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The influence of green finance on economic growth: A COVID-19 pandemic effects on Vietnam Economy

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Abstract

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Environmental protection and high economic growth are the global requirement and have attracted the special attention of researchers and policymakers. Thus, the current study is also going to examine the impact of green finance that includes green investment and green loan on the economic growth of Vietnam. The data have been obtained from the central bank of Vietnam and World Bank Indicators (WDI) from 1986 to 2019. This study also executed the Autoregressive Distributed Lag (ARDL) approach to examine the links among the variables.

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focus on green finance that could increase the economic growth in the country.

Q Keywords: Green finance green investment green loan urban-rural income ratio economic growth

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1. Introduction

For many decades, the reforms in numerous countries endorsed all possible aspects to develop the economy with center stages of economic growth. However, economic growth includes various elements that establish various opportunities for society and the economies of various countries. The economy of Vietnam has suffered many variances of numerous variables, which posed a significant impact on economic growth (Broadstock et al., 2020). After the Vietnam War, many circumstances prevailed in the economy, which, after the strong support of developed economies, was able to recover. A complete period is usually required to support the crashed economies, but the dominance of numerous variables and factors placed externally poses a significant impact (Teoh et al., 2020). After launching the numerous reforms related to political and financial structure, certain past impacts positively the Vietnam economy. From 2002 to 2018, numerous people lived in a poverty line, which was significantly pulled out with developed countries' dominating influence. GDP per capita of Vietnam economy enhanced up to 2.7 times by reaching US \$2,700 during 2019 where 45 million people significantly sorted out from the poverty line. There is a sharp decline during 2019 among the poverty rate by 70% toward 6%, which showed the reduction in poverty rates by 3.2\$ per day. While some ethnic people lived in Vietnam with the poverty status of 86%, similar GDP was presumed during 2018–2019, where estimation was depicted to be 7% with the fast growing rates in the respective region.

The ongoing situation of the Covid-19 pandemic illustrated remarkable effects on the Vietnam economy where green finance enabled significant measures to sustain the economy's environment. Various proactive approaches used in Vietnam to establish dominant alliances

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dominance, which helped Vietnam to pose a sustainable environment for economic growth (Caldecott, 2020). The serious contradiction also eminently discussed in the environment of economic growth and green finance's resilience established positive measures though. Plenty of challenges effectively prevailed in Vietnam's economies, but the effectiveness of green finance inserted possible influences with covering measures to safe economic growth.

The total contribution of services output and goods with the relativeness of population contributes toward economic growth, but the prevalence of Covid-19 disrupted every sort of distribution means. Covid-19 pandemic affected the economic growth from various perspectives, but the green finance endorsed various measures to secure the shocks of Covid-19 striving around the world (D'Adamo et al., 2020). Wide discrimination prevails among the societies of urban and rural income generators, which endorse possible economic growth. Although income generation is denoted as an important element, the pandemic Covid-19 induced a dominant impact, which reduced income in both areas (Yuan et al., 2020). Covid-19 is marked as a general slogan for the disruption of economies, but a shutdown of numerous countries blames the capacities of Covid-19 locally and internationally. People used to spend in the countries to enable economic growth, but the prevalence of Covid-19 affected the needs and movement of currencies among people and sellers. Expenditure states the importance of green finance with the relativeness of Covid-19, which elaborates the proxies with the inclusion of per capita expenditure, contributing to significant economic growth. Different means also prevail, which restrained the per capita expenditure, including Covid-19, which continuously affects global economies (Nurrika et al., 2020).

Vietnam is one of Southern East Asia's fastest-growing economies with a GDP growth rate of 7.5% (2001–2005), then down to 6.3% (2006–2010) and 5.9% (2011–2015), representing an expansive paradigm of non-sustainable production. Moreover, Vietnam's development was focused on a carbon-intensive road that placed great environmental strain. The Government of Vietnam has developed significant plans and policies, including a Social Economic Policy (SEDS 2012–2020 and five year-SED), Vietnam Climate Change Strategy (VCCS 2011), Vietnam's Green Growth Strategy (VGGS 2012), Sustainable Development Strategy (SDS, 2013) and a Master Plan on Economic Reform, in an attempt to encourage sustainable development and green growth (MPER, 2013–2020). In these policies, Vietnam's average GDP growth rate goal

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billion USD between 2021 and 2030 for Vietnam's INDC. Vietnam's economy and financial sector have a very difficult condition owing to very large budgetary deficits of 5.5 percent of GDP (2010) and 6.1 percent of GDP (2015) and a very high budgetary deficit (2015).

