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Financial Innovation and Sustainable Development in Pakistan: An Empirical Study

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ABSTRACT

Pakistan is facing several challenges including economic, social, energy and environmental and is one of the most climate affected country. Henceforth, it is recommended to unearth the factors of sustainable development of Pakistan. This study explores the effect of financial innovation on sustainable development along with energy and trade openness as control variables. Results confirmed that long run relationship exists among the mentioned variables. Financial innovation is positively affecting sustainable development in long run as well as in short run. Likewise, energy is positively influencing sustainable development in both time spans whereas trade openness and energy only influence sustainable development in long run. Financial sector should keep on finding ways for innovation and utilizing fin-tech for ensuring and enhancing financial innovation. Government also must care and adopt policies that are encouraging financial innovation to ensure sustainable development in Pakistan.

Keywords: Financial Innovation, Energy, Trade, Sustainable Development
JEL Classifications: C1, F1, Q40, Q55, Q56

1. INTRODUCTION

Sustainable development encompasses economic, social, and environmental aspects of development therefore, it is the utmost aim of the nations around the globe. These aspects are from derived from the concept of sustainable development discussed in literature. The economic perspective of the sustainable development encompasses present and future needs and abilities of the generation while ecological perspective taking into account the ecological balance. Likewise, social aspect of sustainable development considers the ability to address social issues as well as the whole development process. As for as the measurement of the sustainable development is concerned it can be measured through sustainable development index which taking into account ecological efficiency of the human development. Basically, sustainable development index is the modification of the human development index by considering the ecological efficiency and it is the ratio of human development index to ecological shots (Gasimli et al., 2022; Mohammed et al., 2023).

Financial development is a catalyst for the development. The financial development hypothesis postulate that a well-functioning financial system can effectively mobilize and allocate saved funds towards profitable investment opportunities. In environmental stress, institutions undergoing significant development assume a crucial role in mitigation. The advancement of financial development, facilitated by innovation and research, fosters environmentally sustainable projects, incentivizes investments in renewable energy, and bolsters economic efficiency. Additionally, a modern economy necessitates a proficient system that adheres to global standards. This system has meticulously structured institutions, highly effective marketplaces, and systems facilitating smooth financial transactions. The financial system is a crucial element of the economic structure, responsible for overseeing

the distribution of resources among different stakeholders such as governments, corporations, households, and financial institutions. The cost associated with monitoring and screening can be minimize though efficient finance systems. Additionally, efficient financial system is helpful to deal with challenges and incentivize businesses to engage in creative ventures (Haq et al., 2023). Nevertheless, the presence of underdeveloped capital markets may impede the adoption of innovation due to difficulties in securing adequate financing. Financial markets that exhibit robustness are distinguished by robust credit rights and governance mechanisms, which limit the potential risk of fraudulent activities perpetrated by financial firms. Additionally, financial development has significant role in promoting economies driven by innovation (Haq et al., 2023). According to Nazir et al. (2021), fostering trust in financial institutions to provide funding for organizations demonstrating strong innovative potential, contributing to economic growth, particularly in Asian nations.

Innovation is critical in facilitating societal changes whether concrete or intangible and it catalyzes inclusivity, peace, and sustainable progress while addressing inequities in knowledge and competitiveness among nations (Haq et al., 2023). Financial innovation is of the most important factor that influence the economy (Błach, 2011). This form of innovation is crucial in driving economic growth, improving international financial transactions, and strengthening financial knowledge and skills. To have a comprehensive understanding of the relationship between financial innovation and economic growth, it is imperative first to comprehend the fundamental nature of innovation (Mazzucato, 2013). The strategic aspect of financial innovation is intrinsically linked to its ability to constantly enhance the financial sector (Costanzo et al., 2003). The categorization of financial innovations and their correlation with diverse developmental processes is vital. Financial innovation serves as a mechanism for facilitating the integration of financial sector with pursuit of sustainable development. According to Mention (2011), financial innovation takes the lead in implementing novel financial products, procedures, client engagements, and institutional frameworks. Laeven et al. (2015) postulated that financial innovation facilitates the introducing of new processes and promotes the emergence of creative enterprises. Likewise, enhancing financial institutions and fostering growth in capital, industry, and technology, ultimately leading to economic expansion (Chou and Chin, 2011; Bernanke, 2023). Henceforth, financial innovation grab the attention of researchers as a factor of sustainable development (Ajide, 2016; Bara et al., 2016; Gao et al., 2022; Gasimli et al., 2022; Mohammed et al., 2023).

