GLOBALIZATION AND PUBLIC DEBT:

EVIDENCE FROM PAKISTAN

Submitted by

Namra Tul Ain

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Supervised By

Supervisor: Dr. Karim Khan

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CERTIFICATE

This is to certify that this thesis entitled: **"Globalization and Public Debt: Evidence from Pakistan"** submitted by Ms. Namra Tul Ain is accepted in its present form by the Department of Economics & Econometrics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree of **Master of Philosophy in Economics**.

External Examiner:

Dr. Arshad Ali Bhaii
Assistant Professor
International Islamic University
Islamabad

Supervisor:

Dr. Karim Khan
Associate Professor
PIDE, Islamabad

Head, Department of Economics & Econometrics:

Dr. Karim Khan
Associate Professor/Head
Department of Economics &Econometrics
PIDE, Islamabad

DEDICATION

This is dedicated to my parents and teachers who pray for me and did everything right to support me during my studies.

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First of all I would like to thank Almighty Allah for giving me the capability, courage and determination to accomplish this venture. After **ALLAH** I present my sincerest and profound thanks to **Prophet Muhammad (SAW)** who is source of guidance and blessing for humanity.

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NAMRA TUL AIN

ABSTRACT

The voluminous literature examined the impact of globalization on growth and suggesting that globalization leads to higher growth. Globalization may influence not only the growth of a country but also its debt. Comprehensive studies investigating the effect of globalization on public debt are rare, however, this study attempted to explore the impact of different dimensions of globalization on public debt particularly in case of Pakistan. This study fills the void by providing an empirical analysis of the short-run and long-run effects of globalization on public borrowing over the period of 1975 to 2017. By employing Auto Regressive Distributed Lag (ARDL) cointegration technique, we observe that economic globalization reduces public debt both in short and long run. Social globalization also impacts negatively in short run while political globalization stimulates public debt. However there in no significant impact of overall globalization on public debt. Results suggests that efficiency hypothesis of globalization dominates in case of Pakistan. Policy makers or government should implement significant measures to boost up trade, foreign direct investments, tourism, financial integration, technological advancement in order to contract heavy debt ultimately the problem of debt trap.

Keywords: Globalization, financial integration, public debt, *Auto Regressive Distributed Lag (ARDL).*

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LIST OF ABBREVIATIONS

- ADF: Augmented Dickey-Fuller
- ARDL: Autoregressive Distributed Lag
- CEIC: Census and Economic Information Center
- FDI: Foreign Direct Investment
- GDP: Gross Domestic Product
- IFS: International Financial Statistics
- WDI: World Development Indicators
- ECR: Error Correction Representation

CHAPTER 1

INTRODUCTION

1.1 Introduction

"Promises make debt, and debt makes promises."

-Dutch Proverb

One of the common feature of developing countries is heavily indebtedness. Being an emerging economy, Pakistan is confronted with multiple challenges like massive poverty, inequality, high unemployment, low savings, and low economic growth. In attempting to report these issues, government can get on borrowing and acquire public debt or by taxing, government can back its budget and finance development efforts. To increase wellbeing and to promote growth by more government spending we have to borrow (Akram,2011).Public debt is composed of external debt and domestic debt. Many researchers analyzed the affiliation between external debt, stability and economic growth such as Chowdhury (2001) and Ogunmuyiwa (2011).Various other studies have been conducted in order to find out the relationship between public debt and other macroeconomic variables such as Pegkas (2018).

As saving and investment are key determinants to promote growth, besides this it is well documented that globalization is also an imperative factor for growth ((Maqbool-ur-Rahman, (2015); Kim, (2018). However, explicitly literature has paid very less attention to public debt that is affected by globalization pertaining Pakistan. The rationale of this research is to present a dynamic framework that identifies the various channels of globalization that impacts public debt in case of Pakistan. And to identify how various forms of globalization such as social, political and economic

globalization influence domestic and external borrowings. Various channels of globalization through which public debt may be impacted are discussed below:

Economic globalization epitomizes trade of goods and services, incorporates market, information and capital exchanges mentioned by Kim et.al (2018). There are two channels of economic globalization that might influence public debt either through defacto measures or through dejure measures that includes trade and financial globalization. Trade openness can be helpful in reduction of debt as discussed by Auboin (2004) less developed countries are highly indebted countries and confronted with many challenges in participating international trade because of debt they have low access to private capital markets. Therefore, for these countries relationship between debt, trade and finance is of same importance. Further he elaborated that trade openness can accommodates the stability of external accounts by improving export competitiveness, efficient resource allocation and transparency. FDI flows and portfolio investment also affect public debt. When there is more FDI inflows it will create more employment opportunities and more revenues therefore country will be less dependent on borrowing and it might be helpful in reducing public debt.

By considering the second important factor of economic globalization Yu (2014) advocated that financial integration includes financial transactions in domestic and worldwide markets. He demonstrated that financial openness embodies various elements like capital account openness, national fund issuance, stock market openness, capital flow and FDI. And financial openness might influence debt through remittances. Ncanywa and Masoga, (2018) advocated that investors influenced by countries reputation, investors perceive negative signals if the economies continually depend on debt as the debt stimulates credit risk. Mochama (2016) investigated the link between major macroeconomic variables, external debt, total debt servicing and

inflation in Kenya. He manifested that the government should increase investment and production to increase supply of goods to meet rising demand. However dejure measures such as imposition of tariffs and trade regulations or other import barriers also impacts debt. Still, there is not any consensus whether the tariffs are beneficial or not in reducing the debt.

According to Kim et.al (2018) social globalization embodies flow of ideas, images, people and information. It also involves dejure and defacto measures. It encompasses migration, culture, international tourism and international patents. Debt can be reduce by encouraging tourism in the country as it can be evident from Helena (2017) where he reported that when Greece (debt-stricken country) promoted tourism it resulted in more employment opportunities, income and more development. Similarly Manzoor et.al (2019) concluded that tourism encouraged growth in case of Pakistan. Further, migration can also affect public debt in various ways it can be a motivator or it can be a mean to finance debt (Mosse et.al 2002).

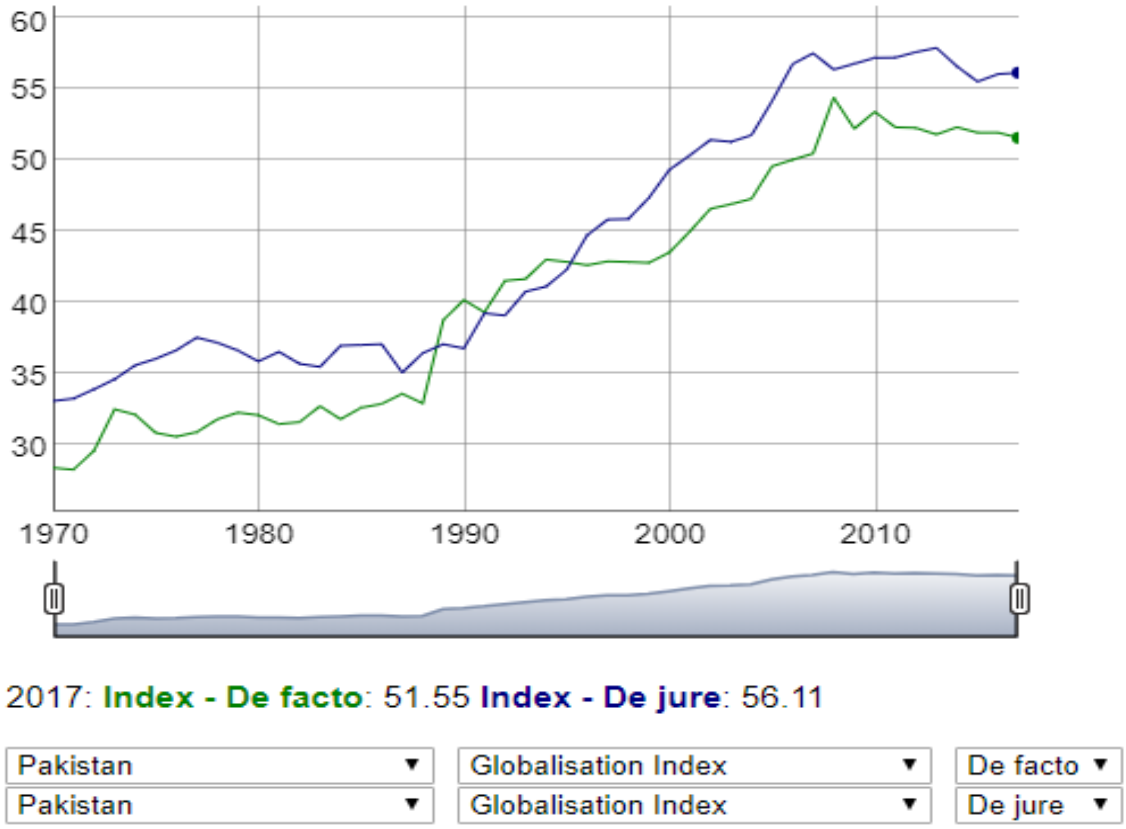
Political globalization refers to the dispersion of government policies Debt might be influence by membership in international organization .For example when a country is more integrated it is connected to various international organizations. It can take assistance from those organization in order to pay the debt or multinational organization through investment channels can help a developing country in generating employment opportunities and more revenue therefore when government has sufficient revenue it has less reliance on public debt.

