

# Does macroeconomic stability promote economic growth? Some econometric evidence from SAARC countries

Md. Nur Alam Siddik

*Department of Finance and Banking, Begum Rokeya University,  
Rangpur, Bangladesh*

## Abstract

**Purpose** – The main purpose of this research is to examine the influence of macroeconomic stability on economic growth of SAARC (South Asian Association for Regional Cooperation) countries.

**Design/methodology/approach** – Using panel data of 1991–2020, fixed effect regression analysis, pooled ordinary least squares and generalized method of moments techniques have been conducted to demonstrate whether macroeconomic stability contributes to economic growth. Moreover, cross-sectional dependency test, unit root test, correlation analysis and granger causality tests have been run.

**Findings** – Robust findings indicate that inflation has negative impacts on economic growth which indicates that lower level of macroeconomic instability promotes countries' economic growth. This study also observed that foreign direct investment, domestic credit delivered to private sector, currency exchange and institutional difference across countries are affirmatively connected while labor force is negatively associated with economic growth.

**Originality/value** – Empirical findings of this study signify that macroeconomic stability have significant effects on economic growth. Findings of this study have superior contributions for the policy makers to achieve sustainable economic growth.

**Keywords** Macroeconomic stability, GDP per Capita, Cross-sectional dependence, Panel causality, SAARC region

**Paper type** Research paper

## 1. Introduction

Macroeconomic stability and the economic growth are the priority policy in any country. Policymakers around the world always search for the strategies and mechanisms to attain higher economic growth and maintain macroeconomic stability simultaneously. The South Asian Association for Regional Co-operation, SAARC (South Asian Association for Regional Cooperation), was formed to encourage economic reliability and co-operation surrounded by eight South Asian nation-states explicitly Bangladesh, Afghanistan, India, Pakistan, Maldives, Bhutan, Nepal and Sri Lanka. In 1985, the association was established with the ambition to stimulate welfare of the nations of South Asia, to promote fast-track economic growth, to improve people's living standard, social advancement and cultural expansion in the member countries. This association is estimated to adopt further energetic footsteps to



improve the trade and industry affiliation among its members. By articulating policies and joint arrangements on mutually agreed tasks, SAARC essentially efforts on accelerating economic, cultural and collective progress of the area and targeted enroute for regional integration. As a result, this South-Asian area achieved remarkable economic growth in recent years and recognized as fast growing economies (Ghani and Ahmed, 2009) while maintained macroeconomic stability. Therefore, it is worthy to investigate whether macroeconomic stability contributes to the high growth of SAARC economies.

Macroeconomic stability, a condition with which an economy has the ability to resist external shocks, is the most imperative issue in the modern macroeconomics. In the global market, macroeconomic stability acts as a safeguard against interest and currency variations. Economic crisis and breakdown in gross domestic product (GDP) may cause by currency fluctuations, huge debt burdens and unmanaged inflation. Generally, macroeconomic instability has unfavorable consequences and hinders countries' economic growth process. However, there are scarcity of empirical studies on establishing the relationship between macroeconomic stability and economic growth, especially in the context of SAARC region.

Some prior studies focused on the issue from regional aspects or country perspectives. For example, Martinez and Sanchez-Robles (2009) observed the influence of macroeconomic stability on economic growth in the context of Eastern Europe region. Vasylieva *et al.* (2018) discussed and examined the relationship between macroeconomic stability and growth of European economies. Šokčević and Štokovac (2011) examined the dispute using data of European transition countries. While other regions of the world were focused by some researchers, no empirical studies have been found to explore the influence of macroeconomic stability on economic growth of SAARC region. In recent years, SAARC have reached remarkable economic growth compared to other regions of the world. So, it is more substantial to inspect the rapport between macroeconomic stability and economic growth of this administrative area. Therefore, this research attempts to fill this research gap by examining the effect of macroeconomic stability on economic growth of SAARC region. Contribution of this research is threefold. First, based on empirical data, this study will explore and establish a relationship between macroeconomic stability and economic growth. Second, this study will investigate whether the institutional difference across countries has association with economic growth. Third, findings of the study will pursue governments and policymakers to take necessary policies to keep stable macroeconomic condition.

The remaining parts of the study is arranged as under; section "Literature review" analyses noteworthy literature relevant to this research; section "Methodology" explains sample, data, models and techniques employed to achieve the objectives of the study; section "Empirical results and their discussion" describes findings, consistency of findings and robustness of findings and section "Conclusion" concludes the outcomes along with policy implications, limitations and future researches of the study. References are given at the finale.

## 2. Literature review

### 2.1 Concept of macroeconomic stability

Different authors have defined macroeconomic stability in different context. As such there is no uniform, single, straight definition of macroeconomic stability. For instance, Ocampo (2008) opined that "macroeconomic stability" condition encompasses not only healthy fiscal policies and price stability but also viable debt proportion, private segment balance sheets, healthful community and well operating real economy. With an emphasis on inflation, World Bank (1990) states a macroeconomic situation as stable at the time when inflation is at less and expectable level, exchange rate is economical and expectable, interest rate is low, the balance of payment is favorable and fiscal policy is stable and viable. Moreover, macroeconomic stability is regarded as an economy's capacity to develop and expedite

economic progress, captivate shockwaves as well as control risk. According to [Khalid \(2017\)](#), stable macroeconomic condition promotes sound financial infrastructure and markets through which intermediaries smoothly channels the fund between investors and savers that helps to stimulate economic growth. In addition, stable macroeconomic situation promotes investment, financial development, integration and globalization which could act as possible channels to economic growth.

While there is no uniform definition, in this study macroeconomic stability focuses on how well an economy manage its inflationary pressure. Specifically, inflation is considered as one of the widely used indicators on how well a country is able to manage its economy. In general, high inflation rates impede efficient resource allocation process and reduce investment rates. Even though some nations wish to have an encouraging inflation rate, there are no opinions for higher inflation rate. Thus, higher inflation may be inferred as a sign that the concerned government has lost control in managing the economy ([Fischer, 1993](#)).