Pakistan is facing several challenges including economic, energy, social and environmental issues. In last two decades, Pakistan did not manage a sustainable economic growth as other than the mentioned challenges it is severely affected by climate change. Consequently, natural calamities are often happening in form of floods, heat waves, and prolonged dry weather. Therefore, it is essential to study the determinants that can affect sustainable development in Pakistan. Henceforth, the aim of this current study is to examine the impact of financial innovation on sustainable development by also considering trade openness and energy as control variables. The rest of paper is arranged in following manner. Second section describes and elaborates about review of literature. The empirical model of the study is concluded in this section. Research methodology is discussed in the third section while results are interpreted and discussed in the fourth section of the study. The conclusion and recommendations are provided in the last section of the study.

2. LITERATURE REVIEW

The broad examination of the impact of financial development on economic growth is well-documented in the literature. Indeed, an effective financial system plays a significant role in promoting sustained economic growth through its ability to regulate savings rates, shape investment choices, and facilitate technical advancements (Levine, 2005). According to Beck and Levine (2004), the advancement of the financial sector plays a crucial role in fostering economic growth by facilitating the functioning of equity capital markets. Additionally, it enables the mobilization of accumulated savings towards various businesses, generating beneficial economic consequences. Simultaneously, macro-prudential and micro-prudential regulatory measures are paramount in guaranteeing economic development's sustainability. The implementation of these influential policies and regulations is crucial for the preservation of a stable economic climate. Moreover, it is worth noting that specific evaluation research emphasizes the significance of financial growth within the framework of monetary transmission channels (Dafermos et al., 2018). The convergence of financial development, fiscal policy, and credit mechanisms catalyzes fostering sustainable economic growth (Nabeeh et al., 2021).

The regulatory structure of financial sector is vital for sustainable development. Adopting a proactive strategy is essential for reducing any negative effects on the sustainability of economic development. The growth model proposed by Aghion et al. (2005) highlights the significant influence of financial development on the cultivation and sustainability of economies driven by innovation. Improving financial development can enhance the effective distribution of funds for innovation, reduce financing costs (Aghion and Howitt, 1998), and mitigate risks associated with these funds, hence promoting technological innovation (Comin and Nanda, 2019). The presence of well-established financial markets mitigates the information asymmetry in research and development investments, greatly enhancing the effectiveness of these investments (Chowdhury and Maung, 2012). A positive correlation exists between diverse financing mechanisms in financial markets and the level of research and development (R&D) intensity (Seidel et al., 2012). This correlation enhances the technological innovation capacity of enterprises and cities. As proposed by Solow (1957), the concept of neoclassical growth theory emphasizes that sustained economic growth over the long run is achieved by technological progress that offsets falling returns on capital. The succeeding endogenous growth model restates the notion mentioned above (Romer, 1990), asserting that innovation driven by enterprises expedites technical advancement, which is a fundamental driver of economic growth (Akçomak and Ter Weel, 2009), ultimately altering the trajectory of economic growth

(Bravo-Ortega, and Marín, 2011). Therefore, the development of financial systems enhances the efficient allocation of funds for innovation, strengthens the capacity of enterprises and urban areas for technological innovation, and drives sustainable economic growth.