Figure 4 displays the KOF index of Globalization from 1970 to 2017 concerning Pakistan. Figure draw attention to the globalization trend that is mushroomed over the period. Graph shows that there was a significant increase in globalization in the year 2007 and 2008.The trend lines are presenting defacto and

dejure components (definition are provided in section 3.4).Recently in 2017 defacto index was 51.55 while dejure index was 56.11 predicting moderate connections with global markets. Pakistan focused more on dejure measures that are policies related, that effect defacto components. Globalization can be a source for reducing debt by focusing on its numerous perspectives as discussed above.

Figure 1.1. shows the globalization index for Pakistan from the year 1970 to 2017.

Figure 1.1 : Pakistan's Globalization Index



Source: The KOF globalisation index–revisited

https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.htm

Similarly other control variables also affects public debt like government spending also influenced public debt. As government have to made capital and revenue expenditures. When there is deficit in budget, government go for borrowing (Sasmal and Sasmal, 2017).Exchange rate is another important factor influencing the debt whenever foreign currency is required exchange rate matters as Patrawimolporn

(2007), revealed that debt services is affected by exchange rate volatility. Various other studies analyzed the relation between debt and inflation the general consensus about relationship between debt and inflation concluded by Romero (2017) is that debt leads to more inflation and debt is also related with more inflation.

1.2 Problem Statement

Pakistan is highly indebted country with a strong reliance on external as well as domestic borrowing. Due to its heavy debt, country cannot grow at its required pace. Globalization is one of the factor that can influence public debt. This study deviates from existing empirical literature and focuses on how globalization can influence public debt in short and long-run in case of Pakistan.

1.3 Objective

The study revolves around the following objectives:

- To analyze the impact of overall globalization on public debt of Pakistan.
- To explore the impact of economic globalization on public debt of Pakistan.
- To gauge the impact of social globalization on public debt of Pakistan.
- To find out the impact of political globalization on public debt of Pakistan.

1.4 Hypothesis

Following hypotheses have been constructed for our study.

H1: There is negative relationship between overall globalization and public debt.

H2: There is an inverse relationship between economic globalization and public debt.

H3: There is negative relationship between social globalization and public debt.

H4: There is negative relationship between political globalization and public debt.

1.5 Motivation

Our study is motivated by the study of Baris (2019) who empirically inspected the relationship between external debt and different aspects of globalization in case of Pakistan but he ignored the short and long run impacts of globalization on public debt. However, the economy of Pakistan rely heavily on domestic debt as well (we can see recent trend and data in figure 1,2,3 in appendix) We analyzed the long run and short run impacts of globalization on debt including both domestic and external components. Thus, this study is important for financial institutions, policy makers, and individuals in Pakistan to recognize the relationship between the public debt and globalization. Therefore, this research study is directed to help and comprehend this relationship and the implications.

1.6 Organization of Study

The study is organized as follows. The coming section presents review of the literature. Section 3, sets out theoretical framework and explains model, sample and data along with methodology for estimation. The penultimate section summarizes the results while concluding remarks are shown in last section.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section discusses the empirical literature on public debt and globalization. Thematic literature is provided related to various channels of globalization. These economic, social, political channels played role in affecting economic outcomes. Our literature is arranged in manner that it provides research related to debt and each component of globalization.

Firstly the definitions of the main variables with the help of literature are given. The process of globalization is broad and multi-dimensional phenomenon with economic, social and political components (Dreher,2006).Given by Peterson Institute for International Economics "G*lobalization* is the word used to describe the growing interdependence of the world's economies, cultures, and populations, brought about by cross-border trade in goods and services, technology, and flows of investment, people, and information." And "*Borrowing* is the taking of money and similar values for repayment after a certain period of time. Public borrowing refers to the legal obligation of the state to pay back the principal and interest to the holders of the predetermined rights in accordance with a certain schedule. Public credit and public borrowing referred as state borrowing in the economic literature mean debts taken by government or other public institutions "(Samuelson 1976). Several studies have been conducted that developed linkages among debt and different elements of globalization are given below:

2.2 Economic globalization and Debt

While looking at an important component of globalization the economic globalization Malik (2010) have explored the waves of external debt on economic condition of Pakistan, he mentioned that in case of Pakistan external debt did not play its role due to its mishandling so it become one of the main obstacles in growth of Pakistan and the government of Pakistan has to fulfill the conditions of IMF .In addition to this, he argued that Pakistan should encouraged investments and external debt should be kept credibly and it can overwhelmed its issues by taming right policies. Moreover, Atique and Malik (2012) investigated the influence of external debt on economic growth with reference to Pakistan. While comparing domestic and external debt, their findings show that external debt has stronger negative impact on the economic growth. Additionally, the association between economic growth and debt in Pakistan have been investigated by Rais and Anwar (2012). They adopted Ordinary Least Square method for the year's 1972-2010.They demonstrated that Pakistan is dependent on both domestic as well as external financing but both forms of debt have adverse effect on GDP per capita. They suggested that country should be get away from debt or it should use moderate debt and it should be utilized for productive purposes.

Further, Gur (2013) looked over the interconnection between exports of financially integrated economies and their sectoral dependence on external finance. Three factors have been used for measuring financial integration that are portfolio investments, FDI and external borrowing. Among these three factors, results revealed that portfolio investments improve exports fairly in those industries that deeply rely on external financing. Likewise, Panizza et.al (2014) also supported the negative correlation between overall debt and growth in OECD countries. However, in

evaluating the relationship between total productivity and debt across different countries Eberhardt & Presbitero (2015) have employed unique methods of linear and non-linear regression specifications and argued growth and debt are inversely related to each other but they do not confirmed the same thresholds of debt in countries. Shamim et.al (2017) determined the link between exports performance and external debt with reference to Pakistan covering 1972 to 2014 data. ARDL Cointegration analysis and Granger causality tests were employed. Conclusion of their study revealed that there is counter relation between external debt and export performance in Pakistan and outcomes of tests exhibit unidirectional relationship running from external debt to exports .Further, they elaborated that this negative relation is due to IMF restrictions to Pakistan such as to nurture revenue by raising indirect taxes and suggested that country should avoid external debt and it should encourage FDI and increase exports and remittances. They mentioned that government should provide allowances to Exports processing zones and should enrich the trade agreements to reduce the undesirable impacts of external debt on exports administration in Pakistan.

Additionally, Nguyen et.al (2018) find out the impact of FDI inflows, trade openness and their collaboration with local credit equilibrium. They used GMM technique and found that FDI inflows have optimistic effect on domestic credit while trade openness has crowding out effects where institutions have a moderating role. Similarly by using The Autoregressive Distributive Lag cointegration and Granger causality, Ncanywa and Masoga (2018) have explored the link between public debt and government investment and ultimately growth. They concluded that public debt and investment are negatively correlated in the long run. Moreover same relationship exists for public debt and economic growth. Furthermore, Tanna et.al (2018) argued that external debt constraining the gains in economic growth resulted from foreign

direct investment. Particularly, high indebtedness obstruct countries to achieve the growth gains from FDI. By using data of 36 developing economies for the years 1984-2010, they suggested that the adverse impact of debt in growth and FDI relation can be mitigated by fueling the financial development.

Over and above that, Gaies& Nabi (2019) empirically investigated that how growth is impacted by direct and indirect sound effects of external financing. They have used data for 67 developing countries from 1972 to 2011 and focused on debt and FDI, and confirmed that through increasing investment both forms (debt and FDI) help in economic growth. Despite this, heavy debt leads to financial crises. Further their findings suggested that FDI has a vital role in lowering the effects of calamities. While looking at the link between exchange rate and crises they demonstrated exchange rate variations lessen the occurrence of crises. Furthermore, their interesting results revealed that instead of debt or FDI alone, mixed financing is more beneficial for developing countries. For Zambia, Saungweme et.al (2019) observed the relationships between public debt, economic growth and debt service, for time period of 1970 to 2017. They claimed that there exists a one way causality from economic growth to public debt but they do not found any causal relationship between debt service and growth.

2.2.1 Trade Openness and Debt

By examining the reasons of expansion in public debt in technologically advanced countries, Azzimonti et.al (2014) have proposed a multi-country model with imperfect markets. They observed that government borrowing surges with more integrated financial markets. Additionally, the link between external debt and trade has been explored by Bölükbaş (2016). By means of the time series data for Turkey he theoretically examined the relation between these two variables. His findings

advocate that both variables have a significant positive correspondence in case of Turkey. Pegkas (2018) determined the nexus amid economic growth and numerous macroeconomic factors such as trade openness, investment, population growth, consumption and public debt in Greece. His results exhibit a long-run relationship among variables. Further, he revealed inverse relation between public debt and population growth, on the contrary investment, trade, consumption has a positive impact on economic growth. Moreover, he demonstrated that debt and growth relation is influenced by debt breaks.