According to a sustainable urban development model, the top-down strategy and green credit programs would help channel funds into the green economy to restructure the Vietnamese economy. In the light of current large government deficits and public debt, mobilizing financial resources primarily includes the private and banking industries, which possess an asset amount equal to 250 percent of GDP and a significantly expanding stock market of 34.5 percent of GDP market capitalization (2015). The Green Financial Policy System and the Green Financial Credit Scheme would assist Vietnam in adopting the Green Growth Plan successfully, responding to climate change and, in particular, fulfilling INDC Vietnam's obligations under the Paris Agreement. If Vietnam achieves its green financial requirements of roughly US\$ 30.7 billion, 85.12 million metric tons of CO₂ will be lowered by 2020. With US\$21.2 trillion to fund all green industries between 2021 and 2030 under Vietnam's INDC commitments of 197.9 Mt CO₂, it will cut Vietnam's overall CO₂ emissions by 25 percent. With the passage of time, the concept of green financing is getting more attention from the world. The countries are focusing more on green finance development. Similarly, Vietnam's green finance demand for the year 2020 is given in [Table 1](#).

Table 1. Vietnam Green Finance (GF) demand FTY 2020

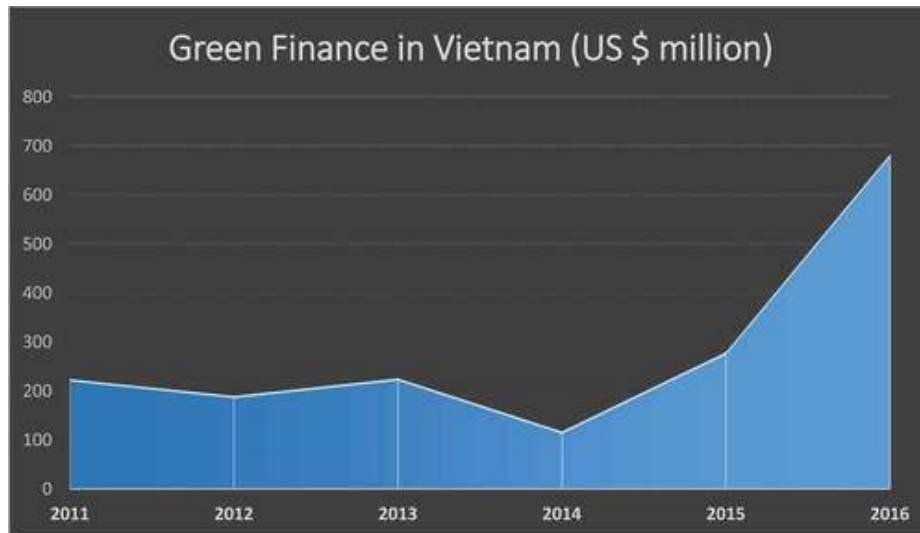


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Green financing is under the core focus of the world due; it benefits multiple other sectors of the economy. These benefits from the green finance are also urging the world to pay more attention to the development of this form of financing. The demand for green financing all around the world is increasing over time. Similarly, green financing development is also getting more attention in Vietnam. The green finance analysis from 2011 to 2016 in Vietnam is given in [Figure 1](#). The investment in the green finance follows the increasing trend from 2011 to 2016. In 2011, the investment in green finance was about US\$200 million but in 2016, the

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Figure 1. Green finance in Vietnam from 2011 to 2016



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The objective of the ongoing research is to measure the impact of green finance and Covid-19 on the economic growth of Vietnam. This study has contributed to the knowledge of the green finance with reference to the Covid-19. The investigation of green finance impact on the economic growth in the Covid-19 pandemic situation is one of the first attempts that could contribute comprehensively to the existing literature of green finance. The examination of Vietnam economy during Covid-19 with green finance is also one of the first attempts and significant contribution of the study.

2. Literature review

The literature clearly stated the importance of economic growth for the countries, including numerous opportunities for the sustainable development of the economy. Various finance sources help economies establish strong measures to develop the economy (Anh Tu et al., 2021; Chien et al., 2021a), but the inclusiveness of green finance prominently stated many factors and Covid-19. Numerous authors argued that establishing economic growth measures, the proper sustainability of financial contributions founded eminent means of

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element with Covid-19. Although financial development tends to be an important factor among economic growth, social and other factors are also required to react with economic growth sustainability (Chien et al., 2021b; Mallick & Rahman, 2020). The imperfection of infrastructure also induces a dominant impact on the economy, but the inclusiveness of various other elements with Covid-19 contributes positive domains to enable a safe environment. Indicators of the economy pose the direction of economy striving toward the development context or declining context; therefore, green finance positively impacts the economy (Chien et al., 2021c).

