International Journal of Advanced Social Studies

Research Article

Role of Finance in Sustainable Development: A Cross-Country Evidence

Article History
Received: October 18, 2022
Revised: November 26, 2022
Accepted: December 15, 2022
Published: December 30, 2022

*Corresponding Email: naeem0067.mn@gmail.com

Muhammad Naeem [1, *], Sajid Karim [2] and Uzma Nisar [1]
[1] Department of Economics, The University of Lahore, Sargodha Campus, Sargodha, Pakistan
[2] Agriculture Department (Marketing Wing), Government of the Punjab, Lahore, Pakistan

Abstract

Financing sustainable development is vital in modern society, and Development money aims to support global community agreements. All domestic and international resource flows, regulations, and international agreements must fit with economic, social, and environmental concerns. It includes all means of implementing the SDGs into a comprehensive financial framework and leads governments, international organizations, economic sectors, and civil society. Context-driven sustainable development goals research provides in-depth insights into global problems and helps regulators discover answers. A well-structured financial framework can implement sustainable development finance to fulfill SDG targets. Our analysis demonstrates that finance mechanisms, equity financing, and financial liquidation can be leveraged to meet economic targets and SDGs. This research also focuses on implications; financial impacts may be more diverse and harder to evaluate. Financial Investors provide up-front working capital and only obtain a return when an agreed result is accomplished. Funds will be used to solve societal issues like education empowerment. Financial constraints are a serious issue to be focused on and may already be helping the planet. Using the SYS-GMM method. This research uses empirical analysis to explain cross-country per capita income differences after using 47 countries. Our results show that financial development is important for long-term development. We also find that the effect of financial-economic policy on financial development is transferred to developing economies through financial development indicators.

Keywords: Finance, Sustainable development, SGDs, Panel data.

Introduction

The Millennium Development Goals (MDGs) expire in 2015; hence, the global community is working on new post-2015 goals. Sustainable Development Goals (SDGs) are more important and extensive than their predecessors, and their implementation will require significant funding. A normal approach to finance is inadequate; development finance needs a paradigm shift. Finances can help accomplish the post-2015 agenda. In 189 nations, the Millennium Declaration was adopted in September 2000, which led to the Millennium Development Goals (MDGs). The eight goals and 21 targets alleviate poverty, eliminate human deprivation in education, gender, and health, and promote sustainable development. The Millennium Development Goals were contested in international forums after their adoption. Developing nations will speed up reforms to boost development and MDGs. Therefore, countries must evaluate all development funding options immediately. Annual investments of $1.5 trillion are needed to meet Paris Agreement goals (Parkinson et al., 2019). Governments will fund sustainable development projects. The government must adopt macroeconomic and financial policies to finance green technologies. Financial problems are a neglected source of development financing. Examine the link between SDG and financial policy. The context of financial policy and the SDG demands an explanation of the fundamental concepts. The section examines SDG and the financial system's

involvement. This section discusses crucial financial role insights for understanding this research.

In the current paradigm, financial plans and SDGs must be linked. A detailed examination of recent studies on the link between financial strategies and SDG (Asongu & De Moor, 2015; Midgley, 2019). Some traditional perspectives on the links between financial policies and SDG targets must be studied further to include policy coordination. Diverse concerns, such as financial inclusion, the importance of the financial sector, and green financial derivatives, have evolved in the financial system and have been given substantial weight by UN sustainable development finance conferences on SDG targets (Bracking, 2019). The research on finance and SDG is theoretical and empirical and identifies global policies and channels. Under the present COVID-19 pandemic difficulties around the world, financial consideration is growing prominence (Wójcik & Ioannou, 2020). The lockdown has led to employment losses and canceled projects. Businesses' financial losses are attributable to bad loan performance and SDG target project risk. After COVID-19, alternative financial measures, financial development, and the SDG are necessary to deal with the problem.

Discussions about long-term development goals start with the SDG. The UN and its member countries want everyone to agree on how the world should change. The idea behind the Sustainable Development Goals is that all development decisions should consider environmental, social, and economic issues (Harvey, 2021). In this situation, the United Nations has made 17 Sustainable Development Goals (SDG) by adding to the existing Millennium Development Goals (MDGs) and focusing on some new areas of development. These areas include sustainable development change, economic inequality, finance, sustainable consumption, peace, and justice. All of these goals are connected, which means that reaching one of them affects the others. All of the goals should be met by 2030, but some of them have earlier deadlines. Other UN and allied development organizations are taking steps to support the SDG and help them be reached faster. The most important things are happening right now to help reach the SDG.

By 2030, there will be no more hunger, food security and nutrition will be better, and agriculture will be more sustainable (Ejemeyovwi et al., 2021). Make sure that by 2030, everyone, no matter how old, is healthy and happy. Make sure that everyone can get a good education and that everyone gets the same quality of education by 2030. Also, make sure people can keep learning their whole lives. By the year 2030, men and women should have the same rights. Make sure there is enough water and sanitation and that it is well-run until 2030.