2.2.2 Financial globalization and Debt

In order to find out pros and cons of financial globalization particularly for the emerging countries Schmukler (2004) argued that developing countries might be at disadvantageous position due to absence of engaging in financial globalization while those may incurred benefits whom have active participation. Similarly, according to Dreher (2006) the international financial integration leads to more growth. Panizza (2008) discussed the structure of public debt in less developed countries. He pointed out concrete issues regarding external and domestic debt trade-off. He concluded that risks of finance can be reduced by shifting towards more domestic financing. By contributing to literature, Muhanji and Ojah (2011) have discussed that external shocks are usually associated to external debt accretion and complications of debt accumulation .They delivered solid measures for the improvements of managing debt. In their seminal paper Bua et.al (2014) have explored various opinions regarding costs and benefits of government borrowing in domestic market. For the period 1971–2011, they analyzed 36 less developed countries and indicated that with a reduction in borrowing costs, low income countries have been capable of having more share in long term debt instruments and having more maturity expansion.

Many other studies supported the relationship of financial integration and external debt such as Misati et.al (2015) determined the bond between financial integration and GDP in the African regions. The study used several measures of financial integration such as debt, FDI and portfolio investments and financial openness index proposed by Chinn-lto. Their findings advocate that in mutual data sample, there is insignificant relationship between variables in both regions. However, while analyzing individually each region, variables turned out to be significant. Their study has following implications such as for different regions financial integration has different impact on growth so policies related to integration should not be generalized. Similarly while discussing the effects of financial globalization. Broner & Ventura (2016) mentioned that there are various outcomes of financial globalization such as uncertain effects on growth, investment and capital flow. Likewise, Jawaid et.al (2017) disclosed the affiliation between international financial integration and democracy with reference to Pakistan. He constructed the IFI (international financial integration) index for the variables over the period of 1975-2013 and checked the long run relationship by via Jhonsen cointegration technique and ARDL technique. Their findings suggested negative and a quiet significant Long-run relationship between democracy and financial integration in Pakistan. While in case of Oman, Kharusi and Ada (2018) have explored the nexus between state external borrowing and growth. They also employed Autoregressive Distributed Lag (ARDL) cointegration and showed an extensive negative impact of outward debt on economic growth of Oman.

In the similar pattern, Kouladoum (2018) analyzed the consequences of external borrowing on the real exchange rate in Chad over the time period 1975 to 2014.He used Generalized Method of Moments approach. His results exhorted that

both variables are significantly and positively related to each other. He recommended that the Government of Chad should execute its fiscal policy in such a manner to redirect it's debt to those commercial and economic sectors that is capable of improving country growth.

2.3 Social globalization and Debt

Bhaird et.al (2014) have investigated that how culture can cause changes in capital structure of (SMEs) small and medium enterprises. While focusing on SMEs he found that individuality and uncertainty avoidance have negative relation with long term obligations. Literature related to other elements of social globalization is provided in introduction chapter.

2.4 Political globalization and Debt

Awan et.al (2015) have explored the contributing factors of external debt in case of Pakistan with data covering from 1976 to 2010.To find out the long run relationship Cointegration technique has been employed and short run aspects were shown in Error Correction Mechanism. Their outcomes suggested that exchange rate, budget deficit also trade openness are key determining factors of external debt as they upturn the debt problem of Pakistan. Inspite of that Qu et.al (2019) looked at the link between regional competition in GDP and government debt. Their findings exhibits that government debt is affected by regional competition in GDP.

2.5 Overall globalization and Debt

Maqbool-ur-Rahman (2015) empirically gauged the relationship between growth and globalization in (India, Pakistan, Bangladesh) three countries of South Asia. The data was used from 1981-2011) for the selected countries. ADF (Augmented Dickey Fuller) unit root test was employed to check out the

stationarity of variables. In order to check long run relationship Johansen cointegration test has been utilized .Results of the study revealed substantial positive long run association among both variables. Further, Granger causality tests was applied to explore the causal liaison between variables and their findings indicate bidirectional causality between variables in India while, there exists one way causality between globalization and GDP in case of Pakistan and Bangladesh. Next, Kim (2018) studied the effect of globalization on the GDP and government debt. He found that growth can be impacted by different elements of globalization and concluded that government size tends to increase with more trade, while it shrinks with social, financial and political factors. Contrarily, government debt was influenced positively by financial and trade openness, and negatively by other factors. By using panel cointegration procedures, they manifested that long run association stays among debt, growth and globalization .They also revealed unidirectional causation start off from globalization to GDP and government debt.

Additionally, Jalili (2019) explored the role of governance, globalization, war and financial development in growth and resource nexus. They concluded that resources might be a burden or a blessing subject to globalization, facing war and financial improvement. Likewise, hypothetically and empirically the association between external debt and globalization has been inspected by Barış (2019).To estimate the connection between external debt and globalization, KOF Globalization Index has been utilized for panel data of developing countries. His findings indicated that there exists positive association between globalization and external borrowing. Subsequently, he observed that economic globalization has positive impact on debt while other components of globalization have no influence on external debt.

In a nutshell, there exists enormous observed literature considering the public debt and growth or globalization and growth nexus. The findings conclude the negative relation between debt and growth while there is positive relation in globalization and growth (Dreher, 2006; Akram, 2011; Atique & Malik, 2012; Chowdhury, 2001).Various other studies such as (Pegkas, 2018; Kim, 2018) have been conducted so as to discover the linkage between debt and other macroeconomic variables. Their findings conclude that government debt is influenced by globalization and it in turn affects growth. Moreover, major macroeconomic variables for instance exchange rate, inflation also influence debt of a country (Patrawimolporn, 2007; Romero, 2017).

2.6 Research Gap

Previous studies have ignored the possible links from globalization to public debt considering long run and short run dynamics specifically in case of Pakistan .Globalization may affect external as well as domestic debt .Our study engrossed on how different channels of globalization (including both defacto and dejure factors) influence public borrowing in short and long run.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter confers the preference of methodology to be used in conducting this research, its justification and rationalization. We have selected data according to the needs of research from an effective source. We certain to use secondary data for the study on the basis of research topic. Theoretical framework is discussed below:

3.2 Theoretical Framework

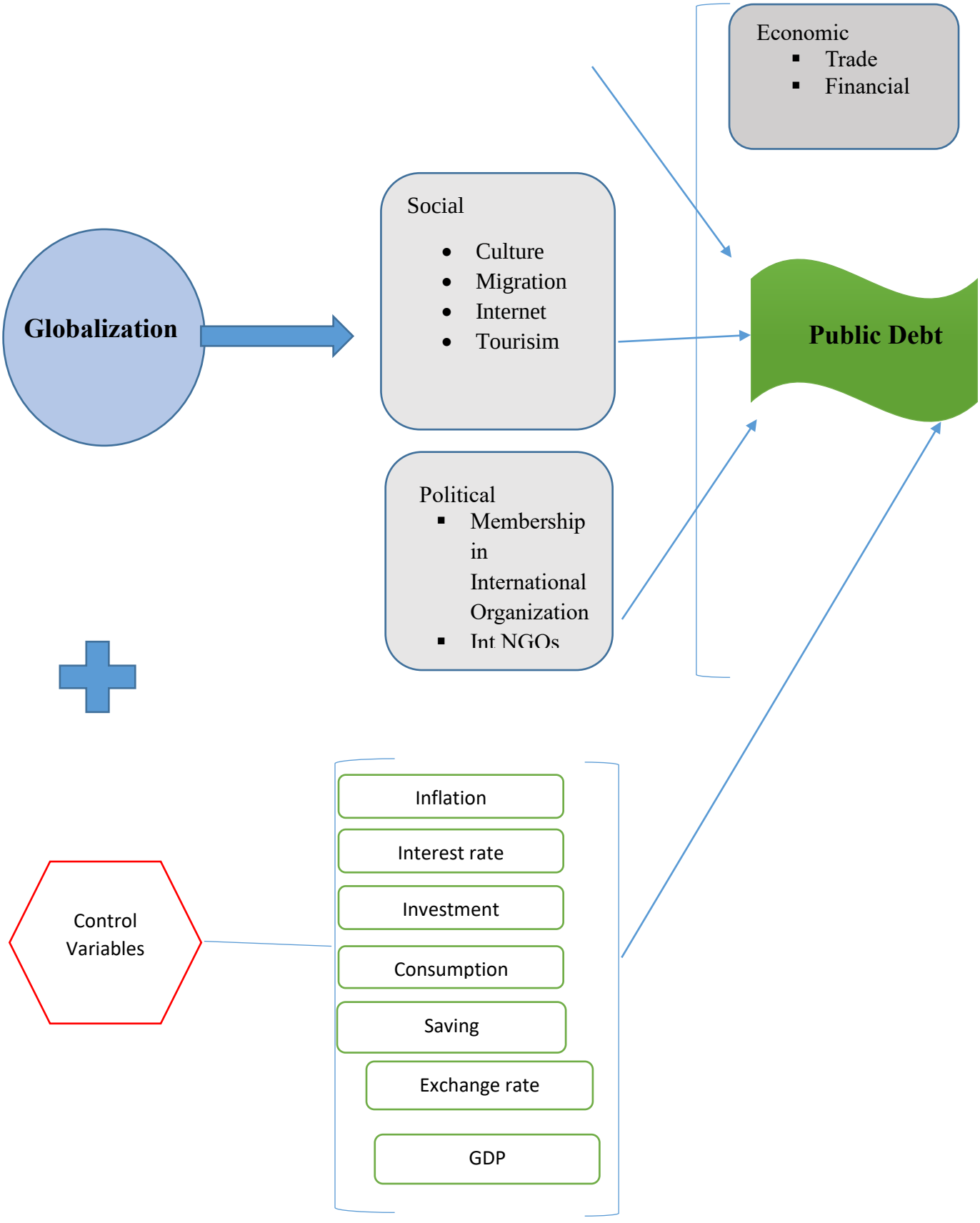
Here in this study we are interested to dig out the relationship between globalization and public debt. Globalization is linked to public debt through various channels as depicted in figure 1. Our main explanatory variable is globalization that includes economic globalization (trade openness, financial openness), social (informational, interpersonal and cultural globalization) and political globalization.