Challenges can emerge in the context of exclusive financial services or during periods of financial crises. Hence, it is imperative to adopt a well-rounded strategy towards financial development to promote comprehensive improvement in the overall well-being of a nation. Despite the necessity of implementing environmentally sensitive manufacturing techniques to support sustainable economic growth, many companies continue to depend on financial support. Numerous emerging economies, which primarily depend on the agriculture industry, have significant challenges associated with increased air and water pollution levels resulting from obsolete technical infrastructures (IPCC, 2014). The function of financial infrastructure is crucial in supporting developing economies in mitigating the consequences of global warming. Implementing more lenient lending regulations that offer convenient credit opportunities to farmers has a crucial role in promoting innovative technologies, hence facilitating effective management of sustainability (Singh and Dhadse, 2021). The size of financial development, structure, and technology-related effects can increase economic scale, encourage environmentally friendly manufacturing techniques, and can help in reducing environmental pollution. Nevertheless, the procedure is intricate, encompassing the evaluation of potential hazards associated with allocating financial resources towards environmentally friendly or sustainable energy initiatives. This assessment also considers many elements, such as technological advancements, financial security procedures, and governmental incentives. The relationship between monetary progress and the environmental difficulties stemming from greenhouse gas emissions is dual, as it serves as both the underlying cause and potential remedy. Global financial expansion has been shown to have significant implications for various aspects of economic activity, including coal consumption, credit expansion, investments, and wealth creation. However, it is important to note that these developments have been found to have adverse effects on the environment. However, it is important to note that financial growth has the potential to alleviate the adverse impacts of greenhouse gas emissions through its ability to promote investments in energy-efficient technologies (Liu et al., 2022).

Foreign trade will promote capital formation, innovation, increased productivity, and more effective resource allocation. According to neoclassical economic theory, trade openness enhances capital formation and optimizes resource allocation, improving the standard of economic growth (Rodrik, 1988). According to the endogenous growth hypothesis, trade between countries boosts factor productivity and innovation, improving economic growth quality (Romer, 1986). Despite many empirical investigations, definitive results regarding the dynamic association between economic growth and trade openness are still tricky. There is theoretical and empirical uncertainty on the effects of international trade on the environment, as it depends on factors such as scale, composition, and technology. Besides, by considering distinct advantages and strengths of a nation, international commerce can significantly contribute to economic growth by promoting specialization and the effective cross-border distribution of resources. It is crucial to recognize that international trade can provide environmental concerns even with its potential benefits. The size effect, composition effect, technique effect, and other channels are just a few of the many ways that the environment and international trade are related.

One important component of this link, the scale effect, suggests that increasing global trade may lead to higher output levels, resulting in a rise in greenhouse gas emissions. This effect emphasizes how closely related economic activity is to the effects on the environment. Production rises along with trade, which could put stress on natural resources and exacerbate environmental degradation. The composition impact is another aspect of this complex relationship that highlights shifts in the makeup of economic sectors. Sectoral composition of a country may change due to greater international trade, which could affect environmental dynamics. An increase in trade, for example, may result in a greater concentration of industries with significant environmental footprints, which could exacerbate environmental challenges (Antweiler et al., 1993). The technology impact also suggests that cross-border adoption and dispersion of various technologies might be influenced by international trade. Technological developments may impact the environment even though they can increase productivity and efficiency. For example, adopting certain production processes in response to global competitiveness may mitigate environmental concerns or make them worse (Aller et al., 2015).

Researchers have explored the relationship between global trade and economic growth, they have found motivation in the development of endogenous growth theory. Several research works have investigated the relationship between global trade and economic expansion, producing a range of conclusions. Economic expansion through specialization and resource allocation through international trade, but these opportunities must be balanced against the environmental costs. In order to have sustain growth and to tackle environmental issues requires understanding the complex relationship between trade and the environment in order to foster sustainable development (Gasimli et al., 2022). International organizations, especially the World Bank and the World Trade Organisation (WTO) emphasizes on the relationship between trade and sustainable development. These organizations have launched several programs that center on trade and sustainable development, aiming to develop trade policies that promote economic expansion while protecting the environment (Weiss, 1992; Chandia et al., 2018). The United Nations Conference on Trade and Development highlights the potential of international trade as a catalyst for economic development. This objective is vital for many nations worldwide. The connection between trade openness and sustainable development has taken the front stage in contemporary economic literature.

