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Linkages between different types of globalization and socio-economic variables: panel data analysis for 129 countries

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Abstract

Present study explores the linkages between three categories of globalization to socio-economic indicators, which include poverty, inequality, unemployment and Human Development Index (HDI) using the sample of 129 countries over the period 1990 to 2019. The results show presence of co-integration among socio-economic variables and three categories of globalization. The findings indicate that economic, political and social globalization is positively related to each other. It is worth mentioning that all the three types of globalization decreases poverty but the role of economic dimension is appeared to be insignificant. Some negative effect of globalization on inequality and unemployment is also reported by this study. The traditional link between inequality, poverty and unemployment in the presence of globalization show that these three variables are closely related to one another, deterioration in any one variable has adverse effect on other two variables. Furthermore, results of Vector Error Correction Mechanism (VECM) show that socio-economic variables not only cause each other but they also improve human welfare that is measured by HDI. Long run causality indicates that all variables cause each other as error correction term is significant.

Keywords: Globalization, Cointegration, Poverty, Inequality, Unemployment, HDI

1 Introduction

The process of globalization has been increasing during the past few decades due to several economic and non-economic factors. In this regard, the policies of government and the national and international organizations play important role in the development of globalization. Many developing and developed countries have been following the economic policies of liberalization. Quite a few countries have made effort to decrease trade restrictions via entering in multiple regional and international trading agreements. Arrangements are being made to reduce the barriers on trade and capital flows. In this regard, financial deregulation was primarily started by developed countries in the 1970s, whereas it initiated in developing countries during the 1980s. The surge of globalization is complemented by technological advancement that has transformed the national companies into transnational to earn more profit in the

newly developed global markets. It has resulted in higher integrated economies in economic, financial, political, social and cultural relations. However, the policies of deregulation do not necessarily guarantee the perks of globalization. Several economies are enjoying substantial economic growth due to globalization, while others are not able to reap its benefits. It is, therefore, challenging to draw some firm conclusions concerning the impact of globalization on economic and social performance of a country. The possible reasoning could be heterogeneity in the structure and policies of different countries which critically dependent on an inspection of economic, financial, political, social and cultural practices of a society. Furthermore, the advantage of opening the border greatly depends on absorption capacity, human resource and institutions of the country under consideration.

Globalization offers multiple channels for development and growth and at the same time it imposes challenges in managing and formulating domestic policies. Income, unemployment, poverty reduction and economic inequality have always been the major objectives of policy makers. Along with these objectives, social performance of a country is also a concern of policy makers. Globalization identifies modernized link to socioeconomic and political processes that effect and are affected by the events in communities. Providing basic necessities and better quality of life is always on the top of the policies that reflected in good governance but these objectives are not easy to achieve. There is always a cruel choice among the economic and social goals of development. It is argued that these indicators can get worse if government's strategies are insensitive to the implication of such polices in the age of global interdependencies. Despite this fact, the effective policy can serve as a locomotive to achieve these goals simultaneously. In this regard, economic growth serves as engine in attaining other social goals. It is suggested that socio-economic sustainability can be achieved by adopting the Rawalsian justice principle in the formulation of economic and financial strategies (Rao and Molina 2015).

High and persistent unemployment increases social discontent (related to inequality and widespread poverty), which is driven by various economic, social and psychological mechanisms. Unemployment is linked not only to greater poverty, but also to greater inequality as the unemployed individuals lose proportionately more than the employed individuals (Nickell 1990). Subsequently, it affects human welfare. Countries with persistent problem of unemployment, poverty and inequality perform poor in the ranking of Human Development Index (HDI). Therefore, it can be concluded that the socioeconomic variables are linked with each other in one way or the other. Furthermore, economic, political and social interdependence of countries is also influencing these indicators directly or indirectly.

The effect of globalization on socioeconomic variables has been one of the debated issues not only among researchers but also masses. The spread of globalization is heterogeneous as some regions are more globalized, while others are not. The global economy does not mean to encompass the whole globe rather; it involves only certain sections in both developing and developed countries. Hence, the impact of globalization is not uniform in all states. Some studies show the convergence of socioeconomic factors among different regions, while others show divergence. An unsettled controversy regarding the consequences of globalization is found in literature. Some studies show favorable impact of globalization on income, unemployment, poverty, inequality and HDI (Dollar 1992; Dreher 2006; Sapkota 2010; Dogan

2013; Lee 2014; Siddiqa et al. 2018), while others observe negative and weak influence on these indicators (Rodriguez and Rodrik 2000; Umaru et al. 2013; Furusawa et al. 2020).