All countries are participating in the SDG agenda and making progress, though varying degrees. This is a very big change. When you look at the world as a whole, it is hard to keep track of and explain progress in any country. The UN keeps track of the most accurate information about how well the SDGs are doing. If the SDGs are to make the expected amount of progress, getting the money together is a big problem, especially in developing countries (Swain, 2018). Unlike industrialized countries, which can usually pay for themselves, developing countries depend a lot on international and multinational aid. The United Nations and other organizations that work on development agree that progress on many goals is slow and still in the early stages. If the world keeps moving at this rate, reaching the SDG by 2030 will be impossible. The risk is much higher for poor countries because they already have too many problems to deal with the SDG. So, getting to the SDG is still hard because of how hard it is to manage money, especially in developing countries (Mendez & Houghton, 2020).

Because of the SDG goals, it is more important for donors and other countries to help developing countries. Most developing countries still depend a lot on foreign aid or donations from multilateral organizations like the United Nations and other foreign governments to pay for the Sustainable Development Goals. So, it looks like the main source of SDG funding in developing countries is the overseas development aid they get from industrialized countries and international development agencies. Part of the money comes from national governments, while the private sector is much less involved. It's important to know that the amount of money we have now is much less than what we need to reach the SDG.

Culas (2007) found that some financial institutions have an effect on deforestation. He looked at the facts about 94 countries from 1987 to 2000. The results show that institutional change helped reduce deforestation

and change the way that sustainable development worked.

However, Kelleher et al. (2009) looked at board information from 2006 to 2008 from 128 countries to figure out how regulatory financial institutions affect sustainable development. They looked at the following financial institutions: voice and responsibility, (ii) political stability, (iii) the government's ability to work, (iv) the quality of administration, (v) law management, and (vi) the control of corruption. For a review of the ecological literature, the following topics were looked at ecological well-being, air and water, biodiversity and life, positive regular assets, and sustainable development change. The study found that political considerations are very important for the development of ecological quality factors.

Similarly, Tamazian and Rao (2010) looked at how financial institutions affected the quality of the 24 economies that were in transition from 1993 to 2004. Overall, the study's results showed how important financial institutions are to the quality of the Castiglione, Infinite, and Smirnova (2012), who looked into how the law was carried out in 28 countries between 1996 and 2008. The research shows that rules of law are important for the long-term health of the environment.

Bhattacharya et al. (2017) showed not only the indirect effects of market regulating and financial institutions, market-creating financial institutions, and market-stabilizing financial institutions on sustainable development but also the direct effects of market regulating, market-creating, market legitimizing, and market stabilizing financial institutions on their own via sustainable economic development and the desirability of FDI inflows. Foreign direct investment (FDI) can hurt a country's chances for long-term growth.

Statement of the Problem

Both finance and sustainable development have received a significant amount of attention and research in recent years. Both the company and macro levels of business have been researched concerning sustainable development and finance. A significant amount of finance and sustainable development approaches it in a variety of ways. These finance practices and sustainable economic practices for a nation. Most of the finance and sustainable development research is not considered. Previous research has paid insufficient attention to finance as well as sustainable development. Numerous economists today are concentrating their research on sustainable development and finance theories. Finance, sustainable development, and sustainable development from a policy viewpoint are all topics that are currently being discussed and worked on.

Research Question

The conversation that was just discussed above brings to light how important finance and sustainable development are. This new phenomenon of finance and sustainable development for improved sustainable development needs to be discussed and better comprehended to be successful. There is still a gap in both the theoretical and empirical literature regarding the question of how sustainable development can emerge through the adaptation of finance. This is a hole that needs to be filled, and that's the purpose of this dissertation.

Objectives of the Research

The main objectives of the research are given below;

i) To determine theoretical links between finance and sustainable development.

ii) To empirically estimate the role of finance in sustainable development.

Hypothesis of Study

i) Ho: finance positively impacts sustainable development.

ii) H1: finance has no impact on sustainable development.

Significance of the Study

No comprehensive study has considered the positive influence of finance on sustainable development. This research proposes a methodology for measuring the impact of finance on sustainable development and a policy roadmap for the prosperity of society, particularly the disadvantaged. Our study provides an inclusive Finance

adaptable index that aids in identifying techniques implemented by various nations to uplift their populations and how these practices can be shared and transferred across cultures. This research develops a theoretical framework to construct relationships between finance and sustainable development. Our study also gives a sustainable policy path for sustainable development, its impact on society, and its relationship with the prosperity of society, particularly in underdeveloped economies.

Methodology

The Financial Institutions and Sustainable Development: Theoretical Framework

A monetary framework that considers property rights and cost channels can link financial institutions to sustainable development. Asset insurance is a big part of supporting sustainable development, and the security of property rights is a big part of that (Acemoglu, 2010; Bhattarai & Hammig, 2001; Rodrik et al., 2004). The level of transaction costs affects how financial institutions are run. These costs include arrangement and control costs and market and administrative transaction costs (Platje, 2004). A framework for putting rules into action is how financial institutions are linked to sustainable development. Formal rules include collecting taxes and fines to people who break the law. The effects of tax collection are sent to the economy to help it grow in a way that is sustainable because of the administration's strong support for sustainable policies (Simmons & Elkins, 2004). If there isn't a formal and financial institution system, a value-based cost must look for real exchange to ensure that different agreements are kept (Shirley, 2005).

