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Article

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Article

Financial Risk Management Based on Corporate Social Responsibility in the Interests of Sustainable Development

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Abstract: This paper aims to study the perspectives of sustainable development amid the COVID-19 pandemic and crisis in 2021, backed by financial risk management and corporate social responsibility. To achieve this goal, the authors use the methods of regression analysis, horizontal and trend analysis, and variation analysis. As a result, it is proven—for the first time—that in isolation, investments and corporate social responsibility do not contribute positively to sustainable development. In addition, the authors determine the absence of the outflow of investments from the world economy during crises. Based on this, a new approach to crisis management of sustainable development is developed—it is based on stimulating corporate social responsibility, for which the complex recommendations in the sphere of state management are offered. The theoretical significance of the conclusions made consists in specifying the essence of financial risk management of sustainable development, which has to be conducted with a strict connection to and based on corporate social responsibility. The practical significance of the developed new approach and offered recommendations on its practical implementation consists of strengthening the scientific and methodological provision of economic crisis management of COVID-19 and the maximization of its contribution to sustainable development to support the Decade of Action.

Keywords: corporate social responsibility; COVID-19 crisis management; financial risk management; sustainable development



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1. Introduction

Sustainable development is a new criterion of socio-economic systems' success, including economic growth and innovations (such as high technologies). The change of strategic milestones of economic systems requires the reconsideration of the methodology of studying their development's cyclicity. The classical methodology of cyclicity analysis envisages the treatment of economic crisis as a period of the slowdown of economic growth rate. Large attention is paid here to the accounting of financial risks of economic crises.

The main financial risk, according to [Adachi-Sato and Vithessonthi \(2021\)](#) and [Çamlıbel et al. \(2021\)](#), is the reduction of the total investments in the economy. Investments are considered in the neo-Keynesian treatment and thus envisage, not necessarily and not only, the outflow of investments from the economy but also the reduction of expenditures of enterprises and households, i.e., the transitioning from consumption to saving of financial

resources. Deficit of investments in the economy takes away the development opportunities, i.e., hinders the overcoming of a crisis.

Financial risk management envisages both the improvement of the investment climate in the economy and the stimulation of consumption (refusal from saving), as well as the increase of government financing of top-priority spheres (especially innovative) for starting the vectors of economic growth. With sufficient total investments, entrepreneurship receives an impulse for development and increases efficiency, production capacity, innovative activity, production volume, and very often, export. This leads to the acceleration of economic growth and the economy at the rising phase, making it more attractive for investors, which allows it—in a short period—not only to achieve the pre-crisis level of GDP but also exceed it, i.e., demonstrating further progress.

The existing scientific and economic literature has two methodological approaches to the research of the impact of economic crises on sustainable development.

The first approach, similarly to GDP, considers sustainable development as the function of investments in the economy. The works of [Ikram et al. \(2021\)](#), [Ji et al. \(2021\)](#), and [Tan et al. \(2021\)](#) note that the implementation of Sustainable Development Goals (SDGs) requires investments and thus is susceptible to financial risks that are connected to the outflow of investments. Critical reconsideration of this approach shows that the financial risks of sustainable development are not identical to the financial risks of economic growth.

Thus, if companies attract investments, this does not guarantee the use of received resources for implementing the SDGs. On the contrary, in the conditions of an economic crisis, companies might be interested in the increase of environmental costs of their activities for the reduction of products' prime cost and the quick increase of profit. This shows—by the example of SDG12—that the inflow of investments in the economy amid a crisis could hinder sustainable development instead of supporting it.

The second approach, which is presented in the works of [Huk and Kurowski \(2021\)](#) and [Kurniatama et al. \(2021\)](#), separates itself from the financial component and focuses on corporate social responsibility as the key factor of sustainable development. A truly high level of corporate social (including ecological) responsibility could contribute to accelerating the implementation of the SDGs, but only if there are sufficient investments.

Considering the above example from the positions of the second approach, it is possible to see that a high level of corporate social responsibility would allow avoiding the increase of ecological costs of production amid a crisis during the inflow of investments in the economy. However, in the case of a deficit of investments, responsible companies might have suffered losses and been ousted from the markets by less responsible companies, which attracted investments in their activities.

