe for any period. As mentioned previously, this point can complete the definition of performance from an investor's and portfolio building perspective.

3.2. Sample description

Contrary to the reference article, the sample of this study is only made of European Union banks. It is formed of 7 sustainable banks and 10 systemic banks.

As data was not easily available for sustainable banks, the choice of only keeping the banks with all the data was done to safeguard the good quality and consistency of this thesis. Thus, Triodos in the Netherlands, Ekobanken in Sweden, Merkur Cooperative Bank in Denmark, Ecology Building Society in the United Kingdom, GLS Bank and Umweltbank in Germany and Banca Etica in Italy are part of our sample. One bank which was part of the Fondazione Finanza Etica's report, Crédit Coopératif in France, was deleted from the sample. Indeed, "within the terms of the French 'Monetary and Financial Code', BPCE is Crédit Coopératif's central body. As such, it ensures its liquidity and solvency, and Crédit Coopératif also shares its rating" (GABV, 2017). Hence, this bank is not financially independent from a systemic bank and could skew the thesis' results. All the sustainable banks of this study are not related to a systemic bank.

About the choice of systemic banks, the same sample as the reference article was chosen, apart from the Swiss banks, as Switzerland is not an EU member. Also, ING Bank has been excluded from this sample as their financial statements for 2018 at the time of this study are not yet published. Finally, all the data needed was not available for Standard Chartered. Hence, BNP Paribas, Société Générale, BPCE and Crédit Agricole in France, Deutsche Bank in Germany, Barclays PLC, HSBC and Royal Bank in the United Kingdom, Nordea Bank in Sweden, Banco Santander in Spain and finally, UniCredit SpA in Italy are part of this sample. These banks were chosen by the reference article because they are the main European Union's banks in terms of total assets.

3.3. Data collection

The data collection process was divided into two parts: the data for computing the financial performance ratios and the savings accounts' interest rates information.

Firstly, the data collection process started with sustainable banks. Several difficulties appeared making this step tedious. Indeed, few recent information was available on some platforms like Thomson Reuters Eikon because most of the banks are quite small entities compared to more classical banks. Hence, their balance sheets and income statements from 2013 to 2018 (the year 2013 is necessary for computing 2014 growth rates ratios) needed to be collected on their website. To do so, their annual reports for the different years studied were downloaded and translated. Then they were copied in an excel file. This process was highly time-consuming as most of the banks only publish their annual reports in their country's local language and not in English. Apart from this difficulty, the main problem was the difference of presentation of the financial statements that made comparisons a bit complicated for some statements' items. Hence, most of the data come from GABV's website in the "key figures" section of the banks' presentation. Nevertheless, not all the banks' key figures were available. Furthermore, only five years were presented, either from 2013 to 2017 or 2014 to 2018. So, the balance sheets and income statements for the missing years were used to fill the data. As the data from GABV was in US dollars while the banks' financial statements were in the bank's local currencies (Euro, Swedish krona, Danish krona, and pounds), conversions were needed. To be the most accurate possible, it was decided to use the monthly average exchange rate in December, as the annual reports are presented "as established on December 31st" for each year. Moreover, a monthly average allows excluding the risk of extreme values on a given day, hence avoiding some potential bias. This step was very important for the consistency of the results, as values in local

currency could increase from a year to another, showing a positive nominal growth rate, whereas the real growth rate (without the inflation's impact) would be negative. And as the values were in different currencies, different inflation rates existed too.

For the systemic banks, the data collection process was easier. All the data from balance sheets and income statements were collected from Thomson Reuters Eikon in US dollars to make it easily comparable.

Secondly, the collection of the savings accounts interest rates was proceeded by looking through the banks' websites or directly asking the banks when the information was not provided or difficult to find.

Savings accounts refer to several kinds of bank accounts. The main different types of bank accounts are support banks accounts, term accounts, variable or fixed rate accounts, day notice accounts, specific local accounts and "classic" savings accounts. All these accounts offer to invest money for a given interest rate that goes from 0 to 3% in the sample studied. However, the accounts differ from one to another according to several criteria. These are, obviously, the interest rates, but also the minimal and maximal amount to invest, the customer's wealth and age. It also considers rather or not the savings account will support a project, the lifetime, the facilities to get a loan by opening a new account; the possibility or not to withdraw money with or without fees or just simply being authorized to withdraw without closing the account, the notice period and rather or not the savings are guaranteed up to the term. Thus, the definition of "classic" savings accounts, which will be at the center of this study, is an account for which there is no term, no maximum amount to deposit, no maximum of withdrawals, no day notice, constant interest rate and open to all customers.

As no recent literature about savings accounts was found, the data collection process and the methodology were designed by the researcher. Hence, the criterion elected to choose if an account will be reported in the database or not was that this type of accounts was present in most of the banks. Also, the “classic” bank accounts are the main accounts studied in this thesis for three reasons. The first one is the presence of these bank accounts or similar ones in almost every bank. The second reason is as they are very similar, they are easily comparable. The third and last one is that there is no restriction for the investors linked to their age or social status.

3.4. Calculations

Performance is a word that has several meanings, hence several ratios needed to be computed and compared to get a complete overview. The ratios chosen are based on the ones used in the two same reference articles evoked previously with some slight differences : return on average assets (ROAA), return on average equity (ROAE), loans to total assets, equity to total assets and several growth measures (total assets, loans, equity, and net income). All these ratios are percentages. The choice of ROAA rather than ROA and ROAE rather than ROE was made because ROAA and ROAE are better indicators for banks and financial institutions than ROA and ROE. This research study’s sub-section aims to define each ratio, why it can be used as a proxy for financial performance and how it can be calculated.

For each ratio, every year from 2014 to 2018 included, and an average of the five years was calculated. All the calculations were done on Microsoft Excel. In a concern of optimal accuracy, the growth ratios’ average over the five years was calculated by computing the growth rate between 2014 and 2018. For the other ratios a simple average of each year’s value was computed.

The first ratio computed is ROAA. “The ratio shows how well a firm's assets are being used to generate profits. ROAA is calculated by taking net income and dividing it by average total assets. The final ratio is expressed as a percentage of total average assets” (Investopedia, 2019). It can be calculated as net income divided by the average of the beginning and the end of the period total assets.

$$ROAA = \frac{\text{Net income}}{\text{Average total assets}}$$

This ratio also demonstrates the firm’s management efficiency. Lastly, ROAA is a good proxy of profitability which is one of the performance components.

The second ratio computed is ROAE. It is one of the most widespread measures. It is the most important profitability metric for shareholders, as it conceptually represents the profit each shareholder could technically get. “Return on average equity (ROAE) is a measure of financial performance calculated by dividing net income by shareholders’ equity. Because shareholders' equity is equal to a company’s assets minus its debt, ROAE could be thought of as the return on net assets” (Investopedia, 2019).. It can be calculated as net income divided by the average of the beginning and the end of the period equity.

$$ROAE = \frac{\text{Net income}}{\text{Average shareholders' equity}}$$

This ratio is usually used in comparison to a benchmark or a comparison between two companies

The third ratio computed is loans to total assets. This metric aims to display banks’ contribution to the real economy. It also shows the level of diversification of its activities (lending and

investing in financial markets). But this diversification is here a synonym of risks as universal banks (banks involved in both lending and investing on financial markets' activities) can suffer from higher losses from “gambling” on financial markets rather than lending money to customers with a relatively small probability of default. It is calculated by dividing net loans by total assets.

$$\text{Loans to total assets} = \frac{\text{Net loans}}{\text{Total assets}}$$

Hence, this ratio is also used in comparison to other companies in the same industry. Banks which are only involved in lending activities will due to their structural difference with universal banks have a higher loan to total assets ratio. This rate is a complement of the previous ratios measuring the banks' performance assessment as it also shows the banks' solvency.

The fourth ratio computed is equity to total assets. It shows the portion of capital a firm has, in comparison to its total assets, and thus his ability to face unexpected losses. It also measures a firm's financial leverage. It can be calculated by dividing equity by total assets.

$$\text{Equity to total assets} = \frac{\text{Equity}}{\text{Total assets}}$$

The higher this ratio the more secure the company is and the lower his probability of bankruptcy. Unfortunately, in the banking industry, this ratio is usually quite low due to their ease to get loans from other commercial banks and central banks. Hence, this rate is also a measure of solvency and is an appropriate proxy for sustainability.