There is a way that financial institutions can be linked to sustainable development (Kemp, 2005). Governance is the process of ensuring laws, transaction forms, and activities are followed and punished to reduce conflict and improve the effectiveness of different financial institutions (Lafferty & Meadowcroft, 2000). It can be seen that financial institutions have different effects on sustainable development.

The Econometric Model

Based on the theoretical discussion mentioned above, it can be inferred that financial institutions are linked with sustainable development through different channels. There is, however, no comprehensive empirical literature available that could define the relationship between financial institutions and sustainable development exactly. Thus, there is room for investigating the impact of financial institutions on sustainable development.

Firstly, our research focuses on estimating the impact of financial institutions on sustainable economic development. Our empirical model is based on following studies (Abou-Ali & Abdelfattah, 2013). The dependent variable, therefore, is sustainable development. For the empirical specifications, the model is specified as:

$$SD_{it} = \alpha_0 + \alpha_1 FI_{it} + \alpha_2 Y_{it} + \varepsilon_{it} \quad (1)$$

In the above equation, SD_{it} indicates sustainable development indicator taken as a dependent variable in the form of adjusted net savings percentage of GNI. On the right-hand side of the equation while the FI_{it} indicates a set of financial institutions as an independent variable, which consists of: 1) Monetary funding (CC) 2) broad funding. The Y_{it} depicts a set of explanatory variables that include (GDP per Capita, FDI as percentage of GDP. A set of Y_{it} explanatory variables have been used in the following studies (Abou-Ali & Abdelfattah, 2013; Venard, 2013). Thus, expected sign of $\alpha_1 > 0$ is positive given as in the equation 1 Adjusted net savings per capita as percentage of GNI is used as the dependent variable.

Hypotheses of the Research

Null Hypotheses

i) Monetary Funding has a positive impact on Sustainable Development.

ii) Fiscal funding has positive impact on Sustainable Development.

Alternate Hypotheses

i) Monetary Funding has a positive impact on Sustainable Development.

ii) Fiscal funding has a positive impact on Sustainable Development.

If we don't accept null hypotheses, we accept other hypotheses. The hypotheses are based on what's already been written, and we've checked both the research hypothesis on economic sustainability and the research hypothesis on sustainable development.

Estimation Methodology

In order to figure out how financial institutions affect sustainable development; we look at a group of 50 developing countries from 2000 to 2021. It is better to look at cross-sections of time when estimating results and the efficiency of a method. The following are some of the benefits of using panel data estimation: It controls how well variables, like culture, are understood. (ii) It has a large sample size and better-estimated coefficients. (iii) It takes into account how biased variables are and how they differ from each other.

SYS-GMM or Dynamic Panel Data Method

For more analysis, it is important to look at how financial institutions and sustainable development are connected in a causal and endogenous way. The impact of sustainable development on dynamic institutional variables is caused by the problem, which worsens it. When we use the GINI index, public spending on education and trade openness is a model of human capital. Many studies bring this problem to people's attention, but it isn't really dealt with because there aren't any good tools on the subject of institutional variables (Barro, 1989; Edwards &Tabellini, 1991; Knack & Keefer, 1995). Because of the following, the Generalized Method of Moments (GMM) is the best way to deal with the endogeneity problem: Consider moment's conditions and zero correlation between lags repressors and error term

i. No requirement for homoscedastic condition and serial independence in the model
ii. Almost all explanatory variables are treated as endogenous variables
iii. Take into consideration of time series, cross-specific along with lags dependency of explanatory variables of the model.

$$SD = \alpha + \beta FIns_{i,t} + \gamma Y_{i,t} + \varepsilon_{i,t} \quad (2)$$

In the above equation, the tsubscript showed that the variables were related to time. To measure the effects that don't change over time, the error term is spread out this way:

$$\varepsilon_{i,t} = \mu_i + Q_i t \quad (3)$$

In the above equation, the error term condition meant that I showed the time-variable parts of the error term, and Q (i,t) showed only the time-variable parts of the error term. The equation for panel model (2) looks like this:

$$Sd_{it} = \alpha + \beta FIns_{i,t-1} + \gamma Y_{i,t} + \mu_i + Q_i t \quad (4)$$

Take first difference to solve the omitted biasness of variables on both sides of the above equation of panel model. So, the panel model became the following.

$$\Delta Sd_{it} = \alpha + \beta \Delta FIns_{i,t-1} + \gamma \Delta Y_{i,t} + \Delta Q_{i,t} \quad (5)$$