During the orientation of Vietnam's economy internationally, various strengthening measures depicted the robust effects of different green finance instruments. Resilience and strength dominate as important elements for any country, helping economies reach the development bridges. The growth of economies prevails among the financing elements that retain a prominent aspect of initiating financial contributions, whether locally or internationally. The significance of green finance positively enumerates economic growth due to the relativeness of economic growth elements. Literature specified the importance of Vietnam's economy, which got disrupted during the initiation of war and Covid-19 from the other countries to refrain the minerals or economy. A broad disparity prevails among the well-cultured and well-developed communities, while the financial means still dominate among them with considerable factors (Kim & Kang, 2020) (Kim & Kang, 2020). Numerous implications often prevail among the partnership by stressing the ratio of urban and rural wages, which tend to be affected by the growth of Covid-19. The countries utilized different channels to allow healthy steps, but the aftereffects of Covid-19 widely disturbed the economies with numerous other green finance effects. It depends on the rural and urban citizens to control their commitment and the quality of living against the economies; thus, the large difference in income presents potential consequences.

Many factors contribute to establishing positive economic growth; therefore, green finance is an important element in the literature posing eminent influence (Chien et al., 2021d). Green finance factors include many elements that directly and indirectly impact economic growth, but the GDP relevance and various economic indicators positively help the economies. The robust impact of Covid-19 and green finance supported the export and demand of

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major factors positively impacts economic growth. The study also compared various economies with the relevance of Vietnam's economy, which has depicted the significant growth in recent years, stating current Covid-19. The booming effects of the manufacturing sector also illustrated the strong impact on economic growth with industrialization. However, foreign direct investments are also denoted as an important macroeconomy element and pose as an eminent element of green finance that contributes to economic growth. It is dependent on the development of various financial institutions, which help different businesses through the innovation of green finance, an eminent contributor to the economy (Chien et al., 2020).

Usually, some projects help to provide profitable means of developing and sustaining the economy; therefore, different expanding green loan tools develop the economic conditions (Chien et al., 2021f; D'Adamo et al., 2020). Literature specified the importance of green loans for economic growth, but the legitimate requirements also prevail in the economic study with the relevance of policies and regulations. Some interest and Covid-19 effects also countered dominating influence over the economic growth (Li et al., 2021b), but green loans' efficiency usually recovers the prospects of negativity (S.-Z. Huang et al., 2020; W. Li, Chien, Hsu et al., 2021). Essentially, it is important to analyze the readiness and utilization of positive green loans, which help develop economic growth and the development of the economy. Green loans' importance also countered as expensive to some economies, especially suffering from huge loans of developed countries and financial institutions (Taghizadeh-Hesary & Yoshino, 2020). The higher interest rates exert an eminent impact on the economic growth; therefore, some emergent means are usually required to recover the loss assumptions during Covid-19. Implementation and development of economic growth require the modeling of various investments that relate to green loans. Although investments have pose positive impacts, the legitimation of a green loan environment influences the growth of economies.

Either some domestic means also disrupt the growth of economies, but the influence of Covid-19 and many other factors contributes significant measures to economic development. Green investment tends to have a positive relationship with establishing strong economic growth where investors tend to spend their amount for significant profits. Covid-19 endorses an eminent impact on economic growth, while green investment countered as a positive

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influence of Covid-19 affected the economies globally. Many elements that prevail domestically influence economic growth, requiring a quantitative approach to develop the economy and enumerate the economic growth factors. Literature viably discussed the eminence of quantitative changes that arrived during Covid-19, which affected the economies of developed countries and the economy of Vietnam.

Socially responsible countries manage to have the dominant source of green investments to establish the socioenvironment and economic growth (Gajjar, 2020; Nguyen et al., 2021). Different investing activities also dominate in the literature, inserting a significant impact on the developing economies, which strives for positive economic growth (Zhuang et al., 2021). Although some alternate projects designed locally also induce positive reflections on the establishment of the economy, international influence poses different aspects (Othman et al., 2020; Sadiq et al., 2020). Globally, the changes affect economic conditions, but the discovery of some green investment elements helps different countries to enable secure means of economic growth.

Production and manufacturing also got affected during the tenure of Covid-19, but the influence of green investment covered some extent of losses. The study initiated the pandemic losses and found significant spans to recover the prospect amounts, but Covid-19 shut down all aspects of covering losses. A green investment where applied have positive means of creating safe measures to recover the losses, but Covid-19 influence continued with various aftershocks. Therefore, some demographic areas also denote the effective placement of green investments, but green investment's relativeness includes a higher rate of interest (Han et al., 2020). Literature used various green investment elements, which helped economies enable safe means of rising economic growth. Some effective measures are usually required to save green investment, which could help counter the losses initiated during the Covid-19 pandemic. Usually, the green investment includes numerous elements through which the treatment of green investment could be initiated. Therefore, mutual funds, traded funds, various securities, and bonds were dominated as important elements that could contribute a significant portion to the economy's affected area. At a higher rate of interest, the economy could subsequently manage to strive for the situation but could face various restrictions after attaining green investment from developed countries (Taghizadeh-Hesary &