That is, with both approaches (with small variations), the same scenario of the negative influence of a crisis on sustainable development and inefficiency of the offered tools of crisis management is repeated. The problem is that the modern world economic system suffers from the COVID-19 pandemic and crisis. Having entered the Decade of Action, it especially needs the full-scale implementation of the SDGs, but neither of the existing (two alternatives) scientific and methodological approaches can guarantee the effectiveness of the corresponding measures of economic crisis management and their contribution to sustainable development.

In previous studies, the scholars unanimously state the critical necessity (mandatory character) for sustainable development (implementation of the SDGs) of investments (as financial resources), which is noted in the works of [Ahmad et al. \(2021\)](#); [Alshater et al. \(2021\)](#); [de SouzaCunha et al. \(2021\)](#); [Miralles-Quirós et al. \(2020\)](#); [Vanwallegghem and Mirowska \(2020\)](#); [Wang et al. \(2020\)](#), and [Yoshino et al. \(2021\)](#), and corporate social responsibility (as readiness and striving to invest in sustainable development), which is noted in the works of [Anis et al. \(2019\)](#); [Buhmann et al. \(2019\)](#); [Castillo-Villar \(2020\)](#); [López-Concepción et al. \(2021\)](#), and [Quaranta and Di Carlo \(2020\)](#). However, investments and corporate social responsibility are studied in isolation, due to which the existing literature

forms a fragmentary image of the corporate support for sustainable development, which is a literature gap.

Based on the existing publications, which confirm the reduction of corporate social responsibility (Lopata and Rogatka 2021; Ziogas and Metaxas 2021) and investment attractiveness of entrepreneurship (Falato et al. 2021; Machokoto et al. 2021) in the conditions of economic crises, the following hypothesis H1 is offered and tested: support for sustainable development in the conditions of an economic crisis requires the combination of financial risk management (inflow of investments) and corporate social responsibility (responsible use of investments for implementing the SDGs).

Hypothesis 1 (H1). *Support for sustainable development in the conditions of an economic crisis requires the combination of financial risk management (inflow of investments) and corporate social responsibility (responsible use of investments for implementing the SDGs).*

This paper aims to study the perspectives of sustainable development amid the COVID-19 pandemic and crisis in 2021, backed by financial risk management and corporate social responsibility. The originality of this paper lies in the development of a new approach to support sustainable development amid an economic crisis, which envisages the systemic character of financial risk management and corporate social responsibility. This paper proves, for the first time, that in isolation, investments and corporate social responsibility do not contribute to sustainable development. The paper's uniqueness consists in the development of recommendations for placing responsible investments in the economy in the conditions of economic crisis for supporting sustainable development.

2. Literature Review

This paper is based on the three following scientific categories. First category: sustainable development. Unlike the traditional "narrow" definition of sustainable development, which is given in the Brundtland (1987) and which is limited by environment protection, this paper used the "wide" treatment of sustainable development. We consider SDGs as an agenda in the sphere of sustainable development (Anderson et al. 2021; Leal Filho 2021; Unger et al. 2021). Accordingly, sustainable development is treated in this paper as the process of implementation of the entire range of the SDGs—not only environmental but also social. This predetermines a close logical (notional) interconnection between sustainable development and charity.

Second category: corporate social responsibility. The existing literature contains a wide range of definitions of corporate social responsibility—from purely altruistic intentions (Ho and Huang 2018; Jegers 2018; Rim and Song 2017; Rim et al. 2016) to the strategic coordination of the needs of interested parties and business operations (Choi et al. 2021; Costa et al. 2021; Zhao et al. 2021).

In this paper, corporate social responsibility is treated as a corporate charity—the practical implementation of altruistic intentions of entrepreneurs, management, and employees (including volunteers) during the use of resources and the organization of corporations. This definition makes corporate social responsibility inseparable—based on common intentions and practices of charity in society. That is, corporate social responsibility is a manifestation of society's charity, which sets a close connection between the charity of person and corporation.

Third category: investments as financial resources for the economy. In a general sense, investments are a means of making a profit. A particular case is investments in sustainable development (investments in the implementation of the SDGs), which are aimed at making a profit from supporting the SDGs. A contrast to them is responsible investments, which imply the placement of financial resources in the support for the SDGs—not for making profit but as altruism (to implement altruistic intentions of entrepreneurs, management, and employees).

