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MASTER’S LEVEL QUALIFICATION PAPER

on the topic “RESPONSIBLE INVESTING AS A SOURCE OF FINANCING
FOR SUSTAINABLE DEVELOPMENT AND ITS GOALS IN INTERNATIONAL
FINANCIAL MARKETS”

Specialty 292 “International Economic Relations”

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It is submitted for the Master's level degree requirements fulfillment.

Master's level degree qualification paper contains the results of own
research. The use of the ideas, results and texts of other authors has a link to the
corresponding source

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Sumy, 2019

SUMMARY

of Master's level degree qualification paper on the theme
“RESPONSIBLE INVESTING AS A SOURCE OF FINANCING FOR
SUSTAINABLE DEVELOPMENT AND ITS GOALS IN INTERNATIONAL
FINANCIAL MARKETS”
student Diana Bychenko

The main content of the master's level qualification paper reflected in 67 pages, including 3 figures, 10 tables, 4 annexes and a list of references with 75 sources.

KEYWORDS: CORPORATE SOCIAL RESPONSIBILITY, CSR INVESTMENT, GLOBAL INITIATIVE UN, INVESTORS, SOCIALLY RESPONSIBLE BUSINESS, SOCIALLY RESPONSIBLE INVESTMENT, SUSTAINABLE DEVELOPMENT.

The purpose of the master's level degree qualification paper is to study the theoretical foundations of socially responsible investment and to make a comparative study of responsible and conventional portfolios, to provide guidance on how to choose the most appropriate way to invest in financial markets, taking into account risk / return factors.

The object of the study is socially responsible investment.

The subject of the study is development of optimal investing portfolios for socially responsible investment.

To achieve this goal and objectives there were used the following scientific methods of research: method of systematization and generalization to determine the essence of socially responsible investing and research of the theoretical basis of SRI, comparison methods for comparative analysis of global and local experience, as well as when comparing the results of calculations on investment portfolios, methods of

logical generalization for the sequence of scientific research, empirical methods for conducting calculations, and formulation of results and recommendations.

The information base of the master's level degree qualification paper is regulatory acts of Ukraine in the sphere of investment activity, reports of the OECD, reports of PRI and UN, scientific publications of local and international scientists in specialized journals, information-analytical and statistical materials and resources from the Internet, data about the results of trading on the exchanges and own calculations.

The main scientific results of the paper are as follows:

1) the main recommendation after conducting the research and analyzing its results is to implement (improve) the CSR system in different enterprises, because it allows companies to earn more profit and develop activity, and investors should pay attention to the Ukrainian stock market and invest their money responsibly, because it is proved that the risks in this the case is lower and the profits are higher;

2) the scientific novelty is that only a few scientists have researched socially responsible investing in the process of comparing two formed optimal portfolios of investment (traditional and responsible), and especially Ukrainian companies. And the topic is related to the corporate social responsibility and responsible investing, which are quite new issues in academic sphere.

The results of the approbation of the main provisions of the master's level degree qualification paper were considered at:

1) publication in journal “Public and Municipal Finance”, which was released on 05 September 2019. [Optimal investment portfolio selection from the largest Ukrainian companies: comparative study of conventional and responsible portfolios / A. Plastun, I. Makarenko, D. Bychenko, Y. Yelnikova. // Public and Municipal Finance., – 2019. – №8. – С. 44–53. doi:10.21511/pmf.08(1).2019.04];

2) part of this research was made according to the Scientific Research Work 56.15-02.17/3П.

Year of Master’s level qualification paper fulfillment is 2019.

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TASKS FOR MASTER'S LEVEL DEGREE QUALIFICATION PAPER

(specialty 292 “International Economic Relations”)
student of 2 course, group ME.M -81a.аН

Diana Bychenko

1. The theme of the paper is “Responsible investing as a source of financing for sustainable development and its goals in international financial markets” was approved by the order of the university from “ __ “ _____ 2019 №__
2. The term of completed paper submission by the student is “ __ “ _____ 2019
3. The purpose of the qualification paper is study the theoretical foundations of socially responsible investment and to make a comparative study of responsible and conventional portfolios, to provide guidance on how to choose the most appropriate way to invest in financial markets, taking into account risk / return factors.
4. The object of the research is socially responsible investment.
5. The subject of research is development of optimal investing portfolios for socially responsible investment,
6. The qualification paper is carried out on regulatory acts of Ukraine in the sphere of investment activity, reports of the OECD, reports of PRI and UN, scientific publications of domestic and foreign scientists in specialized journals, information-

analytical and statistical materials and resources of the Internet, data about the results of trading on the exchanges and own calculations.

7. Approximate master's level degree qualification paper plan, terms for submitting chapters to the research advisor and the content of tasks for the accomplished purpose is as follows:

Chapter 1 “Theoretical and legal basis of responsible investing” – “__” _____2019

Chapter 1 deals with theoretical and legal basis of SRI. In the first chapter it is necessary to analyze the concept of “socially responsible investing”, as well as to consider the theoretical basis of its existence, and the state of its development in the world. Also you need to carry out a comparative study of the world and domestic experience of responsible investing, and to consider in detail the legal regulation of this issue.

Chapter 2 “Social responsible investment and portfolio management” – “__ “ _____2019

Chapter 2 deals with the optimal investment portfolio formation, as well as challenges and perspectives of SRI. In the second chapter you need to do a brief analysis of the stock market in Ukraine, and then form two optimal portfolios separately for Ukrainian companies that have implemented CSR in their activities and for those who have abandoned this initiative. And also to create one optimal portfolio for the US stock market. After the calculations, provide recommendations on choosing a socially responsible investment or a conventional one. The main challenges facing the development of SRIs need to be considered and the solutions to these problems identified. Also, you need to outline the prospects for the development of socially responsible investing.

8. Supervision on work:

Chapter	Full name and position of the advisor	Date, signature	
		task issued by	task accepted by
1	Alex Plastun, Dr., prof		
2	Alex Plastun, Dr., prof		

9. Date of issue of the task: “__ “ _____2019

Research advisor Dr., prof _____ Alex Plastun

The tasks has been received: _____ Diana Bychenko

(signature)

CONTEST

ABBREVIATIONS AND SYMBOLS.....	7
INTRODUCTION.....	8
1.1 The essence of socially responsible investment and theoretical groundwork in this area.....	11
1.2 Comparative analysis of world and domestic experience of responsible way of investing in different countries of the world.....	18
1.3 Legal regulation of socially responsible investment in Ukraine	25
2. SOCIAL RESPONSIBLE INVESTMENT AND PORTFOLIO MANAGEMENT	30
2.1. Formation of optimal investment portfolios:comparative survey of responsible and conventional portfolios	30
2.2 Challenges and prospects for development of socially responsible investment in the world and Ukraine	40
CONCLUSIONS.....	47
REFERENCES.....	50
ANNEXES	59

ABBREVIATIONS AND SYMBOLS

CSR	corporate social responsibility
ESG	Environmental, Social and Governance
FDI	foreign direct investment
PI	portfolio investment
PRI	principles for responsible investment
SRI	socially respible investment
UN	United Nation
UNCTAD	The United Nations Conference on Trade and Development
UNEP FI	United Nations Environment Programme Finance Initiative

INTRODUCTION

There are many different trends in ecology and environmental conservation in the world. The preserving of our planet and its resources is a priority for our society, as many studies have been conducted on the negative effects of carbon dioxide and other emissions, on climate and the further development of our global economy. These include extinction of animals, deforestation, pollution of rivers, seas and oceans. Therefore, companies need to improve their environmental consequence by incorporating the basics of corporate social responsibility, and investors, in turn, should only invest responsible.

It should be noted that the issue of socially responsible investing is of interest to many economists, but it also contains unexplored points about forming optimal portfolios of CSR companies for investors, as well as comparing this method of investing with the conventional one. Research in socially responsible investing will improve the environmental situation and increase the potential for economic development as a whole.

Briefly analyzing the publications of foreign and ukrainian researchers it should be noted that most of them have studied the impact of social investing on the development of communities, companies and the economy as a whole, but no one have advised investors how to better built their investment portfolio. Вивченням таких питань займались Jenkr ter Horst et al. [8], J.Shapiro [9], Jacob Park and Sonia Kowal[10], Guay et al [11] and Ukrainians - A. Ivashchenko [12], O.Kuznetsova et al. [14], etc. S. Moshensky [65], O. Oliynyk [66], I. Vygovskaya [69], D. Dyakovsky [70], O. Golovinov [71] were engaged in study the issue of problems and of development prospects

The purpose of the master's level degree qualification paper is to study the theoretical foundations of socially responsible investment and to make a comparative study of responsible and conventional portfolios, to provide guidance on how to

choose the most appropriate way to invest in financial markets, taking into account risk / return factors.

For this master's level degree qualification paper we need to complete the following tasks:

- to analyze the essence of “socially responsible investing”;
- to consider the theoretical basis of its existence, and the state of its development in the world;
- to carry out a comparative study of the world and local experience of responsible investing;
- to consider in detail, the legal regulation of this issue;
- to do a brief analysis of the stock market in Ukraine;
- to formulate two optimal portfolios separately for Ukrainian companies that have implemented CSR in their activities and for those who have abandoned this initiative;
- to create one optimal portfolio for the US stock market;
- to give recommendations on choosing a socially responsible investment or a conventional one;
- to consider the main challenges that facing the development of SRIs;
- to outline the prospects for the development of socially responsible investing.

The object of the study is socially responsible investment.

The subject of the study is development of optimal investing portfolios for socially responsible investment.

To achieve this goal and objectives there were used following scientific methods of research: method of systematization and generalization to determine the essence of socially responsible investing and research of the theoretical basis of SRI, comparison methods for comparative analysis of world and national experience, as well as when comparing the results of calculations on investment portfolios, methods

of logical generalization for the sequence of scientific research, empirical methods for conducting calculations, and formulation of results and recommendations.

The scientific novelty of this research is that only a few scientists have researched socially responsible investing in the process of comparing two formed optimal portfolios of investment (traditional and responsible), and especially Ukrainian companies. And the topic is related to the corporate social responsibility and responsible investing, which are quite new issues in scientific sphere.

The information base of the master's level degree qualification paper is regulatory acts of Ukraine in the sphere of investment activity, reports of the OECD, reports of PRI and UN, scientific publications of domestic and foreign scientists in specialized journals, information-analytical and statistical materials and resources of the Internet, data about the results of trading on the exchanges and own calculations.

The main recommendation after conducting the research and analyzing its results is to implement (improve) the CSR system in different enterprises, because it allows companies to earn more profit and develop activity, and investors should pay attention to the Ukrainian stock market and invest their money responsibly, because it is proved that the risks in this the case is less and the profits are higher. Our investment porflios can be used by investors to made a dicision in which companiea is better to invest. And also it is useful for government of different contries to provide a regulation and support for sutainable investment.

The results of the approbation of the main provisions of the master's level degree qualification paper were considered at:

1) publication in journal “Public and Municipal Finance” (publisher - LLC “Consulting Publishing Company “Business Perspectives”) which was released on 05 September 2019. [Optimal investment portfolio selection from the largest Ukrainian companies: comparative study of conventional and responsible portfolios / A. Plastun, I. Makarenko, D. Bychenko, Y. Yelnikova. // Public and Municipal Finance., – 2019. – №8. – С. 44–53. doi:10.21511/pmf.08(1).2019.04]

2) part of this research was made according to the Scientific Research Work 56.15-02.17/3П.