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The quality of financial contribution discusses green finance factors, where the element includes green finance, which dominates with certain influences on economic development and economic growth (Chien et al., 2021g; Hsu et al., 2021). Literature mentioned the nomination of various elements that prevail among the green finance for a certain term, which in a short span discussed all possible aspects of economic growth (Abbas, 2020; Kennedy et al., 2020; Vermeulen et al., 2020). The study used various variables prevailing in financial development; therefore, green finance inserted a significant impact on the economy with positive sources and elements with Covid-19. It depends on the premise's management, which elaborates the green investment as a study of an increasingly advanced variable in economic growth. Green finance dominated in the literature as an important element in the economy, which poses various impacts on the economy and societies (Lawrence, 2020; Li et al., 2021c).

The output of any country is usually enumerated by the effective investment in green finance, which significantly accounts for many people (Bassino & Van Der Eng, 2020; Masitenyane et al., 2020). Prominently, the gross domestic product is divided by its population, which endorses the eminent influence over economic growth. Although the population dominates as an important element, the prevalence of green finance and Covid-19, which insert a role in the economy. The study used green finance for positive perspectives of the economy, but some negative aspects were also highlighted in the literature that could disrupt economies. Societies and industries are significantly indulged with economic conditions; therefore, green finance provides easing measures for sustainable efforts and the rise of economic growth (Ncube & Koloba, 2020; Žmuk et al., 2020). Totaling the amounts of services and goods output referred by the industries contributes a significant portion to the economic growth and includes the eminent portion of green finance with effects of Covid-19. The population endorses positive contribution to the economic growth, but the empowerment of population through employment and various opportunities establishes numerous positive measures. Significantly, the borders of various countries also induce neighbors' economic growth with trade dominance and various other factors (Matthews & Mokoena, 2020; Soto, 2020). Literature mentioned the green finance as widely stated green finance inclusiveness of better

A large difference prevails among the well cultured and well-developed societies, while the financial means also dominate among them with vast factors (Kim & Kang, 2020). Numerous consequences also prevail among the relationship by emphasizing the ratio of urban and rural income, which tend to be affected by the rise of Covid-19. The countries utilized different channels to enable safe measures, but the aftereffects of Covid-19 widely disrupted the economies with various other green finance effects. It depends on the rural and urban residents to manage their contribution and the standard of living toward the economies; therefore, the wide disparity of income poses possible effects (Tsunaga et al., 2020; Y Huang & Zhang, 2020). Certain gaps also prevail with the significance of rural and urban income where discrimination of people and needs widely states economic growth. Some restrictions also state the improving economy measures, which have a dominant impact on economic development, while economic growth links with green finance. An artificial means of green finance also imports various elements to the economy but emphasizes the rural and urban income related to economic growth. The study used a wide indication of green finance by stating variation of rural and urban income gaps due to inequalities (Chen et al., 2020). Therefore, inflation and foreign capital directly link with urban and rural income except for trade openness.

The study used various financial indicators to analyze the dominant impact on economic growth; therefore, green finance was prominently found indulged in financial indicators. The influence of green finance is widely discussed in the literature using immense variables that were found to be proactive in the quality of economic growth (Mohsin et al., 2021; Sadiq et al., 2021a; Weeks et al., 2020). The innovative approach used by various authors mentioned green finance's eminence with per capita expenditure and Covid-19, which strongly communicates with the economy. Some interpretations of green finance elements positively denote the significance of financial needs required by the economies of various countries (Nawaz, Hussain et al., 2021; Sadiq et al., 2021b). Prospects of financial development include significant measures with the relevance of governing environmental green finance. Literature specified the importance of Covid-19 and green finance in economic growth, which asserted the improved measures with a great role in the progress and development of the economy (Chai et al., 2020; Nawaz, Seshadri et al., 2021; Xueying et al., 2021). Different analyses with

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dominate the growth of industries, which requires green finance eminence through a variety of essentials inserting a positive role.

The determination of per capita expenditures denotes green finance's significance, which helps various countries, whether fully or partially, with various expenses (Chien et al., 2021i; Liu et al., 2021; Marjit et al., 2020). The study used expenditures as a dominant means of introducing the elements of green finance, which impacts economic growth through various other elements that prevail in the literature. Most countries calculate the modes of expenditures, which posed the dependence of population and contribution (Bayarbat & Li, 2020; Chien et al., 2021h). Usually, economic growth not only relates to certain elements of green finance, but a variety of other factors also impacts economic growth, and Covid-19 tends to be some of them. Different green finance tools include the expenditures, which totals the per capita expenditures where people assessed based on lending toward them. Various divisions among the calculation of per capita expenditures state that the influential means of smaller and larger perspectives belong to the green financing measurements (Shair et al., 2021; H. Sun et al., 2020). Literature established the significance of well-being, which accounts for the percentage of human capabilities as dominant means of income distribution and lending distribution is established. The study used the elements of per capita expenditures by focusing on population significance, which describes the rise and sustainability (Ehsanullah et al., 2021; Setyawan et al., 2020). Per capita expenditure denotes various means of economic performance, which emphasized the comparison of various living standards and various environments of the economy.