The four last ratios are growth ratios. Growth ratios demonstrate the change from a year to another and are short-term performance metrics. These ratios can also be used to assess a firm's

riskiness by showing inconsistent growth rates between years, especially if the rate's sign varies often from positive to negative. A growth ratio is calculated in different ways depending on the previous and actual year's value sign. If both values are positive or the previous year's value is positive and the actual year's value is negative, the growth rate is equal to the subtraction of the actual value by the previous value all divided by the previous value.

$$\text{Growth rate} = \frac{(\text{Actual value} - \text{Previous value})}{\text{Previous value}}$$

If both values are negative, the growth rate is the division of the previous year's value by the actual value and then, minus one.

$$\text{Growth rate} = \frac{\text{Previous value}}{\text{Actual value}} - 1$$

Finally, if the previous year's value is negative and the actual year's value is positive, the growth rate is equal to the subtraction of the actual year's value by the previous value, all divided by the previous year's absolute value.

$$\text{Growth rate} = \frac{(\text{Actual value} - \text{Previous value})}{\text{Abs}(\text{Previous value})}$$

The various growth rates studied (total assets, equity, loans and net income) are performance indicators. The higher these ratios the more competitive the company is compared from the previous year or compared to its counterparts.

4. Results and analysis

The following section is the core of this thesis and will be separated into three main parts.

In the first part, all the performance ratios defined previously, for both ethical and systemic banks will be compared and analyzed for the period 2014 to 2018. For each ratio, 2014, 2018 and average values will be presented in a table. Moreover, a graph will show the evolution of both types of banks for each ratio. More detailed values can be found in the appendix (appendix 2 to 11)

In the second part, and this is an important contribution of this thesis, performance is observed from an investor's perspective. Savings accounts usually offer interest rates to encourage individuals to deposit their money in banks. Hence, these interest rates will be proxy for the accounts' performance. They will be assimilated to expected returns for portfolios. Even if these interest rates are very low compared to other asset classes, they should not be neglected in an investor's portfolio construction. Thus, sustainable banks' savings accounts interest will be compared to those of the systemic banks.

In the third and final part, the results established above will be completed by the interview of Mrs. Andrea Palmer, an investment manager in Triodos, the largest European sustainable bank in total assets value. This subsection aims to provide an internal view on the sustainable banking sector and more specifically its opportunities and challenges nowadays and in the near future. It will also present Mrs. Palmer's point of view about systemic banks activities, their rapport to sustainability and the increasing pressure of becoming greener and more ethical.

4.1. Banks' structural performance

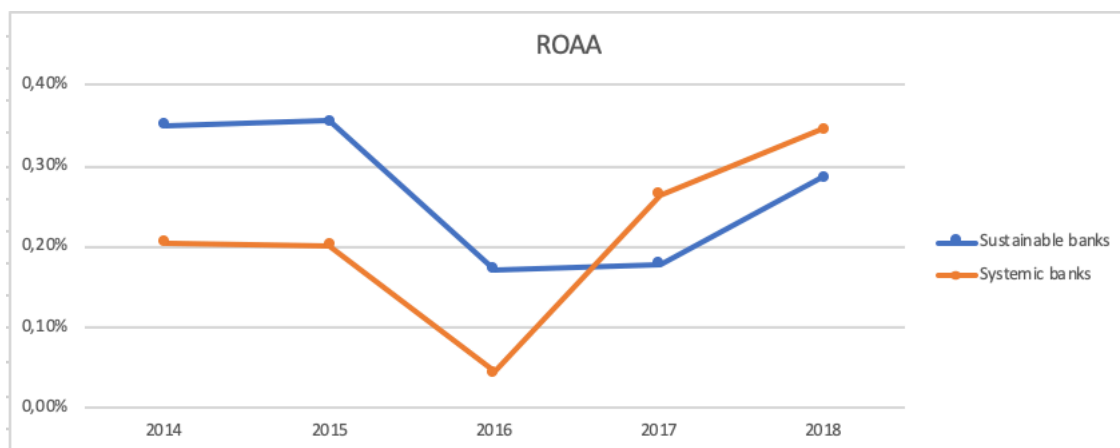
To get a better understanding of this analysis and comparison, it is necessary to alert about several key elements. Firstly, sustainable banks and systemic banks do not have the same size in terms of total assets. The sustainable banks' total assets range is between 100 and 8,830 million dollars while systemic banks are between 700 and 2,500 billion dollars. Hence, any variation in the growth percentages has a larger impact on systemic banks than on sustainable banks. Secondly, growth ratios are percentages. Thus, if a percentage is negative but the previous one was even more negative, the graph's curve can show a rise between the previous and the actual value whereas it is only a "decrease of the decrease". This is why it is essential to identify when the ratios' values are positive or negative. Thirdly, due to the sample size, the individual management efficiency of the banks has a direct impact on the results. Indeed, a very good or bad year for a bank caused by its strategic views may create some extreme values and skew a bit the results as it has been chosen to use averages in the calculations. The decision of choosing averages rather than medians can again be justified by the sample size.

- **Return on average assets (ROAA)**

Table 1: Evolution of ROAA

| | 2014 | 2018 | Average |
|-------------------|-------|-------|---------|
| Sustainable banks | 0,35% | 0,29% | 0,27% |
| Systemic banks | 0,21% | 0,35% | 0,21% |

As can be seen in table 1, sustainable banks ended in 2018 with a lower ROAA than systemic banks which saw an increase from 2014 to 2018. Nevertheless, a similar average over 5 years with an advantage for the sustainable banks (0.27% for sustainable banks and 0.21% for systemic banks). The ROAA is not very high but it is common in the banking industry to have a ROAA under 1% (Investopedia, 2019).



Graph 1: Evolution of ROAA

Graph 1 shows that the evolution for the two categories (sustainable and traditional) is quite similar apart for 2017 where the ROAA remained constant for sustainable banks whereas it increased for the systemic banks. This difference can be simply explained by looking at the ROAA's formula. Indeed, even if net income for sustainable banks slightly increased, their total assets grew a lot between 2016 to 2017, making the ROAA remained constant. Growth in total assets can either be positive or negative. For example, it can be due to the rise of liabilities and more particularly debts which is negative. However, in this case, total assets for sustainable banks raised due to a rise of 21,76% of loans (appendix 6), which is a positive indicator. This demonstrates the sustainable banks' performance recognition and investors' willingness to borrow money from these banks. A total assets' growth of 9.49% (can also be observed for systemic banks also partially linked to their average loan growth (11.05%) (appendix 3).

The last point of this analysis is the comparison in the standard deviation of these values for five years. The standard deviation for sustainable banks is about 0.09% against 0.11% for systemic banks. The difference is not very big but is significant considering the incomparable

size of the two types of banks, as mentioned in the warning done earlier. Also, these two values are quite high for a ROAA which do not go above 0.36% for the sustainable banks and 0.33% for the systemic banks. The main source of volatility is due to the huge variations in net income, especially for systemic banks, which occurred during these five past years. Hence, even if systemic banks record higher net income growth (598.58% against 0.5%), it is mostly associated to their financial markets activities rather than lending ones which lead to a higher standard deviation, and thus level of risk.