1 THEORETICAL AND LEGAL BASIS OF RESPONSIBLE INVESTING

1.1 The essence of socially responsible investment and theoretical groundwork in this area.

Investments contribute to the development of the economies of the countries, as well as contribute to the systematic renewal and expansion of productive capital, accelerating scientific and technological progress and the development of all sectors of the economy. Economic growth is due to the renewal of social and market infrastructure.

Let's start from the understanding of the definition of investments according to the Law of Ukraine "On Investment Activity" which was edited by 20th of October 2019. The first Law Article states: "Investments are all types of property and intellectual property that are invested in objects of entrepreneurial and other activities, which result in the creation of profit, and/or social and ecological effect is achieved" [1]. That is to say, that in Ukraine investments are aimed at the development of the society and preservation, improvement of environment's condition. It is the first indicator of appearance of investing according to the basics of sustainable development.

In order to understand investments in Ukraine we must notice the property used for investing. According to the Law of Ukraine "On Investment Activity" these properties include:

- funds and securities (except promissory notes);
- movable and immovable property;
- property rights of intellectual property (including technical documentation and "know-how");
- rights to use different resources;
- etc [1].

In general, investment activities can be carried out by citizens of the country, various non-state enterprises, associations, unions and societies, as well as other legal entities. In order to understand investing better, we need to clarify that there are two types of investment namely direct and portfolio investments. As we will further consider the investment for international financial markets then we need to consider investment types as a foreign investment.

According to L. Alfaro et al. [2], foreign direct investments is a form of investment in which international capital flows from foreign investor in companies and firms with the subsequent obtaining of a controlling stake. Direct investments are made without investment intermediaries in order to ensure investor control, or to participate in the management of the enterprise. Preferably, they are investing by passive investors who simply buy a significant portion of the company's stock or simply invest in creating a new business. Such investment is carried out to provide a stable but low income.

To give an illustration of the current situation with the foreign direct investment (FDI) we need to clarify global trends in its development. According to the data of United Nations Conference on Trade and Development (UNCTAD) the net flows of FDI has a downward trend.

Global FDI flows in 2018 compared with 2017 fall by 13% and dropped to 1,3 trillion of USD. This decline has started in 2015 and lasts until present. This result was due to a large-scale of repatriation of accumulated foreign earnings by the US multinational companies in the first quarters of 2018, because in the USA were made tax reforms [3]. To give an illustration of the situation with investment in the world in details, let's look at indicator of FDI in different countries in 2018: in the United Arab Emirates net inflows amounted in 10,385 billion of USD, in China – 203,492 billion of USD, in Japan – 25,877 billion of USD, for the United States this indicator is equal to 258,39 billion of USD, in Kenya – 1,626 billion of USD, in Ukraine – 2.476 billion of USD, in Germany net inflows of FDI amounted in 105.28 billion of USD (all these indicators was taken from data of World Bank [4]). These figures have reached the lowest level in the last 15 years.

Portfolio investments can include those investments in the equity and debt securities of the company which does not give the investor the right to manage an enterprise because in portfolio investment there is a restriction on the number of shares in a percentage ratio – the investor must own no more than 10% of all shares of the company, and they seek first of all capital gains [5]. This type of investment includes investments in bonds, shares, and other financial derivatives, and the main gain of this investment is dividends.

To understand the situation with portfolio investment (PI) in the world in details, let's look at indicators of PI in different countries in 2018: in the United States net investment amounted in 18,363 billion of USD, in Japan – 92,217 billion of USD, for the Switzerland indicator is equal to 10,835 billion of USD, in Germany it amounted in 133,812 billion of USD (all these indicators were taken from data of World Bank [6]).

Portfolio is a collection of various investment values (assets) collected, an instrument for achieving a specific investment purpose of a depositor. The portfolio may include different securities of the same type, as well as various investment values, stocks, bonds, investment certificates.

Despite the fact that foreign direct investment is playing an increasingly important role in the socio-economic development of states, portfolio investment remains the most common form of investment. This process can be explained by the fact that most private equity is used in investing. Also, thanks to the development of innovative technologies, it is the possibility of trading through the Internet, more and more investors want to create a portfolio of shares, and invest in various securities (stocks, bonds, investment certificates, government deposit certificates).

Concept of socially responsible investment (SRI) appeared in the mid-1980s, and became widespread as a result of public interest in the subject of corporate social responsibility.

SRI principles have become more visible after the launch of Principles for Responsible Investment (PRI), which were presented by the former United Nations Secretary-General Kofi Annan in 2005 [7]. He invited 20 representatives of a group

of the largest institutional investors from 12 countries to start process of the formation of PRI. For better understanding of needs also this work group was supported by stakeholders from different industries and organizations, for example from governments, universities, colleges, and civil society. The supervision for this process was made by the United Nations Environment Programme Finance Initiative (UNEP FI) and the UN Global Compact.

In order to understand SRI, we need to consider different approaches of scientists or international organizations. For more details refer to the Annex C. According to Jenkr ter Horst et al.[8] the term “SRI” refers to the investment that seek to avoid negative externalities. Author J.Shapiro [9] notice that SRI decisions need to be based on both financial and social performance of the enterprises, also with this statement agree Jacob Park and Sonia Kowal[10]. Guay et al [11] have also suggested that this strategy of investing encourage practices that promote social responsibility and laudable initiatives such as investing, shareholder advocacy and etc.

There has been a numerous studies by Ukrainian scientist to investigate social responsible investment, A. Ivashchenko [12] emphasize that this type of investment takes into consideration the social and environmental impact of investments (both positive and negative) in the context of financial analysis. T. Kalinescu et al. [13] and O.Kuznetsova et al. [14] have also suggested that it is a process of investment, to generate income and improve people's quality of life, taking into consideration social, environmental and ethical factors, along with traditional financial analysis.

A recent study “The Value of Responsible Investment” by the Investment Leaders Group of University of Cambridge Institute for Sustainability Leadership [15] concluded that responsible investing is an approach that clearly recognizes the importance of environmental, social and governmental factors (ESG criteria) to the investor, as well as the long-term health and stability of the market as a whole.

For Eurosif (The European Sustainable Investment Forum), as leading European association organization, define SRI as general term that cover any type of investment process that combines investor’s financial goals (results) with their

concern ESG issues [16]. According to the publication [17] of Ethical Investment Research Services in responsible investment social, environmental and ethical principles of the investor influence which organization or venture they choose to place their money with.

After a detailed analysis of the works of scientists from all over the world, we can propose our own definition of socially responsible investing. SRI – is an approach to investment process in which all decisions are based on financial component and ESG criteria components to avoid negative externalities, to ensure the sustainable development goals.

After we have thoroughly understood the concept of SRI, we must move on to the basics of this type of investment. In that, PRI is responsible for this, their work should be considered in detail. PRI acts in the long-term interests of its subscribers, as well as the financial markets and economies, which ultimately affects the environment and society as a whole [18]. Also, the organization is completely independent, which in turn encourages investors to use responsible investments to increase profitability and better risk management. But it should be noted that they are supported by the United Nations.

If we pay attention to the “PRI 2019/20 Work Programme” [19], in the 2018-2019 reporting year, they developed recommendations on the consideration of ESG criteria for credit rating agencies, created a industry basis guide for investors, and for the EU they developed a system of classification of activity that can be considered as ecological, sustainable economic activity for financial entities.

In the next year they plan to release a list of guidances for asset owners on the impact of ESG factors. Also they they want to develop policy engagement on investment regulations and ESG disclosure in the EU, the UK, the USA, in China and Japan, and ensuring stakeholder support in meeting ESG requirements as part of its investor responsibilities. Also they will pay additional attention on the limitations of different investment theories (especially modern portfolio theory).

Also in this report [20] we can see a dynamics of increasing number of asset under management: the amount of assets has increased more than in 10 times (Fig. 1.1).

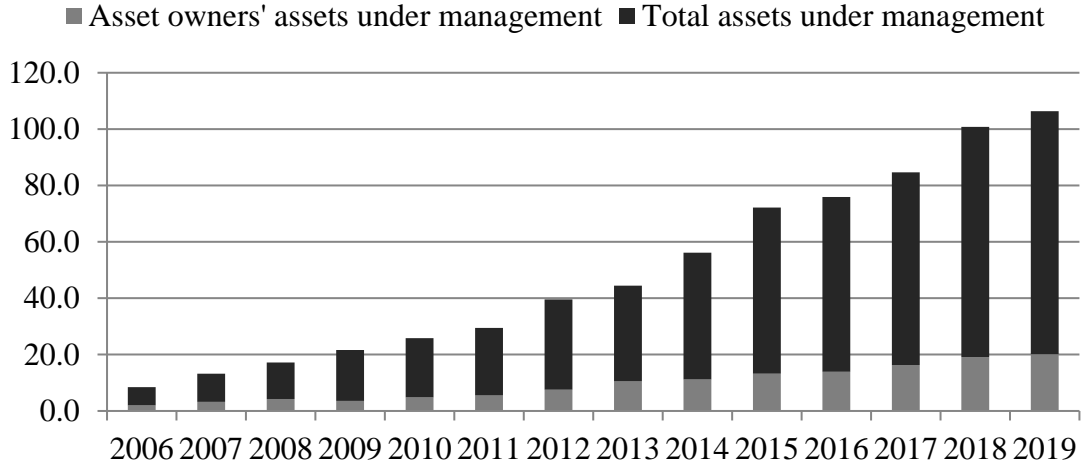


Figure 1.1 – Amount of asset owners' assets under management and total assets under management in 2006 – 2019 years.

All PRI assets are signatories' assets. This signatory includes a common basis for integrating ESG issues, subscribers can collaborate with each other, which reduces their search partner losses, and the status of the subscriber improves reputation. These signatories may be asset owners, investment managers, and professional service partners[21]. In over 14 years, the number of signatories increased from 63 to 2372, showing an increase in 37 times (Fig. 1.2).

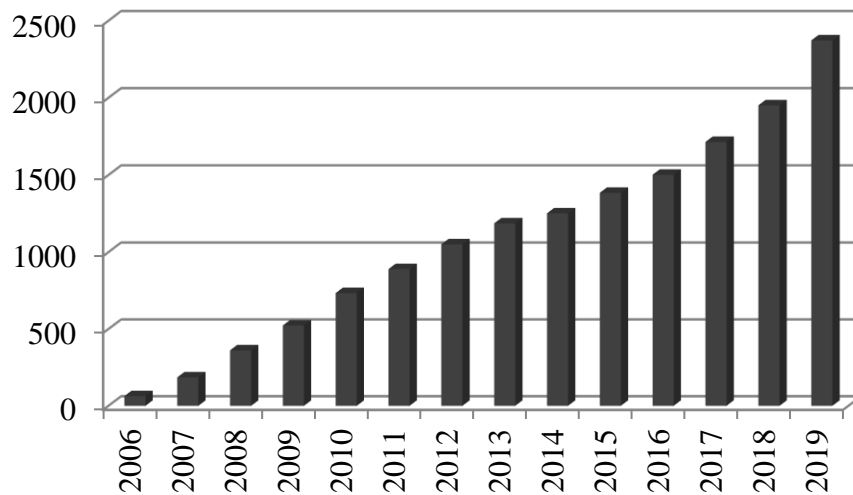


Figure 1.2 – PRI Signatory growth

Signatories adopt the list of 6 Principles, which they must adhere to and facilitate their dissemination to other entities. These 6 Principles include:

- implication of ESG in investment analysis and decision-making processes;
- signatory become an active owner and incorporate ESG issues into ownership policies and practices;
- investing in entities with appropriate disclosure on ESG issues;
- promotion of acceptance and implementation of the PRI in the investment industry;
- working together to increase effectiveness in implementing the PRI;
- reporting on activities and progress in this sphere [21].