3. Research methods

This study is going to examine the impact of green investment and green loans on the economic growth of Vietnam. The control variables that have been used in the study include the per capita GDP, urban-rural income ratio, and per capita expenditures. The data have been obtained from the central bank of Vietnam and WDI from 1986 to 2019. The estimation equation of the current study is as follows:

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(1)

where

EG is the economic growth,

t is the time period,

GL is the green loan,

GINV is the green investment,

URIR is the urban-rural Income Ratio,

PCE is the per capita expenditures.

This study has adopted economic growth as a predictive variable that is measured as the GDP growth annual percentage, while the green loan is measured as the ratio of green loans to loans and used as a predictor. In addition, green investment has also been used as a predictor and measured by the ratio of investment in environmental protection projects to GDP. However, the urban-rural income ratio is also used as a predictor along with per capita expenditures that are measured as the government per capita expenditures (annual %). These measurements are highlighted in [Table 2](#).

Table 2. Variables with measurements



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The selection of the appropriate model among the pooled OLS regression, error vector model, and ARDL has been made by using the unit root test. If the probability values of all the variables are less than 0.05 at the level that means all variables are stationary at the level and pooled OLS regression is an appropriate model for the study. However, if some variables are stationary at the level and some variables are stationary at the first difference, then ARDL is an appropriate model for the study. If all the variables are stationary at first difference, then

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$$d(Y_t) = \alpha_0 + \beta t + \Upsilon Y_{t-1} + d(Y_t(-1)) + \varepsilon_t. \quad (2)$$

Thus, the individual variable stationarity has been examined separately and estimation models of each construct are given below:

$$d(EG_t) = \alpha_0 + \beta t + \Upsilon EG_{t-1} + d(EG_t(-1)) + \varepsilon_t, \quad (3)$$

$$d(GL_t) = \alpha_0 + \beta t + \Upsilon GL_{t-1} + d(GL_t(-1)) + \varepsilon_t, \quad (4)$$

$$d(GINV_t) = \alpha_0 + \beta t + \Upsilon GINV_{t-1} + d(GINV_t(-1)) + \varepsilon_t, \quad (5)$$

$$d(URIR_t) = \alpha_0 + \beta t + \Upsilon URIR_{t-1} + d(URIR_t(-1)) + \varepsilon_t, \quad (6)$$

$$d(PCE_t) = \alpha_0 + \beta t + \Upsilon PCE_{t-1} + d(PCE_t(-1)) + \varepsilon_t. \quad (7)$$

This study also executed the ARDL approach to examine the links among the variables and for the execution of the ARDL model, first, the present study checked the co-integration with the help of the ARDL bond test. The cointegrating estimation is given below:

$$\Delta EG_t = \alpha_0 + \sum \delta_1 \Delta EG_{t-1} + \sum \delta_2 \Delta GL_{t-1} + \sum \delta_3 \Delta GINV_{t-1} + \sum \delta_4 \Delta URIR_{t-1} + \sum \delta_5 \Delta PCE_{t-1} + \varphi_1 EG_{t-1} + \varphi_2 GL_{t-1} + \varphi_3 GINV_{t-1} + \varphi_4 URIR_{t-1} + \varphi_5 PCE_{t-1} + \varepsilon_1. \quad (8)$$

For short-run nexus among the variables, the current study estimated the error correction model, and its estimation equation is given below:

$$\Delta EG_t = \alpha_0 + \sum \delta_1 \Delta EG_{t-1} + \sum \varphi_2 \Delta GL_{t-1} + \sum \omega_3 \Delta GINV_{t-1} + \sum \Upsilon_4 \Delta URIR_{t-1} + \sum_5 \Delta PCE_{t-1} + \delta ECM_t + v_t.$$

4. Results and discussion

This study shows the descriptive statistics first in the findings section and the statistics show the that average EG index is 0.719, while the average green loan ratio is 0.748. In addition, the average green investment is 32.457. Finally, the average urban-rural income ratio is 1.534, while the per capita expenditure on average is 0.857. These values are given in [Table 3](#).