The theoretical connection between sustainable development, corporate social responsibility, and investment—as the logical basis of this paper—is shown in Figure 1.

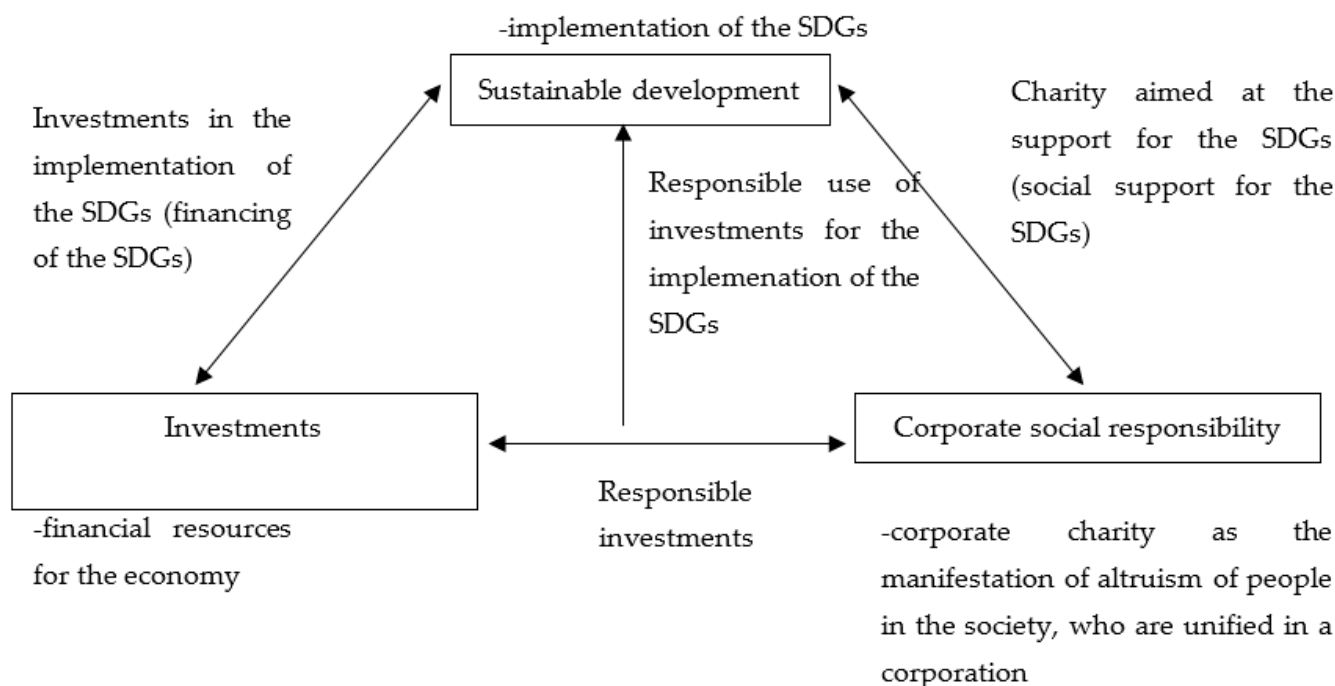


Figure 1. The theoretical connection between sustainable development, corporate social responsibility, and investments is the logical basis of this paper. Source: authors.

As shown in Figure 1, corporate social responsibility and investments could be connected—in isolation—to sustainable development, supporting the implementation of the SDGs in terms of values and finance, accordingly. In the case of their systemic character, there appear responsible investments, which ensure the responsible use of investments for the implementation of the SDGs. The research question (RQ) of this paper is as follows: how exactly should sustainable development be supported: in isolation or with the systemic character of corporate social responsibility and investments?

The significance of financing for the implementation of the SDGs and the importance of financial risks of sustainable development are studied in multiple works of the following authors. [Doni and Johansdottir \(2021\)](#) show the vivid influence of the world economic crisis, amid the COVID-19 pandemic, on progress in the implementation of SDG13, substantiating the dependence of the fight against climate change on the financial context. [Nedopil Wang et al. \(2020\)](#) deem it necessary to address the missing linkage in sustainable finance through the introduction of the ‘SDG Finance Taxonomy’.