Investments contribute to the development of the whole countries, as well as contribute to the technological progress, social aspects of life and ecological situation on the planet. Today we live in a new global world where need to make some changes to leave for future generation a possibility to live. That is why there are a lot of different initiatives that are made by United Nations Organization, for example Sustainable Development Goals (SDGs) and many others. These goals have shaped the business environment that will increase people's awareness, and also this is a direct impulse for us to create a better world for all of us. And SRI has the same aim. After a detailed analysis of the works of scientists we can determine a socially responsible investing, as an approach to investment process in which all decisions are based on financial component and ESG criteria components to avoid negative externalities, to ensure the sustainable development goals. Also we can see a steady increasing in the number of people adhering to the Principles for responsible investing in their investment activities, but at the same time these indicators have not reached their maximum. So scientists all over the world and especially in developing countries need to work on attracting investors to this initiative by making researches on this issue.

1.2 Comparative analysis of world and domestic experience of responsible way of investing in different countries of the world.

Whereas responsible investing is based on ESG factors, its criterion should be considered in more details. According to UN PRI [22] these factors include environmental issues, which include deforestation and natural resource depletion, various types of pollution, and climate change on our planet. Another aspect of this criterion are issues related to the social sphere, namely the provision of decent working conditions and the basis of relations with employees, as well as the prevention of modern slavery and the protection of human rights, the basis of child labor. The next aspect is governance, which includes the development of diversity in governance, the basics of pay and tax, anti-corruption and lobbying.

There are many ways for responsible investment. First of all, let's start with the most common. Investor can consider ESG issues when build a portfolio by using integration or thematic approach, screening, which is called ESG incorporation [22].

An important segment of ESG incorporation is the investment in communities, namely their projects or institutions, to improve their situation, serving poor and undervalued communities in the US and abroad [23]. In the process of ESG incorporation, investment institutions complement traditional, quantitative methods of financial risk analysis and return with a qualitative and quantitative analysis of ESG policy, effectiveness, practice. Sometimes, some investors may be actively seeking to include companies with more stringent ESG policies and practices in their portfolios, or simply exclude from the list ocompanies with poor ESG services.

All ESG incorporation strategies consist of screening (that is a strategy to use certain filters that select a list of potential companies to invest in, in this case investors avoid companies that do not meet certain ESG thresholds), integration (systematic and clear inclusion of ESG by investment managers in financial analysis) and thematic investment in sustainable development (selection of assets specifically linked to sustainability into single or multi-themed funds).

The most common strategy in the United States, according to a report of US SIF Foundation on Trends in Investing in the US [24], both in terms of attracted assets and the amount of managers in 2018, was the integration of ESG - \$2,6 trillion and 75% respectively. The second most commonly reported strategy was negative or exclusive screening, which was reported by 66% of the surveyed money managers and affected \$2,1 trillion.

Another way for responsible investment is active ownership or stewardship. Investor can improve investees' ESG performance or just develop more sustainable business practices [22]. According to the publication of PRI "Active Ownership 2.0: the evolution stewardship urgently needs" [25] – "Active Ownership 2.0 is a vision for an evolved standard in stewardship that is underpinned by an increase in investors' ambition and assertiveness". It builds on existing practice and expertise but explicitly prioritises critical systemic goals and collective effort aimed at concrete outcomes, rather than processes and activities or narrow interests. This strategy provide a discussion of ESG issues with companies for future improving their activity and expressing approval or disapproval through voting on resolution and proposing shareholder resolutions on specific ESG issues. It is also based on existing practice and experience, but directly defines systemic goals and collective efforts that are focused on concrete results rather than processes and activities or narrow interests.

PRI supports the work of exchanges to increase transparency in ESG matters through the Sustainable Stock Exchanges (SSE) initiative. Among the 90 SSE partner exchanges, 43 now provide formal guidance to publishers for ESG information reporting, representing over 35,000 listed companies [26]. Information about ESG is also increasingly being included in the listing rules of the exchanges either by the exchanges themselves or by securities regulators.

According to the annual report of PRI in 2019 [26], compared to 2013, the number of exchanges with ESG bond segments, in 2019 increased from 0 to 17. And the number of exchanges that provide sustainable reports in 2000 was 0, but nowadays this exchanges amounted in 40.

In 2018 signatory growth rate was, at 22% was the highest since the 2011 [26]. The main signatories are public and corporate pension funds, central banks, insurance providers and public treasuries. The main number of signatories are in the US – 464 (with growth rate equal to 22%), the UK together with Ireland have 394 signatories, and the highest growth rate in 2019 year was in China – 64%.

The OECD has established OECD Guidelines for Multinational Enterprises [27], which is a kind of recommendation by governments for multinational enterprises (MNEs) operating in and from the territories of 39 countries that comply with these Rules. They contribute to a favorable investment climate and positive economic, environmental and social development. Also, the OECD Declaration on International Investment and Multinational Enterprises also contributes to this. These initiatives have been joined by 30 OECD countries and 9 non-member countries (Argentina, Estonia, Israel, Latvia, Lithuania, Romania Brazil, Chile and Slovenia)

In view of the fact that SRI has its differences depending on the region. Let's look at it in details. North America, Europe and Australia are among the most important markets for SRI. The development of this type of investment started from these regions, and they are the most stable economically stable markets. Particular attention should also be paid to the fact that approaches to responsible investing depend on the models of corporate social identity in the country.

Sustainable investing is developing in the United States. Total assets used to manage sustainable investment strategies increased from 8,7 trillion of USD in 2016 to 12 trillion of USD in 2018 (26% of all professionally managed assets in the USA), that means that the growth rate of assets is 38%, according to the US SIF's 2018 Trends report [24]. 11,6 trillion of USD are occupied by asset management firms and community investment institutions that apply ESG criteria in investment analysis and portfolio selection, mainly through ESG integration.

The US managers say that they apply \$2,9 trillion in tobacco restrictions, and gun-related restrictions up to 1,9 trillion of USD in assets, up nearly fivefold since 2016 [28].

In comparison, the CSR system in the United States, created within the Anglo-Saxon CSR model, is characterized by minimal government intervention in the management of responsible practices by business entities. Given the lack of general governmental guidance or incentives for CSR in the US, instead of a common approach to CSR policies, programs and policies, these issues are scattered across different authorities. In the US SRI promote independent organizations and regulatory agencies that evaluate corporations by their social and environmental performance and impact. The leading motivation for investors to use SRI is a high customer demand for this type of investment.

To give an illustration of the situation with SRI in EU we need to clarify that in Europe it is developing in the countries of Northern and Central Europe, but in Southern Europe its development is relatively slow. Within the European Union, in recent decades, the institutionalized and governmental administration of SRI has grown, especially thanks to the EU model of CSR.

From 2016 to 2018, sustainable investment assets grew at a modest pace, but not as fast as the total professionally managed assets in Europe, which reached a record 25,2 trillion of euro, assets attracted to corporate involvement amounted to about 5 trillion of euro [28]. Growth in investment impact, while modest, demonstrates that investors are becoming more aware of their potential and want to change their choices by choosing specific categories of investment.

A taxonomy for sustainable investment has been developed in Europe in 2018. In early March 2019, the European Parliament adopted rules under the Sustainable Financing Action Plan to require asset managers to use a common reporting standard.

CSR issues in EU countries have traditionally been an implicit part of the cultural, political and legal framework. In 2001, the European Commission published a declaration entitled "Green Paper", which promotes the establishment of a CSR system in Europe. In 2010, 7 flagship initiatives were launched within the EU 2020 Strategy within the EU's Europe 2020 Strategy for the Sustainable Development Goals by CSR to society. It is at the expense of taxes that, ultimately, it is possible to create a system in which neither citizens nor corporations have to worry about the

social well-being of society [29]. In 2018, the European Parliament adopted a resolution on sustainable financing, which stated that the financial sector should include ESG indicators in investment analysis and investment decisions. In addition, this declaration states that inaccurate assessment or misrepresentation of the environmental risks of companies may pose a risk to market stability [30]. In the UK, SRI is supported by government legislation that encouraged shareholder voting and formal consultation with fund owners to adopt social, ethical and environmental policies.

Latin America, Africa and Asia are emerging markets for SRI, with particular focus on microfinance and community investment. In 2013 was created LatinSIF, which in 2018 become a part of PRI and the main purpose of this organization is promoting sustainable investment in the region. This network is presented in Brazil, Mexico, Columbia, Peru and Chile [28]. In Brazil, CMN's pension regulator has published a new standard for managing the investment practices of occupational retirement plans with a clarified ESG issue. And in Mexico, the pension fund regulator CONSAR is urging institutional investors to consider ESG topics in their investment decisions. In Peru continues their work PIR (Programa Inversión Responsable) for promotion of responsible and sustainable investments.

The SRI concept has existed in China for about a decade. In April 2008, AEGON-Industrial established the first socially responsible fund in China [31]. There are also many different funds that are classified as responsible, such as low carbon and environmental funds. Screening is used as a basis for making appropriate investments in China (rejecting companies that do not suit them by a certain criterion)

In China all social problems, such as occupational safety and security, corruption and fraud, were by far the most common type of ESG risk reported by companies in China. And Chinese government make everuthing possible to understand the main trends that will contribute to the long-term economic success of the country.

In order to understand the situation in the world we need to analyze the market of SRI in Africa. In 2015, a study report by the United Nations Network on

Sustainable Development (SDSN) said that to further implement the SDGs, developing countries need to increase their annual public and private spending by about 1,3 trillion of USD, and that African countries need to require 342-355 billion of USD for the delivery of the SDGs [32]. The impact of investment can potentially complement government spending and ODA by attracting private sector capital and reducing the vulnerability of the African economy to external shocks by providing socio-economic needs

According to a UNDP report [33], the major problems hindering the development of responsible investing in Africa are the complexity of finding viable investments that meet both financial, social and environmental goals, and investors do not see reliable and sustainable social enterprises.

Compared to the foreign experience of responsible investing, this process in Ukraine is not well developed. Ukrainian socially responsible companies seek to invest their resources in community development, support for patients and children. Current trends in social investment in Ukraine are quite positive, but quite different in comparison to foreign experience, since Ukrainians simply invest in socially significant entities and not in CSR enterprises [34]. Ukraine, like other UN members, has begun to set sustainable development goals. These goals should form a new system of mutually agreed management actions in the economic, social and environmental dimensions, which will further lead to social equality and rational use of natural resources in the country.

The fact that real CSR activities and systematic implementation of socially responsible investments are made by 27% of companies is confirmed by the statistics that 38 Ukrainian companies are leading members of the CSR independent expert organization in Ukraine - CSR Center [35].

Information transparency of Ukrainian companies is the basis for the development of responsible investing. After all, the basis for the decision for including the company in the investment portfolio is open information about the financial status of the company, as well as its various activities in the field of ecology and social activity. Ukrainian companies continue to hide information related to

corruption, human rights and ethics in their reports. It should also be noted that all of these reports do not have a single template and each one covers the information it deems necessary, but for investors it does not reveal the full activities of the companies and does not allow them to be compared.

According to L. Petrashko and T. Romanok [36], after the introduction of transparency an information disclosure at all Ukrainian enterprises, the percentage of responsible investing will increase, and investors will be able to use the positive screening approach, that means they will choose the most suitable companies. According to this approach, the main criteria for selecting companies for investing will be environmental (the impact of companies on pollution by environmental companies, the usage of natural resources) and management criteria (ensuring compliance with safety standards, respect for human rights).