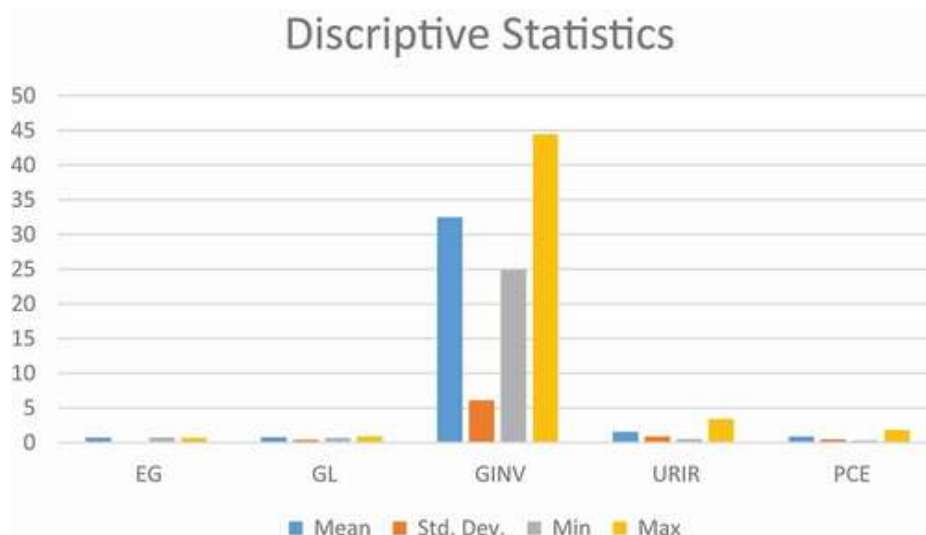
Table 3. Descriptive statistics



[Download CSV](#) [Display Table](#)

The statistics related to the understudy constructs are also presented in the graph that has also shown the mean and standard deviation along with minimum and maximum values of the constructs. These values are highlighted in [Figure 2](#).

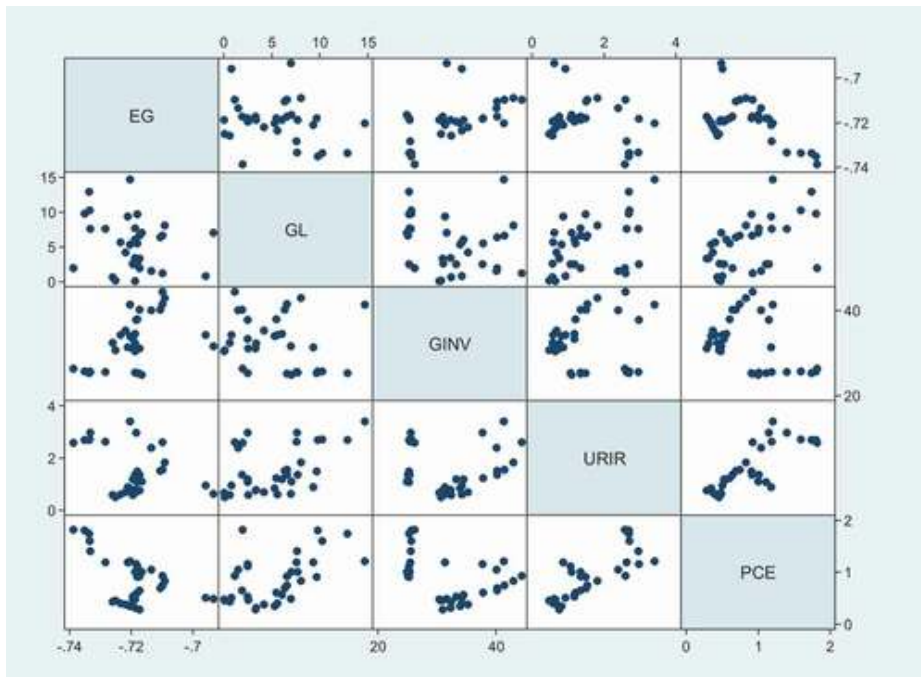
Figure 2. Descriptive statistics



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Figure 3. Scatterplot matrix



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The nexus among the variables is also exposed in the correlation matrix that shows the positive association among the green loan, green investment, and economic growth while negative among URIR, per capita expenditures, and economic growth. These links are shown in [Table 4](#).

Table 4. Correlation matrix



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The results of the ADF test show that GL is stationary at a level, while EG, GINV, URIR, and PCE are stationary at the first difference, which is an indication that ARDL is the appropriate model of the study. These values are highlighted in [Table 5](#).

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Table 5. Unit root test[Download CSV](#) [Display Table](#)

The ARDL bound test shows that the calculated f-statistics is 25.73, which is larger than the critical values at five percent level of significance. This shows that co-integration has existed in the model. These values are shown in [Table 6](#).

Table 6. ARDL bound test[Download CSV](#) [Display Table](#)

The results exposed that green finance along with all control variables such as urban-rural income ratio and per capita expenditures has a positive association with economic growth in the short run. These links are shown in [Table 7](#).