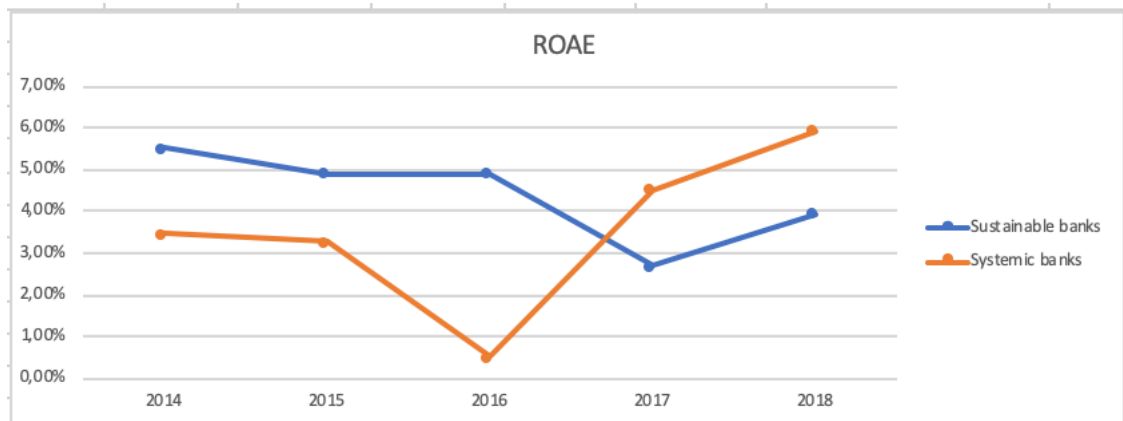
Differences in ROAA from a year to another are usually very small. But, little variations in ROAA can result in large ones in ROAE.

- **Return on average equity (ROAE)**

Table 2: Evolution of ROAE

| | 2014 | 2018 | Average |
|--------------------------|-------|-------|---------|
| Sustainable banks | 5,53% | 3,95% | 4,40% |
| Systemic banks | 3,46% | 5,93% | 3,55% |

The situation for ROAE between 2014 and 2018 is similar to the ROAA's one. Sustainable banks' ROAE decreased from 2014 to 2018 whereas it increased for systemic banks in the same period. However, ROAE's level remains higher in the first ones (table 2). The ROAE can be interpreted as follow. In average during the five years, sustainable banks' shareholders could have got 4.40% of their shares' value as extra income per year, compared to 3.55% for the systemic banks' shareholders. Nevertheless, as some of the sustainable banks are private banks, this interpretation is only an image.



Graph 2: Evolution of ROAE

Graph 2 shows analogous trends than graph 1 for systemic banks. This proves that leverage is not the reason for the ROAA's variations instead of loans and equity growth. Banks are the most leveraged entities and a debt's increment is usually not well perceived by investors. But if we compare the ROAA and ROAE curves for the sustainable banks we can notice that ROAE's curve is smoother than the ROAA's curve. This can be explained by the fact that ROAE is only sensitive to the changes in equity and not in debt. ROAE for both categories is not very good as it should usually be above 5%.

About the standard deviation during these five years, it is of 1.11% for sustainable banks against 1.95% for systemic banks. The same results as for ROAA can be observed, thus the same conclusions can be drawn. Systemic banks have higher standard deviation which can be considered as higher volatility caused by the net income instability and maybe also important variations in equity growth for both kind of banks (appendix 4). However, again, standard deviation considering the banks' size should have been higher for smaller banks like sustainable banks. But it is not the case due to the financial market activities of systemic banks.

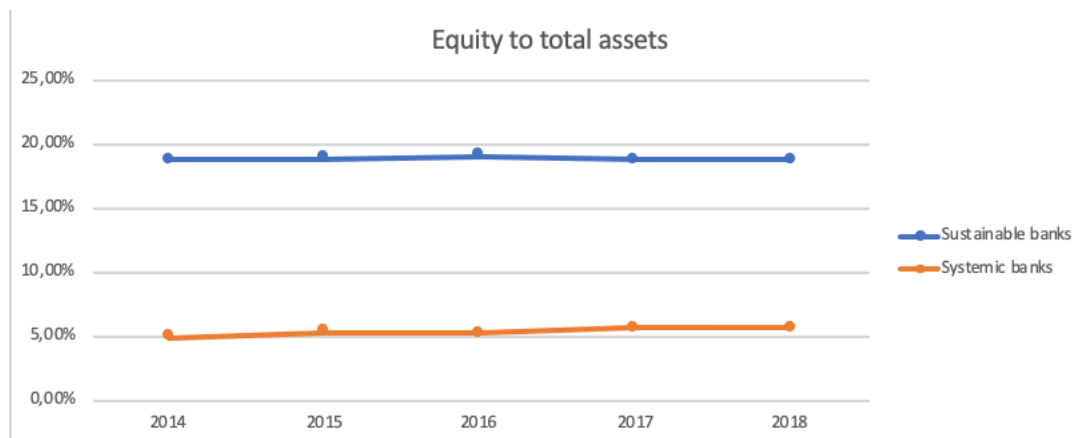
Now that the effect of net income volatility has been identified, the equity to total assets ratio will show if variations in equity are also responsible for the ROAA and ROAE's standard deviation.

- **Equity to total assets**

Table 3: Evolution of equity to total assets

| | 2014 | 2018 | Average |
|--------------------------|--------|--------|---------|
| Sustainable banks | 18,78% | 18,78% | 18,86% |
| Systemic banks | 5,04% | 5,78% | 5,52% |

Equity is a key element to understand a bank's financial health and solidity. In the case of sustainable banks, equity represents 18.86% of its total assets on average for the five years (table 3) and only 5.52% for the systemic banks. These percentages are pretty low when you think about the liabilities structure: debt, equity and deposits (which are a sort of debts). As already mentioned, banks' level of leverage is huge because they have facilities to borrow. Indeed, they can make arrangements with other banks to lend and borrow easily. Furthermore, banks are still considered as "too big to fail", even after the subprime crisis which explains why regulators authorize them to be extremely leveraged, any company in any other industry could not have. But, as banks can also fail, a higher equity to total assets ratio is a positive indicator about a bank's health and sustainability. Hence, sustainable banks based on this measure seem to be more stable.



Graph 3: Evolution of equity to total assets

As can be noticed with graph 3, equity to total assets ratio remains constant for both types of banks even if the equity growth varies a lot. However, even if the two curves seem similar in their evolution, they do not represent the same situation. Indeed, equity growth is always positive for sustainable banks with impressive growth in 2017 (21.70%) (appendix 4), contrary to systemic banks that see their equity decreasing a bit more every year except in 2017. When looking at the growth between 2014 and 2018, sustainable banks are largely above systemic banks (34,76% against 0.03%). A rise in equity can generally be caused by the issuance of new shares or preferred shares, an increase of reserves and/or retained earnings. In the case of sustainable banks, the issuance of new shares is the main reason for the equity's growth. Usually, issuing new shares is not always appreciated by actual shareholders who may see a decrease in their share price. However, in the case of banks which have high debt-to-equity ratios, whereas the optimal debt-to-equity position is 50%, every industry types confused, raising equity to finance new projects is a positive signal sent to shareholders and investors. It shows the willingness to reinforce its structure.

About equity to total assets' volatility, as said, it remains constant meaning the standard deviations are quite low. For sustainable banks, the standard deviation is 0.16% and almost the double for systemic banks, 0.30% (appendix 12). Again, systemic banks' results are more volatile than their sustainable counterparts in the period 2014 to 2018.

Equity to total assets is not the own sustainability measure for a bank and needs to be completed by other similar indicators such as loans to total assets.

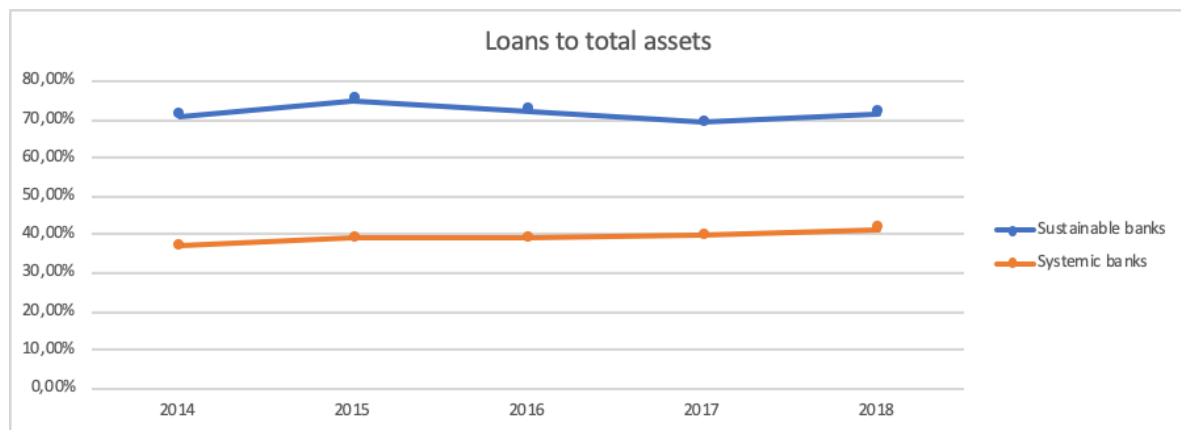
- **Loans to total assets**

Table 4: Evolution of loans to total assets

| | 2014 | 2018 | Average |
|--------------------------|--------|--------|---------|
| Sustainable banks | 70,87% | 71,68% | 71,84% |
| Systemic banks | 37,07% | 41,29% | 39,27% |