### *2.2 Macroeconomic stability and economic growth: theoretical underpinnings*

The views that “state should play vital role in the country’s economic growth process” has developed over the time as because of different schools of thought and many paradigms that have ruled the field. In the neoclassical theory of growth model, [Solow \(1956\)](#) discussed that economic strategies and policies could not alter growth rate in a stable economic state and thus state could play very small role. Later, some endogenous growth models stated that the public sector could play conceivable and more active role, through the provision of public capital or the adjustment of externalities allied with information and technology ([Lucas, 1988](#); [Rebelo, 1991](#); [Romer, 1990](#)). Authors advocated that the state should provide sufficient basis for private agents’ activities. In this concern, the public authorities should warrant the required environments in the economy in order for decisive participations (human or physical capital, knowledge, technology) to gather. This inference indicates that an economy should have such extent of macroeconomic stability to warrant investors’ confidence, offer encouragements for the most productive purpose of the inputs and rip the increase of inputs viable and lucrative at rational degree of risks. An economy with higher macroeconomic instability will reflect a higher degree of uncertainty, which in turn discourage investors from investing or may cause them take erroneous decisions relating to the distribution of resources to alternate projects. [Kuipers \(2001\)](#) discussed that apart from entrepreneurs there is government, accompanied by its organizations, have distinct roles in maximizing the social well-being and increasing the economic growth.

### *2.3 Existing empirical studies*

The key resolution of this study is to explore and establish whether and how macroeconomic stability contributes to economic growth. Some scholars found positive relationship while other scholars observed negative association between macroeconomic stability and economic growth. These mix evidences tender an opportunity for the researcher to search and establish the relationship between the issues. Additionally, scholars argued that macroeconomic stability promote country’s economic growth. This direction of causality from macroeconomic stability to economic growth seems more interesting as it is likely that macroeconomic stability can foster countries’ economic growth.

Using Central and Eastern European countries data of 1962–1995, [Martinez and Sanchez-Robles \(2009\)](#) investigated the association of economic growth with macroeconomic instability. Authors found a converse link between macroeconomic stability and economic growth. Authors argued that inflation reduces investment, efficiency of resources allocation and production output, which are detrimental for economic growth. Employing a new index

of stability, [Sirimaneetham and Temple \(2009\)](#) found that macroeconomic instability acts as a necessary check on economic growth. Applying panel regression and cross-sectional analysis, [Fischer \(1993\)](#) observed that macroeconomic instability misleads foreign exchange markets and decreases economic growth. Author further stated that while low inflation and modest deficits are not required for high growth, excessive inflation is incompatible with long-term growth.

Employing panel data of 25 transition economies over the period of 1989–2006, [Gerry \*et al.\* \(2008\)](#) stated that macroeconomic instability is evil for economic growth and found macroeconomic stability positively impacted the economic growth of sample countries. Using data of 1979–2011, [Karimi \*et al.\* \(2016\)](#) observed positive effects of government investment spending on macroeconomic stability which in turn positively impacted economic development. Authors discussed that by spurring export, balance of payment, private investment and national saving, macroeconomic stability foster real economic growth. Applying data of 129 economies over the period of 1970–2007, [Kazimov \*et al.\* \(2011\)](#) explored that macroeconomic stability has significant positive influences on economic growth. Authors argued that after natural resources are exhausted, maintaining macroeconomic stability encourage investment in that area and lead to continued economic growth. Analyzing panel data of 1969–2016, [Mohamed \(2018\)](#) found that macroeconomic instability has significant negative impacts on GDP growth. Author concluded that macroeconomic turbulence reduces investment and increases foreign debt accumulation, which hinders economic growth. However, author did not show any specific impacts of macroeconomic stability on economic growth. [Ismihan \*et al.\* \(2005\)](#) employed Turkey economy data for the period of 1963–1999 and observed severe negative impacts of macroeconomic instability on economic growth. Authors stated that chronic macroeconomic volatility appears to be a significant barrier to public investment, particularly for its infrastructure component and thus hinders economic growth process. Analyzing panel data of 1980–2012, [Ali and Rehman \(2015\)](#) found a casual relation between macroeconomic instability and economic development. Authors argued that countries need to maintain their macroeconomic environment stable for achieving expected level of sustainable economic growth.

Using data of 2000–2016, [Vasylyeva \*et al.\* \(2018\)](#) found that macroeconomic stability has statistically substantial encouraging outcomes on economic growth. Authors demonstrate that in order for the country's economic growth to reach its desired level, the necessary policies must be in place to guarantee macroeconomic stability, financial growth and enough education. In the context of Vietnam, [An \*et al.\* \(2016\)](#) observed significant affirmative connection between macroeconomic stability and economic growth. Employing data from 1980 to 1990, [Bleaney \(1996\)](#) observed that better macroeconomic (inflation) management significantly relates with higher economic growth. Author stated that by creating a more secure atmosphere for private-sector investment decisions, sound macroeconomic policies support economic growth. However, author used very short sample, which limits the results' generalizability.

In contrast, [Ruzima and Veerachamy \(2016\)](#) found no consensus between macroeconomic stability (inflation) and economic growth. Authors suggested that the ability of the monetary authorities to keep inflation at or below ten percent would boost the potentials to speed up economic growth. Similarly, analyzing data of 1981–2004, [Veni and Choudhury \(2007\)](#) found no relationship between inflation and economic growth of India.

Reviewing existing studies, it is observed that some researches focused on influence of macroeconomic instability or stability on economic growth in various regions but there is no investigation focused on SAARC region. In addition, there are mixed evidences on the relationship between macroeconomic stability and economic growth and the results are inconclusive. Present research endeavors to fill these gaps by analyzing panel data of SAARC countries.

### 3. Research methodology

#### 3.1 Sample, data sources and their description

This study aims to examine the relationship between macroeconomic stability and economic growth of SAARC region. Recently SAARC economies are deliberated as faster developing economies. Thus, this research has considered SAARC countries for present investigation. A list of SAARC member economies is provided in Table 1. Based on availability, country-wise data for the period of 1991–2020 have been accumulated from World Development Indicators (WDI) of the World Bank. WDI is the largest database which encompasses country-wise time series data of countries on more number of variables connected to macroeconomic stability and variables of economic expansion and economic growth. Present study has gathered data on per capita GDP on SAARC region for 1991–2020 from WDI. Author has also accumulated data from the WDI for the period of 1991–2020 on inflation rate, foreign direct investment (FDI), domestic credit delivered to private sector, exchange rate, labor force, political stability (PS), rule of law (RL) and regulatory quality (RQ). Data for 1991–2020 on aforementioned variables on eight SAARC member countries have been accumulated in this research. So, naturally this collected dataset is cross-sectional for an arrangement of years.