_(i,t)- (i,t-1)=0 is a useful condition. But the problem with endogeneity happened between Q (i,t-1) and the lag term of the dependent variable Sd (i,t-1). As shown in the above equation, there is no difference between the relationships of SD (i,t-1) and Q (i,t-1). However, SD (i,t) shows the lag of the dependent variable. The model can be written as follows:

$$if SD_{i,t} = f(Q_{i,t}) \Longrightarrow SD_{i,t-1} = f(Q_{i,t-1}) \quad (6)$$

So, estimates based on the OLS method are skewed, but they are necessary for starting and giving out instrumental variables. Anderson and Hsiao (1981) pointed out that SD (i,t-2) was a relevant instrument, and SD (i,t-2) then told them which variables were the most appropriate. They show the variables matrix

M=[Sd (i,t-2),X (i,t)], which shows that x (i,t) depends on variables that come from outside the system. Also, they suggested more Instrumental variables that can be used, such as SD (i,t-3),SD (i,t-4),…,SD (i,t-k) (Arellano & Bond, 1991). The rules for each moment are as follows:

$$E\left(SD_{i,t-k}\Delta Q_{i,t}\right) = 0 \ \ and for \ K = 2,3,\ldots.,(T-1) \tag{7}$$

Whereas:

$$\left(x_{i,t-n}\Delta Q_{i,t}\right) = 0 \ for n = 1,2,3,\ldots.,(T-1) \tag{8}$$

So, the two models above show that the instruments used can be more than just endogenous variables. Arellano and Bond (1991) came up with a two-step plan for combining the productivity of instruments with the GMM method. In model, there are no limits on the conditions of the moment (Arellano & Bover, 1995; Blundell & Bond, 1998). As a first step, the Arellano and Bond (1991) method uses all instrumental variables in the vector form, as shown below:

$$Y^* = \left[SD_{i,t-2}, SD_{i,t-3}, \ldots, \Delta Q_t, \Delta\omega_{i,t-1}\Delta Q_{i,t-2}, \ldots\right] \tag{9}$$

As a 2nd step, inverse configuration of variance-covariance matrix can be produced where D_H, and GMM estimators are recorded as:

$$\widehat{€}_{GMM} = (X'Z^*D_HY^{*\prime}X)^{-1}X'Z^*D_HY^{*\prime}y \tag{10}$$

Two steps Arellano and Bond (1991) calculation of GMM are more effective and instruments suggested for endogenous variables $x_{i't}$ are more reasonable. Thus, endogenous variables are dealt in more proper way with GMM system.

Data Sources

So, the two models above show that the instruments used can be more than just endogenous variables. Arellano and Bond (1991) came up with a two-step plan for combining the productivity of instruments with the GMM method. In the model, there are no limits on the conditions of the moment (Arellano & Bover, 1995; Blundell & Bond, 1998). As a first step, the Arellano and Bond (1991) method uses all instrumental variables in the vector form, as shown below:

Sustainable Development Variables Data

We used the following factors to measure the indicators of sustainable development.

Adjusted net savings Per Capita

We have used the adjusted net savings per person as a measure of sustainable development. We did this by taking the adjusted net savings per person and multiplying it by 100. Adjusted net savings per person are found by dividing adjusted net savings by the total number of people. The WDI data source gives the definition of "adjusted net savings." It says that "adjusted net savings" are the same as "net national savings" plus "education expenditures" minus "net forest depletion, mineral depletion, and carbon dioxide" and that "certain emission damages" are left out of this variable.

Data source and description of Control Variables

We use the GDP per person to figure out how much physical capital there is. The data on variables that help explain things, such as the GDP per person. WDI uses purchasing power parity to figure out what the GDP per person is (PPP). The gross domestic product, or GDP, is the total amount of goods and services made in a country. A dollar from another country has the same buying power as a dollar from the United States. At buyer's prices, the GDP is the sum of the gross value added by all resident manufacturers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without taking into account the loss of value of manufactured assets or the use-up and loss of natural assets. Based on the 2011 ICP round, data are given in international dollars as they are now.FDI net inflows are the values of investments made in the reporting economy by people who don't live there is inwards enterprises are businesses that are run by people who live in the economy that is being reported

on. All liabilities and assets are transferred to local people and their direct investors. It covers the transfer of assets and liabilities between businesses that are based in the same country and those that are not based in the same country if the business that has the most power is based outside of the country.

Financial Institution Variables

Data on the quality of financial institutions is taken from the World Bank to figure out how the quality of financial institutions affects sustainable development. In economics, the concerned data set is often used to describe the financial institutions of an economy. Most economists have paid attention to all of the parts of an index that have to do with financial institutions, or they have only looked at a small number of institutional parts, or they have only looked at one part if that best meets their research goals.

Results and Discussion

The main goal of this section is to look at how financial institutions affect sustainable development in a practical way. In this section, we have separated empirical results into two sections: section 4.1 is about the effects of financial institutions on sustainable economic development, In the last section talk about the end.

Financial Institutions' Impact on Sustainable Economic Development: Empirical Analysis

We used the System GMM panel method to look at the effects of financial institutions on sustainable development in 47 developing countries from 2000 to 2015. The results are shown in Tables 3 and 4, which are based on the whole sample and show how financial institutions affect sustainable development. The results of using the SYS-GMM method were described in this study. In this study, different diagnostic tests were used to ensure the model specifications were met. After diagnostic testing with the AR1 test and the AR2 test, the estimated results were consistent with the validity requirements of the instruments in the SYS-GMM method.