According to T. Pimonenko et al. [37], Ukraine is focusing on attracting green investments in renewable energy projects as well as in EU countries. Green investing opens up a number of opportunities and challenges for Ukrainian investors. In order to stimulate investment in this area, it is important to clearly outline the benefits for investors, because according to the EU experience, socially responsible investments allow to receive in addition economic, environmental, political and social profit. In Ukraine, this type of investment is widespread for agriculture and forestry, for the energy sector, and public transport.

All things considered, it seems reasonable to assume that environmental issues are very important for future development of our society. All investors need to consider ESG issues when build a portfolio by using different approaches, which help to skip companies with negative ecological impact and to choose the most profitable variants for the future development.

Every region has its own strategies in SRI, and depending on the countries they can be different. The SRI development started from the US market. In the United States SRI are not controlled by the government, and all intervention in the development of CSR is at the minimum level. And all is developed thanks to the high customer demand for this type of investment. SRI issues in EU countries have

traditionally been a part of the cultural, political and legal framework. In Latin America, Africa and Asia this investment is not so popular, but there are a lot of new standard for managing the investment practices with ESG issue.

Ukrainian socially responsible companies seek to invest their resources in community development, support for patients and children. In Ukraine there are some goals in social quality and rational usage of natural resources in the country and also the main goal is to provide information transparency of Ukrainian companies because it this information will give to the investor the understanding of companies' contribution to the corruption, human rights and ethics in their reports.

1.3 Legal regulation of socially responsible investment in Ukraine

The state has impact on any processes through its legal, organizational and legislative mechanisms. The state can promote investment through the formulation and improvement of laws, the provision of tax benefits and the control of investment funds.

The regulation of investment activity is carried out by means of the system of taxation in the country, the basics of depreciation policy, attraction of financial assistance (grants and subsidies), due to government orders and carrying out of various examinations [38]. The adoption of laws and other regulations governing investment activity is one of the most important conditions for the implementation of the state investment policy. These laws regulate the areas and objects of investment, tax regulation, the basics of financial assistance and financial investment.

In February 2011, the Cabinet of Ministers of Ukraine adopted Resolution No.389 "On Approval of the Program of Development of Investment and Innovation Activities in Ukraine" [39]. The main purpose of the Program is to "transition to an innovative model of economic development, modernize production, increase the competitiveness of domestic products in the domestic and foreign markets, and

prevent the impact of the international financial crisis on economic development”. And the main objectives of this program are to create favorable conditions for attracting investment to ensure the development of basic industries and innovative infrastructure.

Other regulations governing investment activities include the Law of Ukraine “On Foreign Investment Regime” [40]. According to this law, the main forms of foreign investment are:

- partial participation in enterprises jointly established with Ukrainian legal entities and individuals, or in the form of acquisition of a share of existing enterprises;
- creation of enterprises wholly owned by foreign investors;
- acquisition of land use rights and use of natural resources in the territory of Ukraine.

Also, regulations related to investing in Ukraine include provisions on investing the tax, economic, civil codes and laws of Ukraine “On Innovative Activity”, “On Financial Leasing”, “On Complex Reconstruction of Outdated Neighborhoods (Districts) Housing Fund”, “On Securities and Stock Market”, “On State Regulation of the Securities Market in Ukraine”, “On Holding Companies in Ukraine”, etc.

As can be seen, there is no regulation of socially responsible investing in Ukraine, but the UN Global Compact is the basis for its development. More and more Ukrainian companies are joining the UN Global Compact, which sets out the principles of social responsibility. To date, 39 members of the UN Global Compact Network have been involved in Ukraine [41] Including: NGOs (Klitschko Foundation, Future Development Agency), holdings (PJSC Carlsberg Ukraine, DTEK LLC), institution of higher education (Kyiv National Economic University named after) Vadim Hetman, Lviv University of Trade and Economics), etc.

The companies that have implemented the principles of social responsibility in their activities, together with the financial statements, prepare non-financial statements, the indicators of which reflect the degree of participation of the company

in solving social problems of society, development of innovations, environmental protection, etc.

The UN Global Compact declares 10 basic principles [41]. Therefore, they should be considered in more details. The first principle concerns human rights, namely that human rights must be upheld and respected and not violated. The following principle applies to labor relations, namely that they do not have to force people to work and eliminate child labor and, in turn, do not discriminate workers. With regard to the environment, the business community must support the environment and take initiatives in the area of environmental responsibility. As well as the foundation of any company activity should be combating all forms of corruption, including extortion and bribery.

Increasing the number of companies that are members of the UN Global Compact Network will improve the level of responsible investing, as Ukrainian investment funds and ordinary investors will have more information on socially responsible investing and its positive effects on the development of economic and financial performance in investor activity.

According to the aforementioned information, the laws of Ukraine and other provisions enshrined in national regulatory documents have a rather indirect attitude towards regulating the responsible investment process in Ukraine, and specialized state policy in this field has not yet been formed, which is one of the most typical problems that impede the development of responsible investment.

To develop the foundations of this policy, it is necessary to formulate a model of corporate responsible investing and to ensure the effectiveness of this process, through the possible integration of all principles of the UN Global Compact and PRI into the activities of investment funds. This model should take into account the peculiarities of investing in Ukraine and build on international experience in corporate social investment. And also a certain list of norms according to which this direction should develop must be formed.

According to L. Petrashko [42] emphasis should be placed on such strategic areas as the development of microfinance, especially to support small businesses, and

to ensure the implementation of socially responsible investing strategies. Fundamentals of microfinance should take into account the peculiarities of investment development in Ukraine and the specifics of the Ukrainian-business environment. Currently, there is no specific legislation in this field in Ukraine, and regulation of microfinance entities is based on general laws.

Another strategic solution to this problem may be to identify requirements for investment funds, and to introduce positive screening and mainly financing environmental and social projects for these investment entities.

So now let's take a closer look at the regulatory framework for investment funds. In January 2014, the Law of Ukraine "On Joint Investment Institutions" came into force [43]. According to Article 7, paragraph 5 of the Law, a joint venture is considered to be specialized if it "invests assets solely in the classes of assets defined by this Law". Specialized mutual investment institutions include investment funds of the following classes: money market funds, government securities funds, bond funds, equity funds, index funds, precious metal funds [43].

According to the law [43], in Ukraine the assets of a specialized fund may include: funds in national and foreign currency; deposits in national and foreign currency; certificates of deposit; public joint stock companies shares; shares of foreign issuers and securities of foreign exchange-traded funds that are traded on foreign stock exchanges. Specialized funds are also prohibited from:

- purchase or additionally invest in securities of one issuer more than 15% of the total value of the fund's assets;
- to acquire more than 10% of the total securities of one issue;
- to place more than 20% of the total value of the fund's assets in the liabilities of one bank [43].

As for equity funds, in the world practice they represent the largest part of investment funds. These funds are generally selected for long-term investment and to generate significant profits. The main difference between equity funds and other investment funds is that they specialize mainly in investing in company stocks, while

ordinary funds, in addition to shares, also invest in other securities. such as bonds[44].

In conclusion we could say that the regulation of socially responsible investment is one of the most important conditions for the implementation of the state investment policy in 21st century. And although the Resolution No.389 “On Approval of the Program of Development of Investment and Innovation Activities in Ukraine” has been implemented into the regulation system of our country and there are a lot of laws that regulate the areas and objects of investment, tax regulation, the basics of financial assistance and financial investment, but there is nothing that can regulate a SRI.

Only UN Global Compact is the basis for first steps in SRI development. A lot of Ukrainian companies are joining the UN Global Compact and try to be responsible and to invest money only in companies and communities that provide a corporate social responsibility. Government need to provide an increasing the number of companies that are members of the UN Global Compact Network, because it will improve the level of responsible investing. And also they need to develop the foundations of this policy and to formulate a model of corporate responsible investing. All this reforms can be made in next 5 years, and the first step in this process can be a regulation and support for microfinancing and investment funds.

2. SOCIAL RESPONSIBLE INVESTMENT AND PORTFOLIO MANAGEMENT

2.1. Formation of optimal investment portfolios: comparative survey of responsible and conventional portfolios

Since investors are currently unable to determine whether investing in responsible companies is efficient and profitable, the comparative survey of responsible and conventional portfolios is very important to ensure that investors understand the results they can receive in the future and answer whether they need to follow global trends.

Before starting of formation an optimal investment portfolio, we need to understand the difference between conventional and responsible investing. So let's take a look at the conventional way of portfolio investing.

Conventional investment in general consists of the most liquid securities (shares, bonds) which are optimized by investors according to the risk/return criteria [45]. And conventional investment includes ordinary financial investments long-term oriented investors tend to pursue a strategic goal that is involved in the management of the investee.

In his research paper A. Plastun notice that responsible investments in Ukraine has not become widespread yet and Ukrainian stock market itself is in crisis [46]. But the introduction of new approaches to the formation and selection of investment portfolios and substantiation of the feasibility of responsible investment can be a trigger to the beginning of the process of stock market stabilization and reorientation of its instruments for financing sustainable development and its goals.

Responsible portfolios are formed by investors who take into consideration ESG criteria. By reducing the number of shares of companies that can be selected into responsible portfolios, the common sense is that they are less profitable/more risky than conventional in terms of financial variables.

At the same time, responsible portfolios are formed from shares of companies that create long-term value for the society, perform socially works for communities, participate in green projects, which can have a positive sigernal effect, which in the end leads to an increase in their profitability and a reduction in risk taking into consideration.

The purpose of this comparison is to compare portfolios that are formed by shares of the largest and the most famous from the list of conventional and responsible Ukrainian companies as the basis for confirming the structure of an optimal investment portfolio with the current conditions of development of the financial market of Ukraine.

In 2018, compared to 2017, the growth rate of trading in the stock market was 26% with a GDP growth of 3,2%. The ratio of trading volumes in the stock market to GDP is 19,8%. According to the results of 2018, the volume of trading in the stock market, compared to 2017, was 26% - up to 590,59 billion of UAH [47].