#### 3.2 Variables selection

**3.2.1 Dependent variable.** This study attempts to examine whether macroeconomic stability induce economic growth. Therefore, economic growth is the dependent variable. GDP is one of the most widely used indicators of economic growth. GDP is calculated as the total monetary value of all the finished goods and services produced within a country's perimeter in a particular period of time. As an extensive measure of total national production, it provides a complete record of a country's economic performance. Studies related to development issues continually uses GDP as a measure of economic growth. For example Antwi *et al.* (2013), Siddik *et al.* (2019) and Islam *et al.* (2021), have applied GDP as a measurement of economic growth. When comparing general variations in living standards among countries, per capita GDP using purchasing power parity (PPP) provides better measures than nominal GDP. This is because PPP method considers the comparative cost of living and the inflation level, whereas nominal GDP does not which may misrepresent the actual variations in income (Bhattarai, 2020). Thus, this research uses per capita GDP PPP as a proxy measure of economic growth.

**3.2.2 Independent variables.** The key objective of this research is to explore whether macroeconomic stability enhances economic growth. Thus, macroeconomic stability, which is measured by inflation rate, is the main variable of interest. Scholars across the world (For example, Mishchenko *et al.*, 2018; Eggoh and Khan, 2014) empirically found that inflation has significant impacts on economic growth. Berument *et al.* (2011) argued that inflation

Sl no.	Country	Region
1	Afghanistan	South Asia
2	Bangladesh	South Asia
3	Bhutan	South Asia
4	India	South Asia
5	Maldives	South Asia
6	Nepal	South Asia
7	Pakistan	South Asia
8	Sri Lanka	South Asia

**Table 1.**  
List of SAARC  
member countries

**Source(s):** <http://saarc-sec.org/about-saarc>

volatility is the first and widely used measure of macroeconomic instability. The lower the inflation the higher the macroeconomic stability and vice-versa. Therefore, this research expect a negative sign (–) on this relationship between inflation and economic growth. In other words, the lower the inflation, the higher the macroeconomic stability and the higher the economic growth in this case and vice-versa.

To isolate the effect of inflation on economic growth, a number of control variables have been incorporated in the study. Firstly, FDI as it plays a crucial role in dynamic economic growth process (Moudatsou, 2003; Pandya and Sisombat, 2017). observed constructive effects of FDI on economic growth which arises through increase of productivity level. Arguing similar, author incorporates FDI, measured by net FDI inflows to the economy (percentage of GDP), in present study. Since FDI investment requires some time to promote economic growth, this study has incorporated lagged value of FDI. The number of lags necessary has been identified by literature. Another variable named, domestic credit to private sector, has been considered. Effective private sectors credit has favorable and considerable impacts on economic growth. In order to finance economic projects and activities that would encourage economic growth and development, domestic lending to private sectors plays a crucial role. This is so because having access to credit private sectors increase capital accumulation and domestic investment to companies' that increase the ability to produce more goods, which increases economic growth (Amoo *et al.*, 2017). Aljebrin (2016) observed that domestic credit provided to private segment has significant positive effects on economic growth. Therefore, this study incorporates this variable and expects a positive sign.

Another control variable, exchange rate, has been incorporated in this study on the argument that both depreciation and appreciation of local currency may affect economic growth. Depreciation of the local currency resulting from a rise in the exchange rate encourages exports while discouraging imports. In other words, the local currency's depreciation converts both import needs from the native population to local goods and import demands from foreigners. As a result, rises in exchange rates promote net exports which in turn foster economic growth. According to traditional view, economic growth and exchange rate movements are positively correlated (Karahana, 2020; Di Nino *et al.*, 2011). Thus, positive relationship between exchange rate and economic growth is expected in this study.

Another variable considered in this study is the labor force. Having a high unemployment rate has costs for society. Additionally, the unemployment rate typically has a higher tendency to reduce the output of goods (Clark *et al.*, 1999). According to Chen *et al.* (2016), higher unemployment may hinder the economic growth. Evidences on impacts of labor force are mixed. Clark *et al.* (1999) and Lai and Yip (2022) found adverse relationship between labor force and economic development. On the other hand, Cung and Hung (2020) found that by boosting productivity, the work force boosts economic growth. Arguing similar, this study incorporates labor force to examine its impact on the economic growth.

There have been a number of studies using similar variables and approach in examining the relationship between macroeconomic stability and economic growth. Thus, it is more interesting to find whether the institutional difference across countries has something to do with economic growth. In other words, it is imperative to examine whether better institution might result in higher GDP growth of countries with the same conditions (for example, inflation). Accordingly institutional differences across countries have been incorporated in this study. Ali (2003) explored that institutional differences are significant sources of economic growth. According to Li *et al.* (2020), institutional difference increase firms to move abroad in pursuit of more efficient institutions by RQ, control of corruption (CC), strong legal system and enough intellectual property rights protection. Following Li *et al.* (2020) this study considers PS, RL, government effectiveness (GEF), RQ and CC as the noteworthy institutional differences across countries and thus included these variables in the empirical model.

First proxy measure of institutional difference across countries considered in this study is the PS which guarantees an increase in both domestic and foreign investment. PS protects citizens' fundamental rights, improves employment conditions, fosters national unity and culture and provides access to basic infrastructure and CC, thereby enhances country's economic growth. [Yakubu et al. \(2020\)](#) who contends that economic growth is facilitated by PS. Arguing similar to [Yakubu et al. \(2020\)](#), this study predicts positive sign of PS on economic growth.

Rule of law has been included as another proxy of institutional difference. A nation's economic development is significantly influenced by its laws and legal framework ([Shevchuk et al., 2020](#)). By establishing RL, a country becomes able to attract more investors who value security, safety and protection. Thus, improvements in RL promote economic growth. So, substantial impacts of RL on economic growth are expected.

The third proxy of institutional differences, GEF, has been incorporated in this study. [Alam et al. \(2017\)](#) stated that good governance encourages more effective labor division, more profitable investment and quicker social and economic policy implementation which directly foster country's economic growth. Arguing similar, noteworthy impact of GEF is expected in this research.

Government RQ has been considered as another proxy of institutional difference. Government regulations can specifically help the economy and certain industries. Sound regulations may encourage investments that create jobs, boost worker productivity by enhancing their health and catalyze significant technical advancements ([Kirchner, 2012](#)). Therefore, this study expects positive sign of government regulations on economic growth.

Finally, CC has been incorporated as proxy of institutional differences across countries. According to [Cieřlik and Goczek \(2018\)](#) government's deployment of anti-corruption measures helps to reduce corruption, build public trust, inspire workers and foster economic progress. Moreover, through its effects on the creation of human capital, CC has positive impacts on economic growth. Arguing similar, this study expects positive impacts of control on corruption on economic growth.