As can be seen in table 4, loans to total assets marginally raised between 2014 and 2018. What is more noticeable is the huge gap between systemic banks and sustainable banks. Indeed, the sustainable banks' portion of loans to total assets is close to twice the systemic banks one on average during the five years period studied (71.84% against 39.27 %). This means that lending activities represent 71.84% of sustainable banks' assets. This rate represents one of the bank's key elements to analyze its balance sheet. Systemic banks are much more involved in trading securities on financial markets than sustainable banks. This is why it was totally expected that systemic banks' loans to assets ratio would be lower than its sustainable counterparts. This measure is part of the risk analysis. Indeed, the higher the ratio, the more the bank contributes to the real economy (in opposition to financial markets). Also, in lending activities, the probability of default is more certainly known than the future price of any risky security traded.

Thus, a bank is commonly considered safer when its loans to assets ratio is high. To complete this metric, the deposits to assets ratio is calculated. However, these data were available for only a few banks.



Graph 4: Evolution of loans to total assets

With graph 4, it can be noticed that for both types of banks, the loans to assets ratio does not vary much from a year to another. Indeed, while comparing total assets growth and loans growth graphs, the curves evolve jointly. Hence as the metric is a ratio, the variations of the two metric's components canceled themselves. This is due to the finding mentioned earlier. Total assets growth may be directly related to loans growth.

About the measure of volatility, loans to total assets ratio is the first metric for which the sustainable banks' standard deviation is higher than the systemic banks (2.09% against 1.51%) (appendix 12). Nevertheless, it is important to remind that, because of the huge difference in the two categories of banks' in terms of total assets value, a standard deviation of 1.51% for systemic banks has a larger impact in amounts than a 2.09% for sustainable banks. Indeed, the largest sustainable bank's assets are at least one hundred times lower in value than the smallest systemic bank.

- **General comments**

Other metrics can be used to assess a bank's performance, but the ones presented above are some of the most relevant. Also, calculating these ratios, in particular, will permit to compare the results found in this thesis to previous studies (Fondazione Finanza Etica, 2017) (GABV, 2017) and highlight the impact of the years 2017 and 2018 as the previous reports stopped in 2016. Using the five-year average to do these comparisons was a way to compare more easily the results of previous studies and these ones. As can be noticed, when an average is in favor of one of the two types of banks, all the years individually are in majority (three years out of five at least) in favor of the same type of banks. This means that there is no extreme value that particularly affects the five-year average. Hence, the five-year average can have some significant value and be exploited.

About the results, considering our sample and the chosen period (2014 to 2018), seven out of eight average in five years ratios are in favor of the sustainable banks. Some of the ratios such as three of the growth rates experience important differences between the two categories studied, on a five-year average. The total assets growth and loans growth rates are even negative for systemic banks which tend to show the systemic banks' deterioration of their situation. The other ratios of this study which are favorable to sustainable banks. The own ratio in favor of systemic banks is the net profit growth. As mentioned previously, systemic banks take more risks in their investments than sustainable banks. Yet, higher risks usually lead to higher returns which are the reason for a higher net profit growth ratio but also a higher standard deviation, as higher risks also increase the probability of losses. It would have been interesting to get the net profit only from the lending activities to make this comparison fairer. One year notably, 2017, was tough for both type of banks in terms of net profits. Sustainable banks endured a loss in

their net profits for the third year in a row while systemic banks saw a decrease in their growth rate by 260% compared to the previous year. These observations are not a coincidence and can be explained by a tense political context in Europe and a fragile economy. 2017 followed 2016 which was the year of Trump election and Brexit vote. Even if these events happened in 2016, the European Union's economy was impacted in 2017 too. The political context in Europe was also tense with the approach of the presidential elections of two of the main figures of the European Union, Germany and France. The French case was especially worrisome with the rise of the nationalist party which was favorite during a time. On the economic side, in 2017, Europe passes close to another economic crisis with Italian banks considered as nonperforming, which directly affected the other European banks. UniCredit SpA faced a falling off of its profits by almost 800% in 2016. Deutsche Bank in Germany was also not in good shape. This year proved the fragility of the systemic banks that we have already observed with somehow lower performance and sustainability rates than sustainable banks. Also, the standard deviations for the period studied tend to demonstrate the volatility and unpredictability of some ratios. To conclude, even if the systemic banks record higher net profits and net profit growth, it is at the cost of higher risks which weaken the already fragile equilibrium they managed to establish. Hence, even if smaller, sustainable banks seem to be in a healthier position than their systemic competitors.

| | Sustainable banks | Systemic banks |
|-------------------------------|-------------------|----------------|
| ROAA | 0,27% | 0,21% |
| ROAE | 4,40% | 3,55% |
| Total assets growth | 35,51% | -12,84% |
| Loans growth | 34,76% | -2,41% |
| Loans to total assets | 71,84% | 39,27% |
| Equity growth | 34,09% | 0,03% |
| Equity to total assets | 18,86% | 5,36% |
| Net income growth | 0,50% | 598,58% |

Graph 5: Ratios five-year average

4.2. Banks' accounts interest rates as a proxy of performance

Banks across Europe provide a large savings accounts offer. Some banks in this thesis' sample, just themselves, propose up to 10 different possibilities. Hence, this part of the analysis will try to describe the most common savings accounts and their pros and cons. Then, annual interest rates comparison in the case of the "classic" savings accounts will be done (appendices 13 and 14). Indeed, interest rates are here, a proxy of the deposits' performance, and will complete the structural bank analysis realized above. Every time, the term "interest rate" is used, it refers to the nominal annual percentage rate. In the banking sector, a nominal interest rate is an interest rate before taking into account inflation and fees.

Support bank accounts are accounts that can be found only in sustainable banks. The characteristics of support bank are that it is a free savings account (no interest rate and no management fee). Also, it is commonly an account that has a defined lifetime. The customer also gets the opportunity to choose a cause that is dear to him. For instance, Merkur Cooperative bank offers support accounts that defend several ethical causes by investing in international organizations' projects. Amnesty account, climate account, save the children's account, nature account and WWF nature account are the causes, an individual can defend simply by putting its savings in Merkur Cooperative Bank. This is an easy way to support a cause dear to you, safely, in total transparency and without any effort. Support accounts like some "classic" savings account do not provide interests. It is the case of Banca Etica, and they took the time to answer this question. This was their answer: "Our first value proposition is that we are the own Italian bank that is completely transparent. If you put your money in our savings account you are sure that we don't use them to finance companies or projects involved in arms, tobacco, fossil fuel, animal experimentation... On the other side, you are sure that your money will be

invested in sustainable projects from an environmental and social perspective: culture, social cooperation, young entrepreneurs. So basically, a customer chooses us because he shares our values. We also offer fair prices. Our services are competitive compared to the other Italian banks and we also provide digital services. In the end, if you decide to buy some stocks and become a shareholder you will gain some extra discount on loans and other services.” Thus, some sustainable banks believe what would attract potential investors is more all the advantages they offer compared to systemic banks (transparency, ethical projects, possibility to choose a cause that is dear to you, etc.) than the few interests they could gain. Furthermore, this added to competitive services should be sufficient to convince customers. Indeed, savings accounts interest rates are anyway very low. Nowadays, when putting their money in savings accounts, most of the time, people do not expect the account to be very profitable. They often open it to “store” their savings.