In Table 1, descriptive statistics of variables are given. However, the mean value of sustainable development measured by the log value of adjusted net saving is 2.18. The mean value of FC1 is 7.38. High mean values of financial development through domestic credit to private sector FC1 indicate a high level of stabilized institutions in selected developing countries. The mean value of broad money FC2 is -0.22, suggesting a better situation. Arguably, this is the result of the conflict in the developing world. The mean value of GDP is 3.91.

Table 1. Descriptive statistics.

Variables	Obs.	Mean	Std. Dev.	Minimum	Maximum
LANS	943	2.18	0.85	-5.77	4.44
POLITY11	838	7.38	1.69	0.01	9.81
FC1	839	6.44	0.99	2.41	8.66
FC2	798	0.22	0.46	-2.00	0.84
FD	1218	3.91	5.24	-9.00	10.00
GDP	1,127	1.65	2.16	-4.60	7.34
FDI	1,163	0.012	2.02	-4.60	5.67
REG	9.29	4.05	0.53	1.66	4.79

Note: Log of Adjusted Net Saving (LANS), political institutions (PR), financial loaning or measure of domestic credit to the private sector (FC1), financial loaning or measure of the growth of broad money (FC2), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), renewable energy consumption (REG).

The mean value of the index of financial development FD is high at 6.44, indicating better policies in developing countries. The average value POLITY11 is 1.0, ranging from -4.47 to 2.27. The mean value of the gross domestic product is 4.26. The mean value of the foreign direct investment (FDI) is 0.012 percent, which is low for our sample of developing countries. The mean value of secondary school enrollment is 4.05, with a

standard deviation of 0.53. The estimated results from the results of REG from a full sample showed that they are significant at the 10% level. The coefficient of the REG variable is -0.0889*. This is a negative number (a). So, the value of the EPR coefficient shows that if we raise it by 10 percentage points, sustainable economic development in developing countries will drop by 0.9 percentage points. The results are in, and they show that ethnic conflicts are one of the most important problems facing the developing world. In Table 2 all variables show positive correlation with each, as shown in Table 2.

Table 2. Correlation matrix of variables.

Variables	ANS	ANS_L1	PR	PUI	ETC	GDP	FDI	SSER
ANS	1							
ANS_L1	0.834	1						
POLITY11	-0.082	-0.083	1					
FC1	-0.084	-0.068	0.117	1				
FC2	-0.074	-0.081	-0.074	-0.028	1			
FD	0.108	0.121	0.109	0.267	-0.069	1		
GDP	0.082	0.083	0.412	0.503	1.000	0.188		
FDI	0.032	0.053	0.028	0.090	-0.064	0.069	1	
REG	0.149	-0.149	0.244	0.326	0.074	0.163	0.546	1

Note: Log of Adjusted Net Saving (LANS), political Institutions (PR), financial loaning or measure of domestic credit to the private sector (FC1), financial loaning or measure of the growth of broad money (FC2), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), renewable energy consumption (REG).

In Table 3, the overall results regarding sustainable development are shown. We use DC, which is a measure of domestic credit to the private sector in an economy, to figure out how financially developed a country is. Going forward with domestic credit research is good for sustainable development. It means that lending activities in the financial sector increase the risks of sustainable development and that these risks can be bad because of the way the economies of these developing countries are becoming more industrialized. So, our research also shows that the sustainable development hypothesis (De Nicol'o et al., 2012) is supported by the way money is handled in these economies. Sustainable development shocks must be lessened by making financial changes to make sustainable development more resilient. We also used broad money to evaluate financial development. We looked at BM, which is a measure of the growth of broad money in these economies' financial sectors. Moving on to evolution, it shows that broader money growth in the financial sector is good for Sustainable development. It means that activities in the financial sector that use broad money as a tool to get to the financial sector development raise risks for sustainable development because they make it easier for economic projects in developing economies to get money and liquid assets. So, the sustainable development hypothesis is supported by the way money is handled in developing economies (De Nicol'o et al., 2012). A financial improvement to ensure sustainable development resilience is essential for mitigating sustainable development shocks.

The effect of FDI on Sustainable development is also big and good. This result is the same as what Destek and Okumus (2019) found in their research on developing words. Foreign direct investment could make it harder for developing countries to get the resources they need for sustainable development. So, economic benefits in these countries come with costs to the environment and society, especially when it comes to natural resources. The long-term effects of foreign direct investment on welfare are unclear, especially for natural resources (Mcnally, 1999). The results show that in developing countries, it's important to figure out which parts of foreign direct investment are important to better understand whether the pollution heaven or pollution hallo hypothesis is true in those countries.