Globalization can affect public debt through economic channel in two ways. The first channel include defacto measures which are actual trade flows involving exchange of goods and services over a large distances. Trade openness can accommodates the stability of external accounts by improving export competitiveness, efficient resource allocation and transparency. Similarly defacto financial globalization includes FDI flows and portfolio investment also impacts debt. As when there is more FDI inflows it will create more employment opportunities and more revenues therefore country will be less dependent on borrowing therefore it might be helpful in reducing public debt. The second channel of economic globalization is dejure trade and financial globalization measures which incorporates imposition of tariffs, regulations and other import barriers. Public debt is also subjected to defacto social globalization component where migration, culture, international tourism can

influence the public debt as mentioned in chapter one. Moreover, civil liberties and human capital can effect debt such as civil liberties played roles in affecting economic outcomes as mentioned by Benyishay & Betancourt (2010). Last channel of globalization that matters for debt is political globalization that can reduce debt. Political factors also effect public debt as it shows how much foreign influence is accepted by a country. Further the membership in international organization can be helpful in reducing the debt.

Besides these other macroeconomic factors influence domestic and external debt. These are (inflation, investment, consumption, saving, interest and exchange rate) control variables in our models. Patrawimolporn (2007), mentioned that exchange rate volatility affects debt services. Similarly, debt is subjected to government spending Sasmal and Sasmal, 2017 found that government encouraged borrowing when there is deficit in budget. Similarly there is evidence that public debt are inflationary and inflation may cause public debt to increase more Romero & Marín, (2017). Conceptual frame work is presented below in figure 3.2.1:

Fig 3.1: Conceptual



3.3 Specification of the Model

To explore the affiliation concerning public debt and different dimensions of globalization our study has used following regression specification.

Functional form of Model is:

$$PDEBT_t = \alpha_t + \alpha_1 GLOB_t + \alpha_2 X_t + \mu_t \text{ ---------- (1)}$$

Where, subscript t represents time period, PDEBT is the public debt and it is dependent variable, α represents intercept and α_1 α_2 are slope coefficients, GLOB is Globalization which is main explanatory variable and it includes economic, (financial openness, trade openness) social (interpersonal, informational ,cultural) and political globalization. X_t Represent the control variables (inflation, exchange rate, government spending, savings, interest rate, investment and GDP) in time period t.

To expose the relationship among public debt and different dimensions of globalization we have used following regression specifications.

$PDEBT_t = \beta_t + \beta_1 EGLOB_t + \beta_2 X_t + \varepsilon_t$ ---------- (i)

$PDEBT_t = \gamma_t + \gamma_1 SGLOB_t + \gamma_2 X_t + \varepsilon_t$ ---------- (ii)

$PDEBT_t = \delta_t + \delta_1 PGLOB_t + \delta_2 X_t + \varepsilon_t$ ---------- (iii)

Where EGLOB represents economic globalization. SGLOB captures social globalization .PGLOB represents political globalization. In the above specifications β, ϒ, δ are intercepts and β_1 to $\beta_2$are slope coefficients of equation (i). Similarly, γ_1 to γ_2 are slope coefficients of equation (ii) $\delta_1$to δ_2 be slope coefficients of equation (iii).

We have two different hypothesis of globalization that are efficiency and compensation hypothesis. Efficiency hypothesis assumes that globalization reduces

public spending while compensation hypothesis suggests that there is positive affect of globalization on government expenditures. As globalization is an important factor we assumed that if globalization increases economic outcome will increase so we therefore are less dependent on borrowing so by this channel we can expect that globalization is negatively associated with public debt.

Similarly when GDP improves the country has more exports and greater revenues therefore it will also negatively impact debt. Moreover inflation may cause public debt to decrease Romero & Marín, (2017).We also expect negative relation. Our expectation is with more population growth and government spending public debt will rise. Likewise interest rate being one of the important factor of economy might influence debt positively in short run while it has negative relation with external borrowing as when interest rate is high country will borrow less and vice versa.

3.3.1 Construction of Variables

Public Debt

Public debt is dependent variable that involves two components i.e. domestic debt and external debt. In the analysis, we have used Public external Debt/GDP and Domestic Debt/GDP. Further these indicators of public debt are classified into two sub-categories: Stock and Flow variables: Those components are stock variables that tells the value of the debt burden to different fundamental economic indicators e.g. debt/exports ratio, similarly debt/GDP ratio and further domestic debt/GDP ratio. The most extensively used indicator to assess stock of public debt (including external debt) is its ratio to GDP. Other components that relates to debt service payments are flow variables (Akram, 2011). For public debt we utilized data from State bank of Pakistan.

Inflation

Inflation plays essential role as a control variable to capture the uncertainty impact caused by debt/debt servicing. The different indicators are present to determine inflation. Most frequently Consumer price index and GDP deflator are used for measuring inflation. In this research study, we have exercised CPI as an indicator of inflation.

Investment

For capital stock the main variables used in the literature are gross domestic investment, Investment/output ratio. We have used gross capital formation as a ratio to GDP. And for this data is used from World Development Indicators.

Government spending

Government spending also influences the debt .We used government spending as a percent of GDP. The data for government spending is taken from World Development Indicators.

Interest Rate

It also influences the public debt particularly domestic debt. It is also control variable for our analysis. And we used real interest rate (%) from International Financial Statistics.

GDP

It is one of the explanatory variable .Various measures of GDP or economic growth have been utilized in existing literature such as Real GDP, Per capita GDP, Real GNP, GDP growth rate etc. In our study, we employed GDP per capita and the data is taken from World Development Indicators (World Bank).

Exchange Rate

It is one of the important factor that can influence debt as shown in previous literature. Our study has used real effective exchange rate from World Development Indicators.

Globalization

It is main explanatory variable. For measuring this we categorized this into following components**:**

1. Political Globalization.

2 .Social Globalization.

3 .Economic Globalization.

Summary of the variables is provided in Appendix table 1.

3.3.2 Estimation Technique

We have analyzed the interaction between different components of globalization and public debt in case of Pakistan by means of time series data. In the first instance the study applied unit root testing to assess the stationary of variables because there is possibility of spurious regression and for integrating modeling we have to do pre unit root testing. There are various unit root tests like Augmented Dickey Fuller test, Phillip Peron test. Augmented Dickey-Fuller (ADF) test is a revision of the DF test. It is used to determine the non stationarity of variables in both cases with intercept or without intercept. We have used ADF unit root test having null hypothesis “series is I (1) that is unit root” while the alternative hypothesis is “series is stationary or I (0)”.

In the next phase, for testing the long-run relationship we have employed Cointegration Tests. We found some series were I (0) and most of them were I (1) so we moved for ARDL cointegration Bound test approach having null hypothesis “no

level relationship "(no cointegration) and alternative hypothesis is "having level relationship" (cointegration exists). Pesaran et al. (2001) constructed ARDL bound test approach. This technique has various benefits over other techniques of cointegration such as Laurenceson and Chai, 2003 revealed that ARDL bound testing includes maximum lags in general to specific modeling. It can applied to I (0) variables, I (1) variables or mixture of both variables (Pesaran, 1997).According to Narayan (2005) bound test approach also offers long-run unbiased estimates in the case where the model have some endogenous regressors. Further Pesaran and Shin (1999) reported that from ARDL error correction model (ECM) can be obtained which contain short run adjustments with long run equilibrium. Ultimately, ARDL cointegration is two step procedure. First to explore the presence of long-run relationship among all the variables. Then next step is to evaluate short and long run models. The bound testing approach is grounded on the joint F-statistic. Both set of critical values are reported in Pesaran et al. (2001) and Narayan (2005).Each variable in ARDL model is assumed to be I (0) at one set of bound values while the other set of critical bound values undertakes all variables I (1).Moreover, if the calculated F statistics go beyond the value of upper critical bounds, then the null hypothesis of no cointegration is rejected. If the F-statistic is lower than the value of lower limits, we then accept the null hypothesis. If the computed statistic stays within the bounds at that point the test come to be inconclusive.

After finding the long-run relationship amid variables, we have estimated the error-correction model. We employed error correction with the intention of checking the short run dynamics and to check long run convergence to equilibrium path. Moreover we applied diagnostic checking and CUSUM test in order to find out stability and adequacy of the model. If the CUSUM statistics plot fall into the critical

limits then the null hypothesis (model is stable) is accepted otherwise we do not accept the null hypothesis.