Some accounts can offer little higher rates than “classic” savings accounts (up to 0.5% for the sustainable banks and 0.85% for the systemic banks). If these accounts go with higher rates, it is because they are more binding. Indeed, the savings cannot technically be withdrawn before the accounts’ term, but if the customer insists to withdraw the money it is still possible. Nevertheless, this will lead to the closing of the account and the abandon of the totality of the interests. These accounts are a bit similar to day notice accounts. Day notice accounts do not allow the customer to do withdrawals without noticing the bank 30 to 90 days before the withdrawal day. They are common in sustainable banks and offer better interest rates than classic accounts (appendix 13).

Depending on the amount deposited in the account, its lifetime and the local regulations, its rate (fixed or variable) varies a lot from a bank to another. In France, for example, the most common

savings account is the A booklet (Livret A in French). This account is accessible to anyone over 18 years old and is characterized by a limited amount of 22.950€, no management fees, interest rates exonerated of government taxes and unlimited free withdrawals. The main specificity of this account is that the interest rate is fixed by the French government twice a year. Also, from a bank to another, there is often no exact equivalent account. Hence, due to all these disparities, it is a bit difficult to draw conclusions. It seems, according to our sample, that systemic banks' term accounts offer higher interest rates than sustainable banks. This can be explained by the size of these banks, the diversity of their investments, their activities' level of risk and thus, their profits. Indeed, the net profit growth of the systemic banks is of 598.58% compared to 0.5% for the sustainable banks. Knowing that systemic banks already make more profits than sustainable banks, their accounts' interests' rate should be much higher. The following comparison between systemic banks and sustainable banks ones on their classic savings accounts will show if the interests' rate gap between the two banking categories is consequent or not.

Classic bank accounts' interest rates from our sustainable banks' sample goes from 0% (Banca Etica) to 0.85% for Ecology Building Society. This difference can partially be explained by the fact that Ecology Building Society's savings account has a maximum limit of £75,000 (around \$95,000) whereas other accounts accept unlimited amounts. Thus, the larger the amount, the higher the interests needed to be paid by the bank. Hence, if the amount on the bank account is very consequent, the bank would need to pay high amounts of interests. This is why they need to establish a limit that respects the breakeven point. Also, Triodos, in the United Kingdom, has an account which offers 1% interest rate but with a limit amount of £500,000 for a sole account and £1,000,000 for a joint account. Added to this constraint, above three withdrawals per year,

the customer needs to pay some fees. But, the account with the higher interest rate and limited constraints, goes to Ecology Building Society and its regular saver account. With 1.75% annual interest rate, this account is, however, more constricting than classic savings accounts. Even if the customer only needs £25 to open it, he cannot add more than £3000 per year in the account or easily withdraw his money.

In our sample, systemic banks' classic savings accounts' annual interest rates go from 0.01% (Deutsche Bank) to 0.30% (Barclays). Again, as for sustainable banks, the highest rate is given by a British bank. The average rate is around 0.15%. It seems like there is less variability in interest rates between the systemic banks than the sustainable banks.

Last but not least, both kinds of banks offer some children or youth accounts. They have a small maximum amount (1,600€ for the four systemic French banks) but higher interest rates (between 1% and 1.75%). The objective of these accounts is to retain customers from an early age. Due to their target who are not the investors, hence not this thesis' focus, and the extremely limited amount that can be deposited, no further analysis will be performed on this account class.

To conclude, considering how low the interest rates are in the banking industry, this is not the main criterion, a potential investor will look at. In our sample, every systemic bank offers positive interest rates for their savings accounts contrary to some sustainable banks. But, even if the answer provided by Banca Etica about their interest rate policy is coherent, other banks like Triodos prefers to align themselves or even exceed their systemic competitors' interest rates. This strategy appears to be more interesting for sustainable banks for two reasons. The first reason is psychological. Even if an individual can only get 0.10% annual return on his

investment, it will always unconsciously appear much better than nothing. The second reason is market-oriented. Social, ethical and environmental projects are frequently associated with philanthropy in popular belief. Hence, not offering any interest rate can unconsciously strengthen this belief, whereas a positive interest rate may surprise and attract potential customers' attention. Even if the annual rate of return is a good proxy of performance for most of the securities, because how symbolic the rate of returns provided by banks in their savings accounts are, this parameter is not of the largest significance for choosing a bank. Also as in our sample, some sustainable banks align themselves with systemic banks, they can be considered as better options from an investor perspective, thanks to all their side benefits.

4.3. Banks, present and future: An interview of Mrs. Andrea Palmer (Triodos)

After presenting sustainable and systemic banks' performance from an external point of view, by studying their consolidated financial statements, it is complementary to obtain an internal angle about it. Hence, Triodos, the largest EU sustainable bank in total assets value, accepted to give an interview about the present and future of sustainable banks and more specifically of Triodos, obviously. All the following declarations are proper to Mrs. Palmer and the author's opinions.

In this thesis, interest rates on savings accounts are a proxy of performance. This means the higher the interest rate, the better the performance is considered to be from an investor's perspective. Triodos, which headquarters are based in the Netherlands, is one of the sustainable banks which offers the highest interest rates for its classic savings accounts (0.4% and 1.75%). However, there was a discussion about lowering these rates down to 0% because most of the

Dutch banks do not offer interests for their savings accounts. Indeed, as nowadays the rates are very low on the market, a positive rate will not make the customers much wealthier. There is no real difference between no interests and the actual interests provided by banks. But, it is a marketing tool to propose interest rates, because to customers, even if the returns they would get are very small, it still sounds better than nothing. In fact, it is more about psychology. Also, social, environmental-friendliness and ethics often click in people's minds with philanthropy. Thus, offering interest rates is a way to prove that sustainability is profitable.

Fortunately, this word association (sustainability and philanthropy) starts to disappear. An increasing number of individuals and companies begin to consider sustainable finance and sustainable investment as an opportunity to make money. In Triodos, there is no typical investor in terms of age and gender. Contrary to what could be expected, a large part of their customers is retired people. Nevertheless, some common points between the investors can be emphasized. Most of them are quite wealthy and educated people, that had the chance to travel around the world and see by their own eyes, the changes that need to be implemented. This is why they show some enthusiasm towards sustainable activities and hence, sustainable banking.

Sustainable banking is a growing industry, but still represents only a niche in the global banking industry. Some actors like Triodos, implemented for almost four decades in this sector, can identify some threats and opportunities in this growth. Its goal is to change finance. Hence, the new regulations and the pressure about climate change are good news for Triodos, as the company tries to spread the word on this topic for a long time. However, the industry growth brings some new competitors. Thus, it is challenging on a marketing perspective to keep on differentiating and to keep its market share. Indeed, most of the potential customers do not have the time to look in-depth about the savings accounts options they have. Of course, the industry's

growth also brings some opportunities to Triodos such as opening new branches in other countries (arrival on the Italian market) and increasing their digital integration (brand new website).

Systemic banks are aware of the sustainability boom in their industry too. It may become a threat to their activities as they are not really committed to sustainability but more about making money. As long as it will be profitable to invest in non-ethical activities, they will keep on doing it. However, as it can be noticed with the recent launch of sustainability booklets in several banks of our sample, like BNP Paribas, Société Générale, BPCE and others, the systemic banks want to capitalize on the sustainability opportunity. So, according to the interviewee, systemic banks will not disappear in the future, but the definition of the systemic banking sector may change in the following years. Even if sustainability is more used as a marketing tool for systemic banks, they need to start from somewhere. Finally, this is positive for the sustainable banking branch as if even systemic banks get involved in more ethical activities, it proves that sustainability does not necessarily go only along with philanthropy.

In the future, Triodos hopes to develop its international branches, create more partnerships, strengthen its network and its position on the market and mostly keep being an actor in the ecological transition. Governments need to be the drivers of change because the financial sector is still one of the main pieces of resistance in the ecological transition. The implementation of taxes may be the key, as the banks will naturally abandon unprofitable activities. However, the remaining time to successfully implement the ecological transition is very short making Mrs. Palmer quite pessimistic about the ability to deeply change the sustainable investment industry on time.