[Adiyoh Imanche et al. \(2021\)](#) substantiate the important role of sustainable financing in the achievement of the SDGs in Nigeria with special attention to foreign direct investment from China. [Xiong and Yao \(2021\)](#) show that green investments in China stimulate sustainable economic development. [Ziolo et al. \(2021\)](#) demonstrate the important role of sustainable finance in achieving Sustainable Development Goals.

[Liyana et al. \(2021\)](#) prove the progressiveness of the EU policy framework in aligning sustainable finance for sustainable development in Africa and Asia. [Ionescu \(2021\)](#) proved the expedience of using green finance for low-carbon energy, sustainable economic development, and climate change mitigation during the COVID-19 pandemic. [Gambetta et al. \(2021\)](#) substantiate the large potential of listed companies to finance the Sustainable Development Goals. [Zhang and Wang \(2021\)](#) assess green technology indicators for cleaner production and sustainable investments in a developing country context.

Corporate social responsibility, as a source of sustainable development, is reflected in the following works. [Nawrocki and Sz wajca \(2021\)](#) perform a multidimensional comparative analysis of involvement in CSR activities of energy companies in the context of sustainable development challenges based on the evidence from Poland. [Janowski \(2021\)](#) prove that CSR and postal service sustainable development influences the urban environment (by the example of courier service operator solutions in Europe).

[Sudirman et al. \(2021\)](#) determine the contribution of corporate social responsibility (CSR) to achieve the Sustainable Development Goals (SDGs) in southeast Sulawesi. [Khuong et al. \(2021\)](#) show that stakeholders and corporate social responsibility (CSR) programmes are the key sustainable development strategies to promote corporate reputation (based on evidence from Vietnam). [Ragulina et al. \(2021\)](#) show the management of the risks of innovative activities focused on the consumer market, comparing competitiveness to corporate responsibility.

[Trzeciak \(2021\)](#) substantiate the necessity for sustainable risk management in IT enterprise based on corporate social responsibility. [Nobanee et al. \(2021\)](#) perform an overview and prove the contribution of reputational risk of enterprises to the economy's sustainable development. [Mach et al. \(2021\)](#) substantiate the effect of structural funds on housing market sustainability development and implementation of the SDGs.

The performed literature review has shown that the issues of financial risk management of sustainable development and support for the implementation of the SDGs based on corporate social responsibility are elaborated sufficiently in the existing publications, but they are studied separately. Thus, there is no systemic idea of the conditions at which the SDGs are achieved.

Financial risk management of sustainable development is associated in the existing literature sources with financial risk management of economic growth (GDP). The financial risks, which increase in the conditions of economic crises, include the deficit of investments, which is considered peripherally and is unified. The approach to economic crisis management envisages the attraction of investments for the financial support for the targeted economic activities (similarly to the vectors of economic growth). The authors of this paper offer and test the hypothesis H1 that the described processes cannot be treated as similar. To prove this hypothesis, the authors use the notion of responsible investments.

The notion of responsible investments is given in the following works: [Singh et al. \(2021\)](#), [Brzeszczyński et al. \(2021\)](#), [Rehman et al. \(2021\)](#), and [Daniels et al. \(2021\)](#); however, their essence as a source of sustainable development is not elaborated sufficiently (first gap), and there is no evidential base for the conditions under which investments and corporate social responsibility stimulate sustainable development (second gap). Both of these gaps are dealt with in this paper.

This research could fill the gap in the literature due to the provision of the economic and mathematical research model, which allows the quantitative measuring of the contribution of investments and corporate social responsibility in sustainable development and the formation of the evidential base for testing the proposed hypothesis.

3. Materials and Methods

To test hypothesis H1, the authors use the method of proof by contradiction. According to this method, the hypothesis H1 is deemed proven if investments and corporate social responsibility—separately—are not enough to accelerate sustainable development amid the COVID-19 pandemic and crisis in 2021, i.e., if there is a negative dependence of sustainable development on investments and corporate social responsibility.