3.4 Data Type and Sources

Our study has utilize annual data from 1975-2017.We picked out this frequency due to availability of data set. The data for globalization is taken from KOF globalization index that was developed by a German economist Axel Dreher (2006) and it was revised in 2019 (Gygli, 2019). It encompasses social, political and economic factors while it does not include environmental factors. We have used the revised version (Gygli, 2019) of KOF index that differentiates between dejure and defacto measures. Where defacto measures of globalization are related to concrete worldwide flows and activities besides this, dejure globalization measures situations and policies that, affects actual flows and international activities. The revised KOF index includes 43 variables as compared to 23 variables in original index as mentioned by Gygli et.al (2019). The overall globalization index as well as sub-indices assumes values scaled from 1 (minimum globalization) to 100 (maximum globalization).The data for control variables is taken from WDI and for Public debt we have used data from State bank of Pakistan. E-Views 10 is used for the data analysis as it is user friendly software.

CHAPTER FOUR

ANALYSIS AND RESULTS

4.1 Analysis and Results

By using the following econometric techniques we have done our analysis: First we have done descriptive analysis of variables then we have check the stationarity by ADF unit root test. Then we applied ARDL bound test approach. Results are given below:

DISCUSSION OF RESULTS

4.2 Descriptive Statistics

To start off analysis we carried out detail statistical analysis. The table 1 displays descriptive statistics. The average value of public debt is 5538.71 (RS bn) having standard deviation 5646.6 and the mean value of globalization is 43.83 with standard deviation of 8.33.Average values of economic, social and political globalization are 33.71,25.03 and 72.72 respectively. Similarly for INF the average is 8.43 with standard deviation 4.15.Coresspondingly, the average of INT is 9.80 with standard deviation 0f 2.11.And for the INV the average value is 17.73 and standard deviation of investment is 1.60.Moreover,the average value of CONS is 88.83 and its standard deviation is 3.90.Likewise, the mean value of SAV is 22.46 with standard deviation 3.24 and for the EXC the average is 137.45 along standard deviation of 46.01.Similarly, the mean value of GDP is 2.10 having standard deviation 1.86. Exchange rate and public debt has highest volatility compare to other variables.

Skewness and kurtosis are the moment based measures that measures the degree of departure from normality. For normal distribution skewness is equal to zero and kurtostis is equals to 3.

Table 4.1: Descriptive Analysis of Selected Variables

	PDBT	GLOB	ECO	SOC	POL	INF	INT	INV	CONS	SAV	EXC	GDP
Mean	5538.71	43.83	33.71	25.03	72.75	8.43	9.80	17.73	88.83	22.46	137.45	2.10
Median	3431.0	43.66	33.76	17.70	78.32	7.84	9.80	18.01	90.03	21.71	116.10	2.07
Maximum	24990.4	55.34	43.87	42.62	85.55	20.90	13.34	20.81	95.31	30.43	231.41	6.69
Minimum	945.03	33.46	27.33	14.51	55.48	2.52	6.26	14.12	82.38	14.66	95.26	-1.84
Std. Dev.	5646.60	8.33	4.47	10.47	11.99	4.15	2.11	1.60	3.90	3.24	46.01	1.86
Skewness	1.99	0.09	0.35	0.70	-0.38	0.99	0.00	-0.46	-0.30	0.13	0.91	0.15
Kurtosis	6.36	1.42	2.45	1.84	1.40	4.29	1.79	2.35	1.71	2.86	2.12	2.69
Jarque-Bera	48.88	4.50	1.42	5.98	5.62	10.12	2.58	2.31	3.62	0.15	7.29	0.34
Probability	**0.00**	0.10	0.49	**0.05**	**0.06**	**0.00**	0.27	0.31	0.16	0.92	**0.02**	0.84

Except political globalization, investment and consumption all the variables are rightly skewed. Further kurtosis statistic exhibits that all the variables are platykurtic (short tailed or lower peak) except INF and Public debt that are leptokurtic (long tailed or higher peak). Finally the results of normality are displayed .Jarque Bera test is test of normality having null hypothesis residual are normally distributed. From the table values the probability value of inflation and exchange rate are significant so we negate the null hypothesis of JB test and determine that the residuals of public debt, social and political globalization, inflation and exchange rate are not normally distributed whereas for all of other variables we undertake the null

hypothesis of JB test and we therefore conclude residuals are to be normally distributed.

4.3 Unit Root Testing

We analyzed the stationarity of Variables with Augmented Dicky Fuller test. The outcomes are illustrated in Table 2. The results show that at level all the series are non-stationary except Gross domestic product, saving and inflation. In short, all the series are I (1) except these three variables.

Table 4.2 Results of Unit root Testing

Variable	Augmented Dickey-Fuller At Level (P value)	Augmented Dickey-Fuller At First Difference (P value)
LPDT	0.99	0.00
GLOB	0.90	0.00
INF	**0.00**	0.00
INT	0.71	0.00
INV	0.10	0.00
CONS	0.75	0.00
SAV	**0.06**	0.00
EXC	0.055	0.00
GDP	**0.00**	0.00
ECO	0.92	0.00
SOC	0.79	0.02
POL	0.97	0.00
DFGLOB	0.55	0.00
DJGLOB	0.82	0.00

We have mix order of integration series so ARDL cointegration is most appropriate in this case we have used cointegration technique proposed by Pesaran et.al (2001).The general ARDL cointegration equation in our case is given below:

$$\Delta LPDT = \alpha + \alpha_1 LPDT_{t-1} + \alpha_2 GLOB_{t-1} + \alpha_3 X_{t-1} + \sum_{i=0}^{p} \omega i \Delta LPDT_{t-1} +$$

$$\sum_{i=0}^{p} \beta i \Delta GLob_{t-1} + \sum_{i=0}^{p} \delta \Delta X_{t-1} \ + \varepsilon_t \text{----------(A)}$$

Where α is intercept, αi are long run multipliers, β ,φ,ω are short run dynamic coefficents.

ε_t is the error term.

4.4 Optimal Lag Selection

Table 4.3: Optimal Lag Selection

Lag	AIC	SC	HQ
0	29.76794	30.09892	29.88925
1	-37.65826*	-34.67940*	-36.56639*

AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

As proposed by Pesaran et.al (2001) the optimal number of lags are chosen on the basis of AIC, SC and HQ information criteria. In our case one lag is optimal lag.

Model: 1 (Overall Globalization and public debt)

4.5 Cointegration Results

In bound testing approach of cointegration the F-statistics is compare against the critical values. Bahmani- Oskooee and Nasir, (2004), reported that F statistic is responsive to order of lags levied on difference variables. Our bound test results are provided in table 4.Optimal number of lags according to lag selection criteria is one Boutabba (2014) exposed that F-test depends on following factors (i) the number of independent variables (ii) the order of variables,(iii)sample size (iv) whether the

ARDL model include intercept or trend. The bound test results of first model are displayed in table 4 where the main explanatory variable was overall globalization.

In the table 4.4 the calculated F-statistic **F (Lpdt/Glob INF Int Inv Cons Sav Exc Gdp) = 18.49** exceeds the upper limits of the critical value of 3.79 at t 1% significance level. Thus, at 1% significance level null hypothesis is rejected and we suggest the existence of long run relationship.

Table 4.4. The results of Bound test

Order of Lag	**F-Statistic**	**Conclusion**
1	18.49	cointegration
Note: The critical value ranges of *F*-statistics are 1.66 - 2.79, 1.91 - 3.11, and 2.45 – 3.79 at 10%, 5% and 1% level of significances, respectively.		

The next step after the cointegration was to evaluate the long-run parameters. The results of long-run estimates are stated in Table 5. All estimated coefficients are statistically insignificant.

Table 4.5: Long run Estimation Results
Long-Run Coefficients of
ARDL (1, 0, 0, 0, 0, 0, 0, 1, 1) Model
Dependent Variable L (PDT)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
GLOB	0.048588	0.293515	0.165539	0.8696
INF	0.118155	0.388375	0.304229	0.7630
INT	0.541740	0.802245	0.675279	0.5045
INV	-0.191553	0.736592	-0.260053	0.7965
CONS	0.105067	0.261146	0.402330	0.6902
SAV	-0.248243	0.749540	-0.331194	0.7427
EXC	0.016543	0.040753	0.405936	0.6876
GDP	0.042687	0.308556	0.138345	0.8909

The short-run results are provided in table 6.The coefficients of D (GDP) and D (EXC) are positive and significant .The coefficients on the lagged error correction term are significant with the accurate sign at 1% level, which approves the results from the bounds test for cointegration. The coefficient, -0.029 advocate that a deviation from the long run equilibrium level of public debt in a year is adjusted by 2.9% over the subsequent year.