Energy is essential for several life functions, such as business, education, transportation, health, and life expectancy (Lloyd, 2017; Gasimli et al., 2023). Researchers have examined the complex relationship between energy use, economic growth, and

carbon emissions. There is a significant correlation between rising economic growth and energy use and rising carbon emissions (Kais and Sami, 2016). The desire for higher living standards and the growing world population cause the energy demand to rise exponentially. The main energy sources can be broadly categorized as either conventional or renewable, and the sustainability of each depends on how long they are available. As a result, there are two crucial options for using energy resources: using readily available, conventional, and environmentally damaging energy resources or adopting technology-driven, unconventional, and environmentally benign energy sources (Kumar, 2020).

It can be deduced from the literature discussed above that financial innovation is an imperative factor of sustainable development. Likewise, the literature discussed also highlighted the importance of energy and trade openness in sustainable development. As the main objective of this current study is to examine the effect of financial innovation on sustainable development however, keeping the importance of energy and trade for sustainable development, these factors are considered as control variables. The empirical model of this study based on literature is written in Equation (1) as follows:

$$SD = f(FIV, EC, TO) \quad (1)$$

Whereas SD, FIV, EC, and TO presents sustainable development, financial innovation, energy consumption and trade openness respectively.

3. RESEARCH METHODOLOGY

Suppose one employs the method of ordinary least squares. In that case, one risks getting false regression since time series data typically exhibit a trend over time and struggle with nonstationarity issues. By taking the variables at the difference, it is possible to eliminate the nonstationarity problem; nevertheless, the differencing procedure may prohibit a long-run relationship between variables if one ever existed. This study applies augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test (Dickey and Fuller, 1979; Phillips and Perron, 1988) for testing unit root problem. Once the order of the variables are determined then one has to study the long run relationship between variables (Shafiq et al., 2012) and this study applies Autoregressive distributed lagged (ARDL) model. ARDL is a time series technique proposed by Pesaran and Shin (1999). This technique is improved and modified by Pesaran et al. (2001) that gives long run as well as short run estimates even for small number of observations along with adjustment process from any external disturbance shock. Moreover, this technique has some distinct features that distinguishes ARDL technique from other conventional cointegration techniques. First, this technique can be employed on small datasets and can give reliable cointegration results (Boutabba, 2014). Second, this technique can be applied on same or different order of integrated variables but integration order must not be higher than first order (Primbetova et al., 2022; Meo et al., 2018). Third, ARDL accounts for endogeneity problems that may arise from cointegration process and also differentiate between dependent and independent variables (Narayan, 2005). Additionally, ARDL estimates are efficient and unbiased. The unrestricted ARDL is basically an error correction mechanism as depicted in Equation (1) as follows:

$$\Delta SD_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i \Delta SD_{t-i} + \sum_{i=0}^{m} \alpha_i \Delta FIV_{t-i} + \sum_{i=0}^{m} \alpha_i \Delta TO_{t-i} + \sum_{i=0}^{m} \alpha_i \Delta EC_{t-i} + \beta_1 FIV_{t-1} + \beta_2 TO_{t-1} + \beta_3 EC_{t-1} + \varnothing_{ect} ECT + e_t \quad (2)$$

Whereas α_i presents the short run dynamic parameters, while β_i shows long run coefficients of the respective variables. Besides, α_0 the intercept, e_t is the error term, and ECT displays an error correction term that if carries significant negative coefficient demonstrate the dynamic stability of the model along with adjustment strength per period from any external shock. The confirmation of the cointegration in ARDL lies on upper and lower bounds critical values (Pesaran et al., 2001; Narayan, 2005). If the ARDL calculated F-statistic value is greater than upper bound value then alternative hypothesis of cointegration is accepted against the null hypothesis and one has to conclude that variables tested are cointegrated in long run. If ARDL calculated F-statistic value is less than lower bound critical value than null hypothesis is accepted whereas the test is inconclusive if ARDL calculated F-statistic value is between lower and upper bound critical value.