Reviewing the existing literature, one observes the following finding. First, most of the empirical evidence shows relationship between globalization and one or two socioeconomic indicator using economic or financial proxies of globalization. Studies with the comprehensive index of globalization also focus on single dimension of socioeconomic status and most importantly literature seems to be missing regarding the impact of globalization on socioeconomic index, expect for HDI. However, it is also subject to criticism for considering only few indicators (Murray 1993 and Srinivasan 1994). Second, most of the empirical literature do not allow cross-sectional dependence, despite that there is economic, financial, political and social interdependence among countries and regions in the modern era of globalization. Now-a-days international dependence is said to be strong, especially with reference to commerce and finance. For instance, the monetary policies of financial Centre countries have huge spillover effect on smaller economics due to globally integrated financial system, which consequently influences the related indicators of nation states.

These shortcomings motivate us to explore the linkages among different types of globalization (economic, social and political) and socioeconomic variables (poverty, inequality, unemployment and HDI) by applying the recent econometric techniques and procedures. The goal of current study is to investigate the association among economic, political and social globalization and the relationship of these types of globalization with selected socioeconomic variables. The conclusion will provide an insight to comprehend the causal connection among different types of globalization and socioeconomic variables. For this purpose, the panel data set of 129 countries from the period of 1990 to 2019 is analyzed. Moreover, second generation econometric procedures are employed to consider cross-sectional dependence of macroeconomic variables, which is neglected in most of the empirical finding of globalization studies.

The analysis carried is an effort to empirically test the relationship between three types of globalizations, as how economic, political and social globalizations are linked to one another. Furthermore, the study of possible effects of globalization on poverty, inequality, unemployment and HDI and the reverse causation distinguishes the current study from previous literature. Several studies have shown the impact of globalization on various indicators but none of the previous studies have attempted to explain how poverty, inequality, unemployment and human welfare affect the density of economic, political and social interdependence among countries. Relational behavior of human development index is also explored to three types of globalization to examine which dimension of globalization is powerful in affecting the overall socioeconomic performance of a country. Specifically, the aims of the study are as follows. First, it investigates the relationship among three categories of globalization and socio-economic indicators. Second, it examines the inter-link between socio-economic indicators in the presence of economic, political and social globalization. Third, short run and long run impact of globalization on selected socio-economic indicators.

2 Literature review

It is presented into three sections; hence, Section 2.1 shows the studies that analyze association between globalization, inequality and poverty. Section 2.2 provides literature on the relationship of globalization with unemployment. Finally, Section 2.3 deals with the human welfare.

2.1 Globalization, inequality and poverty

Globalization, growth, income distribution and poverty nexus is a highly controversial and debatable issue. Rigorous analysis is required to conclude any result due to complex relationship among these variables. It follows multilayered channels that dynamically interact over time. Hence, net effect of globalization cannot be judged with limited information. Nissanke and Thorbecke (2006) provide a detailed channel to explain the impact of globalization on poverty. It is proposed that reduction in poverty requires a combination of higher growth and pro-poor distribution of income.

Theoretical and empirical studies show mixed results on the connection between globalization, income inequality and poverty relationship. The studies of Borjas and Ramey (1994); Freeman (1995); Richardson (1995) and Wood (1995) showed trade as a source of raising inequality. Cornia (2004) highlighted that higher income inequality is not due to traditional reasons rather it is due to globalization in recent years. Furthermore, Epifani and Gancia (2008) showed that higher level of international trade is correlated to higher wage inequality in advanced and developing countries. Furusawa et al. (2020) suggested a theoretical framework and showed that international trade increases income inequality in small countries.

In contrast, Bhalla's (2002) estimate showed that global Gini-coefficient has reduced from the value of 0.67 in 1980 to 0.64 in 2000 due to trade openness. Similarly, Sala-i-Martin (2002) showed decline in global inequality since 1980. The studies of Chakrabarti (2000) and Faustino and Vali (2011) showed that larger participation in international trade and trade openness decreases inequality. Zhou et al. (2011) also observed a negative relation between globalization and income inequality in 60 developed and developing economies by applying globalization indices based on Kearney's data. Various other studies, however, have observed no significant effect of international trade or openness on income distribution (e.g., Fieleke 1994; Edwards 1997; Mah 2003).

The studies of Faustino and Vali (2011) and Asteriou et al. (2014) used FDI as a proxy of globalization in addition to trade openness and showed that it increases income inequality. Similarly, Choi (2006); Basu and Guariglia (2007) and Mihaylova (2015) also concluded that raising income inequality is linked to higher FDI stocks. However, Bhandari (2007) and Franco and Gerussi (2013) found no effect of FDI on income distribution, while Ucal et al. (2016) showed negative relationship between FDI and inequality in Turkey.

Dreher and Gaston (2008); Bergh and Nilsson (2010a); Atif et al. (2012); Ezcurra and Rodriguez-pose (2013) and Upadhyay (2015) used a comprehensive index of globalization, i.e., KOF index. These studies showed that increase in globalization has exacerbated income inequality in developed and developing countries.