The difficulty in proving the hypothesis is that there are no official international statistics on responsible investments since they are a relatively new scientific term. That is why, based on the existing official statistics, the evidence base of this paper is built on the substantiation of the absence of a positive contribution to sustainable development investments and corporate social responsibility (in isolation). The following indicators have been selected for consideration:

- Total investment, calculated by the [International Monetary Fund \(2021\)](#), which characterizes the availability of financial resources in the economy (we shall denote it as *fr*);
- World giving index, calculated by [Charities Aid Foundation \(2021\)](#), which characterizes the level of corporate social responsibility (we shall denote it as *cr*);
- Sustainable development index, calculated by [UN \(2021\)](#), which characterizes the level of achievement of the SDGs (we shall denote it as *sd*).

It should be noted that the data for CSR are based on the individual responses: page 4 of the 2021 World Giving Index by CAF 2021 says, “The report includes the results of 1.6 million individuals interviewed across the globe since 2009” ([Charities Aid Foundation 2021](#)).

An argument in favour of using these data as a proxy for corporate actions equals corporate social responsibility to corporate charity. The scientific essence of using the data on charity consists in the quantitative measuring of the general level of charity in society, which, in its turn, determines corporate charity (corporate social responsibility).

These individual answers are then aggregated for obtaining a country assessment and ranking, which allows using them as the data at the level of countries. Since the data are collected not among separate corporations, they are not corporate (microeconomic) data, but standard national (macro-economic, country) data—i.e., the data conform to the analytical goals of this paper. Thus, we ensure the combination of analysis units (compatibility of the data on all selected statistical indicators).

The sample of countries for research has been formed by two criteria. The first criterion is coverage of the largest possible number of countries to obtain data that are correct at the level of the world economic system. The second criterion is avoiding gaps in the data (absence of the values of certain indicators). The sample of 105 countries has been formed by these two criteria. The empirical base of the research is given in Supplementary Materials in open access (public repository Mendeley Data) ([Vagin et al. 2021](#)).

The research model of this paper is calculated based on the data for 2021 and has the following form:

$$sd = F(fr, cr) \quad (1)$$

The basis for this econometric (economic and mathematical) construction (1) is the presence of a theoretical connection between these indicators, which is shown in Figure 1. The consequences of the COVID-19 pandemic could be linked to model (1) with the fact that amid the pandemic and crisis, the gap between charity and investments increases. Thus, in stable conditions (before a crisis), the investors’ purpose of making a profit could coincide with their altruistic intentions for the support for the SDGs, and the investments in the support for the SDGs can (with large probability) guarantee the return.

However, under the conditions of a crisis, the probability of the return of responsible investments is substantially decreased (approaches zero). That is why the data for 2021 (obtained under the conditions of the COVID-19 pandemic) allow for the most precise and correct differentiation of investments and corporate social responsibility and thus are optimal for the search for an answer to the set research question and testing of the proposed hypothesis.

To determine the dependence of the sustainable development index on total investments and the world giving index, the method of regression analysis is used. The results of regression analysis are tested for correspondence to the Gauss–Markov theorem, for checking their reliability (at the significance level $\alpha = 0.05$). For this, the following tests are performed: analysis of multiple correlations, variables multicollinearity test, the F-test, and Student’s *t*-test.

Additionally, the dynamics of the inflow of investments in countries of the sample in 2000–2021 are studied with the use of the methods of horizontal and trend analysis, as well as variation analysis. This allows for the deep elaboration of financial risks and the influence of economic crises on them, including the 2008 financial crisis and the COVID-19 pandemic and crisis in 2020–2021.

4. Results and Discussion

To determine the significance of investments and corporate social responsibility for sustainable development (separately) based on the created empirical data (Vagin et al. 2021), the coefficients of this research model are specified—they are reflected in the following equation of multiple linear regression:

$$sd = 87.323 - 35.442fr - 0.1535cr \quad (2)$$

According to the obtained regression Equation (2), an increase of the inflow of investments in the economy by 1% GDP leads to a decrease of the sustainable development index by 35.442 points. An increase of the world giving index by 1% leads to a decrease of the sustainable development index by 0.1535 points. Let us consider the results of the performed tests for checking the reliability of the regression Equation (2):