### 3.3 The model

With the purpose of examining whether macroeconomic stability stimulate economic growth, based on theories discussed, justifications provided, we propose the following model:

$$GDP_{it} = \alpha_0 + \beta_1 INF_{it} + \beta_2 FDI_{it} + \beta_3 DCPS_{it} + \beta_4 EXCH_{it} + \beta_5 LF_{it} + \beta_6 INSDF_{it} + \varepsilon_{it} \quad (1)$$

where,  $GDP_{it}$  is the outcome variable that reflects the economic growth of country  $i$  at period  $t$ . Author uses inflation,  $INF_{it}$  as a main variable of interest which measures macroeconomic stability and the corresponding  $\beta_1$  is the magnitude, which estimates the effect of macroeconomic stability on economic growth.  $FDI_{it}$  signifies foreign direct investment and  $\beta_2$  is the corresponding coefficient. SAARC is the third largest region the world with significant number of poor people is living. To improve the living standard for mass people and sustainable development in the region, huge investment is required. As such this variable,  $FDI_{it}$ , draws special attention to be included in the model.  $DCPS_{it}$  denotes domestic credit provided to private sector and  $\beta_3$  is the corresponding coefficient. Economic theories suggest that a well-developed financial system increases mobilization of resources, warrants an efficient allocation of resources and consequently stimulates faster economic growth. Thus, in order to examine whether financial development matters for growth in SAARC countries, this variable,  $DCPS_{it}$ , as the proxy of financial development, is considered in the proposed model.

$EXCH_{it}$  denotes country's currency exchange and  $\beta_4$  is the corresponding coefficient. By altering the relative prices of domestic and imported commodities, currency exchange

helps flourishing economic growth. Thus, in order to examine the impact of variation of the value of a country's currency, this variable has been incorporated in the model.  $LF_{it}$  signifies labor force and  $\beta_5$  is the corresponding coefficient. Increasing unemployment reduces economic growth. In order to examine the impact, labor force has been included in the model. Institutional differences across countries,  $INSDF_{it}$  refers to a set of variables to measure impacts institutional differences on economic growth.  $INSDF_{it}$  have been measured by PS, RL, GEF, government RQ and CC. Institutional differences encourage businesses to relocate in search of more effective institutions through high regulatory standards, effective anti-corruption measures, a robust legal system and adequate protection for intellectual property rights, which induce economic growth. Thus, to find whether the institutional difference across countries have impacts on economic growth,  $INSDF_{it}$  has been incorporated in the model. A summary of comprehensive list of variables employed in this investigation, their measures and data sources are exhibited in Table 2.

#### 4. Empirical results and their discussion

##### 4.1 Descriptive statistics

Table 3 exhibits the descriptive statistics which affords some advantageous perceptions about the variable applied in this research and Table 4 discusses the country-wise mean values for all variables. In case of dependent variable, per capita GDP PPP, a mean of 4404.340 has been found during the period of study. As shown in Table 4, Afghanistan has experienced the lowest per capita GDP PPP having a mean of 1582.735 and Maldives has the highest value of 11700.179. Inflation, the key explanatory variable, has a maximum value of 1.422 with a lowest value of  $-0.299$  and an average of 0.797 with a standard deviation of 0.275 which denotes that sample states observed moderate level of inflation. Maldives experienced the smallest mean of inflation of 0.635 while Sri Lanka experienced highest inflation of 0.887. Likewise, a mean value of FDI is 0.003 with a standard deviation of 1.394 have been found and Maldives achieved the highest FDI while Nepal achieved the lowest mean for FDI. This study

Variable	Legend	Measurement	Source
GDP per capita	GDP PPP	Log of Per capita GDP PPP; Gross domestic product, GDP, stated in current international dollars converted by purchasing power parity, PPP, conversion factor	WDI
Inflation	INF	Inflation, Consumer Price Index (Annual percentage)	WDI
Foreign Direct Investment	FDI	Foreign Direct Investment (Net inflows percentage of GDP)	WDI
Domestic Credit	DCPS	Domestic Credit to Private Sector (Ratio of GDP)	WDI
Exchange Rate	EXCH	Official exchange rate (local currency units relative to the U.S. dollar)	WDI
Labor Force	LF	Labor force participation rate, total (% of total population ages 15+)	WDI
Institutional differences	INSDF		
Political Stability	PS	Estimate value of political stability and absence of violence	WDI
Rule of Law	RL	Estimate value of rule of law	WDI
Government Effectiveness	GEF	Estimate value of government effectiveness	WDI
Regulatory Quality	RQ	Estimate value of regulatory quality	WDI
Control of Corruption	CC	Estimate value of control of corruption	WDI

Source(s): Prepared by Author

**Table 2.**  
The synopsis of list of working variables, their measurement and data sources

**Table 3.**  
Descriptive statistics

Variable	Obs	Mean	Std. dev	Min	Max
GDP PPP	209	4404.340	3850.111	805.455	18959.370
INF	202	0.797	0.275	-0.299	1.422
FDI	212	0.003	1.394	-10.803	6.902
DCPS	196	29.343	15.027	3.512	76.325
EXCH	224	56.317	29.724	10.253	162.465
LF	224	58.947	11.469	46.636	85.936
PS	160	-0.986	1.157	-2.810	1.283
RL	160	-0.482	0.631	-1.897	0.612
GEF	160	-0.422	0.605	-2.232	0.901
RQ	160	-0.601	0.534	-2.110	1.027
CC	160	-0.537	0.710	-1.638	1.641

**Source(s):** Author's calculation

found a mean of 29.343 for DCPS with a standard deviation of 15.027 and Nepal has realized the uppermost mean value of 37.852 while Afghanistan has the lowermost mean of 5.858. For currency exchange, a mean value of 56.317 and a standard deviation of 29.724 have been found. Maldives has the lowest mean value of 12.988 while Sri Lanka experienced the highest currency exchange of 96.030. In case of labor force, this study observed a mean of 58.947 with a standard deviation of 11.469 and Nepal has realized the uppermost mean value of 84.489 while Afghanistan has the lowermost mean of 46.902. For PS, a mean value of -0.986 and a standard deviation of 1.157 have been found. Afghanistan has the lowest mean value of PS of -2.457 while Bhutan experienced highest PS with a mean of 0.884. For RL, a mean value of -0.482 and a standard deviation of 0.631 have been found. Afghanistan has the lowest mean value of RL of -1.697 while Bhutan experienced the highest RL with a mean of 0.288. For GEF, a mean value of -0.422 and a standard deviation of 0.605 have been found. Pakistan has the lowest mean value of GEF of -0.612 while Bhutan experienced the highest GEF with a mean of 0.461. For government RQ, a mean value of -0.601 and a standard deviation of 0.534 have been found. Afghanistan has the lowest mean value of RQ of -1.534 while Maldives experienced highest RQ with a mean of 0.030. Finally, this study found a mean of -0.537 for CC with a standard deviation of 0.710. Bhutan has realized the uppermost mean value of 1.018 while Afghanistan has the lowermost mean of -1.433. In sum, descriptive statistics implies that variables considered are fit to conduct advance analysis.