Proponents of globalization argue that negative effect of globalization on income inequality is a result of change in technology rather than trade openness (Jaumotte et al. 2013). However, several studies showed rise in income inequality by incorporating the role of factor endowment and technology in determining the distributional effects of international trade (Perry and Olarreaga 2006; Gourdon et al. 2008; Meschi and vivarelli 2009 and Bensidoun et al. 2011).

Different studies have observed that the distributional effects of globalization depend on various conditions, which include financial development, institutional growth, status of education and health (Lundberg and Squire 2003; Hamori and Hashiguchi 2012; Majeed and Zhang 2014; Lee 2014). According to Harrison and McMillan (2007) and Lee (2014) better human capital and institutional development may minimize the adverse effects of globalization. The study of Lee (2014) showed that the higher level of international trade improves income distribution and poverty.

The effect of globalization on poverty is linked with economic growth and inequality (Nissanke and Thorbecke 2006). Economic growth is a fundamental indicator in the reduction of poverty; low economic growth causes poverty (Ravallion 2005). In contrast, Chen and Ravallion (2004) showed decline in extreme poverty (less than $1 per day) from 40.3% in 1981 to 21.3% in 2001 in developing countries due to expansion of international trade. Likewise, Chaudhry and Imran (2013) also reported reduction in poverty due to trade liberalization in Pakistan.

2.2 Globalization and unemployment

Theoretical and empirical literature that establishes the link between international trade flows and employment is complex and often ambiguous. Consequences of trade on employment depend on industrial composition of production and variations in labour market frictions across industries and countries (Belenkiy and Riker 2015). Globalization brings structural change in the economy by replacing traditional modes of production to advanced and efficient techniques. It shifts labour from one sector to another sector, these search friction and structural changes may result in job creation or destruction.

Unemployment is an important economic indicator that determines resource allocation of economy. Malik et al. (2011) and Awad and youssof (2016) showed significant effect of economic globalization in reducing unemployment in Pakistan and Malaysia, respectively. Similarly, Gozgor (2017) showed favourable results of trade openness on employment in 87 countries; however, influence of economic, political and social globalization is statistically insignificant. In addition, the studies of Osmani (2005); Ogunrinola and Osabuohien (2010) and Siddiqa et al. (2018) showed significant influence of globalization in decreasing unemployment. It is argued that opening of borders and labour market to rest of the world creates new jobs, thereby reduces unemployment. In contrast, the study of Potrafke (2010) indicated no influence of globalization on unemployment rate, insurance protection and benefit. There are several studies that claimed the deterioration of working conditions and elimination of jobs of unskilled labours in the process of globalization (e.g., Heine and Thakur 2011; Stiglitz 2002; Wood 1998).

There are various studies that examined the impact of single component of globalization, i.e., trade openness on unemployment. Therefore, the studies of Dutt et al. (2009) and Nanthakumar et al. (2011) found inverse relation between trade openness and unemployment. In addition, Anjum and perviz (2016) observed that trade liberalization is negatively associated with unemployment in labour-abundant countries, whereas there is positive association between these two variables in capital-abundant countries. The study of Nwaka et al. (2015) also confirmed that trade openness increases unemployment.

2.3 Globalization and human development index (HDI)

One of the fundamental goals is to determine the direction of policies in such a way that it improves economic and social well-being. There are several factors that play a critical role in translating the economic growth in social performance of a country. In this context, macroeconomic and political stability is desirable to reap the benefits of growth in terms of social prosperity. Human welfare and trade linkages have been observed since the beginning of economic activities. However, contrasting views are found in assessing the link between these two variables. Neo-classical explained welfare gains from comparative advantage theory and reduction in trade barriers, while it is also observed that trade openness reallocate resources and comparatively cheap labour results in job loss. Similarly, it is quite difficult to quantify the consequences of globalization on human welfare. Different indicators have been applied to analyze the performance of the countries regarding human welfare. In this respect, United Nations developed a composite index to quantify the idea of human well-being. Hence, three important dimensions are taken to assess economic and social development of a country. It includes health status measured as life expectancy at birth, knowledge in terms of literacy rate and growth is taken as gross national per capita income.

One of the major goals of a government is to perform well on the indicators of HDI. It is vital to examine the impact of globalization on the improvement of HDI. Limited empirical and theoretical studies are available on this issue. However, there stand two opposing opinions in analyzing the impact of human welfare on globalization. The studies of Soros (2000) and Guillén (2001) observed global integration as a greater threat to economy and argued that government become ineffective to deliver better quality of life to individuals in the existence of globalization. The interdependence influence the domestic policies, thereby, reflects in adverse effect of globalization. Likewise, Scott (2001) showed the negative effects on human welfare through job elimination in manufacturing sector. In contrast, numerous studies examined the beneficial effect of globalization on human development (Zoellick 2001; Thorbecke and Eigen-Zucchi 2002; Tsai 2007; kiani et al. 2021). Sapkota (2010) highlighted that cross-border linkages through organizations and networks are influential in decreasing human poverty while promoting human and gender development.