- The analysis of multiple correlations has shown that the multiple correlation coefficient (R^2) took the value 0.3745. This is a sign of the moderate connection between the indicators: the change of the sustainable development index by 37.45% is explained by the change of total investments in the economy and the world giving index (corporate social responsibility);
- Variables multicollinearity test allowed obtaining the following results. Cross-correlation between the sustainable development index and total investments $r_{sd,fr} = -0.16$. Cross-correlation between the sustainable development index and the world giving index $r_{sd,cr} = -0.35$. Cross-correlation between the world giving index and total investments $r_{cr,ft} = 0.12$. Therefore, multicollinear (duplicative) variables are absent;
- F-test allowed obtaining the following results. At 105 observations in the sample and 2-factor variables ($k_1 = 2$, $k_2 = 104 - 3 = 101$), the table value $F = 3.09$. The observed value $F = 8.32$, i.e., it exceeds the table value (the test is passed);
- The Student's t-test allowed obtaining the following results. At the significance level $df = 104$, the table value $F = 1.982$. The observed value $F = 20.65$, i.e., it exceeds the table value (the test is passed).

Based on the results of the performed tests, it is possible to conclude that the obtained regression Equation (1) conforms to the Gauss-Markov theorem and is reliable at the significance level $\alpha = 0.05$. The received results confirmed the hypothesis H1 and proved that in isolation, investments and corporate social responsibility do not contribute to the implementation of the SDGs.

The qualitative scientific and economical treatment of the obtained results shows that the determined negative regression does not mean that neither investments nor corporate social responsibility are needed for the implementation of the SDGs (which might have been a belief from the mathematical point of view, abstracting from the economic sense of the studied variables); it means that there is a necessity for a flexible approach to managing investments and corporate social responsibility in the interests of sustainable development.

In this paper, to achieve the guaranteed positive contribution to the implementation of the SDGs, the authors offer a systemic implementation of both considered measures, manifested in responsible investments. Responsible investments are treated as targeted investments in the projects on implementation of the SDGs (corporate responsibility of investors which place responsible investments). Second, investments in the activities of companies that support the SDGs and conduct their activities according to the priorities of sustainable development (corporate responsibility of the recipients of investments).

To stimulate the inflow of responsible investments in the economy, the authors offer a set of the following recommendations in the sphere of state management:

- Provision of tax preferences (e.g., tax subsidies or tax vacations) for the subjects of entrepreneurship, which are recipients of responsible investments;
- Provision of attractive conditions for the inflow of responsible investments in the economy—e.g., based on special economic zones;

- Setting requirements to the placement of responsible investments by private parties of the implemented and started projects of public-private partnership;
- Compilation and publication in open access of the national ranking of responsible investors and responsible companies, which attract the largest total investments and use them with the largest contribution to the implementation of the SDGs.

It should be noted that total investments are much more subject to state regulation, and special attention should be paid to its research. To determine the general accessibility of investments (including responsible investments and those that could become responsible investments) in the modern world economy, let us consider the averaged dynamics of the inflow investments in countries of the sample in 2000–2021, which are calculated and illustrated in Figure 2.