Table 4.6: Short run Estimation Results

ECR of the Selected
ARDL (1, 0, 0, 0, 0, 0, 0, 1, 1) Model
Dependent Variable: D (LPDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXC)	0.003642	0.000691	5.268513	0.0000
D(GDP)	0.008440	0.002948	2.862622	0.0075
ECM_t (-1)*	-0.029204	0.002018	-14.47150	0.0000

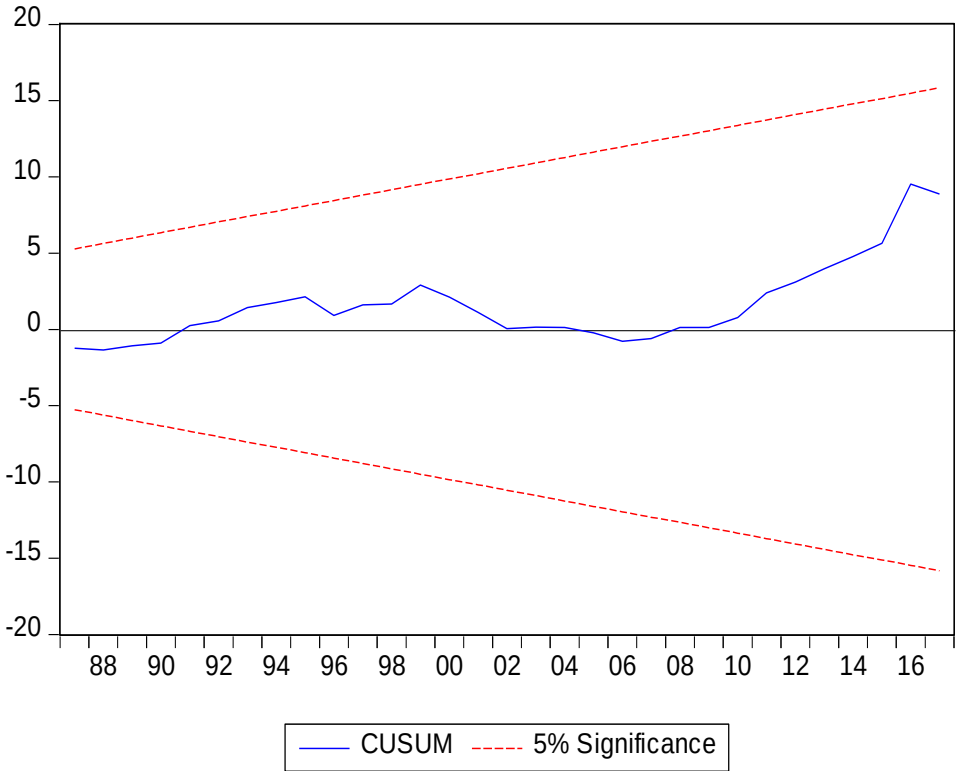
*represents significance of the coefficient at 1 percent level
R^2 =0.63, Adj. R^2 = 0.61, DW = 1.94, S.E. of regression=0.041

Diagnostics tests results are reported in table 7 where serial correlation has a p value of 0.93 that is greater than 5% it is insignificant so we admit the null hypothesis and concluding no problem of serial correlation .Similarly the model do not have issue of hetroskedasticity as p value is insignificant. Therefore, the result of the diagnostic tests directs that the model contains those econometric properties that are needed.

Table 4.7: Diagnostic tests (p-value)

Serial correlation	0.936
Heteroskedasticity	0.499

Figure 4.1: CUSUM test stability diagnostics



Conclusion: Model is stable

The graph of CUSUM test is presented in Fig 1. This test is proposed by Brown et al. (1975).The plot of CUSUM statistics lies within the critical limits so we infer that model is stable. Hence this model can be utsed for different policies.

Model: 2 (Economic globalization and debt)

The results of second model considering economic globalization as main explanatory variable are given in table 8.We again compared F statistics with critical values. The calculated F-statistic **= 4.38** is go beyond the upper limit of the critical

value of 3.79 at the 1% significance level. Therefore we deny the null hypothesis and concluding the long run relationship exists.

Table 4.8: The results of *Bound test*

Order of Lag	**F-Statistic**	**Conclusion**
1	4.38	cointegration
Note: The critical value ranges of *F*-statistics are 1.66 - 2.79, 1.91 - 3.11, 2.45 – 3.79 at 10%, 5% and 1% level of significances, respectively.		

Subsequently, we estimates the parameters of long run These are stated in table 9.The results are same as were expected .The coefficient of economic globalization is negative and quiet significant. This outcome tallies with the study of Rodrick (1997).However these findings are inconsistent with the outcomes of Baris (2019) and Kim et.al (2018) as they revealed the debt and economic globalization both complement each other. Moreover in table 9 all other variables are statistically significant except investment and consumption and GDP. The significant positive coefficient of inflation is consistent with the study of Romero et.al (2017) while this is opposite to the findings of Bon (2015) who suggested the negative effect of inflation on public debt. Moreover, the investment coefficient is negative but it is insignificant in long-run. Similarly, saving has significant negative relation with public debt in long-run. While the positive value of exchange rate discloses that public debt may rise due to rise in exchange rate in long run. Moreover, consumption has positive but insignificant relation with public debt in long-run

Table 4.9: Long run Estimation Results

Long-Run Coefficients of
ARDL (1, 1, 0, 1, 0, 1, 1, 1, 0) Model
Dependent Variable L (PDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECO	-0.056433	0.009281	-6.080255	0.0000
INF	0.014267	0.007584	1.881166	0.0704
INT	0.570135	0.033731	16.90256	0.0000
INV	-0.002836	0.018055	-0.157074	0.8763
CONS	0.003725	0.010446	0.356567	0.7241
SAV	-0.020372	0.010265	-1.984543	0.0571
EXC	0.005163	0.001691	3.053548	0.0049
GDP	0.020565	0.012825	1.603495	0.1200

EC = LPDT - (-0.0564*ECO + 0.0143*INF + 0.5701*INT -0.0028*INV + 0.0037 *CONS - 0.0204*SAV + 0.0052*EXC + 0.0206*GDP)

Short-run aspects are provided in table 10.The sign of coefficient of D (ECO) are negative and significant it evidences the efficiency hypothesis of globalization where government constrains public spending ultimately it reduces public debt. These are similar .results as of the study of Rodrick (19997).The negative coefficient ECM has the accurate sign with 1% .level of significance, which approves the results from the bounds test

Table 4.10: Short run Estimation Results

ECR of the Selected

ARDL (1, 1, 0, 1, 0, 1, 1, 1, 0) Model
Dependent Variable: D (LPDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ECO)	-0.012011	0.004092	-2.935431	0.0066
D(INT)	10.19575	1.358959	7.502615	0.0000
D(CONS)	0.007085	0.003516	2.015205	0.0536
D(SAV)	-0.002628	0.002484	-1.058076	0.2991
D(EXC)	0.003792	0.000632	5.997802	0.0000
ECM_t (-1)*	-0.420156	0.058995	-7.121854	0.0000

* represents significance of the coefficient at 1 percent level
R^2 =0.73, Adj. R^2 = 0.69, DW = 1.92, S.E. of regression=0.036

Model: 3 (Social globalization and public debt)

The results of third model having Social globalization as main independent variable are shown in table 11. The computed F-statistic **=4.19** go beyond the upper limit of the critical value of 3.79 at the 1% level of significance. Therefore, we deny the null hypothesis at 1% level of significance and imply that long run relationship exists.

Table 4.11 The results of *Bound test*

Order of Lag	F-Statistic	Conclusion
1	4.190	cointegration
Note: The critical value ranges of *F*-statistics are 1.66 - 2.79, 1.91 - 3.11, 2.45 – 3.79 At 10%, 5% and 1% level of significances, respectively.		

The results of long-run estimates are given in table 12. Findings revealed that social globalization has not significant impact on public debt these are similar results as of Baris (2019).All other variables in this model are revealing insignificant impact on public debt.

Table 4.12: Long run Estimation Results

Long-Run Coefficients of ARDL (1, 1, 1, 1, 0, 0, 0, 1, 1) Model

Dependent Variable L (PDT)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
SOC	0.095504	0.228477	0.418001	0.6791
INF	0.037386	0.088991	0.420110	0.6776
INT	0.250852	0.823383	0.304660	0.7629
INV	-0.000434	0.169071	-0.002566	0.9980
SAV	-0.225282	0.411029	-0.548093	0.5880
CONS	-0.057920	0.151607	-0.382041	0.7053
EXC	0.013855	0.015807	0.876524	0.3882
GDP	0.004054	0.118715	0.034151	0.9730

EC = LPDT - (0.0955*SOC + 0.0374*INF + 0.2509*INT -0.0004*INV -0.2253 * SAV -0.0579*CONS + 0.0139*EXC + 0.0041*GDP

Further, short run estimates are presented in table 13.In short run Social globalization has significant and negative relationship with public debt .These outcomes are coherent with the findings of Kim et.al(2018).While interest rate, exchange rate, inflation and GDP significantly positively affects public debt in case of Pakistan. In short run 1 unit increase in social globalization will reduces 1.5% of public debt. Again in this model inflation, exchange rate and the interest rate is going to increase more debt. ECM term is highly significant and negative that reinforces long run relationship. From the table values the coefficient -0.055 of error correction term reveals that adjustment speed from past year's disequilibrium in public debt to existing year equilibrium is 5.5% .