Through financial development indicators and sustainable development, we also look at the indirect effects of FP on sustainable development. In terms of disaggregated effects, model (2) shows how (FC1*GDP) and control variables work together to have an effect. We can see that it doesn't have a statistically significant effect. Model 3 shows how both (FC2*DC) and the control variables affect each other. We can see that it has a positive and important effect. Model 4 shows the joint effect of (FD*BM) and control variables. We can see that its effect is statistically significant and has a positive value. In short, the results show that the coefficients of financial policy through economic growth are positive and statistically significant. This proves that policies for sustainable development can be seen in financial policy through sustainable development. Our empirical results are quite interesting in terms of how they relate to multiplicative terms in financial development and how they affect sustainable development in developing countries. In developing countries, some of the reasons have to do with money. Less developed countries (LDC) may have trouble getting green investment funds because they don't know how profitable their projects will be in the future and because the financial sector trusts fossil fuel projects more for their socioeconomic development.

Table 4 shows the indirect effect of FC1, FC2, and FD through FDI. Taking the findings together, FDI encourages efficient technologies if policy financial development is slowed down and encourages changes that lead to sustainable development. The neutrality effect is caused by the fact that policies for renewable projects aren't strong enough. This result fits with what has been found in the following studies. The estimated results from the whole sample showed that FDI as a percentage of GDP doesn't make much of a difference in the situation of developing countries for Sustainable Economic Development. It said that FDI has nothing to do with keeping an economy going. The results of our research are different from those of other studies, which showed that FDI inflows have a positive effect on sustainability (Globerman & Shapiro, 2003). Scholars say that there are economic reasons why people in developing countries do what they do. MNCs usually only invest in private programmers, and their main goal is to make money quickly. These MNCs don't have to worry about the future of the economy in developing countries. In developing countries, law and order hurt their ability to grow their economies in a sustainable way. A country's economy in sustainable way because the infrastructure in developing countries is so bad that it doesn't help keep the law. The studies that back up our points are listed as (Catrinescu et al., 2009).

Also, our research's empirical results are very interesting regarding the multiplicative effect of multiple financial institutions and foreign direct investment in developing countries. The results are good and statistically significant. The study came to the conclusion that FDI flows into multilevel financial institutions can improve SED. Our research results differ from those of other studies, which suggest that FDI flows positively affect sustainability (Globerman & Shapiro, 2003). The FDI flows are based on favoritism and special treatment. Improving the efficiency of the structure of multiple financial institutions in developing countries can help SED. Scholars also say that this kind of discussion took place.

The results show that the coefficients of renewable energy REG have a statistically significant positive effect on changes in sustainable development. This suggests that the problem of sustainable development can be solved by using renewable energy. Improvements to financial institutions could have a big effect on sustainable development by making economies in developing countries work better. Our results are pretty interesting when it comes to some developing countries that are related to each other in a multiplicative way. The results are statistically important. We've come to the conclusion that financial development indicators and financial policy as a whole need to be improved to help solve problems with sustainable development and that green financing tools need to take on new forms. The results are in line with what other studies have shown, which is that the effects of financial policy are passed on through financial development (Monasterolo et al., 2019). Due to their low social, economic, and financial development level, developing countries may find it hard to meet their sustainable development mitigation goals.

The results show that the GDP per capita is a good indicator of sustainable development. Different model specifications from 0.0426*** (see Table 1) show that the GDP per capita coefficients are statistically significant at the 1% level (a). The empirical provides evidence. It said that if the GDP per capita changed by one-unit, Sustainable Economic Development would change by 4.3 units. It said that sustainable

development is the first step toward economic sustainability for developing countries. Most economists who talk about sustainable development stress the importance of growth in physical stock, and the growth in GDP per person is based on growth in physical capital stock.

Table 3. The impact of financial institutions on Sustainable Development in Developing Countries.

Variables	(1)	(2)	(3)	(4)	(5)
	ANS	ANS	ANS	ANS	ANS
POLITY11	-0.0789*	-0.0259	-0.0476	-0.0734	-0.0655
	(0.0422)	(0.0319)	(0.0460)	(0.0546)	(0.0747)
LGDP1	0.0426***				
	(0.00841)				
FDI	-0.000491	-0.003967	-0.00574***	0.00325	-0.00660
	(0.00433)	(0.00385)	(0.00406)	(0.00230)	(0.00400)
FC1	-0.640***		-0.641***	-0.0521	-0.788***
	(0.759)		(0.731)	(0.177)	(0.331)
FC2	0.00846***	0.0542***		0.0539***	0.0443***
	(0.00419)	(0.00252)		(0.00351)	(0.00365)
REG	0.0656***	0.0927***	0.0959***		0.0460***
	(0.00701)	(0.00640)	(0.00843)		(0.00933)
FD	-0.0557***	0.00431	-0.0177***	0.0413***	
	(0.00302)	(0.00616)	(0.00649)	(0.00502)	
FC1_LGDP1		-0.0637***			
		(0.0211)			
FC2_LGDP1			0.00464***		
			(0.000510)		
REG_LGDP1				0.00865***	
				(0.00519)	
FD_LGDP1					-0.000696
					(0.000860)
FC1_FDI					
FC2_FDI					
REG_FDI					
FD_FDI					
OBSERVATIONS	676	676	576	572	576
NUMBEROF COUNTRY1	47	47	37	56	46
AR (1)	0.07	0.00	0.010	0.60	0.40
AR (2)	0.30	0.87	0.74	0.93	0.91

Note; Robust standard errors are in parentheses. *, ** and *** denote significance at the 10, 5 and 1 percent. Log of Adjusted Net Saving (LANS), political Institutions (PR), financial loaning or measure of domestic credit to the

private sector (FC1), financial loaning or measure of the growth of broad money (FC2), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), renewable energy consumption (REG).