5. Discussion and limits

In a first time, the following section aims to compare the results found to existing reports on older periods and periods that overlap this research time horizon. In a second time, it will pinpoint some limits of this thesis, mostly related to the results accuracy due to the sample size and the methodology used. In a third time, suggestions and recommendations to improve the quality of this work and go even more in-depth.

The topic of this research is sustainable and systemic banks performance in European Union from 2014 to 2018. This subsection will place into juxtaposition this thesis' results and the results found in the Fondazione Finanza Etica report and the GABV report. Hence, the comparisons will be done following the methodologies used in the two reports which are identical. The first comparison will be done with European banks (not only European Union banks). The loans to assets ratio and the equity to total assets ratio will be compared considering 2016, the last year of the study to identify the differences between Europe and the European Union. Then, still with these two ratios, the last year of this study, the evolution between 2011 and 2018 will be observed. Obviously, as some differences will be diagnosed between Europe and European Union banks, the evolution between 2011 and 2018 will not be fully accurate. Furthermore, other ratios' (growth ratios, ROAA and ROAE) the five-year average (2014 to 2018) will be compared to the EBI report's five-year average (2011 to 2016) to highlight the impact of years 2017 and 2018. The second comparison will be done between European Union bank and worldwide banks (including the banks in European Union). As for the first comparison, the loans to assets ratio and the equity to assets ratio will be compared considering 2017, the last year of the study to discuss the disparities between the European Union's results and the world's results. Then, the same path will also be used for analyzing the evolution between 2012

and 2017. Moreover, the other ratios' (growth ratios, ROAA and ROAE) five-year average will be contrasted, using the same methodology as for the first comparison.

All the banks included in this thesis' sample are part of the Fondazione Finanza Etica's report's sample too. It includes 21 sustainable banks and 15 systemic banks. Hence, we can expect more variations in sustainable banks' results. Thus, in Europe, in 2016, the loans in the percentage of total assets represented 73.42% for sustainable banks and 38.53% for systemic banks. In our study, the percentages found are 72.4% for the sustainable banks and 39.19% for the systemic banks. About the equity to total assets ratio in Europe, in 2016, sustainable banks have a percentage of 11.22% against 5.63% for the systemic banks. In the European Union, the equity to total assets rates calculated are 19.12% for sustainable banks and 5.34% for the systemic banks. Hence the sustainable banks in our sample perform better on this ratio compared to the average European banks. Now, considering the evolution between 2011 and 2018, a small fall can be observed for the sustainable banks' loans to total assets ratio (75.25% versus 71.68%) contrary to systemic banks that overperform (34.62% against 41.29%). About the equity to total assets ratio, ethical banks record a growth (11.22% against 18.76%) between 2011 and 2018. However as seen previously, this rise may be due to the sample studied rather than a concrete growth. From the systemic banks' side, a little increase happened (4.39% versus 5.65%). About the five-year average ratios, we can observe for sustainable banks, a higher average rate for return on average equity (ROAE) (3.26% in 2011, against 4.40% in 2018), total assets growth (9.03% against 35.51%), loans growth (8.53% against 34.76%) and equity growth (9.04% against 34.09%). The three growth rates are much larger in 2018 than in 2011. This is mainly due to the large increase in 2017 in equity and loans. For the systemic banks, higher five-year average rate for ROAA (0.19% in 2011 against 0.21% in 2018) and net income (598% against

-1). There may be a difference in the way of compounding net income growth rate rather annual as the biggest rates of return are, in our sample, 2015 and 2016. Indeed, Fondazione Finanza Etica used the compounded annual growth rate while in this study the annual growth rate (see in methodology) was calculated. Thus, we can find two explanations about the evolution between 2011 and 2018. It may be related to the recent years' performance (2017 and 2018) for some ratios such as for total assets. Nevertheless, the two last years' performances are quite good compared to the previous years studied. Hence, the gap may be explained by good performances in 2011 and 2012 and poor performances of the following years. Globally, our sustainable banks' sample record better results than the sample from the Fondazione Finanza Etica report. This is linked to higher performances in 2017 mostly. The difference about being a member or not of the European Union do not seem to have a big impact on the performance.

In this second comparison, the results found in this thesis about the European Union will be contrasted to the results of all the banks in the world. All the sustainable banks of the thesis' sample are also part of the GABV report sample as they are part of GABV in Europe. The GABV sample includes 44 ethical banks and 30 systemic banks. Hence, the loans in the percentage of total assets, on average worldwide, in 2017, was 71.8% against 69.28% in European Union for sustainable banks. Thus, European Union banks from our sample seem to be on the global average. The same observation can be done for systemic banks. The global rate for 2017 was 41.5% against 41.29%. About the equity to total assets ratio, EU sustainable banks appear to have a stronger position compared to the worldwide average (18.78% against 8.3%). However, systemic EU banks are a little under the global mean with only 5.64% versus 7.4%. Considering the evolution between 2012 and 2017, on a global perspective, the loans to assets ratio remains constant (71.6% in 2012 versus 71.8% in 2017). This evolution is similar for the

period 2014 to 2018 for sustainable banks. A slight increase between 2012 and 2017 occurred for worldwide systemic banks as for EU systemic banks between 2014 and 2018. For the equity to total assets ratio, the average of global sustainable banks keeps the same position such as the EU banks between 2014 and 2018. On their side, between 2012 and 2017 global systemic banks record a small rise in their equity to total assets ratio such as the EU systemic banks between 2014 and 2018. Hence, for these ratios in general, EU banks seem to follow the global banks' trends. Then, about the five-year average ratios, EU ethical banks higher total assets, loans and equity growth than the global average. But it is not the case for the ROAA and ROAE. The period of comparisons is not exactly the same, from 2014 to 2018 for the EU banks and 2013 to 2017, for the global banks. However, if the growth ratios are higher in the EU, it is mainly due to the year 2017. About the systemic banks, almost all the ratios show an underperformance of the EU systemic banks compared to the rest of the world. Several studies have already shown the underperformance of EU banks in contrast to US banks in the near past, and this study reinforces this position for more recent years.

The comparisons done above cannot be considered as totally consistent due to several limits which need to be identified in this research. Once, this will be done, it will help the future research community to improve the results and the analysis of this thesis. The first limit is the sample size. Indeed, the sample size is quite small because of a sum of difficulties : the period studied is very recent meaning the banks financial statements were not all available at the time of this thesis, the language and presentation of the balance sheets (some banks do not put every time the same assets in the same asset class) and the lack of data about savings accounts interest rates. In any way, while starting this research, it was obvious that the results found will not be statistically verified because of the limited number of banks, not permitting to reach the number

of one hundred observations and perform some regressions. The second limit of this thesis is the choice of the indicators calculated. Indeed, some other performance indicators could have been added but it was decided that it was more consistent to follow the methodology tracked by the GABV and the Fondazione Finanza Etica in their reports. Two derogations were done for the ROAA and ROAE, calculating these ratios rather than the systemic ROA and ROE presented in the reports because of the better adequacy of these ratios for the banking sector. Therefore, about the indicators' calculations, they cannot be totally exact because of the rounded amounts given in the balance sheets as all the values are in millions or even billions. Also, all the members of the European Union did not adopt the euro, so it was necessary to convert all the local currencies and even the euro into the dollar. This choice was done to be able to make a comparison between the results of this study and the existing literature. Indeed, due to inflation, it would not have been possible to compare values in different currencies. Hence, as the accounts are always presented at the December 31st, the exchange rate applied for every currency was the December the current's year exchange rate for each year. This can be considered as a bias in the calculations. All the bias evoked were considered before starting this study. Hence, the errors they could create have already consented.

The previous bias mentioned should be taken into consideration for future studies on this topic. Also, if the research is carried on for more than a semester as it was the case for this thesis, it may be easier to gather more data by contacting the banks. Although this was done in the case of this study, many banks took a long time to answer and even more, to find a date for a potential interview. Furthermore, some other performance and risks metrics could be added to this study such as the deposits to total assets ratio, the debt-to-equity ratio, the loan loss provision, the earnings retention, etc. This list is not exhaustive and only indicative.