3 Methodology

Multifaceted and complex phenomenon of globalization has affected social, political, cultural, technological, environmental, financial and economic aspect of various countries. Pro-globalists presume it as a strong force to promote economic growth. Moreover, they are of view that higher economic growth reduces poverty and inequality (Washington consensus), which in turn increases human welfare. Critics view it as social, political, cultural and economic threat to a nation state, which raises doubts on the effectiveness of globalization in improving the socioeconomic status of a country.

Although there is a wide array of empirical and theoretical evidence on the consequences of globalization, but the available literature is not able to provide conclusive result concerning the impact and direction of globalization. Linking the socioeconomic development of a country to globalization is a challenging task, because the complex process of globalization brings multiple transformations in the economic, political and social structures of countries.

It is highly debatable whether national policies with advanced wave of liberalization are compatible or conflicting in achieving the socioeconomic targets of a country. The success of achieving the socioeconomic targets is critically dependent on the degree of globalization. It is also characterized as heterogeneous, which creates divergence among socioeconomic performance of the countries across globe.

In this study the causal connection between globalization and socioeconomic variables are explored. The categorization of globalization, particularly covering the aspect of economic, social and political is taken to establish their possible links to socioeconomic variables. Four variables are selected to address social and economic performance of a country. These are poverty, inequality, unemployment and HDI.

This link is analyzed with the help of Vector Autoregressive (VAR) model. VAR model is introduced by Sims (1980) to study the structural and causal relationship between different macroeconomic variables. It not only summarizes all the information of data, but also provides insight to policy experiment. A VAR naturally treats all the variables as endogenous; it describes each of the endogenous variables by the history of all the variables considered in the model. The selected model seems appropriate, since it is not clear whether the socioeconomic factors under consideration drives, or is driven by globalization. However, one severe disadvantage of the using VAR model is that it requires stationary time series data. In most of the cases this requirement leads toward differencing and hence loss of information on any long-run relationship between the variables is observed. Granger (1981) proposed a solution to this problem by introducing the association between co-integration and error correction models, which was further extended by Engle and Granger (1987). Therefore, VAR model is presented as vector error correction model (VECM). In model 1, the variables of poverty, income inequality, unemployment and HDI represent the socioeconomic performance of a country. This model is helpful in analyzing the link between globalization and socioeconomic indicators. The model 1 for selected 129 countries is formulated as follows,

Model 1 = ECOG, POLG, SOCG, poverty, income inequality, unemployment and HDI

$$\begin{bmatrix} \Delta ECOG_{it} \\ \Delta POLG_{it} \\ \Delta SOCG_{it} \\ \Delta Poverty_{it} \\ \Delta Unemployment_{it} \\ \Delta Inequality_{it} \\ \Delta HDI_{it} \end{bmatrix} = \begin{bmatrix} a_{1i} \\ a_{2i} \\ a_{3i} \\ a_{4i} \\ a_{5i} \\ a_{6i} \\ a_{7i} \end{bmatrix} + \sum_{j=1}^{P} \begin{bmatrix} \beta_{11ij}\beta_{12ij}\beta_{13ij}\beta_{14ij}\beta_{15ij}\beta_{16ij}\beta_{17ij} \\ \beta_{21ij}\beta_{22ij}\beta_{23ij}\beta_{24ij}\beta_{25ij}\beta_{26ij}\beta_{27ij} \\ \beta_{31ij}\beta_{32ij}\beta_{33ij}\beta_{34ij}\beta_{35ij}\beta_{36ij}\beta_{37ij} \\ \beta_{41ij}\beta_{42ij}\beta_{43ij}\beta_{44ij}\beta_{45ij}\beta_{46ij}\beta_{47ij} \\ \beta_{51ij}\beta_{52ij}\beta_{53ij}\beta_{54ij}\beta_{55ij}\beta_{56ij}\beta_{57ij} \\ \beta_{61ij}\beta_{62ij}\beta_{63ij}\beta_{64ij}\beta_{65ij}\beta_{66ij}\beta_{67ij} \\ \beta_{71ij}\beta_{72ij}\beta_{73ij}\beta_{74ij}\beta_{75ij}\beta_{76ij}\beta_{77ij} \end{bmatrix} \begin{bmatrix} \Delta ECOG_{it-j} \\ \Delta POLG_{it-j} \\ \Delta SOCG_{it-j} \\ \Delta Poverty_{it-j} \\ \Delta Unemployment_{it-j} \\ \Delta Inequality_{it-j} \\ \Delta HDI_{it-j} \end{bmatrix} + \begin{bmatrix} \lambda_{1i} \\ \lambda_{2i} \\ \lambda_{3i} \\ \lambda_{4i} \\ \lambda_{5i} \\ \lambda_{6i} \\ \lambda_{7i} \end{bmatrix} + \begin{bmatrix} \mu_{1it} \\ \mu_{2it} \\ \mu_{3it} \\ \mu_{4it} \\ \mu_{5it} \\ \mu_{6it} \\ \mu_{7it} \end{bmatrix}$$