#### 4.2 Multicollinearity test

Country-wise data of eight SAARC countries over the period of 1991–2020 have been accumulated in this study. Thus, probable high correlations between two or more variables might be an issue. As such author investigates associations between explanatory variables in order to check for the multicollinearity.

As exhibited in [Table 5](#), findings show a very low correlation among predictor variables used in the right side of the model. Based on suggestion of [Ott and Longnecker \(2015\)](#) this finding infers that there is low extent of multicollinearity and such low multicollinearity is not a problem in this study.

#### 4.3 Cross-sectional dependence test

To analyze panel data, cross-sectional dependence (CD) in the series needs to be examined. Ignoring CD may produce biased and unreliable results. To inspect the presence of CD in model, this study follows [Pesaran \(2004\)](#) test of CD, which is estimated as under:

	GDP PPP	INF	FDI (-1)	DCPS	EXCH	LF	PS	RUL	GEF	RQ	CC
Afghanistan	1582.735	0.766	-0.036	5.858	49.889	46.902	-2.457	-1.697	-1.471	-1.534	-1.433
Bangladesh	2066.176	0.751	0.003	29.530	60.796	58.037	-1.228	-0.839	-0.732	-0.910	-1.062
Bhutan	5026.637	0.781	-0.023	24.827	45.880	68.199	0.884	0.288	0.461	-0.662	1.018
India	3262.146	0.825	0.052	37.741	45.880	55.110	-1.131	0.065	-0.039	-0.359	-0.383
Maldives	11700.179	0.635	0.332	38.611	12.988	53.635	0.412	-0.292	-0.032	0.030	-0.540
Nepal	1634.870	0.821	-0.380	37.852	73.456	84.489	-1.316	-0.609	-0.780	-0.630	-0.691
Pakistan	3283.198	0.861	0.010	21.735	65.620	50.379	-2.118	-0.814	-0.612	-0.641	-0.939
Sri Lanka	6612.552	0.887	0.048	30.312	96.030	54.825	-0.935	0.045	-0.170	-0.099	-0.265
Total	4396.062	0.791	0.001	28.308	56.317	58.947	-0.986	-0.482	-0.422	-0.601	-0.537

Source(s): Author's calculation

Table 4.  
Country-basis mean  
value for all variables

**Table 5.**  
Correlation and VIF  
analysis results

	GDP PPP	INF	FDI(-1)	DCPS	EXCH	LF	PS	RUL	GEF	RQ	CC	VIF	1/VIF
GDP PPP	1.000												
INF	-0.267	1.000										1.280	0.778
FDI	0.061	-0.097	1.000									1.030	0.972
DCPS	0.321	0.108	0.073	1.000								1.730	0.577
EXCH	-0.073	0.115	-0.053	0.115	1.000							1.370	0.728
LF	-0.249	-0.010	0.013	0.309	0.062	1.000						1.540	0.651
PS	0.556	-0.266	0.065	0.361	-0.279	0.258	1.000					4.060	0.246
RL	0.376	-0.013	0.046	0.425	0.003	0.178	0.678	1.000				4.360	0.096
GEF	0.421	-0.096	0.070	0.262	-0.174	0.060	0.767	0.890	1.000			2.770	0.361
RQ	0.419	-0.120	0.071	0.283	0.076	0.010	0.337	0.689	0.564	1.000		2.770	0.361
CC	0.321	-0.070	0.022	0.237	-0.061	0.288	0.766	0.822	0.872	0.368	1.000	5.170	0.090
Mean VIF												2.360	

  

	PS	RUL	GEFF	RQ	CC
PS	1.000				
RUL	0.705	1.000			
GEF	0.783	0.886	1.000		
RQ	0.500	0.711	0.710	1.000	
CC	0.759	0.827	0.821	0.405	1.000

**Source(s):** Author's calculation

$$CD = \sqrt{\frac{2T}{N(N-1)}} \left( \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \right) \tag{2}$$

In above equation (2), T represents time; N refers the numeral of cross-sections and  $\hat{\rho}_{ij}$  denotes the association of the  $i$ th and  $j$ th error terms. Moreover, this has zero expected value for the static values of T and N. In equation (2),

$$\hat{\rho}_{ij} = \sum_{t=1}^T \frac{\lambda_{it}\lambda_{jt}}{\left(\sum_{t=1}^T \lambda_{it}^2\right)^{1/2} \left(\sum_{t=1}^T \lambda_{jt}^2\right)^{1/2}} \tag{3}$$

Here,  $\lambda_{it}$  explicates the residuals constructed on T observation for every  $i = 1, \dots, N$ . Table 6 represents the results of Pesaran CD test grounded on which the null hypothesis that “there exists no cross-sectional dependency” has been rejected.

#### 4.4 Panel unit root test

In this research, simple unit root test for panel data has been conducted by employing Im *et al.*, (2003) test, known as IPS (Im, Pesaran and Shin) test, which is based on the Dickey-Fuller test procedure. IPS test proposed to check unit root in panel data that pools information from cross-sectional and time-series dimensions. Moreover, IPS test consents for heterogeneity as well as a residual serial correlation of error and dynamics variances cross-section panel data. IPS unit root test initiates by specifying an isolated Augmented Dickey-Fuller regression for cross-section with no time trend and individual effect as follows:

$$\Delta x_{it} = \alpha_i + \rho_i x_{i,t-1} + \sum_{j=0}^p \gamma_{it} \Delta x_{i,t-j} + \varepsilon_{it} \quad (i = 1, \dots, N; t = 1, \dots, T) \tag{4}$$

In the above-applied equation, panel index signifies by  $i = 1, \dots, N$ ;  $t = 1, \dots, T$  represents time index;  $x_{it}$  is a tested variable;  $\gamma_{it}$  denotes panel specific means, time trend and considering on the option in unit root test along with  $p$  indicates lag selection order and  $\varepsilon_{it}$  is a stationary error term. Consequently, null hypothesis  $H_0 : \rho_i = 0$  and alternative hypothesis  $H_a : \rho_i < 0$  for all panels are employed in the panel unit root test. Rendering to IPS test, the alternative hypothesis ( $H_a$ ) might accept for a portion or one or all  $i$ , the outcome of the precise unit root test explains the alternate hypothesis.