Table 4. The impact of financial institutions on Sustainable Development in Developing Countries.

Variables	(6)	(7)	(8)	(9)
	ANS	ANS	ANS	ANS
POLITY11	0.0253	-0.0574**	-0.465***	-0.403***
	(0.0534)	(0.0622)	(0.0658)	(0.0574)
LGDP1	-0.0529***	0.00972***	0.0791***	0.324***
	(0.00814)	(0.00583)	(0.00855)	(0.0372)
FDI				
FC1		-0.198*	-0.0643	-0.0854
		(0.0711)	(0.317)	(0.212)
FC2	0.0407***		0.00628***	0.00678***
	(0.00784)		(0.00323)	(0.00231)
REG	0.205***	0.0881***		-0.0542***
	(0.00985)	(0.00823)		(0.0485)
FD	-0.00695	0.0464***	0.00980	
	(0.0640)	(0.00476)	(0.00615)	
FC1_LGDP1				
FC2_LGDP1				
REG_LGDP1				
FD_LGDP1				
FC1_FDI	-0.655***			
	(0.0825)			
FC2_FDI		0.000641***		
		(0.000619)		
REG_FDI			0.000760***	
			(0.000461)	
FD_FDI				0.000789***
				(0.00053)
OBSERVATIONS	630	670	682	682
NUMBER OF COUNTRY1	49	50	47	47
AR (1)	0.010	0.05	0.00	0.00
AR (2)	0.76	0.36	0.40	0.25

Note; Robust standard errors are in parentheses. *, ** and *** denote significance at the 10, 5 and 1 percent. Log of

Adjusted Net Saving (LANS), political Institutions (PR), financial loaning or measure of domestic credit to the private sector (FC1), financial loaning or measure of the growth of broad money (FC2), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), renewable energy consumption (REG).

In the analysis, a set of explanatory variables showed signs similar to those predicted by different models from the literature. The effect of the institutional variable of POLITY11 Controlling corruption is good for sustainable development if you look at the whole sample data set and divide countries into two groups based on how far along their economies are. Our research showed that the only way to make financial institutions work better is to keep corruption in check. An effective institutional structure encourages productive economic activities by using economic resources well. This helps the whole economy grow in a way that is sustainable. The Polity II index showed that the market positively affected sustainable development. The reason for this is that democracies in some developing countries aren't making their economies better in the long run. For democracy, the activities that have to do with health and the low level of people's contributions to reducing how much money each person gets were observed.

Conclusion and Policy Implication

Through the roles that sustainable development and the development of the financial sector play, there is a link between sustainable development and financial policies. So, low sustainable development is possible if developing economies don't change how their financial sectors are set up and don't adopt long-term policies for green energy. This can be done by reducing the amount of financial development in their macroeconomic policies. Policies to stop financial development from hurting the economy are based on policies to stop financial development from hurting the economy. Because of this, it is essential to look at how economic policy and financial development changes affect sustainable development. Our research looks at FD's direct and indirect effects on pollution in low-and middle-income countries. The model evaluation uses static and dynamic analysis to determine how well this works. Our results show that financial development is important for long-term development. We also find that the effect of financial-economic policy on financial development is transferred to developing economies through financial development indicators. In the same way, we think that financial development is important for sustainable development and helps it along. However, the output of financial development has an effect on sustainable development with interactive terms with economic development and FDI, which shows that a green revolution through reducing FD is a long way off. Maybe it's even more important to create a good financial structure for green energy efficiency, which is key to meeting sustainable development goals. We also look at how economic growth affects the development of a sustainable economy. We also find that the drop in FDI in primitive technology is a big reason sustainable development is improving.

The implication for policy is that when making policies about FP. These results show that the potential benefits of FD policies should improve Sustainable development in developing economies. So, the leaders of these developing economies should put a lot of effort into sustainable policies that affect financial development so that they can spend more money and budget on things that are important for long-term growth. Also, the financial institutions in these economies should focus on green investment policies that help with sustainable development and reduce the effects of sustainable development. Stockholders may have a role to play in preventing sustainable development from getting worse. This will help these economies come up with green credit derivatives. Also, the governments of these economies should strengthen and build financial infrastructure to deal with the effects of sustainable development. It is only possible if financial institutions and investment firms that support green production in these economies give them money and help with how to do it. Also, there needs to be a big change in the way financial policymakers think in order to follow these rules, which can hurt policy stability because economic policy and financial development work against the effectiveness of regulations and the meeting of carbon mitigation goals.