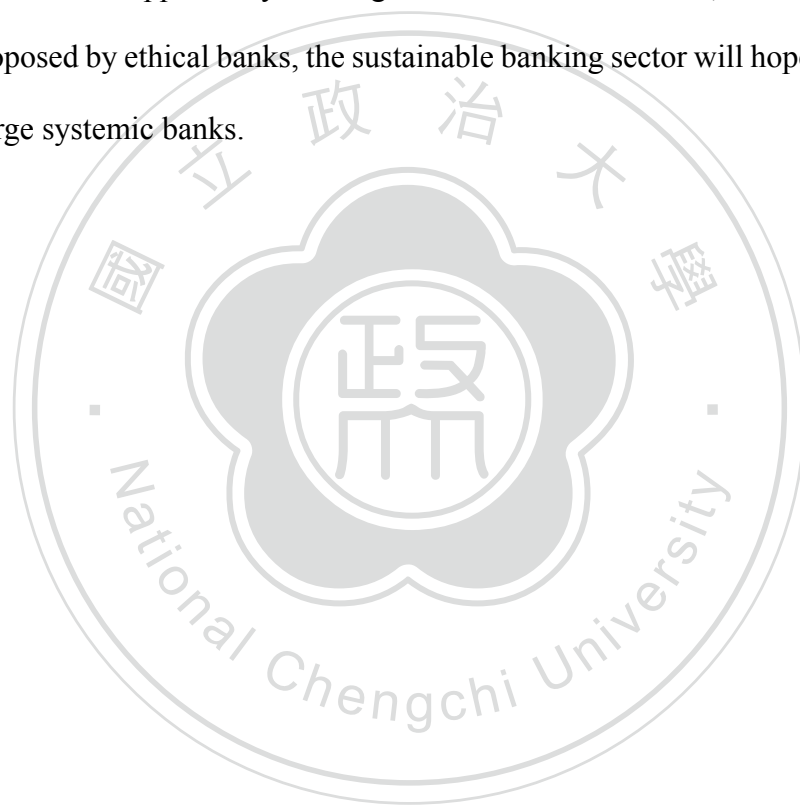
6. Conclusion

The banking industry such as many other industries may drastically change in the next decade due to the climate change threat. Indeed, a radical change in our lifestyle, especially in developed countries like Taiwan or European countries, is necessary.

The change will pass through three drivers: governmental regulations, populist pressure and switch of capital flow. Hence, sustainable investment is one the keys to change. Investment industry covers many asset classes such as mutual funds, stocks, bonds, cash and cash equivalents. Most of the existing literature failed to show an outperformance of SRI over their systemic counterparts.

In this thesis, by doing a comparison between sustainable and systemic banks, an under-researched asset class has been studied: cash and cash equivalents, and more precisely deposits. Following some existing methodology about performance, adding some new criteria unconsidered at the moment, and suggesting the idea of risk assessment, the main contribution of this thesis is to open the door to some further analysis. As presented, during the five years studied, some performance indicators such as the ROAA and ROAE were higher for sustainable banks than systemic banks on five year average. Several reasons were advanced in thesis to explain these gaps. Sustainable banks have higher level of equity and lower level of debt, making them be safer than systemic banks. Also, the impact of the financial market activities on banks' performance and their level of risk could be an argument. This last point needs further research to see if financial market activities and ROAE and ROAA are positively correlated.

Many limits were pinpointed in the discussion, demonstrating some weaknesses in the accuracy of the results. However, the assumptions stated in the beginning still found some answers. From an investor's perspective, considering the neglecting gap in the interest rates offers between ethical and systemic banks, sustainable banks can be a suitable option now and probably even more in the future. With a more solid structure, the sustainable banking industry growth, the transparency and the opportunity to do good without much effort, if not to learn about the accounts proposed by ethical banks, the sustainable banking sector will hopefully progressively shake the large systemic banks.



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8. Appendices

| APPENDIX I THE TWO TEAMS COMPARED IN THE RESEARCH | |
|---|---------------------------------|
| EUROPEAN ETHICAL AND SUSTAINABLE BANKS | EUROPEAN SYSTEMIC BANKS |
| Alternative Bank Schweiz (Switzerland) | BNP Paribas (France) |
| APS Bank (Malta) | Deutsche Bank (Germany) |
| Banca Popolare Etica (Italy) | HSBC (UK) |
| Caisse Solidaire (France) | Barclays (UK) |
| Caixa de Pollença (Spain) | Credit Suisse (Switzerland) |
| Charity Bank (UK) | Groupe BPCE (France) |
| Cooperative Bank of Karditsa (Greece) | Groupe Crédit Agricole (France) |
| Credal (Belgium) | ING Bank (Netherlands) |
| Cultura Bank (Norway) | Nordea (Sweden) |
| Ecology Building Society (UK) | Royal Bank of Scotland (UK) |
| Ekobanken (Sweden) | Santander (Spain) |
| Freie Gemeinschaftsbank (Switzerland) | Société Générale (France) |
| GLS Bank (Germany) | Standard Chartered (UK) |
| Group Crédit Coopératif (France) | UBS (Switzerland) |
| Hefboom (Belgium) | Unicredit Group (Italy) |
| La Nef (France) | |
| Magnet Bank (Hungary) | |
| Merkur Cooperative Bank (Denmark) | |
| Oikocredit (Netherlands) | |
| Tise (Poland) | |
| Triodos Bank (Netherlands) | |

Appendix 1: “The two teams compared in the research” – Fondazione Finanza Etica

| Sustainable banks | 2014 | 2015 | 2016 | 2017 | 2018 | Average |
|------------------------|--------|---------|---------|---------|--------|---------|
| ROAA | 0,35% | 0,36% | 0,17% | 0,18% | 0,29% | 0,27% |
| ROAE | 5,53% | 4,92% | 4,92% | 2,70% | 3,95% | 4,40% |
| Total assets growth | -3,09% | -2,24% | 7,90% | 23,49% | 1,75% | 35,51% |
| Loans growth | 2,56% | 3,70% | 4,64% | 21,76% | 1,96% | 34,76% |
| Loans to total assets | 70,87% | 74,94% | 72,40% | 69,28% | 71,68% | 71,84% |
| Equity growth | 5,12% | 2,03% | 6,10% | 21,70% | 1,38% | 34,09% |
| Equity to total assets | 18,74% | 18,91% | 19,12% | 18,78% | 18,76% | 18,86% |
| Net income growth | 32,47% | -14,25% | -66,19% | -10,09% | 31,97% | 0,50% |

Appendix 2: Sustainable banks’ ratios from 2014 to 2018

| Systemic banks | | | | | | |
|------------------------|--------|---------|---------|--------|--------|---------|
| | 2014 | 2015 | 2016 | 2017 | 2018 | Average |
| ROAA | 0,21% | 0,20% | 0,04% | 0,27% | 0,35% | 0,21% |
| ROAE | 3,46% | 3,28% | 0,52% | 4,53% | 5,93% | 3,55% |
| Total assets growth | -4,53% | -13,49% | -4,60% | 9,49% | -4,59% | -12,84% |
| Loans growth | -9,92% | -7,96% | -4,35% | 11,05% | -1,07% | -2,41% |
| Loans to total assets | 37,07% | 39,10% | 39,19% | 39,71% | 41,29% | 39,27% |
| Equity growth | -1,71% | -6,15% | -5,39% | 18,26% | -4,19% | 0,03% |
| Equity to total assets | 4,92% | 5,34% | 5,25% | 5,64% | 5,65% | 5,36% |
| Net income growth | 31,00% | 267,81% | 302,69% | 43,83% | 52,24% | 598,58% |

Appendix 3: Systemic banks' ratios from 2014 to 2018

| - | 2014 | 2018 | Average |
|-------------------|--------|--------|---------|
| Sustainable banks | 5,12% | 1,38% | 34,09% |
| Systemic banks | -1,71% | -4,19% | 0,03% |

Appendix 4: Evolution of the equity growth

| - | 2014 | 2018 | Average |
|-------------------|--------|--------|---------|
| Sustainable banks | 2,56% | 1,96% | 34,76% |
| Systemic banks | -9,92% | -1,07% | -2,41% |