4. RESULTS AND DISCUSSION

Table 1 portrays descriptive statistics. Sustainable development is measured through index developed by Hickel (2020) and collected from sustainable development index organization (SDI, 2023). It carries mean value of 0.52 with minimum and maximum values are 0.43 and 0.60 respectively. Financial innovation is proxy with automatic teller machines (Shehzad et al., 2021; Haq et al., 2023) in some empirical studies but researchers argued that it can be better proxy with ratio of narrow money to broader money as in some studies it is considered as a ratio of either M1 to M2 or M2 to M3 (Bara et al., 2016; Nazir et al., 2021). In this study it proxy with M2 to M3 and data is collected from State Bank of Pakistan. FI has mean value of 1.64 whereas minimum and maximum value are 1.16 and 2.51 respectively. Energy and trade openness is collected from World Bank (2023). Energy consumption is measured in kg of oil equivalent per capita. Its mean value is 13.52 while minimum and maximum values are 10.22 and 16.48 respectively. Trade openness is measured as a percent of GDP. Trade openness has mean value of 32.10 while its minimum and maximum values are 24.70 and 38.50 respectively. Table 2 presents results of ADF and PP unit root tests. These results indicate that all variables are having trend at level and are non-stationary while when their first difference is not trended and are stationary thus; all variables are having no unit root problem at first difference and are integrated of order one.

Once the time series variables are checked for nonsationarity problem and after order of integration is determined then one can check cointegration and long run relationship among variables through cointegration technique. As discussed earlier, this study employs ARDL bounds test for cointegration as well as for result

estimates in the long run and short run. The results of cointegration through ARDL are provided in Table 3. These results indicate there are two cointegrated equation as the calculated F-test value is greater than upper critical bound value. These results confirm the long run association between variables and one can move on to get long run and short run results estimates.

Table 4 presents long run and short run results estimates. In the long run, all variables are having significant and positive effect on sustainable development of Pakistan. The results indicate that financial innovation and energy consumption are having significant and positive effect on sustainable development while trade openness is not having significant effect but carries positive coefficient in the short run. These results also indicate that the study model is dynamically stable as ECT carries negative and significant coefficient. Moreover, it can also be deduced from this result that model can adjust itself from any external shock in <1½ year.

Table 1: Descriptive statistics

Variable	SD	FI	EC	TO
Mean	0.52	1.64	13.52	32.10
Maximum	0.60	2.51	16.48	38.50
Minimum	0.43	1.16	10.22	24.70
Standard deviation	0.05	0.38	1.85	4.04

Table 2: Unit root tests results

Variable	T-statistics		Decision
	At level	First difference	
ADF test results			
log*SD*	−1.29	−4.65***	I (1)
log*FI*	−1.11	−4.31***	I (1)
log*EC*	−1.39	−4.83***	I (1)
log*TO*	−1.80	−5.33***	I (1)
PP test results			
log*SD*	−1.40	−4.65***	I (1)
log*FI*	−1.05	−5.93***	I (1)
log*EC*	−1.41	−4.84***	I (1)
log*TO*	−1.80	−5.34***	I (1)

***Significance level at 1%. ADF: Augmented dickey-fuller

Table 3: Autoregressive distributed lagged bounds test results

Model	Test	Value
Model *SD=f* (*FI, EC, TO*)	F-statistics	4.17*
Model *FI=f* (*SD, EC, TO*)	F-statistics	1.47
Model *EC=f* (*SD, FI, TO*)	F-statistics	8.41***
Model *TP=f* (*SD, FI, EC*)	F-statistics	0.97
Significance level (%)	**Critical bounds**	
	Lower bound I (0)	**Upper bound I (1)**
1	4.29	5.61
5	3.23	4.35
10	2.72	3.77

*** and *represent significant level at 1% and 10% respectively. SD: Standard deviation

Table 4: Long run and short run results

Variables	Coefficient	T-statistics
Long run results		
Log*FI*	0.16***	6.36
Log*EC*	0.58***	7.66
Log*TO*	0.28***	4.10
Constant	−1.68	−1.58
Short run results		
Δlog*FI*	0.14**	2.84
Δlog*FI* (−1)	0.09	1.88
Δlog*EC*	0.71***	4.27
Δlog*TO*	0.12	1.88
ECT	−0.75***	−3.40