The given Model 1 is shown in vector and matrix notation to present all the information in a more compact form, where α and β are parameters. ECOG, POLG and SOCG is representing economic, Political and social globalization, respectively. Where Δ is the first difference of the variables, which shows short run dynamics and ECT is the estimate of long run. Speed of adjustment toward long run equilibrium is denoted by λ. The error terms are represented by μ_{kit}, which satisfies the standard assumptions.

4 Data and variables

This section presents the description of each variable used in the current study. The sample of 129 developed and developing economies is analyzed ranging from 1990 to 2019[1]. Annual data is obtained using multiple sources. Each variable is described in detail below.

4.1 Economic globalization (ECOG)

The variable of economic globalization is defined as the worldwide movement of goods, services and capital. It is the interdependence of national economies through cross border flow of commodities, services, capital, technology and information. Economic globalization generates a global supply chain which is based on sophisticated interconnection of networks that permit enterprises to produce, handle and disburse numerous goods and services to the community worldwide. Data on economic globalization index are obtained from KOF time series Database.[2] The data are publicly available and can be acquired from the provided web link (https://kof.ethz.ch/en/data/kof-time-series-database.html). It provides KOF (*Konjunkturforschungsstelle*) economic globalization index, constructed with the help of statistical tool named as Principal Component Analysis (PCA). It is a comprehensive index and is constructed using eight variables. These variables are related to economic and monetary flows and some trade restriction are also included. Therefore, the variable of inflow and outflow of commodities and services, foreign direct investment, portfolio assets and income to foreigners are taken into consideration. Whereas, import restrictions, tariff, trade taxes and capital account controls are also included in the construction of KOF economic globalization index.

[1] See appendix-I for list of countries.

[2] Overall Economic Globalization.

4.2 Political globalization (POLG)

Political globalization is referred as the development of global political network in which there is strong influence of national and international nongovernment organizations. It is the emergence of transnational state with cohesive global governance. Political globalization has various dimensions, hence, its measurement involve variety of variables that are linked with global political networks. Political agreements at international level among different countries develop a strong political setup that creates political interdependence which influences the domestic policies. It is also considered as a diffusion of government policies and is measured by different indicator such as number of embassies in a country, affiliations in international organizations, involvement in peace keeping missions of United Nations and international contracts and agreements signed between different states. This index of KOF political globalization is also taken from KOF time series Database (https://kof.ethz.ch/en/data/kof-time-series-database.html).[3]

4.3 Social globalization (SOCG)

Social globalization is described by the spread of information, ideas and people. Dispersal of traditional and cultural standards through media, internet and tourism across globe increases interconnection of people. It creates social networks that enable individuals to communicate more effectively which results in spread of information, culture and ideas. Different indicators and proxies are used to measure diffusion of cultural values and ideas. In the current study the index of KOF social globalization is also acquired from KOF time series Database which can be accessed through (https://kof.ethz.ch/en/data/kof-time-series-database.html).[4] It is a composite of three dimensions including individual contacts, cultural and information flows. These aspects are taken into consideration to explain social globalization among countries. Individual contact provides information on telephone calls, worldwide tourism, foreign population and international mails. The flow of information is catered through internet users, television and trade in newspaper. Cultural aspect is captured by the number of McDonald restaurants, Ikea outlets and trade in books.

4.4 Poverty

Poverty is a condition of deprivation of basic needs, including food, shelter, clothing, footwear, and other amenities of life. It is also referred as the inability to purchase basic consumption basket of goods and services. In the current study, poverty is calculated by head count index (HCI), which measures the percentage of individuals living below poverty line.[5] Data on HCI are collected from multiple sources, keeping in view that the collected index is measured at national poverty line. Multiple sources are consulted to avoid the issues of non-availability and incomplete information. In this regard, World Bank open Database (https://databank.worldbank.org/home.aspx), OECD Database (https://data.oecd.org/), CIA World Factbook (https://www.cia.gov/the-world-factbook/countries/), Eurostat Database (https://ec.europa.eu/eurostat/data/database) and Statista Database (https://www.statista.com/) are the major sources to compile the data. Bureau

[3] Overall Political Globalization.