Table 7 exhibits outcomes of IPS panel unit root test. First difference unit root test lag order selected by the awake information criterion (ACI) with maximum lag number being to 5. This outcome clearly indicates that all variables are significant with intercept as well as with intercept and time trend at the first difference for IPS test. Findings confirm that for all variables, the null hypothesis of unit root test has been rejected at a 1% level of significance which implies all variables are stationary referring that data set is consistent enough to conduct further analysis.

	1	2	3	4	5	6
Pesaran CD	4.489	4.651	6.485	5.264	5.288	3.301
Probability	0.000	0.000	0.000	0.000	0.000	0.000

Source(s): Author’s calculation

Table 6. Outcome of CD test

**Table 7.**Outcomes of Im,  
Pesaran, and Shin (IPS)  
panel unit root test

	Intercept		Intercept and trend	
	Statistics	Probability	Statistics	Probability
GDPP	-0.640	0.260	-1.837	0.033
INT	-9.735	0.000	-5.713	0.000
FDI (-1)	-10.935	0.000	-8.425	0.000
DCPS	-6.314	0.000	-4.387	0.000
EXCH	-8.814	0.000	-8.013	0.000
LF	-3.893	0.000	-3.405	0.000
PS	-6.427	0.000	-4.307	0.000
RL	-7.572	0.000	-3.879	0.000
GEF	-7.078	0.000	-5.025	0.000
RQ	-7.102	0.000	-8.191	0.000
CC	-8.064	0.000	-5.406	0.000

**Note(s):** First difference unit root test lag order selected by the Akaike information criterion (ACI) with maximum lag number being to 5**Source(s):** Author's calculation

#### 4.5 Regression results and their discussion

In determining on fixed effect versus random effect analysis, Hausman test has been conducted. Hausman test examines whether null hypothesis exhibits a statistical metamorphosis (Hausman, 1978). If it displays such statistical metamorphoses, the fixed effect suits the investigation. For panel data, fixed effects models is highly helpful because they enable the separation of important dimensions of variation. Fixed effects models, for cross sectional panel study, eliminate omitted variable bias by observing changes over time within groups, typically by introducing dummy variables for the missing or unidentified attributes. On the basis of findings of Hausman test, this study employed fixed effects regression analysis. Table 8 presents the outcomes of fixed effects regression analysis.

Empirical outcomes confirm that INF has statistically substantial negative effects on economic growth which means the higher the INF, the lesser the macroeconomic stability and the lower the economic growth and vice-versa. These findings indicate that macroeconomic stability contributes SAARC countries' economic growth. Observed outcomes are similar and steady with the results of Akinsola and Odhiambo (2017) and Bittencourt (2012). Among control variables, FDI has momentous affirmative impact on economic growth of SAARC economies which is consistent with the results of Alvarado *et al.* (2017), Moura and Forte (2013) and Vasylieva *et al.* (2018). The significance of this finding to the policy maker is that policies should be formulated as to fascinate additional FDI inflows to the economy to induce economic growth. Resembling to the outcomes of Nzomoi *et al.* (2012) and Udoji *et al.* (2015) this study observed domestic credit to private sector has noteworthy optimistic impact on economic growth of SAARC economies which indicates that governments should encourage private sector by providing more credit to them.

Consistent with the findings of Karahan (2020) and Di Nino *et al.* (2011), this study observed positive impacts of currency exchange on economic growth. Through fluctuations in the demand for exports and imports, the exchange rate has an impact on economic growth. Currency exchange contributes economic growth by changing the relative pricing of domestic and foreign goods; exchange rate encourages exporters while discouraging imports due to depreciation of local currency. Moreover, when the home currency depreciates, imports become less affordable domestically and exports become more competitive internationally, driving up demand for locally produced goods.

In line with Chen *et al.* (2016), Clark *et al.* (1999) and Lai and Yip (2022), this study found negative relationship between labor force and economic growth. A decline in the

GDP PPP	1	2	3	4	5	6
INF	-1146.978 (0.003)	-911.381 (0.053)	-1341.901 (0.003)	-1414.993 (0.002)	-1713.657 (0.000)	-1252.909 (0.006)
FDI (-1)	-105.017 (0.098)	-48.318 (0.532)	-56.651 (0.465)	-45.038 (0.564)	-54.676 (0.000)	-53.491 (0.496)
DCPS	30.229 (0.011)	33.424 (0.022)	42.183 (0.003)	34.801 (0.019)	27.606 (0.046)	40.731 (0.005)
EXCH	50.217 (0.000)	60.954 (0.000)	58.257 (0.000)	57.090 (0.000)	55.055 (0.000)	59.466 (0.000)
LF	-266.795 (0.000)	-189.874 (0.011)	-186.262 (0.013)	-227.337 (0.004)	-229.619 (0.001)	-185.592 (0.016)
PS		552.879 (0.037)				
RL			-1191.710 (0.060)			
GEF				-1241.116 (0.119)		
RQ					-2295.676 (0.000)	
CC						
C	17325.010 (0.000)	12410.450 (0.011)	11350.910 (0.020)	14203.100 (0.005)	14086.200 (0.003)	178.305 (0.801)
F	74.17 (0.000)	35.07 (0.000)	34.71 (0.000)	34.22 (0.000)	40.93 (0.000)	11809.980 (0.017)
R-Square	0.6757	0.6199	0.6175	0.6142	0.6556	0.6070
Hausman Test	14.584(0.012)	15.787(0.014)	57.276 (0.000)	41.435(0.000)	95.591(0.000)	32.396(0.000)

**Note(s):** Number in parentheses are *p*-value  
**Source(s):** Author's calculation

**Table 8.**  
Results of fixed-effects  
regression analysis

unemployment rate could place undue pressure on wages and prices, leading to inflation which will have negative impact on economic growth. Moreover, the unemployment rate typically has a tendency to lower the output of goods.