Table 7. Short-run coefficients[Download CSV](#) [Display Table](#)

The results also exposed that green finance such as green loans and green investment has a positive association with economic growth in the long run. However, urban-rural income ratio and per capita expenditures have an insignificant positive association with economic growth in the long run. This nexus is also shown in [Table 8](#).

Table 8. Long-term coefficients[Download CSV](#) [Display Table](#)

The results of robustness analysis show that the GINV has positive and significant nexus with EG of the Vietnam in the short run, while GL has positive but insignificant nexus with EG of the Vietnam in short run and URIR has negative and significant nexus with EG of the Vietnam in the short run. These values are mentioned in [Table 9](#).

Table 9. Short-run analysis



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The results of robustness analysis also show that the GINV has positive and significant association with economic growth, while GL has positive but insignificant nexus with EG of the Vietnam in the long run. However, URIR has negative and insignificant nexus with EG in the long run. These values are mentioned in [Table 10](#).

Table 10. Long-run analysis



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4.2. Discussions

The results have revealed that the policy to grant green loans even during the prevalence of pandemic Covid-19, which is a great threat to the natural environment, proves to be in a positive relationship with the economic growth rate. These results are approved by the research investigation of Z. Li et al. (2018), which gives deep insight into the inclusion of green practices in loan policies and their consequences. It implies that the consideration of the government regulators' environmental requirements by financial institutions while granting loans improves the country's economic growth. Our study results are approved by the research of Cui et al. (2018), who focus on the fact that the economic growth rate is accelerated by the green development in the individual financial organizations. The grant of loans for the investment in eco-friendly projects on favorable conditions helps organizations

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investment has a positive association with the country's economic growth. The study examines that the prevalence of Covid-19 investment in the projects launched for the achievement of the country's environmental goals accelerates the rate of economic growth. These results are approved by the studies of Liao (2018), which show that the encouragement of investment in environmental projects, especially at the time when there is a severe threat to the country's natural resources and residents, proves to be beneficial for the economy to grow both within the country and in the world economy. These results are also in line with the previous studies of H. Sun et al. (2019), which imply that encouraging the implementation of green practices in the investment policies plays a significant role in economic growth.

Different means of tradition in Vietnam have an effective approach, but the financial means of introducing eminent elements over the economic growth attained much importance. To drive toward positive economic growth, various elements of significant opportunities could not be overlooked. Although plenty of resources play a positive role in establishing economic growth, the eminence of quality economic development seeks the significance of green finance (Zhang et al., 2020). A new term of green finance provided all means to ease the economic growth where certain improvements are also required to achieve the task. The population of Vietnam reached 96.5 million during 2019 from 60 million since 1986 and is also expected to expand to 120 million in 2050. The capital index of Vietnam also increased from 0.66 to 0.69 from 2010 to 2020. Vietnam's credit grants induced 24.94 billion US dollars through 210 operations with some commitments of active projects of US \$7.41 billion. Vietnam's economy indulged in the projects of various plans, which are dominantly inserted in the surrounding sites. Therefore, the certified green loans of Vietnam value \$186 million to be used by various energy projects. Different financing companies invested a significant portion of green loans amounting to \$27.9 million, including various commercial banks. Some syndicated loans also contributed \$148.8 million, where the infrastructure loan induces \$9.3 million for the prevailing projects. Many countries invest in lower economies with the significance of the better value of exchange rates to earn profits and oblige the economies. Therefore, the significant impact of Covid-19 in Vietnam has emerged the lower rates of inducing investments. During Covid-19, various investments from developed countries were also restrained due to low margins and a high probability of losses (An & Pivo, 2020; Flores & Chang, 2020).

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19 pandemic. These results match with the studies of Su et al. (2015). These studies indicate that both the urban and rural are significant to the country as both contribute to the land's economic growth. The metropolitan area gives better quality products, so the higher urban-rural income ratio means better economic growth. These results also agree with the previous studies of Wang et al. (2016), which show that the increasing ratio of urban-rural income indicates the more and better quality of finished goods production, which determine the better GDP rate, which is the most crucial indicator of country's economic growth. The study findings have indicated that the per capita expenditure in a country has a considerable positive association with the economic growth rate. For the stimulation of economic activities within a country, the country's population's utilization of final production is necessary. Thus, the more the per capita expenditures, the more is the stimulation in the economic activities and better is the economic performance. These results are in line with the previous studies of Quy (2017), which indicate that the expenditures incurred to the individuals on the acquisition of basics and facilities bring stability in the economic activities and overall economic growth as they set a higher production rate and greater marking, which are considered the essentials of economic growth. These results are also approved by the research studies of Zhao et al. (2017), which indicate that in the countries where the per capita expenditure is more in quantity, the economy grows at a rapid pace.