*** and * represent significant level at 1% and 10% respectively. SD: Sustainable development

The positive and significant effect of financial innovation highlights that financial innovation is encouraging income level, health and also taking into account the ecological aspect of development in Pakistan. The finding of this study supports the argument put forward by Adusei (2013) that sound and viable financial sector play an important role in sustainable development by promoting productive investment. Bayar (2014) documented that financial sector have greater influence on overall economic progress however, Levine (1997) argued that developed and efficient financial sector is vital for sustainable development by encouraging financial innovation. Additionally, this study also strengthens Dong and Akhtar (2022) arguments who determined the role of financial innovation in economic development and they stressed on the role of innovation for sustainable development. As this study finds positive impact of financial innovation on sustainable development so it is recommended that financial sector keeps on finding ways for innovation and utilizing fin-tech for ensuring and enhancing financial innovation. Besides, for financial sector and innovation policy makers should also consider society and social capital (Gamage and Li, 2016). In order to effectively address problems related to environmental deterioration, policymakers must prioritize the acquisition of reliable financial investments and the use of efficient technology for green energy projects. The maintenance of this equilibrium is crucial for the achievement of sustainable development goals (7 & 13), as well as for the preservation of international relations amidst socioeconomic changes. Within this particular framework, the influence of industries on the deterioration of the environment becomes apparent, particularly in initiatives focused on green and renewable energy that strive to mitigate carbon emissions. Government also must care and adopt policies that are encouraging financial innovation. These policies measures can be in form of tax relaxation and incentives. These tax relaxation and incentives may be for research and development or for adopting of fin-tech in financial sector. Additionally, for sustainable development initiatives must be taken to amalgamate payment tools, new financial assets and services with financial innovation. As the financial innovation will not only lead to sustainable development but also stimulate financial development.

Although, energy consumption deteriorate environmental quality as it is mainly responsible for carbon emission as past studies in respect of Pakistan documented. But, no one can deny the positive role energy can play and also energy is vital and backbone of the economy. This significant positive effect of energy on sustainable development in long run and short run indicate that although energy may have negative impact on the environment but it positive impacts surpasses the negative impacts. Therefore, it is advised that government has to ensure the availability of the energy at

Table 5: Diagnostic tests results

Diagnostic tests	Coefficient	P
Heteroskedasticity	1.60	0.21
LM serial correlation	0.08	0.78
JB-statistics	2.26	0.32
Ramsey reset test	0.22	0.64

JB: Jarque-Berra

Figure 1: CUSUM of recursive residual

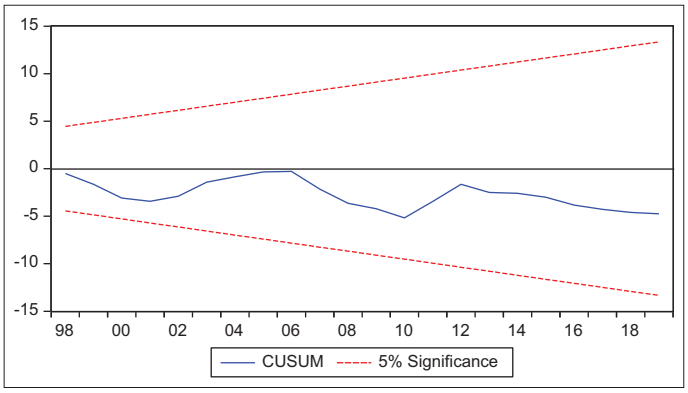
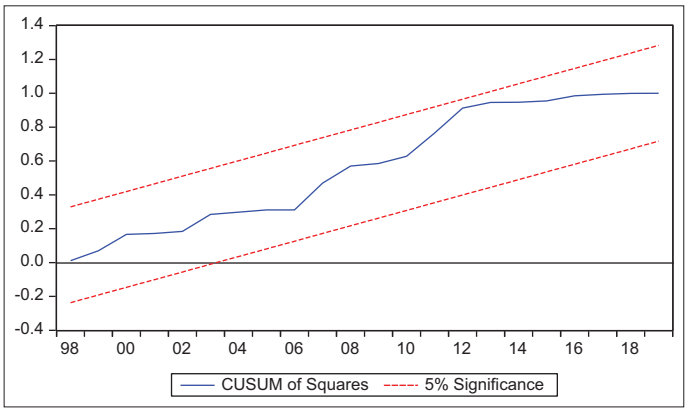