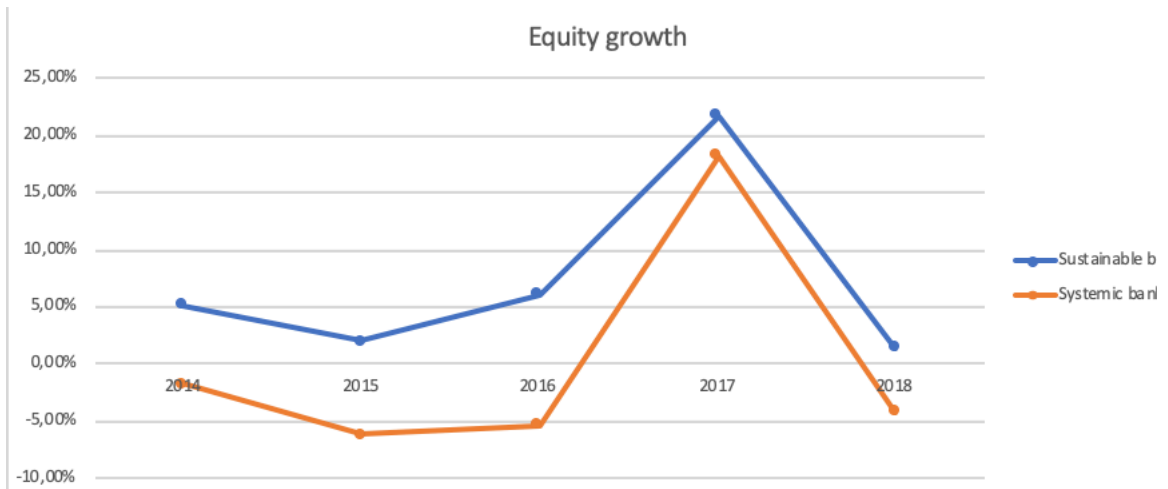
Appendix 5: Evolution of the loans growth

| - | 2014 | 2018 | Average |
|-------------------|--------|--------|---------|
| Sustainable banks | -3,09% | 1,75% | 35,51% |
| Systemic banks | -4,53% | -4,59% | -12,84% |

Appendix 6: Evolution of the total assets growth

| - | 2014 | 2018 | Average |
|-------------------|--------|--------|---------|
| Sustainable banks | 32,47% | 31,97% | 0,50% |
| Systemic banks | 31,00% | 52,24% | 598,58% |

Appendix 7: Evolution of the net income growth



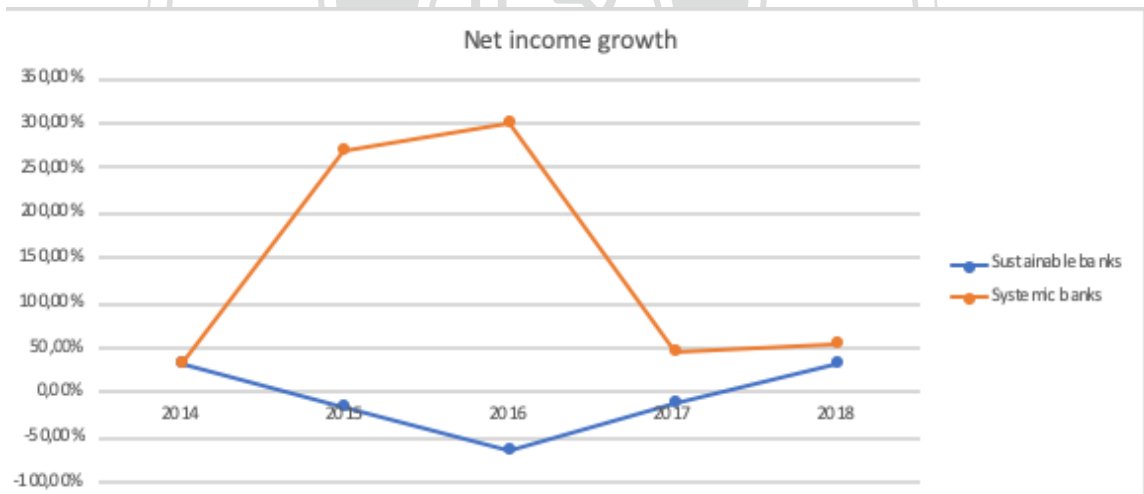
Appendix 8: Evolution of the equity growth



Appendix 9: Evolution of the loans growth



Appendix 10: Evolution of the total assets growth



Appendix 11: Evolution of the net income growth

| | Sustainable banks | Systemic banks |
|-------------------------------|-------------------|----------------|
| ROAA | 0,09% | 0,11% |
| ROAE | 1,11% | 1,99% |
| Equity to total assets | 0,16% | 0,30% |
| Loans to total assets | 2,09% | 1,51% |

Appendix 12: Standard deviations

| | Triodos | Ekobanken | Merkur Cooperative Bank | Ecology Building Society | Umweltbank | GLS | Banca Etica | Folkesparekassen |
|-------------------------------|----------|-----------|-------------------------|--------------------------|----------------|-----------|-------------|------------------|
| Savings account | 0,4%* | 0% | 0,15% | 0,85%* | 0,01% | 0% | 0% | 0%* |
| Savings account 2 | 1%** | 0-0,75%** | | 1,75%** | | 0% | | |
| Regular saver (notice period) | 0,15%*** | - | | 1-1,45%*** | 0,05% or 0,1%* | | | |
| Support account | - | 0% | 0% | | | | | |
| Riskier account | | | 1% | | | | | |
| Term accounts | | | | | 0,50% | 0 to 0,5% | | |

* normal savings account
** Triodos online saver plus : no minimum amount, max amount of 500000 for sole account and 1000000 joint, no max withdrawal but fees after more than 3 withdrawlss
*** Regular saver : 33 to 90 day notice period, 2 penalty free withdrawals, save from to £25 to no limit
* Easy access : min amount £25, max inv £75000, no limit on withdrawals
** Regular saver ; min amount £25, max amount per calendar year £3000, no notice on withdrawals but restriction
*** minimal amount £500, max amount £75000, 90 day notice
** Bound account : 1, 2, 5 years, one deposit up to maturity, withdrawal possible but with fees
*in the case of growing interest rate account, +0,1% per year, during 7 years, one deposit, min 2500€
* no interest rate but facilities to get a loan
* no interest rate but discount on stocks and loans

Appendix 13: Sustainable banks' interest rates

| | BNP Paribas | Deutsche Bank | HSBC Holdings | Barclays | BPCE | Caisse d'épargne | Banque Populaire | Crédit Agricole | Nordea Bank | Royal Bank of Scotland | Banco Santander | Société Générale | UniCredit S |
|------------------------------------|-------------|---------------|---------------|-------------|-------|------------------------|------------------|-----------------|-------------|------------------------|-----------------|------------------|-------------|
| Savings account | 0,10% | 0,01% | 0,15% | 0,25%-0,30% | 0,10% | | | 0,10% | 0,20% | | 0,20% | 0,25% | 0,10% |
| Savings account 2 | | | | | | | | | | 0,20%-0,35% | | | |
| Livret A* | 0,75% | | | | 0,75% | 0,75% | 0,75% | | | | | | 0,75% |
| Livret Jeune** | 2% | | | | 1,50% | 1,75% | 1% | | | | | | 1% |
| Livret de développement durable*** | 0,75% | | | | 0,75% | 0,75% | 0,75% | | | | | | 0,75% |
| Compte à terme**** | | | | 3% | | specific interest rate | | | | | | | |
| Plan de ahorro***** (savings) | | | | | | | | | | | | | |
| fixed rate savings account^ | | | 0,45%-0,85% | | | | | | | | | | |

* = Livret A is a savings account with the max limit of 22,500€, fixed interest rate from country (France)
** = Livret jeune is a savings account with max limit 1,600€ from 12 to 25
*** max limit to 12000, interest rate fixed by the country (France)
**** fixed or variable interest rate, withdraw money = closing account
***** max 5000€/year and min 5 years
^ from 1 to 3 years, 2000 to 1000000 pounds, increasing interests with time, cannot withdraw, fee if the case (90D)

Appendix 14: Systemic banks' interest rates