[4] Overall social Globalization.

[5] poverty headcount ratio at national poverty lines (% of population).

of statistics of a few countries are also consulted for missing data. Interpolation is also performed for finding missing values. As an alternative to avoid extrapolation, omitted values at the boundary of the selected sample are substituted by the latest data available.

4.5 Income inequality

Income inequality is defined as a substantial disparity in income distribution between population of a country or the uneven distribution of income within individuals, groups, classes or population. Country level Gini-coefficients are used to show income inequality in this study.[6] It measures the income distribution within a country and is ranges from zero to one. Zero expresses perfect equality, while one expresses perfect inequality. Data are collected from UNU-Wider Database (https://www.wider.unu.edu/database/world-income-inequality-database-wiid), World Bank open Database (https://databank.worldbank.org/home.aspx), Eurostat Database (https://ec.europa.eu/eurostat/data/database) and Human Development Reports of various years. Missing values of few developing countries are found by performing interpolation.

4.6 Unemployment

Unemployment is the fraction of labour force without work but seeking and available for work. Moreover, those who are not currently looking for job but have some arrangement for future job are also considered as unemployed. Data on unemployment as a proportion of total labour force are taken from OECD Database (https://data.oecd.org/), and World Bank open Database (https://databank.worldbank.org/home.aspx).[7]

4.7 HDI

HDI is a popular measure to present the level of human development in three aspects related to knowledge, heath and income. It is used to quantify a country's overall attainment in its social and economic dimensions. More specifically, HDI is constructed using the variable of life expectancy, education and per capita income. Human Development Report of UNDP Database (https://hdr.undp.org/data-center/human-development-index#/indicies/HDI) provides data on HDI and its dimensions.[8] The detail of each index is provided below:

$$Education\ Index = \frac{MYS\ Index + EYS\ Index}{2}$$

$$MYS\ Index = \frac{MYS}{15}\ and\ EYS\ Index = \frac{EYS}{18}$$

The anticipated maximum value of this indicator for the year 2025 is 15, and in most of the countries, 18 years are required in completing a master degree. The mean year of schooling (MYS) and expected year of schooling (EYS) are the two components that are averaged to create the education index.

[6] Gini index.

[7] Unemployment, total (% of total Labor force).

[8] Human Development Index: Education Index, Life Expectancy Index and GNI index.

Table 1 Results of cross-sectional dependence

Variable	Pesaran (2004)	Frees (1995)	Friedman (1937)
ECOG	267.12 (0.000)	43.58 (0.000)	1666 (0.000)
SOCG	370.21 (0.000)	66.97 (0.000)	2326 (0.000)
POLG	318.77 (0.000)	73.22 (0.000)	2407 (0.000)
HDI	409.17 (0.000)	104.74 (0.000)	2987 (0.000)
Poverty	56.47 (0.000)	36.65 (0.000)	405.05 (0.000)
Gini-coefficient	22.76 (0.000)	20.21 (0.000)	210.62(0.000)
Unemployment	24.38 (0.000)	14.44 (0.000)	219.73 (0.000)

Probability values are given in brackets

$$Life\ Expectancy\ Index = \frac{LE - 20}{85 - 20}$$

The United Nations Organization (UNO) has recorded a minimum value of 20 and maximum of 85. Therefore, if the life expectancy at birth is 85, the index takes a value of 1 and if it is 20, a value of 0:

$$Income\ Index = \frac{\ln(GNI\ per\ capita) - \ln(100)}{\ln(75,000) - \ln(100)}$$

Income index is 1 if GNI per capita is $75,000 and 0 if it is $100. In all three indices of HDI, maximum and minimum value is assigned by UNO.

5 Empirical results

As a preliminary, test of cross-sectional dependence (CD) is applied to all the three types of globalization and macroeconomic variables. It is meaningful in our analysis, since the socio-economic variables are, economically, political and socially integrated. For this purpose, Pesaran (2004), Friedman (1937) and Frees (1995) tests are applied, as these tests are appropriate for the case, where time period (T) is lesser than cross-sectional units (N). Present study has small T and large N, i.e., $T < N$. The results of these tests are offered in Table 1. The results show evidence to reject the null hypothesis of no cross-sectional dependence against the alternative hypothesis of cross-sectional dependence. All the three tests indicate that the probability values of the variables under consideration are less than 1% level of significance, hence, it is concluded that there is cross-sectional dependence in all series.

The finding of Table 1 induces to consider the issue of cross-sectional dependence while applying the panel unit root tests. It is, therefore, desirable to apply second generation unit root tests. Pesaran (2007) unit root test of CADF and CIPS is applied. This test is appropriate, because it is well-suited to data set, where T is smaller than N. The results are displayed in Table 2.