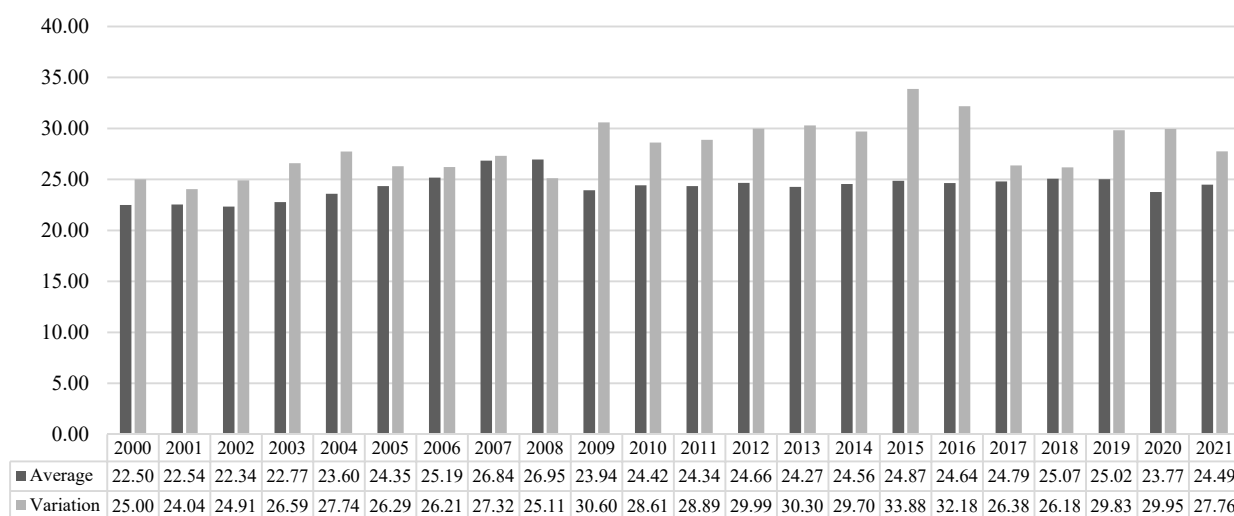


Figure 2. Dynamics of total investments in countries of the sample (% of GDP) and their variations (%) in 2000–2021. Source: Calculated by the authors based on (Vagin et al. 2021).

As shown in Figure 1, total investments in the world economy were rather stable during the considered period. In 2000, the indicator equalled 22.50% of GDP (variation—25%). In 2007, total investments increased up to 27.32% of GDP (variation reached 26.84%). The trend—growth of total investments compared to 2000—equalled 21.42%.

In the conditions of the 2008 financial crisis, total investments reduced by 8.08% (horizontal decrease compared to 2007) by 25.11% of GDP, and variation remained almost unchanged (26.95%). In 2009, total investments grew by 12.00% (trend growth compared to 2007), up to 30.60% of GDP, and variation decreased (23.94%).

By 2019, total investments grew up to 29.83% of GDP (variation equalled 25.02%). Amid the COVID-19 pandemic and crisis in 2020, total investments grew by 0.40% (horizontal growth compared to 2019), reaching 29.95% of GDP, and variation decreased (23.77%). In 2021, the volume of investments grew by 6.94% (trend growth compared to 2019), up to 27.76% of GDP, and variation remained at the level that was below the 2019 level (24.49%).

Total investments in the world economy in the considered period varied from 22.34% of GDP (the minimum that was observed in 2002) to 26.95% of GDP (maximum that was observed in 2008). The variation of investments was moderate, in the range from 24.04% (the minimum that was observed in 2001) to 33.88% (the maximum that was observed in 2015).

The performed systemic analysis of the financial risks of the economy has shown that they do not demonstrate a vivid tendency for an increase amid the crises and, on the contrary, are inclined to reduce during the world economy's crises. Therefore, economic crises stimulate the inflow of investments. Combining the obtained results of the regression analysis (Equation (2)) and systemic analysis of the dynamics of investments in the world economy, it is possible to conclude that the absence of a significant contribution of

investments to sustainable development in 2021 (amid the COVID-19 pandemic and crisis) is explained not by their outflow (deficit) but by the low (insufficient) level or decline of corporate social responsibility.

That's why management of the financial risks of economic crises (including the COVID-19 crisis) should envisage the attraction of responsible investments with main attention paid to stimulation of corporate social responsibility of investors and companies that receive investments.

The obtained results and conclusions further develop and supplement the framework of the concept of responsible investments. Unlike the existing publications—Singh et al. (2021); Brzeszczyński et al. (2021); Rehman et al. (2021); Daniels et al. (2021)—which consider responsible investments peripherally and discuss the issue of their notion, the results of this paper clarify the essence of responsible investments as a source of sustainable development. The results of this paper are given in Table 1.

Table 1. Comparative analysis of financial risk management of sustainable development and financial risk management of economic growth (GDP).

Criterion of Comparison	Financial Risk Management of Economic Growth (GDP)	Financial Risk Management of Sustainable Development
Manifestation of economic crisis	the slowdown of the rate of economic growth (reduction of GDP)	the slowdown of progress in implementing the SDGs (reduction of the sustainable development index)
Financial risks, which increase in the conditions of economic crises	deficit (an increase of demand with a less vivid increase or decrease of the offer of investments) of investments for economic growth	deficit of responsible investments due to the insufficient (low or reduced) level of corporate social responsibility
Structure of investments	simple—all investments are important and equally valuable	complex—only responsible investments are necessary and valuable
Approach to economic crisis management	the attraction of investments for the financial support for the vectors of economic growth	the attraction of responsible investments through the stimulation of corporate social responsibility

Source: Authors.