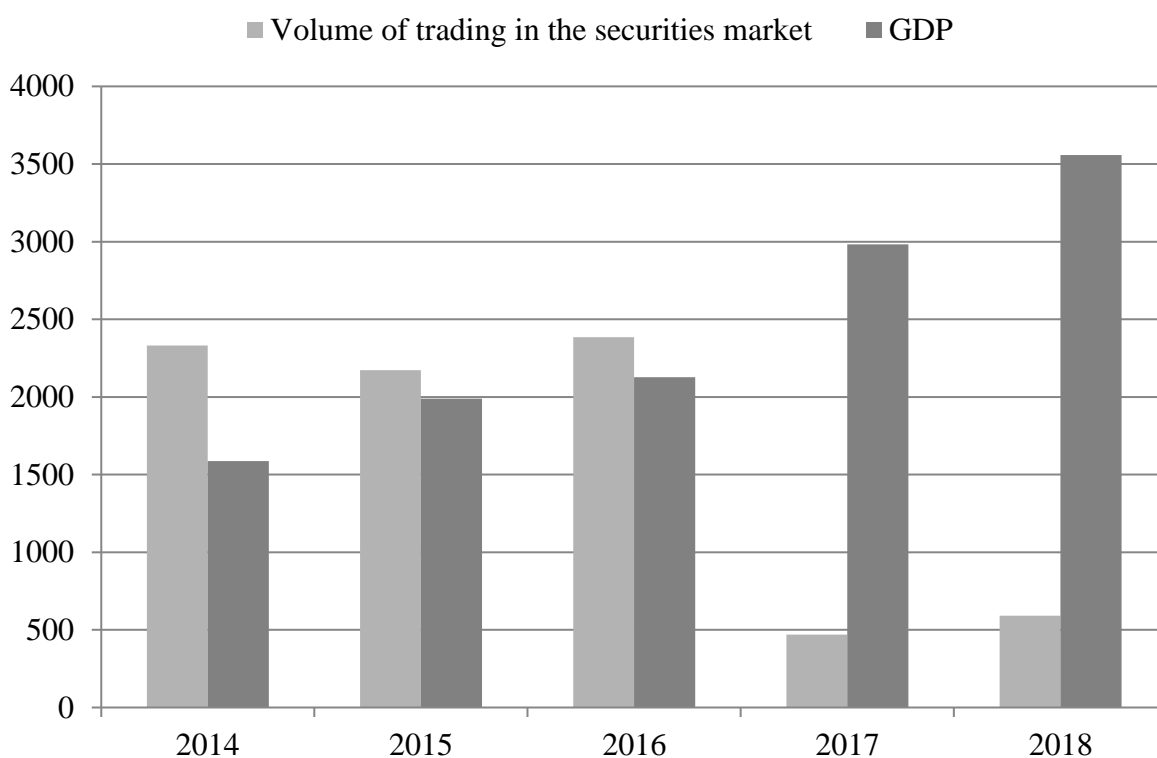


Figure 2.1 – Comparative data of trading volumes on the stock market and GDP, billion of UAH

During 2014-2018, the National Securities and Stock Market Commission registered share issues totaling 1 385,06 billion of UAH. In 2018, the issue volume has reached its minimum in the last five years and amounted to 22,28 billion of UAH. The volume of trading in the securities market in 2018 decreased by 37,1% compared to 2017 and amounted to 79,62 billion of UAH. Reduction in trading volume of shares was due to continued work on clearing the stock market and increasing the transparency of the stock market segment [47].

The key hypothesis of this study is to check that the responsible investment portfolios outperform the conventional investment portfolios of Ukrainian companies by their parameters (return, risk).

The empirical basis of the survey was the data of quotations of shares of six most liquid conventional and six responsible companies in the Ukrainian and Warsaw exchanges. The methodological basis of calculations was the classic Markowitz portfolio optimization model [48, 49]

In order to determine the composition of investment portfolios, it is necessary to solve two problems based on the model of H. Markowitz, namely:

1) calculate a portfolio with a minimum level of risk and a limited level of profitability, such a task has the form of such a system (2.1):

$$\left\{ \begin{array}{l} \sqrt{\sum_{i=1}^n w_i^2 \cdot \sigma_i^2 + 2 \sum_{i=1}^{n-1} \sum_{j=i+1}^n w_i \cdot w_j \cdot k_{ij} \cdot \sigma_i \cdot \sigma_j} \rightarrow \min \\ \sum_{i=1}^n w_i \cdot r_i > r_p \\ \sum_{i=1}^n w_i = 1 \\ w_i \geq 0 \end{array} \right. , \quad (2.1)$$

where w_i — share of the i -th financial instrument in the portfolio;

σ_i — standard deviation of the yield of the i -th financial instrument;

w_j — share of the j -th financial instrument in the portfolio;

k_{ij} — correlation coefficient between i, j -th financial instrument;

σ_j — standard deviation of the yield of the j -th financial instrument;

r_i — the return on the i-th financial instrument;

r_p — the return on the portfolio;

n — number of financial instruments of the financial portfolio;

2) calculate a portfolio with a maximum level of profitability and a limited level of risk. This task looks like system (2.2):

$$\left\{ \begin{array}{l} \sum_{i=1}^n w_i \cdot r_i \rightarrow \max \\ \sqrt{\sum_{i=1}^n w_i^2 \cdot \sigma_i^2 + 2 \sum_{i=1}^{n-1} \sum_{j=i+1}^n w_i \cdot w_j \cdot k_{ij} \cdot \sigma_i \cdot \sigma_j} < \sigma_p, \\ \sum_{i=1}^n w_i = 1 \\ w_i \geq 0 \end{array} \right. \quad (2.2)$$

where w_i — share of the i-th financial instrument in the portfolio;

r_i — the return on the i-th financial instrument;

σ_i — standard deviation of the yield of the i-th financial instrument;

w_j — share of the j-th financial instrument in the portfolio;

k_{ij} — correlation coefficient between i,j-th financial instrument;

σ_j — standard deviation of the yield of the i-th financial instrument;

σ_p — standard deviation of the yield of the portfolio;

n — number of financial instruments of the financial portfolio;

The risk of an investment portfolio looks like (2.3):

$$\sigma_p \sqrt{w_i \cdot w_j \cdot V_{ij}} = \sqrt{\sum_{i=1}^n w_i^2 \cdot \sigma_i^2 + 2 \sum_{i=1}^{n-1} \sum_{j=i+1}^n w_i \cdot w_j \cdot k_{ij} \cdot \sigma_i \cdot \sigma_j}, \quad (2.3)$$

where w_i — share of the i-th financial instrument in the portfolio;

w_j - share of the j-th financial instrument in the portfolio;

V_{ij} — covariation of the yield of the i-th and j-th financial instruments;

σ_i — standard deviation of the yield of the i -th financial instrument;

k_{ij} — correlation coefficient between i, j -th financial instrument;

σ_j — standard deviation of the yield of the j -th financial instrument;

n — number of financial instruments of the financial portfolio;

In order to compare conventional and responsible investment, it is necessary to calculate the return of shares of Ukrainian companies in which implemented strategies for corporate social responsibility and ordinary companies. To conduct research, we took the results of the stock quotes for the month at the Ukrainian Stock Exchange and the Warsaw Stock Exchange between February 2012 and January 2017, because it is a significant period of time that will help us to make more accurate calculations.

Companies with implemented CSR strategies, which have shown their CSR activity in annual reports and are a members of UN Global Compact, include: PJSC “ArcelorMittal Kryvyi Rih” (KSTL), PJSC “DTEK Zakhidenergo” (ZAEN), PJSC “Dniprospetsstal” (DNSS), DTEK Dniprovsky Electric Networks Ltd. (DNON), Kernel Holding (KER), PJSC “Concern Galnaftogaz” (GLNG). Among the companies that have not implemented CSR strategies, we have taken the “blue chips” of the Ukrainian Exchange: PJSC “Raiffeisen Bank Aval” (BAVL), PJSC “Tsentrenergo” (CEEN), PJSC “Ukrtelecom” (UTLM), PJSC “Ukrnafta” (UNAF), PJSC “Donbassenergo” (DOEN), PJSC “Kryukiv Carriage Building Plant” (KVBZ).

For the beginning, we calculated the monthly return for PJSC “DTEK Zakhidenergo” (ZAEN), PJSC “ArcelorMittal Kryvyi Rih” (KSTL), PJSC “Concern Galnaftogaz” (GLNG), PJSC “Dniprospetsstal” (DNSS), DTEK Dniprovsky Electric Networks Ltd. (DNON) with the growth rate (rt) [50]. The return for Kernel Holding (KER) was given in [51].

Also, the return of shares for the month for enterprises of PJSC “Raiffeisen Bank Aval”, PJSC “Tsentrenergo”, PJSC “Ukrnafta”, PJSC “Ukrtelecom”, PJSC “Kryukiv Carriage Building Plant”, PJSC “Donbassenergo” were given in [52-57].

Then we calculated the growth rate (rt) for the quotes, which is an indicator of the return of shares (Annex D). And all this calculations was calculated earliar in my article with A.Plastun and I.Makarenko [58].

The next step is to determine the mathematical expectation of return (ri) for each stock, for this we will find the arithmetic mean for the entire period. Equity risk (σ) is calculated as the average deviation of the values for the entire period (tables 2.1 and 2.2).

Table 2.1 — Mathematical expectation of return and risk for shares of enterprises with implemented CSR strategies

	PJSC “DTEK Zakhidenergo” (ZAEN)	PJSC “ArcelorMittal Kryvyi Rih” (KSTL)	PJSC “Concern Galnaftogaz” (GLNG)	PJSC “Dniprospestal”	DTEK Dniprovsky Electric Networks Ltd. (DNON)	Kernel Holding (KER)
ri (Expected Return)	-3,16%	-5,09%	-2,93%	-3,07%	6,89%	3,85%
σ (Standard deviation (risk))	12,24%	16,01%	21,52%	16,98%	40,44%	24,85%

Expected Return is negative for the PJSC “DTEK Zakhidenergo” (-3.16%), PJSC “Arcelor Mittal Kryvyi Rih” (-5,09%), and for PJSC “Concern Galnaftogaz” (-2,93%), and for DTEK Dniprovsky Electric Networks Ltd. and Kernel Holding the expected return is positive, 6,89% and 3,85% severally. And risk is high for companies with high expected return and low for the companies with negative ri

Table 2.2 — Mathematical expectation of return and risk for shares of ordinary companies.

	PJSC “Raiffeisen Bank Aval” (BAVL)	PJSC “Tsentrenergo” (CEEN)	PJSC “Ukrnafta” (UNAF)	PJSC “Ukrtelecom” (UTLM)	PJSC “Kryukiv Carriage Building Plant” (KVBZ)	PJSC “Donbassenergo” (DOEN)
ri (Expected Return)	-2,51%	-2,27%	-2,10%	-3,10%	-0,60%	-2,36%
σ (Standard deviation (risk))	10,34%	11,05%	15,37%	17,22%	17,69%	12,09%

Expected Return is negative for all companies. And risk for PJSC “Raiffeisen Bank Aval” is 10,34% and 11% for PJSC “Tsentrenergo”, and a little bit higher for others.

The next stage of calculation is the creation of tables of return covariations of shares among themselves. Covariance is a scale of the variability of two random variables [59]. These tables, in turn, create covariance matrices for the investment portfolio. You can notice that the diagonal values represent the variance of stock return (tables 2.3 and 2.4). This matrix is a basis for the next calculations according to the H.Markowitz,

Table 2.3 - Covariance matrix for responsible portfolio

	PJSC “DTEK Zakhidenergo” (ZAEN)	PJSC “ArcelorMittal Kryvyi Rih” (KSTL)	PJSC “Concern Galnaftogaz” (GLNG))	PJSC “Dniprospetsstal”	DTEK Dniprovsky Electric Networks Ltd. (DNON)	Kernel Holding (KER)
PJSC “DTEK Zakhidenergo” (ZAEN)	0,01449	0,00318	0,00383	-0,00472	0,00634	0,00529
PJSC “ArcelorMittal Kryvyi Rih” (KSTL)	0,00318	0,02477	-0,00439	-0,00835	-0,01753	0,00552
PJSC “Concern Galnaftogaz” (GLNG))	0,00383	-0,00439	0,04476	0,00516	0,02516	-0,01137
PJSC “Dniprospetsstal”	-0,00472	-0,00835	0,00517	0,02787	0,00132	0,00353
DTEK Dniprovsky Electric Networks Ltd. (DNON)	0,00634	-0,01753	0,02516	0,00132	0,15805	-0,01175
Kernel Holding (KER)	0,00529	0,00552	-0,01137	0,00353	- 0,01175	0,05969

And also we need to calculate this for conventional investment portfolio, that is similar with previous table 2.3.