The Pesaran CADF test of the null hypothesis of non-stationary is based on the mean of individuals ADF t-statistics of each unit in the panel. All the series are non-stationary at level as the null hypothesis cannot be rejected at any conventional level of significance. Results show that all the data series are found to be stationary at first difference. Pesaran (2007) also suggested CIPS test of panel unit root, which is derived from CADF,

Table 2 Results of Pesaran CADF, panel unit root

Variables	Level		First difference	
	t-bar Stats	*Z* test	t-bar Stats	*Z* test
ECOG	− 2.174	1.783 (0.963)	− 3.539	− 14.891 (0.000)
POLG	− 2.318	0.024 (0.510)	− 4.212	− 23.108 (0.000)
SOCG	− 2.252	0.830 (0.797)	− 4.255	− 23.630 (0.000)
HDI	− 2.255	0.795 (0.787)	− 3.052	− 8.940 (0.000)
Poverty	− 2.192	1.558 (0.940)	− 3.187	− 10.589 (0.000)
Gini-coefficient	− 2.220	1.217 (0.880)	− 3.603	− 15.673 (0.000)
Unemployment	− 1.971	4.263 (1.000)	− 3.787	− 17.920 (0.000)

Results are obtained with constant and trend. Critical values are − 2.630, − 2.540 and − 2.490 at 1%, 5% and 10% significance level, respectively

Probability values are given in brackets

Table 3 Results of CIPS unit root test

Variables	Level	First difference
ECOG	− 2.589	− 4.971
POLG	− 2.391	− 5.221
SOCG	− 2.365	− 5.214
HDI	− 2.111	− 3.834
Poverty	− 1.992	− 3.093
Gini-coefficient	− 2.589	− 4.172
Unemployment	− 2.354	− 4.702

Results are obtained with constant and trend

The critical values are − 2.77, − 2.65 and − 2.5910 at 1%, 5% and 10% significance levels, respectively

as it is based on simple averages of CADF statistics. The outcomes of CIPS test are displayed in Table 3.

The results show that all the series are non-stationary at level, because null hypothesis of non-stationary cannot be rejected when compared to the critical values at 1%, 5% and 10% level of significance. However, all the series turn out to be stationary at first difference at 1% level of significance.

All the variable are I(1), hence, Westerlund (2007) test of cointegration is applied. It is a four panel cointegration test, which processes the properties of small sample size and greater power in comparison with conventional residual-based panel cointegration test (e.g., Pedroni 2004). This test allows to compute bootstrap p values, which considers the general form of cross-sectional dependence. It is error correction-based cointegration test in which the null hypothesis of no cointegration implies that the error correction term in the model of conditional error correction is equivalent to zero. The alternative hypothesis of group-mean tests, in which G_t and G_a examine that at least one cross-sectional unit is cointegrated while the panel tests, P_t and P_a tests that the panel is cointegrated for all cross-sectional units. Rejection of null hypothesis provides evidence in the favour of cointegration for at least one cross-sectional unit or for the whole panel in group-mean test and panel tests, respectively.

Table 4 Results of cointegration test

Model 1								
Case-I					**Case-II**			
Lag = lead = 1, kernel window = 3					**Lag = 1, kernel window = 3**			
Statistic	**Value**	***Z* value**	***p* value**	**Robust *p* value**	**Value**	***Z* value**	***p* value**	**Robust *p* value**
G_t					− 2.779	− 3.928	0.000	0.000
G_a		N/A			− 3.171	14.551	1.000	0.330
P_t					− 21.981	1.811	0.965	0.005
P_a					− 2.284	10.018	1.000	0.375

5.1 Cointegration analysis

The results of cointegration test are dependent on the chosen lags, leads and kernel width in small data set. Therefore, the short run dynamics is kept fixed to single lag and lead with 3 Bartlett kernel window width, which is obtained by plugging-in the standard values, i.e., 4*(T/100)2/9 ≈3. Bootstrap resampling method is also applied at 200 replications for all four panel cointegration test that provide the robust *p* value. The results are shown in Table 4.

Results show that the number of observations is not enough to observe the relationship in case-I; however, the evidence of cointegration is clear from the analysis of case-II. Table 4 reports weak evidence of cointegration as the null hypothesis is never rejected except for group-mean test of G_t. However, the results of bootstrap procedure provide robust *p* values in the analysis. The robust *p* values show relatively strong evidence of cointegration in model 1. The result implies that group-mean test of G_t rejects the null hypothesis of no cointegration and provide support for the evidence of cointegration among the variables of the model 1. Moreover, the panel tests of P_t show that the probability value is significant at 1% level of significance, specifying rejection of null hypothesis and validates cointegration among variables. Hence, it can be concluded that there is the existence of long run cointegration association among the variables based on group-mean test of G_t and panel tests of P_t.