Economic development considers the strong relationship between economic growth and green finance. In particular, green finance exerts positive impacts on economic growth where the possibility of green loans also dominates with an effective role in a green economy (Aymerich & Herce, 2020; S. Huang et al., 2020). The green environment domains include the gap in people's wealth, economic growth, and per capita with the eminence of green finance. Ultimately, green loan factors contribute to effective policies and positive measures to enable economic growth, but Covid-19 influence both of them. The study believed that the importance of various variables related to green finance dominates with the significance of financial projects that support economies' growth. Some sort of negative influences is seen with the prevalence of green elements and Covid-19, which do not relate directly but indirectly pose an impact on economic growth. The literature described the principles of green loans denoting the issuing authorities, specifically in some countries. Various countries founded

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loans and Covid-19 influences economic growth. Finance includes various types that help sustain the economies of developing countries usually affected by various shocks, especially Covid-19. Green loans established significant measures to provide a friendly economic growth environment, which usually denotes various appeals and projects (Sgammini & Muzindutsi, 2020; Xu & Li, 2020).

5. Conclusion and policy implications

The study analyzes the impacts of Covid-19, a contagious disease prevailing on economic development. The prevalence of this threatening pandemic adversely impacts the well-being of all the segments of the population. It snatches the equal opportunities of growth from all the population segments as the economic activities are jammed, and the living standard of different sets of people is disturbed. The study tests the role of the element of environmental concern included in the other areas in the maintenance of the status of economic development in Pakistan, and it proves its significance with the statistics from the population of Pakistan. The favorable green loan policies protect the natural environment and reduce the negative impacts of a Covid-19 pandemic on the economic growth rate. The well-being of all the population segments is not much affected by the contagious pandemic-like Covid-19 under the high encouragement of investment in the projects whose purpose is to remove pollutants from the natural environment and ensures its protection. The high rate of per capita GDP helps the economy to remain stable for the increased GDP, which means the strong financial position of the economic institutions that they can afford the costs incurred on the eco-friendly technology, techniques, and resources and the training and education of employees for creating environmental awareness in them. The study has investigated the urban-rural income ratio and the per capita expenditures. It checks their role in removing adverse impacts of the prevalence of severe pandemic of Covid-19 on the economic growth.

The present study has much theoretical significance. It is a distinction in the past literature on economic development. Usually, reviews by Easterly and Levine (2016) talk about economic development as a whole, but this study addresses the only economic development. This study

while being suffered from contagious diseases like Covid-19, a severe threat to the societies and economies across the world. The study states that green finance and different financial factors affect the status of economic growth. The paper considers green finance like a green loan and green investment and economic factors like per capita GDP, urban-rural income ratio, and per capita expenditures while checking the movement in economic development. As far as the study's empirical implication is concerned, it has vital significance to the economist to examine the rate of economic growth and accelerate. The study elaborates on how economic growth can be enhanced with the proper implementation of green practices of credit policy of financial institutions and the issuance of financial securities. With the higher per capita GDP and higher per capita expenditures, the growth rate of the country increases. Besides, with the achievement of a higher urban-rural income ratio, the economic growth rate can be increased. This study has guided regulators to increase their focus on green finance that could increase the economic growth in the country.

5.1. Limitations and future directions

There are several limitations that our research still has, and that must be removed by the upcoming studies for better results. The most important among them is the analyses of the impacts of a limited financial area where green practices are now being implemented. So, the scope of the study is limited, and it must be expanded by future writers with the addition of financial areas having green implications. Moreover, the study applies a particular research sampling technique to analyze the material in support of the study. Although this quantitative research technique has been used with the undertaking of all necessary steps, it is recommended to future scholars to turn their attention to other sampling techniques for better results. The source, which has been in this research for the collection of required quantitative material to approve the concepts of this work, is particular while for better support, data should be acquired from more sources. Our research on the effects of the introduction of green practices in finance and different economic areas on the financial position has been carried out in the situation where there is Covid-19 pandemic on the peak and the nature and health of people are threatened. Thus, for the reconfirmation of the same results, these variables and their mutual association must be analyzed in the case of the usual social and economic situation so that accuracy of the results can be maintained in any time

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economic activities and growth rate. Thus, the study conducted considering the economic factors of Vietnam's economy is not equally suitable for other countries that have their own culture, geography, and social conduct. While replicating the research results, future scholars should take the standard economy for generalizability.

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No potential conflict of interest was reported by the authors.

Highlights

1. Currently, Covid-19 has a rigorous impact on the economic growth all over the world due to long-term economic lockdown.
 2. Green finance has significantly improved the environmental conditions that ultimately improve the economic conditions.
 3. Economic growth is significantly affected by the Covid-19 lockdown.
 4. The policymakers should increase their focus towards green finance in this lockdown situation to improve the economic condition, especially in Vietnam.
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Additional information

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