Table 4.13: Short run Estimation Results

ECR of the
Selected ARDL (1, 1, 1, 1, 0, 0, 0, 1, 1) Model
Dependent Variable: D (LPDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SOC)	-0.015084	0.005477	-2.753812	0.0102
D(INF)	0.006390	0.001899	3.365142	0.0022
D(INT)	4.325832	0.549264	7.875689	0.0000
D(EXC)	0.003953	0.000654	6.045394	0.0000
D(GDP)	0.008037	0.002794	2.876601	0.0076
ECM_t (-1)*	-0.055271	0.007937	-6.963678	0.0000

R^2 =0.71, Adj R^2=0.67, S.E of regression= 0.037, DW=2.4

Model: 4 (Political globalization and public debt)

Model 4 has a political globalization as main regressor. Cointegration results are given in table 14.We compare F-Statistics with critical values. At 1% significance level the computed F-statistic is **17.51** that exceeds the upper limit of the critical value of 3.79. Thus, at 1% significance level, we negate the null hypothesis and concluding that long run relationship exists.

Table 4.14 The *Bound test results*

Order of Lag	**F-Statistic**	**Conclusion**
1	17.51	cointegration
Note: The critical value ranges of *F*-statistics are 1.66 - 2.79, 1.91 - 3.11, and 2.45 – 3.79 at 10%, 5% and 1% level of significances, respectively.		

Having found the cointegration, we estimated long-run parameters of ARDL Model .Results are given in table 15.Only interest is significant variable while other variables are not significant. These outcomes are consistent with study of Baris (2019) who conclude no relation between political globalization and external debt.

Successively, we provide error correction representations for short-run impact. Results are presented in table 16.In short-run, political globalization has significant positive impact on public debt .This outcome is different from the findings of Kim et.al (2018), as he elaborated that debt decreases with political globalization. Error correction term with lagged has a negative sign also significant supporting the existence of long-run relationship among the variables. The coefficient of ECM -0.064 predicts that adjustment speed from last year disequilibrium in public debt to present year's equilibrium is only 6.4%.

Table 4.15 : Long run Estimation Results

Long-Run Coefficients of
ARDL (1, 1, 0, 0, 0, 0, 0, 1, 1) Model
Dependent Variable L (PDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
POL	0.019526	0.042784	0.456376	0.6514
INF	0.061012	0.086888	0.702195	0.4880
INT	0.650242	0.355537	1.828898	0.0774
INV	-0.121859	0.193902	-0.628457	0.5345
CONS	0.033039	0.049725	0.664430	0.5115
SAV	-0.108250	0.124713	-0.867991	0.3923
EXC	0.019936	0.018567	1.073775	0.2915
GDP	0.000121	0.104773	0.001154	0.9991

EC = LPDT - (0.0195*POL + 0.0610*INF + 0.6502*INT -0.1219*INV + 0.0330 *CONS-0.1082*SAV + 0.0199*EXC + 0.0001*GDP

Table 4.16 : Short run Estimation Results

ECR of the Selected ARDL (1, 1, 0, 0, 0, 0, 0, 1, 1) Model

Dependent Variable: D (LPDT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(POL)	0.011917	0.003959	3.010092	0.0053
D(EXC)	0.003793	0.000669	5.665952	0.0000
D(GDP)	0.008821	0.002896	3.045839	0.0048
ECM_t (-1)*	-0.064734	0.004582	-14.12869	0.0000

R^2 =0.67, Adj R^2=0.64, S.E of regression= 0.039, DW=2.0

4.6 Results

The results are as follow:

H1: The hypothesis that overall globalization has negative impact on public debt is rejected on the basis of table 5 and 6, so we conclude no effect of overall globalization on public debt in case of Pakistan.

These results are inconsistent with previous findings the reason might be their studies do not include domestic debt.

H2: The hypothesis that economic globalization has negative impact on public debt is supported by the long-run and short-run estimates as in table 9 and 10.Therefore we conclude that economic globalization has negative impact on government debt .This outcome signals the hold of efficiency hypothesis of globalization in case of Pakistan.

This outcome is consistent with the study of Kim et.al (2018)

H3: The hypothesis that social globalization has negative impact on public debt is only supported by the short-run estimates as in table 13.It also evidences the efficiency hypothesis of globalization in case of Pakistan.

H4: The hypothesis that political globalization has negative impact on public debt is rejected .It is not supported by the long-run and short-run estimates as in table 6. So we conclude that in case of Pakistan political globalization stimulates public debt.

In a nutshell, efficiency hypothesis of globalization holds in case of Pakistan. So we can say globalization can be effective in reducing debt. These are interesting outcomes and would be beneficial for policy makers.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study attempted to explore the relationship among different components of globalization and public debt of Pakistan over the time period 1975 to 2017. This is new aspect as previous literature looked at the relationship between globalization and growth or other macroeconomic factors. As Pakistan has heavy debt but it relay heavily on domestic debt previous consider the do not include domestic debt and its relationship with globalization. We have used the updated and revised version of globalization (KOF index Gygli, 2019) that include both defacto and dejure measures. We employed ARDL cointegration techniques so as to check the long-run and short-run dynamics. According to the results of the study overall globalization has not any impact on public debt at all, economic globalization has significant negative impact on public debt both in short and long run while political and social globalization have strong significant impact on public debt only in short run. Social globalization has negative impact on public debt whereas political globalization has strong positive impact on public debt .These results support efficiency hypothesis of globalization. The main implication of our analysis clearly advocates policies for economic and social globalization and free trade to ensure reduction in public debt. And to focus on political aspects of globalization so that debt can be reduced.

5.2 Recommendations

Policy makers or government should implement significant measures to boost up trade, foreign direct investments, tourism, financial integration, technological advancement in order to contract heavy debt ultimately the problem of debt trap.

Further study can be extended by exploring how globalization is effecting our circular debt and institutional quality of Pakistan.

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APPENDIX

Figure 1: Government spending trend

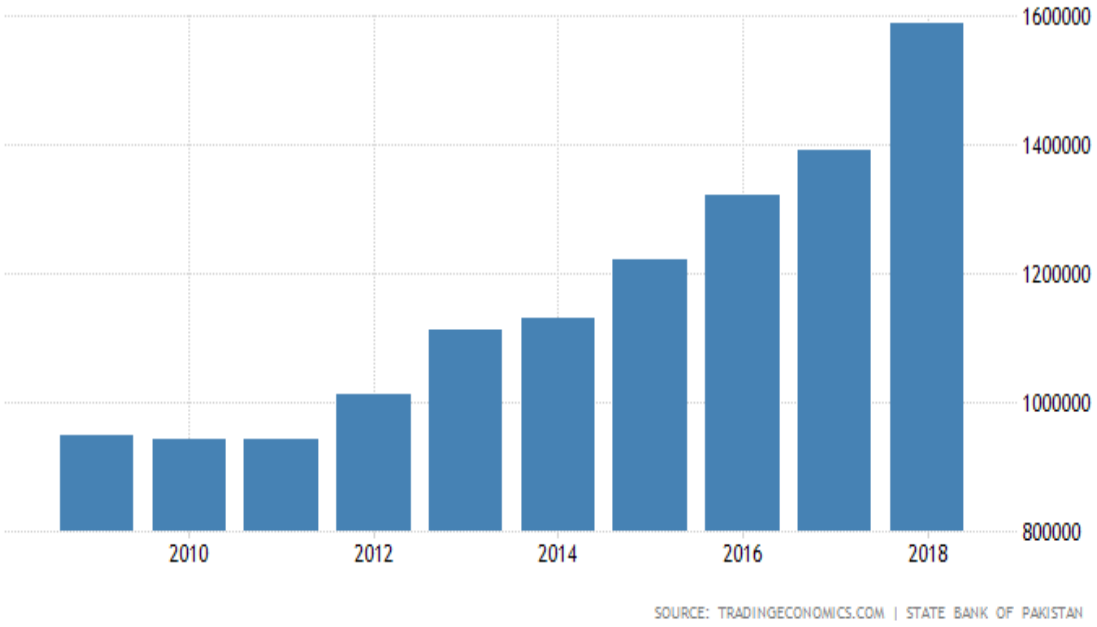
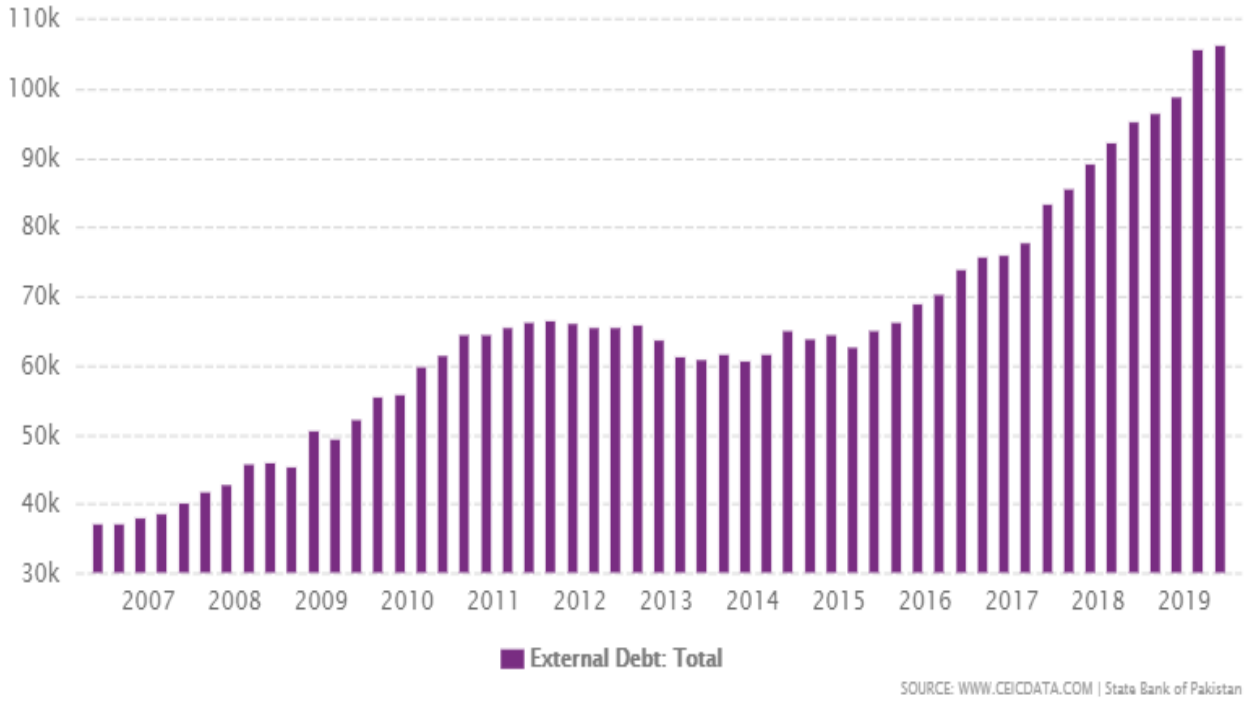