This study found significant impacts of institutional differences on economic growth. Among the proxies of institutional differences, this study found that PS has positive impact on economic growth of SAARC countries. Investments, both domestically and abroad, and public confidence in the government rises as a result of PS, thereby ensure steady growth of an economy.

Consistent with the findings of [Shevchuk et al. \(2020\)](#), this study observed positive effect of RL on economic growth. By giving people access to justice, guaranteeing due process and enabling remedies for rights violations, the RL promotes development by enhancing the voices of people and communities. The preservation of all human rights, including the rights to development, cultural rights, social and economic rights, is necessary for the RL to promote the goals of sustainable development. Moreover, the RL offers a legal framework, contractual certainty and conflict resolution processes that support economic growth and development.

Similar to the findings of [Alam et al. \(2017\)](#), positive impact of GEF on economic growth is found in this study. By fostering labor market efficiency, investment productivity and the adequacy of economic and social policies, effective governance can promote economic growth. Additionally, good governance is a prerequisite for establishing the institutional framework that lowers transaction costs and a competitive market is advantageous for boosting the effectiveness of resource allocation and the rate of economic growth.

Consistent with the findings of [Kirchner \(2012\)](#) this study found significant positive relationship between government RQ and economic growth. This finding indicates that good government RQ ensures safety, fairness and protects constitutional rights, which attracts foreign investor and positively induces economic growth.

Finally, similar to the finding of [Cieřlik and Goczek \(2018\)](#), this study observed significant positive influence of CC on economic growth. Controlling corruption promotes economic growth by effective use of public resources and boosts of human capital. Therefore, the economy will maintain continuous growth by supporting such an institutional difference. In sum, empirical findings indicate that better institution results in higher GDP growth.

#### 4.6 Granger causality tests

This study conducted panel Granger causality test with an aim to inspect the causality directions between variables. Panel Granger causality test can be done by two methods. Firstly, one can treat the panel as an enormous arranged dataset, where all coefficients are presumed to be communal throughout all cross-sections. Then the Granger causality test is assessed in a typical way in where main assumption is that all coefficients are identical through the panels without cross-sectional variances ([Granger, 1969](#)). In the second method, it is assumed each coefficient are dissimilar through whole cross-sections ([Dumitrescu and Hurlin, 2012](#)). Under this method, typical Granger causality tests for every panel is to be calculated and then estimates a Z bar statistic from the mediocre. Since there are many missing data in present dataset, this study employed the first method to inspect the Granger causality test as suggested by [Ali and Rehman \(2015\)](#). Arguing similar to [Ali and Rehman \(2015\)](#), author apply the Granger causality test approach assuming all cross-sections have the same coefficients and treating the panel an enormous arranged dataset. As shown in [Table 9](#), this study observed unidirectional causal relationship between two issues macroeconomic stability and economic growth. This finding denotes that macroeconomic stability induce economic growth.

#### 4.7 Robustness checks

To shed further light on the impacts of macroeconomic stability on economic growth, robustness of findings of this study have been checked by two ways. Firstly, whole sample periods have been divided as subsample from 1991–2011 and 2012–2020 and execute the fixed effects regression analysis independently. Secondly, author conduct pooled ordinary least squares (OLS) and generalized method of moments (GMM) analysis techniques. Pooled OLS can be employed to obtain accurate and uniform estimates of the parameters, even when time constant features are present. The pooled OLS model is frequently used in various panel data sets to assess how other models perform in comparison. In order to check for endogeneity of the explanatory variables, GMM is widely used techniques and thus applied in this study to check for the robustness of findings.

With the first way, [Table 10](#) presents the regression outcomes for the period 1991–2011 and 2012–2020 respectively. The findings, macroeconomic stability promote economic growth are very similar to those found with the baseline model for whole period of 1991–2020. With the second method of robustness check, author applied pooled OLS and GMM techniques and found similar results which are represented in [Table 11](#). Since observed outcomes of robustness check tests are analogous with the findings of main model, outcomes of this study are robust.

### 5. Conclusions

This study empirically examined whether macroeconomic stability promotes economic growth in SAARC region using data of 1991–2020. Findings of the study indicate that inflation has statistically substantial negative effects on economic growth. The higher the inflation, the lower the macroeconomic stability and the lower the economic growth is and vice-versa. In other words, these findings indicate that macroeconomic stability contributes SAARC countries' economic growth. The key significance of this research is that this study will generate inspiring responsiveness of the concerned governments of SAARC economies to take such plans and policies of macroeconomic stability, which ultimately will stimulate sustainable economic growth of their states. This study also found FDI, currency exchange and institutional difference have positive and labor force has negative impacts on economic growth.

The policy implications of these results are obvious. If nations want to achieve long-term economic growth, they must assure macroeconomic stability. As macroeconomic stability is necessary for growth, governments and policymakers can make improvements in pricing stability and fiscal solvency. To lower and stabilize inflation, the SAARC countries should implement the necessary fiscal and monetary policies. One of the fiscal measures to control inflation is to control governments' spending. For instance, governments can boost expenditure in times of economic gloom in order to boost aggregate demand. Besides, controlling government spending, encouraging effective use of resources already available to prevent further debt and enhancing nations' capacity to control their state debt are also needed. Furthermore, debt situation has to be better monitored and more efficient mechanisms and feedback systems need to be created in order to prevent financial crisis

	Statistics	Prob
LINF does not Granger Cause GDPPPP	2.007	0.096
GDPPPP does not Granger Cause LINF	1.341	0.257

Source(s): Author's calculation

**Table 9.**  
The estimations of  
Granger causality test

**Table 10.**  
Results of robustness  
check with fixed-effect  
regression results (for  
sample periods of  
1991–2011 and  
2012–2020)