Table 2.4 — Covariance matrix for conventional portfolio

	PJSC “Raiffeisen Bank Aval” (BAVL)	PJSC “Tsentrenergo” (CEEN)	PJSC “Ukrnafta” (UNAF)	PJSC “Ukrtelecom” (UTLM)	PJSC “Kryukiv Carriage Building Plant” (KVBZ)	PJSC “Donbassenergo” (DOEN)
PJSC “Raiffeisen Bank Aval” (BAVL)	0,01033	0,00215	0,00784	0,00109	0,00836	0,00555
PJSC “Tsentrenergo” (CEEN)	0,00215	0,01181	0,00623	0,00413	0,00270	0,00613
PJSC “Ukrnafta” (UNAF)	0,00784	0,00623	0,02283	0,00370	0,00806	0,00584
PJSC “Ukrtelecom” (UTLM)	0,00109	0,00413	0,00370	0,02868	0,00469	-0,00197
PJSC “Kryukiv Carriage Building Plant” (KVBZ)	0,00836	0,00270	0,00806	0,00469	0,03026	0,00597
PJSC “Donbassenergo” (DOEN)	0,00555	0,00613	0,00584	-0,00197	0,00597	0,01412

According to the H.Markowitz theory - to solve the first problem (according to system 2.1), it is necessary to determine the minimum acceptable margin level of the portfolio (rp). Take $rp \geq 3\%$, because such a minimum profitability level is acceptable for the Ukrainian stock market, and also introduce restrictions on the weighting of the share ratios: the share of shares should be equal to 1, and the shares themselves should have a positive sign.

To solve the second problem (according system 2.2), we set the maximum permissible level of portfolio risk $\sigma p \leq 3\%$.

Analyzing the key parameters of constructed conventional and investment portfolios of the largest Ukrainian companies, we should underline two key issues.

In the first case of portfolio optimization with a minimum level of risk and a limited level of profitability we have responsible portfolio of companies with CSR

strategies with a minimum risk equal to 0,77%, the return is equal to 3%. The portfolio consists of shares of Kernel Holding – 90,46% and PJSC “ArcelorMittal Kryvyi Rih” – 9,54%. This portfolio outperform conventional portfolio.

In the second case of portfolio optimization with a maximum level of profitability and a limited level of risk, we have responsible portfolio of companies with CSR strategies with a maximum return of 6,89%, and total risk is 2,69%. The portfolio consists of shares of DTEK Dniprovsky Electric Networks Ltd. And also this portfolio outperform conventional portfolio, which was formed from ordinary companies with a maximum return of portfolio of -0,6%, and total risk is 100,08%. And for ordinary companies, the conventional portfolio is not even formed, because return is negative.

We can not make simillar comparison study for the American market, because majority of the companies that are listed on stock exchanges have CSR policies.

To conduct research, we took the results of the stock quotes for the month at the New York Stock Exchange between February 2014 and August 2019, because it is a significant period of time that will help us to make more accurate calculations.

For the beginning, we found the growth rate (r_t) for WalMart, Inc. (WMT), Apple Inc (AAPL), Boeing Co (BA), Microsoft Corporation (MSFT) (Annex D). [60-63].

The next step is to determine the mathematical expectation of return (r_i) for each stock, for this we will find the arithmetic mean for the entire period. Equity risk (σ) is calculated as the average deviation of the values for the entire period (table 2.5).

Table 2.5 — Mathematical expectation of return and risk for shares of enterprises

	Walmart Inc	Apple Inc	Boeing Co	Microsoft Corporation
r_i (Expected Return)	1,04%	2,36%	2,72%	2,34%
σ (Standard deviation (risk))	5,36%	7,28%	7,15%	4,98%

Expected return is positive for the all companies. Walmart Inc has the lowest return – 1,04%. Apple Inc, Boeing Co and Microsoft Corporation have expected return from 2,34% to 2,72%. And risk is is appropriate for companies and market.

The next stage of calculation is the creation of tables of return covariations of shares among themselves. These table, in turn, create covariance matrices for the investment portfolio. You can notice that the diagonal values represent the variance of stock return (table 2.6). This matrix is a basis for the next calculations according to the H.Markowitz.

Table 2.6 — Covariance matrix for responsible portfolio

	Walmart Inc	Apple Inc	Boeing Co	Microsoft Corporation
Walmart Inc	0,002825	0,001200	0,002176	0,000951
Apple Inc	0,000954	0,005206	0,000663	0,001056
Boeing Co	0,001056	0,000663	0,005019	0,000954
Microsoft Corporation	0,000951	0,002176	0,001200	0,002432

According to the H.Markowitz theory - to solve problem (according system 2.1), it is necessary to determine the minimum acceptable margin level of the portfolio (rp). Take $rp \geq 3\%$, because such a minimum profitability level is acceptable for the stock market, and also introduce restrictions on the weighting of the share ratios: the share of shares should be equal to 1, and the shares themselves should have a positive sign.

To solve the second problem (according system 2.2), we set the maximum permissible level of portfolio risk $\sigma p \leq 3\%$.

As a result of the first case of portfolio optimization with a minimum level of risk and a limited level of profitability we have portfolio of companies with a minimum risk equal to 0,19, the return is equal to 2,72%. The portfolio consists of

shares of Boeing Co – 100% that in comparison with the non-optimal portfolio (with equal share for every company) the profit is higher. For non-optimal portfolio risk – 0,18%, and future return – 2,12%.

Above all, if we take into consideration our research, it is clear that investing in Ukraine in a company with implemented corporate social responsibility strategies is more profitable. After all, the risk of such claims is lower – in the first task the risk is 0.77%, and in the second it is 2.69%, and the return at given levels of risk is 3% and 6.89% severally.

Conventional portfolios are more risky, because in the second task the level of risk is equal to 100.08% with negative profitability. It should also be noted that the portfolio with the highest level of profitability was not even made due to negative return.

Undoubtedly, responsible activity of companies influence on profitability of the shares of companies in the Ukrainian stock market, as these companies are mainly the most progressive in their activities. They implement audit and corporate social responsibility strategies.

The obtained results have not only theoretical significance - both the rationale for the threat of responsible investment in Ukraine and the applied value for market participants in terms of investment decisions making, taking into consideration the ESG criteria, and the formation of investment portfolios from shares of the responsible companies, the key parameters of which exceed the conventional portfolios.

2.2 Challenges and prospects for development of socially responsible investment in the world and Ukraine

Socially responsible investing is now the basis for the development of society, because only by meeting the goals of sustainable development our society have a

future. Sustainable development initiative is possible only through the financing of certain projects, companies which implement corporate social responsibility, communities and etc.

The main objects of sustainable investment in our time are companies that are engaged in renewable energy sources or just use them in their activities, as well as companies that contribute to the stability of climatic conditions, human health, as well as the safety and development of different communities and their potential. . We need to understand that the amount of investment in a CSR company increases the opportunity for future development in the countries of stability and confidence in the future.

According to a study by EY [64] in 2015, the growth of the socially responsible investing market is driven primarily by population growth, because it is projected that in 2050 it will add 2 billion people, and therefore the demand for food, water and other resources of our planet.

In our opinion, the main areas that companies should take in order to benefit from investments and their activities in the future, should be innovation in any production, development of renewable energy sources (solar, wind power), recycling of garbage and other materials into something new, also the health and education sectors.

If we talk about the development of socially responsible investing, it should be noted that due to the increasing popularity of corporate social responsibility and the spread of sustainable development goals, the awareness of the importance of this type of investing is increasing every year. The responsible investing market is growing much faster than the traditional investment services market, and it is this growth dynamics that determines the prospects for such investment.

Of course, the development of socially responsible investing will be a significant challenge for companies, as they will need to adapt to new market conditions. Companies will have to change their corporate culture, production technologies, etc.

Firstly the foremost task for the companies is to develop a network of advisers on corporate social responsibility development for stimulation of investment. And also to develop relationships with various stakeholders for further ensure the company's active operations and to develop investment attractiveness for investors.

In the developed countries of the world, there are no significant problems with the development of SRI due to the fact that most companies have joined the UN Global Compact and other initiatives in this field. Therefore, investment funds and ordinary investors have no choice whether to invest in the traditional way or to choose socially responsible investing, all are switching to responsible investing.

But in Ukraine there are significant problems in this area. The same needs to be considered in more detail to ensure further investment development and sustainable development goals. S.Moshensky [65] identifies among the main threats to the development of socially responsible investment in Ukraine - the low information transparency of the activities of the majority Ukrainian companies. To begin with, let's look at this problem in more detail.

Transparency is the creation and development of an open source for all stakeholders about the activities of the company, etc. [66]. Company transparency, shows how open the company is in its activities and management decisions. Of course, company with open information about its business will help to enhance its image and attract new investors. According to ISO 26000, "Guidelines for Social Responsibility" [67], "organizations should be transparent in decisions and activities that affect society and the environment"

This problem can be solved by introducing regulations that will regulate the reporting of companies and help stakeholders to understand more about the company's activities, and whether it is necessary to invest in it.

Another obstacle is to the development of socially responsible investing is that only a small number of companies are willing corporate social responsibility standards [66]. And investing funds not even a wide choice during the process of selecting companies to invest. Simply, some companies find it inappropriate to implement CSR strategies because they see it as a waste of money. But the

management of these companies need to understand that the introduction of corporate social investment will help to improve the image of the company in both national and world markets. Also, many studies prove that after the introduction of CSR there is an improvement in financial performance [68]. Advantages include increasing customer loyalty and increasing of sales, as customers fully trust the company and choose it from competitors.

Also it is easier to hire professionals to work for a company that supports a well-designed social responsibility policy, it reduce staff turnover and employee training costs. It should be understood that if staff turnover is the norm for the company, then it carries significant costs of production due to lack of jobs, also reduces discipline, increased defective products, and deteriorating social and psychological climate in the company.

Another problem with low demand for SRI may be the lack of knowledge of investors on this topic [69]. Not all of them are even familiar with this particular type of investing and are not paying enough attention to it, and some just consider these investments to be inappropriate. Since they believe that such companies will not necessarily have prospects for improving their financial results in the future.

Therefore, scientists should make every effort to conduct research on this issue and disseminate its results to potential socially responsible investors and ordinary people, as these studies will increase the competitiveness of the Ukrainian economy in the world .

Another challenge for developing a responsible way of investing is low activity of society as a whole [70], as well as of various non-governmental organizations, trade unions, local communities in promoting SRI ideas in the Ukrainian market and actually forcing businesses to adhere to SRI in order to ensure their future development.

This is one of the problems of our society that some people continue to live in the Soviet Union in their thoughts, but are not concerned about the further development of society and believe that their opinion no one can support, and do not enlighten them. It is also important to understand that society is the leading driver of

any change, so it should be used - to organize protests for companies that harm the environment and society, also to boycott their products, and not to choose such companies for work.

Another problem is the underdevelopment of the stock market in Ukraine. Due to this underdevelopment, Ukrainian investors have a higher level of risk when investing in the stock market in Ukrainian enterprises, often enough they choose foreign markets because of lower risks and relatively higher profitability. This problem can be solved using the experience of foreign countries. Such changes will indeed have positive effects on the country's economy.

The Social Responsibility Institute in Ukraine is mostly informal. The domestic system of regulation of this process does not meet either international practice or real demands of socio-economic policy of both the state and the business sector. And to ensure full development, there should be a legal framework that will lay down the basic principles of socially responsible investing and will develop recommendations for companies and businesses to properly structure this process, and there will be guidance on adopting CSR strategies.

And after the creation of a national corporate social responsibility strategy, even more companies will be willing to join and further comply with the norms set out therein. It is undoubted that the strategy will prescribe points for investment funds.