Figure 2: External debt of Pakistan



Source: https://tradingeconomics.com/pakistan/government-spending CEIC (Census and Economic Information Center)

Figure 3: Government debt to GDP trend

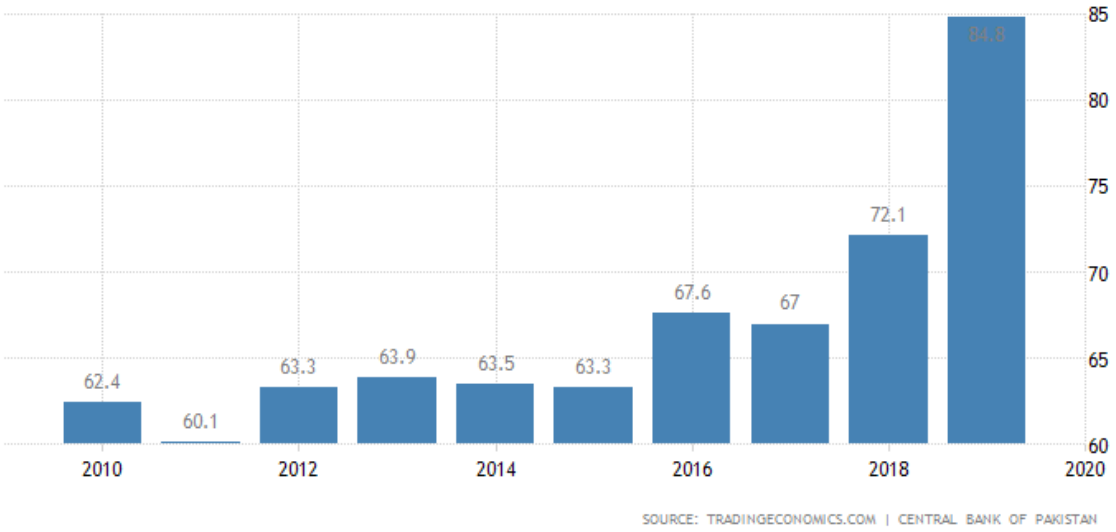


Table 1

Summary of the Definitions and Sources of Variable

Main Variables	***Description***	***Source***
Public Debt	It is the dependent variable.	SBP
Control variables	It include inflation, interest rate, government spending. population growth, ,GDP per capita etc.	World development Indicators
Globalization	It is the key explanatory variable that effect growth.	KOF Globalization index

Table 2

KOF Globalization index (Rankings for the year 2017)

2019 KOF Globalization Index (Rankings for the year 2017)								
Rank	**Country**	**Index, overall**	**Rank**	**Country**	**defacto**	**Rank**	**Country**	**dejure**
1	Italy	98.26	1	Italy	96.83	1	Germany	100.00
2	France	98.17	2	France	96.68	2	Italy	99.70
3	Germany	97.96	3	United Kingdom	96.17	3	France	99.67
4	United Kingdom	97.90	4	Germany	95.92	4	United Kingdom	99.64
5	Spain	97.46	5	Netherlands	95.73	5	Spain	99.33
6	Netherlands	97.33	6	Spain	95.58	6	Sweden	99.03
7	Sweden	97.26	7	Sweden	95.49	7	Netherlands	98.94
8	Switzerland	96.37	8	Austria	94.58	8	Belgium	98.67
9	Belgium	96.27	9	Switzerland	94.15	9	Switzerland	98.58
10	Austria	95.96	10	Belgium	93.87	10	Finland	97.67
11	Portugal	93.84	11	South Africa	92.55	11	Denmark	97.40
12	Finland	93.82	12	United States	91.71	12	Austria	97.33
13	Denmark	93.77	13	India	91.64	13	Turkey	96.58
14	United States	93.62	14	Portugal	91.62	14	Russian Federation	96.39
15	Russian Federation	93.05	15	Canada	91.51	15	Portugal	96.06
16	India	92.96	16	Brazil	91.14	16	Poland	95.58
17	Turkey	92.47	17	Australia	90.39	17	United States	95.53
18	Canada	92.41	18	Denmark	90.15	18	Romania	95.16
19	Greece	91.95	19	Japan	90.09	19	Luxembourg	95.05
20	Hungary	91.85	20	Korea, Rep.	90.04	20	Argentina	94.61
21	Egypt, Arab Rep.	91.83	21	Finland	89.98	21	Greece	94.34
22	Argentina	91.66	22	Egypt, Arab Rep.	89.78	22	India	94.29
23	Poland	91.61	23	Russian Federation	89.72	23	Hungary	94.22
24	Korea, Rep.	91.16	24	Greece	89.57	24	Egypt, Arab Rep.	93.88
25	Romania	91.11	25	Hungary	89.49	25	Ukraine	93.52
26	China	90.61	26	China	89.34	26	Canada	93.32
27	Norway	90.23	27	Malaysia	89.18	27	Czech Republic	92.40
28	Australia	90.21	28	Norway	88.93	28	Bulgaria	92.35

29	Czech Republic	90.16	29	Argentina	88.71	29	Korea, Rep.	92.29
30	Ukraine	89.24	30	Turkey	88.36	30	Mexico	92.23
31	Japan	88.73	31	Ireland	88.14	31	China	91.89
32	Mexico	88.61	32	Czech Republic	87.93	32	Norway	91.54
33	Chile	87.73	33	Poland	87.63	33	Croatia	91.24
34	South Africa	87.60	34	Indonesia	87.54	34	Chile	90.94
35	Indonesia	87.28	35	Romania	87.07	35	Slovak Republic	90.82
36	Morocco	87.06	36	Serbia	86.29	36	Peru	90.75
37	Bulgaria	87.02	37	Nigeria	85.38	37	Australia	90.02
38	Serbia	87.02	38	Mexico	84.99	38	Tunisia	89.89
39	Peru	85.90	39	Ukraine	84.96	39	Morocco	89.79
40	Nigeria	85.72	40	Chile	84.52	40	Slovenia	89.58
41	Croatia	85.47	**41**	**Pakistan**	**84.47**	41	Uruguay	88.25
42	Malaysia	85.28	42	Morocco	84.32	42	Guatemala	88.21
43	Slovak Republic	85.19	43	Kenya	82.40	43	Serbia	87.76
44	**Pakistan**	**85.05**	44	Thailand	81.77	44	Japan	87.36
45	Tunisia	83.65	45	Senegal	81.74	45	Ecuador	87.27
46	Slovenia	83.45	46	Bulgaria	81.69	46	Indonesia	87.02
47	Senegal	83.34	47	Peru	81.04	47	Philippines	86.58
48	Philippines	82.96	48	Ethiopia	79.75	48	Jordan	86.47
49	Uruguay	82.80	49	Croatia	79.69	49	Lithuania	86.47
50	Thailand	82.14	50	Slovak Republic	79.57	50	Latvia	86.34
51	Jordan	82.06	51	Ghana	79.45	51	Algeria	86.27
52	Ghana	81.39	52	Philippines	79.35	52	Nigeria	86.05
53	Algeria	80.36	53	Cuba	78.42	**53**	**Pakistan**	**85.63**
54	Estonia	80.05	54	New Zealand	78.20	54	Venezuela, RB	85.58
55	Colombia	79.64	55	Iran, Islamic Rep.	77.92	55	El Salvador	85.43

Source: Gygli et.al (2019). The KOF globalisation index–revisited. The Review of International Organizations, 1-32.