The contribution of this paper to literature is as follows: first, the formation of the evidence basis on the conditions under which investments and corporate social responsibility stimulate sustainable development. It is proven, for the first time and in isolation, investments and corporate social responsibility do not make a positive contribution to sustainable development. Second, determination of the absence of the outflow of investments from the world economy during crises. Both new scientific results are the basis for using the new approach to crisis management of sustainable development, the essential differences (specific) of which (from the existing approach) are as follows:

- absence of the necessity for the special attraction of investments in the economy amid a crisis;
- the complicated structure of investments in the economy, in which responsible (and opposite—irresponsible) investments are distinguished.

The developed and recommended new approach to crisis management of sustainable development, for practical application in the modern conditions of the COVID-19 pandemic and crisis, is based on stimulating corporate social responsibility, for which the complex recommendations in the sphere of state management are offered. Together with the increase of the inflow of investments in the economy, the growth of corporate social responsibility will attract responsible investments, which will support the implementation of the SDGs.

Thus, this paper has provided an answer to the set research question (RQ) and formed an evidential base of the fact that support for sustainable development (SDGs) should be performed with the systemic character of corporate social responsibility and investments. Implications for this theory consist in the specification of the central role of responsible

investments for the achievement of sustainable development (implementation of the SDGs). This allows narrowing and clearly determining the limits of the search of perspectives of the practical implementation of the SDGs, drawing them around responsible investments.

Implications for practice consist in the formation of the scientifically substantiated idea that corporations have to make responsible investments for the contribution to sustainable development (support for the SDGs). This allows correcting the corporate strategies in the sphere of sustainable development, refusing those regarding corporate social responsibility that are not supported by investments and from investments that are not based on altruism, and replacing them with responsible investments.

Implications for policymakers are connected to the fact that this paper's conclusions allow the improvement (increasing the effectiveness) of the state regulation of investments in sustainable development. This paper's results provide state regulators with a clear guide for action (practical guide) for stimulating investments in sustainable development, recommending focusing the measures of state support on responsible investments.

5. Conclusions

Thus, the obtained results allowed reconsidering the essence of financial risk management of sustainable development and separating it from the financial risk management of economic growth (GDP). Unlike the latter, in which financial risks, increasing in the conditions of economic crises, are connected to a deficit of investments, financial risk management of sustainable development—as the key financial risk—envisages the deficit of responsible investments due to the insufficient (low or reduced) level of corporate social responsibility.

The structure of investments (simple in the existing practice, at which all investments are important and equally valuable) is more complex—financial risk management of sustainable development requires and values only responsible investments. A simple attraction of investments in the economy is not sufficient either—crisis management of sustainable development requires the attraction of responsible investments through the stimulation of corporate social responsibility.

This proves hypothesis H1 and validates that support for sustainable development in the conditions of economic crisis requires a combination of financial risk management (inflow of investments) and corporate social responsibility (responsible use of investments for implementing the SDGs), which implies the attraction of responsible investments. For this, a set of recommendations in the sphere of state management is offered.

The theoretical significance of the given conclusions consists in specifying the essence of financial risk management of sustainable development, which has to be conducted in the strict connection to and based on corporate social responsibility. The practical significance of the developed new approach and offered recommendations on its practical implementation consists of strengthening the scientific and methodological provision of economic crisis management of COVID-19 and the maximization of its contribution to sustainable development to support the Decade of Action.

It should be noted that the results of the performed research are limited due to the deficit of the available official international statistics. Thus, the performed economic and mathematical modelling has clearly shown that investments and corporate social responsibility—in isolation—do not contribute to the implementation of the SDGs. However, the authors' conclusion that this contribution could be ensured by responsible investments cannot be backed—due to the deficit of statistics—by the facts and mathematical model. Thus, it is an assumption (a new hypothesis).

Therefore, future studies should focus on scientific and methodological support for the development of an official international statistical accounting of responsible investments (in particular with the help of special indices) and the collection and systematization of alternative data (fragmentary and segmentary national statistics, surveys, and expert opinions). It is expedient to use these data for testing the offered hypothesis on the

contribution of responsible investments to sustainable development, which has become the new key result of this paper.

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