Other key things to remember are prospects for the development of socially responsible investing in Ukraine. So, to begin with, improving well-being of individual investors as well as investment funds will allow us to develop socially responsible investing, because we all understand that investing capital in any business requires an excess of cash from an investor. For Ukraine, this is a very difficult issue, since only Ukrainian oligarchs have access to and surplus resources. But unfortunately, they all favor harmful production that does not require significant resources, but requires considerable labor resources and has a negative impact on the environment and human health. The government of Ukraine should impose certain

restrictions on monopolies in different industries of economy, and stop the usurpation of power by oligarchs.

Another promising activity in the area of investment relations regulation will be increasing of requirements for investment funds, pension funds and other institutional investors. After the introduction of stringent conditions of activity, which will stipulate the obligation to invest in socially responsible businesses, communities, etc. This will improve the returns on these funds, improve the standard of living of citizens and ensure the further development of a social and responsible way of investing in the Ukrainian financial market.

The development of methods of providing certain investment services will be a driving force for changing the minds of ordinary people about the correct implementation of the principles of responsible investing.

Another perspective is the introduction of international standards of social responsibility, which is quite natural. In fact, all these standards summarize the best practices of leading countries in the world and various multinational companies. This will lead to better conditions in the Ukrainian market, but it should be understood that for Ukraine these standards will be somewhat inflated due to the fact that the Ukrainian market is only developing. So the implementation of strategies should be approached with an understanding of the peculiarities of the Ukrainian economy.

The first step may be the simple accession of Ukrainian companies to the UN Global Compact. The number of such companies is increasing every year, and they have already introduced corporate social responsibility reporting practices. Therefore, it is very important to attract socially responsible investors. And for future activity of these companies in CSR, they need to join the initiative to display both financial and non-financial results of company in the form of reports according to the Global Reporting Initiative

In conclusion, despite all the challenges of socially responsible investing, they can be quickly overcome and debug the investment process in different countries around the world. For example, Ukraine just has to take into account the experience of different organizations, companies and countries, to disseminate information to the

average citizen in order to provide support in different situations. Also changes are possible only if the authorities interact with business and ordinary citizens. Only then will it be possible to fight corruption and oligarchs, which drag the country to the bottom in all rankings. And enterprises will not be afraid to disclose their activity, and they will be invested by foreign investors.

Therefore, there are prospects for developing a sustainable way of investing, and this investment can completely replace the traditional way of investing, and all companies will join various international initiatives and implement CSR. But for this they need to deal with the problematic issues as they stand in the way of development.

CONCLUSIONS

The expansion of socially responsible investment as a source of financing for the sustainable development economy in the world is characterized by a highly growing trend. Companies need to improve their environmental consequence by incorporating the basics of corporate social responsibility, and investors, in turn, should only invest responsible.

After research we can say that we met the purpose of this master's level degree qualification paper, we studied the theoretical foundations of socially responsible investment and made a comparative study of responsible and conventional portfolios, provided guidance on how to choose the most appropriate way to invest in financial markets, taking into account risk / return factors.

And we completed all tasks: analyzed the concept of “socially responsible investing”; considered the theoretical basis of its existence, and the state of its development in the world; carried out a comparative study of the world and domestic experience of responsible investing; considered in detail the legal regulation of this issue; made a brief analysis of the stock market in Ukraine; formulated two optimal portfolios separately for Ukrainian companies that have implemented CSR in their activities and for those who have abandoned this initiative; created one optimal portfolio for the US stock market; gave recommendations on choosing a socially responsible investment or a conventional one; considered the main challenges that facing the development of SRIs; outlined the prospects for the development of socially responsible investing.

As has been noted investments contribute to the development of the whole countries, as well as contribute to the technological progress, social aspects of life and ecological situation on the planet. After a detailed analysis of the works of scientists we can determine a socially responsible investing, as an approach to investment process in which all decisions are based on financial component and ESG criteria components to avoid negative externalities, to ensure the sustainable

development goals. Also we can see a steady increasing in the number of people adhering to the Principles for responsible investing in their investment activities, but at the same time these indicators have not reached their maximum.

All things considered, it seems reasonable to assume that environmental issues are very important for future development of our society. All investors need to consider ESG issues when build a portfolio by using different approaches, which help to skip companies with negative ecological impact and to choose most profitable variants for the future development. Every region has its own strategies in SRI, and according to the countries they are changed. And all is developed thanks to the high customer demand for this type of investment. SRI issues in EU countries have traditionally been a part of the cultural, political and legal framework. In Ukraine there are some goals in social quality and rational usage of natural resources in the country and also the main goal is to provide information transparency of Ukrainian companies because it this information will give to the investor the understanding of companies contribution to the corruption, human rights and ethics in their reports.

Saying about regulatiom, government need to provide an increasing the number of companies that are members of the UN Global Compact Network, because it will improve the level of responsible investing. And also they need to develop the foundations of this policy and to formulate a model of corporate responsible investing.

Above all, if we take into consideration our research, it is clear that investing in Ukraine in a company with implemented corporate social responsibility strategies more profitable. After all, the risk of such claims is lower – in the first task the risk is 0.77%, and in the second it is 2.69%, and the return at given levels of risk is 3% and 6.89% severally.

Undoubtedly, responsible activity of companies influence on profitability of the shares of companies in the Ukrainian stock market, as these companies are mainly the most progressive in their activities. The obtained results have not only theoretical significance - both the rationale for the threat of responsible investment in Ukraine and the applied value for market participants in terms of investment decisions

making, taking into consideration the ESG criteria, and the formation of investment portfolios from shares of the responsible companies, the key parameters of which exceed the conventional portfolios. In conclusion, despite all the challenges of socially responsible investing, they can be quickly overcome and debug the investment process in different countries around the world.

Therefore, there are prospects for developing a sustainable way of investing, and this investment can completely replace the traditional way of investing, and all companies will join various international initiatives and implement CSR. But for this they need to deal with the problematic issues as they stand in the way of development.

The scientific novelty of this research is that only a few scientists have researched socially responsible investing in the process of comparing two formed optimal portfolios of investment (traditional and responsible), and especially Ukrainian companies. And the topic is related to the corporate social responsibility and responsible investing, which are quite new issues in scientific sphere.

The main recommendation after conducting the research and analyzing its results is to implement (improve) the CSR system in different enterprises, because it allows companies to earn more profit and develop activity, and investors should pay attention to the Ukrainian stock market and invest their money responsibly, because it is proved that the risks in this the case is less and the profits are higher. Our investment portfolios can be used by investors to make a decision in which company is better to invest. And also it is useful for government of different countries to provide a regulation and support for sustainable investment.

With respect to further developments on this subject, this study may serve as a basis for other studies, namely conducting similar studies for other developing countries. In the future, more attention should be paid to the ESG criterion, as well as developments on this issue.

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ANNEXES

Annex A

SUMMARY

Bychenko D. Responsible investing as a source of financing for sustainable development and its goals in international financial markets. – Master’s Level Qualification Paper. Sumy State University, Sumy, 2019

The master’s level qualification paper focuses on the importance of existence of socially responsible investing and how it influences the financial market. In this paper theoretical and legal groundwork for SRI was analyzed, and was provided an analysis of world and domestic experience in this field. Also was made and a formation of optimal investment portfolios and compared portrolios for responsible and convential way of investing. And was outlined the main challages and perspectives for future development of the socially responsible investment.

The main purpose of this study is to prove the importance of SRI and to form an optimal portfolio according to the norms of SRI.

Keywords: corporate social responsibility, CSR investment, Global Initiative UN, investors, socially responsible business, socially responsible investment, sustainable development.

АНОТАЦІЯ

Биченко Д.О. Відповідальне інвестування як джерело фінансування сталого розвитку та його цілей на міжнародних фінансових ринках. – Кваліфікаційна магістерська робота. Сумський державний університет, Суми, 2019 р.

Кваліфікаційна магістерська робота фокусується на важливості існування соціально відповідальних інвестицій та їх впливу на фінансовий ринок. У цій роботі було проаналізовано теоретичні та правові основи соціально

відповідального інвестування та був зроблений аналіз світового та вітчизняного досвіду в цій галузі. Також було сформовано та порівняно оптимальні інвестиційні портфелі для відповідального та традиційного способу інвестування, та окреслено основні завдання та перспективи майбутнього розвитку соціально відповідальної інвестиції.

Основна мета цього дослідження - довести важливість соціально відповідального інвестування та сформувавши оптимальний портфель відповідно до норм відповідального способу інвестування.

Ключові слова: корпоративна соціальна відповідальність, інвестиції в корпоративну відповідальність, Глобальна Ініціатива ООН, інвестори, соціально відповідальний бізнес, соціально відповідальні інвестиції, стійкий розвиток.

Annex B

1. Kempf A. The effect of socially responsible investing on portfolio performance / A. Kempf, P. Osthoff. // *European Financial Management*. – 2007. – №13. – С. 908–922.

JEL Classification: G11, G12, G20, G23, M14

Keywords: Socially Responsible Investing, Portfolio Management, Trading Strategy

This article draws attention to the features of socially responsible investing, namely the approaches that investors always use (screening and screening policies). It was also determined whether this type of investment was effective. Using the KLD ratings data from 1991 till 2004, they have found evidence that socially responsible investments only rarely have a negative effect. They also proved that all these results are in no way tied to a particular industry, so the results can be confidently used to further develop investment plans.

2. 2018. Global Sustainable Investment Review [Электронный ресурс] // GSIR. – 2018. – Режим доступа до ресурсу: http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf.

The Global Sustainable Investment Alliance (GSIA) is an international collaboration on sustainable development. This is the fourth edition in a series after reviewing sustainable investments worldwide in 2012.

This report reveals the basics of sustainable investing. And it shows the main indicators, and in Europe alone, the total assets for sustainable and responsible investing has grown by 11% in two years and reached 4,1 trillion of USD. In the United States, the figure is 12,0 trillion of USD.

Responsible investment approaches are also considered in this report, was also considered in this report, namely, negative screening and corporate engagement. These methods are quite popular and complement the ESG integration strategies. This

report also examines the motivation and positive impact of responsible investing. The main motivation is the desire to achieve social and environmental benefits, as well as the desire to fulfill the mission of companies.

According to this report, investment initiatives primarily related to climate change are improving the impact of environmental factors. Also, after analyzing sustainable investments, it was concluded that sustainable investments are becoming more and more accessible to different asset classes and by expanding the range of investment mechanisms.

3. Annual Report 2019 [Электронный ресурс] // PRI. – 2019. – Режим доступа до ресурсу:
https://d8g8t13e9vf2o.cloudfront.net/Uploads/t/j/z/priannualreport2019_901594.pdf.

This report details the following issues:

— regulation of corporate social investment (it starts with the importance of the responsibilities of beneficiaries to the stakeholders, and the introduction of regulation of obligations based not only on risk / return assessments because investments play a much greater role in the development of the economy and society of the world;

— the introduction of the ESG criterion (as this criterion is not yet well known to the general public in different countries of the world, the report states the importance of sharing this information with the majority of investors);

— the importance of creating a responsible investor community is emphasized (only together can significant changes be made in the development of investing);

— another important priority in 2019 was the training of responsible investors;

— and a detailed description of the issues facing and facing responsible investing.