Figure 2: CUSUM of squares of recursive residual



cheaper rate as Pakistan is facing energy crisis for last two decades along with high energy prices. Haq et al. (2023) argued that recent past initiated coal projects in Pakistan will further exacerbate environmental degradation. Pakistan has to ensure availability of energy from potential resources especially renewable energy. Pakistan is a developing country and is lacking funds availability to unearth renewable energy so it is recommended to get assistance from international donors like World Bank and Asian Development Bank for such green initiatives.

The results indicate significant positive effect of trade openness on sustainable development which indicate that trade integration with rest of world is ensuring increase in income level and health measures along with taking into account environmental quality as sustainable development covers all these aspects. Although, there are studies which documented trade openness is polluting the environment especially in developing countries. The reason for the negative impact of trade openness on environment is the relax policies of the developing countries as most of the developing countries prioritizing the economic aspects attached with trade instead of its bad impact on environment. This is one of the important reason that this study considers the impact of trade on sustainable development and not just on environment or economic growth. Therefore, it is recommended that government should encourage and take actions for enhancing trade with rest of world. This could be made possible by searching new markets for Pakistan's exports as Pakistan's trade is concentrated with few countries. It is also advisable to look after bilateral relations for trade along with multilateral agreements.

Diagnostic tests are carried out for the empirical model and these results are given in Table 5 below. The estimated model of the is not suffering from econometric problems such as heteroskedasticity and serial correlation and error term is normally distributed as Jarque-Berra (JB) statistics suggests. The Ramsey RESET test result indicate that functional form of the empirical model of the study is correct. The stability of the model is confirmed through cumulative sum CUSUM of recursive residual (Figure 1), and CUSUM of squares (Figure 2) as the lines are located within the bounds.

5. CONCLUSION

The current study examines the impact of financial innovation on sustainable development by also considering energy and trade openness as vital factors of sustainable development. Time series data is analyzed for mentioned purpose over period from 1990 to 2019. This study finds the order of integration of all variables with unit root tests before testing for cointegration. Unit root tests confirmed that variables are having unit root problem at level while variables are free from this problem at first difference. ARDL bounds technique assured that studied variables are cointegrated in long run. Long run and short run results confirmed the significant positive effect of financial innovation and energy on sustainable development whereas trade openness only has significant positive effect on sustainable development in long run. As this study finds positive impact of financial innovation on sustainable development so it is recommended that financial sector keeps on finding ways for innovation and utilizing fin-tech for ensuring and enhancing financial innovation. Government also must care and adopt policies that are encouraging financial innovation. Initiatives must be taken to amalgamate payment tools, new financial assets and services with financial innovation for sustainable development, as the financial innovation will not only lead to sustainable development but also stimulate financial development. These policies measures can be in form of tax relaxation and incentives. These tax relaxation and incentives may be for research and development or for adopting of fin-tech in financial sector.

This study documented that trade promotes sustainable development in Pakistan, therefore, it is recommended that government should encourage and take actions for enhancing trade with rest of world. This could be made possible by searching new markets for Pakistan's exports as Pakistan's trade is concentrated with few countries. It is also advisable to look after bilateral relations for trade along with multilateral agreements. Besides, this study results affirmed the positive influence of energy for sustainable development, therefore, it is advised that government has to ensure the availability of the energy at cheaper rate as

Pakistan is facing energy crisis for last two decades along with high energy prices. Pakistan has to ensure availability of energy from potential resources especially renewable energy. Pakistan is a developing country and is lacking funds availability to unearth renewable energy so it is recommended to get assistance from international donors like World Bank and Asian Development Bank for green initiatives.

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