GDP PPP	Fixed-effect regression (1991–2011)						Fixed-effect regression (2012–2020)					
	1	2	3	4	5	6	1	2	3	4	5	6
INF	265.022 (0.328)	271.361 (0.435)	185.018 (0.582)	-216.407 (0.660)	-60.644 (0.840)	157.272 (0.637)	-1487.207 (0.004)	-1147.532 (0.024)	-1026.249 (0.024)	-1463.062 (0.006)	-508.391 (0.246)	-916.471 (0.065)
FDI(-1)	5.453 (0.899)	102.084 (0.074)	95.287 (0.101)	100.484 (0.080)	64.827 (0.201)	103.644 (0.068)	75.673 (0.387)	51.963 (0.532)	146.509 (0.061)	80.120 (0.373)	139.089 (0.051)	103.785 (0.196)
DCPS	41.325 (0.000)	49.358 (0.000)	48.321 (0.000)	46.737 (0.000)	33.370 (0.000)	46.780 (0.000)	19.984 (0.447)	4.507 (0.860)	10.231 (0.650)	20.349 (0.444)	-6.689 (0.753)	19.950 (0.402)
EXCH	36.591 (0.000)	48.670 (0.000)	45.167 (0.000)	44.754 (0.000)	39.193 (0.000)	44.224 (0.000)	37.501 (0.059)	32.779 (0.082)	19.776 (0.254)	37.232 (0.064)	50.456 (0.000)	42.121 (0.021)
LF	-201.547 (0.015)	-212.908 (0.039)	-211.365 (0.050)	-237.014 (0.050)	-208.474 (0.029)	-208.943 (0.041)	33.990 (0.786)	31.293 (0.039)	23.182 (0.829)	43.742 (0.740)	259.325 (0.029)	216.717 (0.095)
PS		195.601 (0.337)						1177.256 (0.021)				
RL			-216.407 (0.685)					4037.871 (0.000)				
GEF				-221.000 (0.701)						305.6505 (0.781)		
RQ					-1790.753 (0.000)						3866.163 (0.000)	
CC						-801.569 (0.176)						2467.098 (0.003)
C	12300.330 (0.021)	12378.720 (0.062)	12299.150 (0.077)	13959.860 (0.046)	12239.640 (0.036)	11945.830 (0.071)	2222.305 (0.773)	4152.987 (0.572)	6257.219 (0.350)	1787.791 (0.822)	-9044.954 (0.166)	-7935.662 (0.306)
F	49.39 (0.000)	21.38 (0.000)	21.04 (0.000)	21.03 (0.000)	30.98 (0.000)	21.80 (0.000)	8.16 (0.000)	8.55 (0.000)	12.00 (0.000)	21.03 (0.000)	15.42 (0.000)	9.93 (0.000)
R-Square	0.665	0.631	0.627	0.627	0.712	0.635	0.498	0.5620	0.6429	0.627	0.6981	0.5984

Note(s): Number in parentheses are  $\beta$ -value  
Source(s): Author's calculation

	Results of pooled OLS						Results of GMM analysis					
	1	2	3	4	5	6	1	2	3	4	5	6
GDP												
PPP												
INF( $t-1$ )							1.017 (0.000)	1.013 (0.000)	0.996 (0.000)	1.017 (0.000)	1.012 (0.000)	1.013 (0.000)
INF	-3854.598 (0.000)	-2357.628 (0.000)	-4393.345 (0.000)	-4140.617 (0.000)	-3949.565 (0.000)	-4232.522 (0.000)	50.478 (0.613)	238.373 (0.182)	40.443 (0.803)	138.63 (0.391)	91.538 (0.574)	103.89 (0.511)
FDI ( $-1$ )	-67.341 (0.666)	0.841 (0.996)	-17.313 (0.929)	-36.367 (0.848)	-41.695 (0.829)	-4.204 (0.982)	46.245 (0.011)	50.373 (0.028)	45.068 (0.053)	47.695 (0.040)	47.867 (0.040)	47.999 (0.039)
DCPS	117.311 (0.000)	70.819 (0.000)	95.044 (0.000)	102.269 (0.000)	103.035 (0.000)	110.851 (0.000)	-0.567 (0.859)	-5.761 (0.306)	-0.148 (0.977)	-1.618 (0.744)	-1.510 (0.762)	-1.464 (0.768)
EXCH	-4.803 (0.540)	13.603 (0.094)	-7.317 (0.405)	-0.921 (0.917)	-11.364 (0.196)	-5.019 (0.559)	2.520 (0.175)	1.969 (0.574)	3.236 (0.375)	2.760 (0.443)	2.268 (0.528)	2.163 (0.543)
LF	-108.806 (0.000)	-170.583 (0.000)	-144.174 (0.000)	-136.708 (0.000)	-129.650 (0.000)	-166.903 (0.000)	-11.114 (0.524)	-14.651 (0.527)	-11.374 (0.623)	-1.571 (0.949)	-9.196 (0.701)	-7.262 (0.761)
PS		2101.126 (0.000)						179.336 (0.124)				
RL			1997.587 (0.000)						-308.26 (0.263)			
GEF				2400.696 (0.000)						244.90 (0.373)		
RQ					2860.110 (0.000)						-18.988 (0.926)	
CC						1887.298 (0.000)						55.076 (0.240)
C	10696.550 (0.000)	15852.50 (0.000)	15185.67 (0.000)	13958.24 (0.000)	14798.75 (0.000)	15834.10 (0.000)	660.39 (0.559)	1143.67 (0.457)	598.20 (0.691)	146.76 (0.926)	583.53 (0.705)	499.40 (0.330)

Note(s): Number in parentheses are  $\beta$ -value  
Source(s): Author's calculation

**Table 11.**  
Results of robustness  
check with pooled OLS  
and GMM analysis

in SAARC nations. Policymakers can increase the interest rate to limit the amount of money in an economy which will help them maintaining macroeconomic stability. SAARC economies should implement structural reforms to improve and strengthen the operation of the money and capital markets in order to support macroeconomic stability, which will eventually enhance countries' economic growth. Finally, policies relating to better institutions such as maintaining PS, ensuring RL, improve in GEF, improve RQ and combat corruption by taking more controlling measures should be undertaken by the policymakers to spur sustainable economic growth.

Although present study made a widespread work on investigating whether macroeconomic stability stimulates economic growth, however, data inadequacy on all countries was an immense problem. Therefore, once data become available on all other indicators, in future other scholars could incorporate indicators or generate an index of macro stability in the context of SAARC countries which will make the results more comparable. Moreover, the results of this study limits only developing economies, thus, future studies could be conducted on developed countries.

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#### **About the author**

Md. Nur Alam Siddik, PhD obtained his BBA degree and MBA degree in Finance and Banking from University of Rajshahi, Bangladesh and obtained PhD degree in Finance from Dongbei University of Finance and Economics, Dalian, P.R China. He also obtained an International Professional Teaching Qualification degree from Häme University of Applied Sciences, Finland. At present, he is working in the Department of Finance and Banking, Begum Rokeya University, Rangpur, Bangladesh. His current research interests include financial inclusion, financial and macroeconomic stability, economic development, sustainable development and SDGs. Md. Nur Alam Siddik can be contacted at: [mnas@brur.ac.bd](mailto:mnas@brur.ac.bd)