Annex C

Table C.1 — Approaches to the definition of SRI

Scientist/Organization	Definition Of The Concept
Renneboog, Ter Horst & Zhang [8]	The SRI term refers to investments that seek to avoid negative externalities.
J. Shapiro [9]	SRI is a practice of making investment decisions based on both financial and social performance. It is in the concept of investing in concert with investors principles.
Jacob Park and Sonia Kowal [10]	Socially responsible investing (SRI) is an investment process that integrates analysis of environmental, social, and governance issues into traditional quantitative financial analysis.
Guay, Doh & Sinclair [11]	SRI is a strategy that encourages corporate practices that promote social responsibility and laudable initiatives such as impact investing, shareholder advocacy and community investing.
A. Ivashchenko [12]	Socially responsible investing is an investment process that takes into account the social and environmental impact of investments (both positive and negative) in the context of financial analysis.
T.Kalinescu et al. [13]	Investing in social objects to generate income and enhance the quality and quality of life of people by meeting their material, spiritual or social needs.
O.Kuznetsova et al. [14]	It is a process of investing investors, taking into account social, environmental and ethical factors, along with traditional financial analysis.
Investment Leaders Group of University of Cambridge Institute for Sustainability Leadership [15]	Responsible investment is an approach to investment that explicitly acknowledges the relevance to the investor of environmental, social and governance factors, and of the long-term health and stability of the market as a whole. It recognises that the generation of long-term sustainable returns is dependent on stable, wellfunctioning and well-governed social, environmental and economic systems.
Eurosif [16]	Sustainable and responsible investing (SRI) is a generic term covering any type of investment process that combines investors' financial objectives with their concerns about Environmental, Social and Governance (ESG) issues.
Ethical Investment Research Services [17]	SRI is a tool, which describes any area of the financial sector where the social, environmental and ethical principles of the investor (whether an individual or institution) influence which organization or venture they choose to place their money with.
Principles for Responsible Investment [18], [19]	Responsible investment is an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns. Sustainable investing is an investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management.

Annex D

Table D.1 — The return of shares of companies with CSR strategies per month from February 2012 to January 2017, %.

Date	PJSC «DTEK Zakhidenergo» (ZAEN)	PJSC «ArcelorMittal Kryvyi Rih» (KSTL)	PJSC Concern Galnaftogaz (GLNG)	PJSC «Dniprospeystal»	DTEK Dniprovsky Electric Networks Ltd. (DNON)	Kernel Holding (KER)
February 2012	-5,23%	4,29%	0,00%	-5,66%	26,67%	6,28%
March 2012	-2,98%	-10,41%	0,00%	-24,69%	25,26%	-6,80%
April 2012	-32,18%	-6,73%	0,00%	23,94%	-3,36%	2,43%
May 2012	-20,75%	-34,43%	0,00%	-9,29%	-15,22%	-19,42%
June 2012	-18,50%	0,00%	0,00%	9,53%	-2,56%	8,84%
July 2012	-0,10%	0,00%	0,00%	-16,61%	-28,95%	14,68%
August 2012	-16,46%	0,00%	0,00%	3,45%	-1,48%	-2,72%
September 2012	12,44%	0,00%	0,00%	-8,33%	-6,02%	-4,41%
October 2012	-15,57%	0,00%	0,00%	-0,91%	-47,92%	2,77%
January 2013	-4,12%	0,00%	4,17%	0,20%	-18,75%	4,42%
February 2013	2,15%	0,00%	-0,48%	-28,07%	20,00%	-6,60%
March 2013	-11,58%	-69,95%	0,00%	34,72%	92,31%	-9,22%
April 2013	1,19%	0,00%	0,00%	-27,84%	0,00%	-3,05%
May 2013	-8,24%	0,00%	0,00%	21,43%	-38,12%	0,17%
June 2013	2,56%	0,00%	0,00%	8,82%	110,08%	-16,38%
July 2014	3,03%	0,00%	1,50%	0,00%	-63,23%	-13,13%
August 2014	-11,14%	0,00%	-11,11%	-50,00%	49,99%	-11,11%
September 2014	10,00%	0,00%	-41,67%	-30,00%	-4,00%	-3,30%
October 2014	18,88%	0,00%	28,57%	0,00%	80,54%	6,43%
November 2014	-9,47%	0,00%	-88,89%	0,00%	-44,61%	10,00%
December 2014	-3,77%	0,00%	0,00%	0,00%	-15,28%	-2,37%
January 2015	10,87%	-43,50%	20,00%	0,00%	3,28%	9,80%
February 2015	-4,45%	0,00%	-16,67%	0,00%	41,25%	2,40%
March 2015	3,89%	0,00%	-33,33%	0,00%	-7,85%	125,28%
June 2015	0,60%	0,00%	20,00%	0,00%	6,67%	-1,90%
November 2015	10,56%	0,00%	0,00%	6,38%	-7,13%	-7,34%
December 2015	-15,58%	0,00%	0,00%	9,00%	-16,15%	-0,56%
January 2016	-16,55%	0,00%	0,00%	-8,26%	35,78%	-6,78%
February 2016	19,83%	8,11%	0,00%	0,00%	-13,51%	12,18%
January 2017	5,92%	0,00%	30,00%	0,00%	49,09%	25,01%

Source: calculated by the authors on the basis of data of UX [50] and taken for Kernel Holding (KER) from site Investing.com [51]

Table D.2 — The return of shares of ordinary companies per month from February 2012 to January 2017, %

Date	PJSC «Raiffeisen Bank Aval» (BAVL)	PJSC «Tsentrenergo» (CEEN)	PJSC «Ukrnafta» (UNAF)	PJSC «Ukrtelecom» (UTLM)	PJSC «Kryukiv Carriage Building Plant» (KVBZ)	PJSC «Donbassenergo» (DOEN)
February 2012	-5,88%	-3,37%	-5,46%	-6,16%	-9,14%	-1,6%
March 2012	-4,69%	-6,98%	-16,24%	-2,68%	1,31%	-7,58%
April 2012	4,10%	0,00%	-3,72%	0,00%	-4,34%	-3,98%
May 2012	-13,39%	-36,42%	-32,48%	-7,25%	-20,56%	-25,11%
June 2012	-17,27%	14,57%	-19,70%	-11,05%	5,59%	-3,70%
July 2012	7,69%	16,84%	13,08%	-22,42%	5,74%	20,87%
August 2012	-8,16%	-6,62%	-4,57%	13,28%	-4,79%	-19,90%
September 2012	-7,78%	3,15%	-7,70%	-5,17%	8,47%	6,99%
October 2012	-15,66%	-11,45%	-0,85%	-23,64%	-11,73%	-11,58%
January 2013	19,77%	-2,20%	1,18%	-25,00%	2,01%	-0,76%
February 2013	13,59%	-3,86%	37,25%	13,33%	16,22%	10,13%
March 2013	-17,09%	-8,71%	-20,52%	-2,21%	-0,26%	-11,53%
April 2013	5,15%	-23,85%	-11,76%	3,01%	9,20%	-2,34%
May 2013	2,94%	8,19%	2,16%	-4,38%	-0,20%	4,55%
June 2013	-3,81%	6,24%	0,00%	22,14%	-6,40%	5,31%
July 2014	-4,55%	5,05%	34,36%	-1,71%	-0,74%	1,85%
August 2014	-13,61%	0,00%	-3,02%	16,28%	-15,43%	-13,03%
September 2014	0,79%	-6,23%	-3,00%	-10,00%	-1,33%	-19,29%
October 2014	-3,91%	5,40%	-14,57%	0,00%	-11,04%	20,04%
November 2014	-17,89%	-3,02%	-20,93%	-22,22%	-21,14%	-8,44%
December 2014	-4,95%	2,17%	-5,92%	8,57%	17,57%	6,31%
January 2015	-9,38%	-4,91%	18,94%	-24,34%	-22,18%	-7,61%
February 2015	20,69%	11,58%	16,54%	39,13%	24,50%	-1,97%
March 2015	-6,67%	-2,88%	2,91%	-5,00%	-10,44%	-23,49%
June 2015	1,10%	-13,00%	7,81%	-8,33%	69,00%	-3,07%
November 2015	6,33%	-17,65%	-10,79%	-40,00%	-7,71%	15,03%
December 2015	-10,71%	1,79%	-6,87%	33,33%	-8,24%	-3,79%
January 2016	-4,00%	-4,17%	-9,93%	0,00%	9,73%	-1,59%
February 2016	2,78%	3,89%	-9,07%	-8,33%	12,00%	-10,12%
January 2017	9,09%	8,41%	9,79%	-12,12%	22,16%	18,74%

Source: taken from site Investing.com [52-57].

Table D.3 — The return of shares of companies per month from February 2014 to August 2019, %

	Walmart Inc	Apple Inc	Boeing Co	Microsoft Corporation
February 2014	0,03%	5,13%	2,92%	1,24%
May 2014	-3,69%	7,27%	4,83%	1,34%
August 2014	2,61%	7,22%	5,25%	5,26%
November 2014	14,78%	10,12%	7,57%	1,83%
February 2015	-1,24%	9,64%	3,77%	8,54%
May 2015	-4,84%	4,10%	-1,97%	-3,66%
August 2015	-10,07%	-7,04%	-9,36%	-6,81%
November 2015	2,80%	-1,00%	-1,77%	3,25%
February 2016	-0,03%	-0,67%	-1,62%	-7,64%
March 2016	3,24%	12,72%	7,41%	8,55%
April 2016	-2,37%	-13,99%	6,19%	-9,70%
May 2016	5,85%	6,53%	-6,42%	6,28%
June 2016	3,16%	-4,27%	2,95%	-3,45%
July 2016	-0,07%	9,01%	2,92%	10,77%
August 2016	-2,10%	1,81%	-3,15%	1,38%
September 2016	0,95%	6,55%	1,77%	0,24%
October 2016	-2,91%	0,43%	8,11%	4,03%
November 2016	0,59%	-2,66%	5,71%	0,57%
December 2016	-1,86%	4,80%	3,40%	3,12%
January 2017	-3,44%	4,77%	4,97%	4,04%
February 2017	6,28%	4,77%	10,29%	-1,04%
March 2017	1,62%	4,87%	-1,87%	2,94%
April 2017	4,30%	-0,01%	4,51%	3,95%
May 2017	4,55%	6,34%	1,51%	2,02%
June 2017	-3,72%	-5,72%	5,39%	-1,30%
July 2017	5,70%	3,27%	22,61%	5,47%
August 2017	-2,40%	10,27%	-1,15%	2,85%
September 2017	0,09%	-6,02%	6,07%	-0,37%
October 2017	11,74%	9,68%	1,48%	11,67%
November 2017	11,36%	1,66%	7,30%	1,19%
December 2017	1,56%	-1,52%	6,54%	1,63%
January 2018	7,95%	-1,06%	20,16%	11,07%
February 2018	-15,56%	6,38%	2,21%	-1,31%
March 2018	-1,16%	-5,81%	-9,48%	-2,67%
April 2018	-0,57%	-1,50%	1,73%	2,47%
May 2018	-6,69%	13,08%	5,58%	5,69%
June 2018	3,77%	-0,94%	-4,73%	-0,23%
July 2018	4,18%	2,80%	6,20%	7,58%
August 2018	7,43%	19,62%	-3,79%	5,89%
September 2018	-2,03%	-0,83%	8,49%	1,82%
October 2018	6,78%	-3,05%	-4,58%	-6,61%
November 2018	-2,62%	-18,40%	-2,28%	3,82%
December 2018	-4,61%	-11,67%	-7,00%	-8,40%
January 2019	2,88%	5,52%	19,57%	2,82%
February 2019	3,30%	4,03%	14,09%	7,28%
March 2019	-1,47%	9,70%	-13,31%	5,28%
April 2019	5,44%	5,64%	-0,98%	10,73%
May 2019	-1,36%	-12,76%	-9,55%	-5,30%
June 2019	8,92%	13,05%	6,56%	8,31%
July 2019	-0,10%	7,64%	-6,27%	1,72%
August 2019	3,52%	-2,02%	6,71%	1,17%

Source: taken from site Investing.com [60-63].