Our research has some flaws. We examined the direct and indirect links between financial policy and sustainable development in developing economies. For a sustainable development assessment, we only look

at air pollution. Even though our research proves that sustainable development and financial policy are important, it also gives some important facts that other countries need to know. The level of financial development may differ from one country to the next, so this should be considered more. Future studies can be expanded to examine how the exchange rate, fiscal policy, or monetary policy affects green development.

References

Anderson, T. W., & Hsiao, C. (1981). Estimation of dynamic models with error components. Journal of the American Statistical Association, 76(375), 598-606.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. Journal of Econometrics, 68(1), 29-51.

Asongu, S. A., & De Moor, L. (2015). Financial globalisation and financial development in Africa: assessing marginal, threshold and net effects (No. WP/15/040). AGDI Working Paper.

Barro, R. J. (1989). The Ricardian approach to budget deficits. Journal of Economic perspectives, 3(2), 37-54.

Bhattacharya, M., Awaworyi Churchill, S., & Paramati, S. R. (2017). The dynamic impact of renewable energy and institutions on economic output and Sustainable development across regions. Renewable Energy, 111, 157–167. https://doi.org/10.1016/j.renene.2017.03.102

Bhattarai, M., & Hammig, M. (2001). Institutions and the environmental Kuznets curve for deforestation: a crosscountry analysis for Latin America, Africa and Asia. World development, 29(6), 995-1010.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of econometrics, 87(1), 115-143.

Bracking, S. (2019). Financialisation, climate finance, and the calculative challenges of managing environmental change. Antipode, 51(3), 709-729.

Catrinescu, N., Leon-Ledesma, M., Piracha, M., & Quillin, B. (2009). Remittances, institutions, and economic growth. World Development, 37(1), 81-92.

Culas, R. J. (2007). Deforestation and the environmental Kuznets curve: An institutional perspective. Ecological Economics, 61(2-3), 429-437.

De Nicol´o, M.G., Favara, G., & Ratnovski, L. (2012). Externalities and Macroprudential Policy.https://www.imf.org/external/pubs/ft/sdn/2012/sdn1205.pdf.

Destek, M. A., & Okumus, I. (2019). Does pollution haven hypothesis hold in newly industrialized countries? Evidence from ecological footprint. Environmental Science and Pollution Research, 26, 23689-23695.

Edwards, S., & Tabellini, G. (1991). The political economy of fiscal policy and inflation in developing countries: an empirical analysis (No. 703). The World Bank.

Ejemeyovwi, J. O., Osabuohien, E. S., & Bowale, E. I. (2021). ICT adoption, innovation and financial development in a digital world: empirical analysis from Africa. Transnational Corporations Review, 13(1), 16-31.

Globerman, S., & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. Journal of International Business Studies, 34, 19-39.

Harvey, C. R., Ramachandran, A., & Santoro, J. (2021). DeFi and the Future of Finance. John Wiley & Sons.

Kelleher, D., Kim, G. S., & Chang, Y. J. (2009, June). Do differences in political institutions explain differences in environmental policy performance across countries. In APPAM-KDI International Conference on Environmental Policy and Teaching Methods, Seoul.

Knack, S., & Keefer, P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. Economics & Politics, 7(3), 207-227.

Lafferty, W. M., & Meadowcroft, J. (2000). Implementing sustainable development: Strategies and initiatives in high consumption societies. OUP Oxford.

Mcnally, R. (1999). Foreign Direct Investment and the Environment : From Pollution Havens to Sustainable Development. World Wildlife Fund, August, 1–106. http://www.oecd.org/investment/mne/2089912.pdf

Mendez, A., & Houghton, D. P. (2020). Sustainable banking: the role of multilateral development banks as norm entrepreneurs. Sustainability, 12(3), 972.

Midgley, H. (2019). The National Audit Office and the Select Committee System 1979–2019. Parliamentary Affairs, 72(4), 779-798.

Monasterolo, I., Roventini, A., & Foxon, T. J. (2019). Uncertainty of climate policies and implications for economics and finance: An evolutionary economics approach. Ecological Economics, 163, 177-182.

Parkinson, C. L. (2019). A 40-y record reveals gradual Antarctic sea ice increases followed by decreases at rates far exceeding the rates seen in the Arctic. Proceedings of the National Academy of Sciences, 116(29), 14414-14423.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. Journal of economic growth, 9, 131-165.

Shirley, M. M. (2005). Institutions and development. In Handbook of New Institutional Economics (pp. 611-638). Boston, MA: Springer US.

Simmons, B. A., & Elkins, Z. (2004). The globalization of liberalization: Policy diffusion in the international political economy. American Political Science Review, 98(1), 171-189.

Swain, R. B. (2018). A critical analysis of the sustainable development goals. Handbook of sustainability science and research, 341-355.

Tamazian, A., & Rao, B. B. (2010). Do economic, financial and institutional developments matter for environmental degradation? Evidence from transitional economies. Energy economics, 32(1), 137-145.

Wójcik, D., & Ioannou, S. (2020). COVID-19 and finance: market developments so far and potential impacts on the financial sector and centers. Tijdschrift voor economische en sociale geografie, 111(3), 387-400.