5.2 Dynamic ordinary least square (DOLS)

Next step is to estimate the coefficient through DOLS. Time specific effects are introduced to allow limited degree of cross-sectional dependency. Estimation is done by taking each variable as a dependent variable with remaining as independent variables to identify the impact of all the variable with each other. Akaike information criteria (AIC) is used to select lags and leads length. Results of model 1 are displayed in Table 5.

The statistical findings in Table 5 are discussed in such a way that it provides understanding in four directions. First, it shows inter-relationship between the three types of globalization, that is, economic, political and social globalization. Second, the relationships of these types of globalization to poverty, income inequality, unemployment and HDI are discussed. Third, the effects of these socioeconomic variables on three types of globalization are presented. Finally, the inter-relationship among socioeconomic variables is discussed.

Table 5 Results of DOLS of Model 1

Dependent variables	Variable	Coefficient	St. error	t-Stats	*p* value
ECOG	POLG	0.060**	0.027	2.210	0.027
	SOCG	0.628***	0.049	12.850	0.000
	Poverty	− 0.028	0.027	− 1.040	0.298
	Gini-coefficient	0.092**	0.045	2.030	0.042
	Unemployment	0.092	0.045	1.031	0.142
	HDI	0.136**	0.102	2.332	0.023
POLG	ECOG	0.157***	0.043	3.610	0.000
	SOCG	0.396***	0.060	6.620	0.000
	Poverty	− 0.156***	0.033	− 4.810	0.000
	Gini-coefficient	− 0.096*	0.055	− 1.740	0.081
	Unemployment	− 0.353	0.097	− 1.621	0.110
	HDI	0.077*	0.127	1.821	0.103
SOCG	ECOG	0.468***	0.025	19.020	0.000
	POLG	0.116***	0.019	6.150	0.000
	Poverty	− 0.034*	0.019	− 1.810	0.070
	Gini-coefficient	0.119***	0.032	3.760	0.000
	Unemployment	0.182***	0.061	3.007	0.003
	HDI	0.705***	0.071	9.912	0.000
Poverty	ECOG	− 0.036	0.051	− 0.710	0.477
	POLG	− 0.082**	0.039	− 2.110	0.035
	SOCG	− 0.063*	0.070	− 1.890	0.093
	Gini-coefficient	0.543***	0.064	8.550	0.000
	Unemployment	0.114	0.113	1.000	0.316
	HDI	− 0.658***	0.144	− 4.570	0.000
Gini-coefficient	ECOG	0.062**	0.024	2.590	0.010
	POLG	− 0.034*	0.018	− 1.865	0.062
	SOCG	0.106***	0.033	3.200	0.001
	Poverty	0.264***	0.017	14.840	0.000
	Unemploy	0.170***	0.054	3.140	0.000
	HDI	0.065	0.069	0.940	0.345
Unemployment	ECOG	0.029**	0.013	2.260	0.024
	POLG	− 0.046***	0.010	− 4.620	0.000
	SOCG	− 0.013	0.018	− 0.750	0.452
	Poverty	0.030***	0.009	3.070	0.000
	Gini	0.088***	0.016	5.290	0.000
	HDI	0.053	0.037	1.430	0.154
HDI	ECOG	0.059***	0.013	4.450	0.000
	POLG	0.007*	0.010	1.650	0.060
	SOCG	0.490***	0.018	26.790	0.000
	Poverty	− 0.235***	0.010	− 23.900	0.000
	Gini	− 0.060***	0.016	− 3.630	0.000
	Unemloy	− 0.090***	0.029	− 3.050	0.000

The symbols *, ** and *** show significance at 10%, 5% and 1% levels, respectively

The table shows that political globalization has positive and significant effect on both economic and social globalization. It indicates that political globalization tends to promote economic and social globalization. Economic globalization also promotes the other two types of globalization. Finally, positive influence of social globalization is also found on economic and political globalization. Therefore, this model indicates that all the three types of globalization are positively related to each other. It indicates that economic, political and social globalization is interconnected.

The results further show that all the rising density of economic, social and political globalization helps to reduce poverty across national borders, though the variable of

economic globalization is not statistically significant. In the modern era of globalization; workers enjoy mobility, farmers have access to credit and technical knowledge, social safety nets in the form of income support and well-targeted food aid help in declining the rate of poverty. Furthermore, international community provides aid, particularly to lower income countries for basic amenities, let alone there will be more hunger and more starvation.

Results indicate that economic and social globalization results in rising income inequality. Highly interdependent goods and labour markets, flow of capital, global competition, technological advancement and internet are increasing the worldwide demand for skilled labours more rapidly than the supply. Hence, it increases income inequality not only within countries but also across countries by encouraging immigration of skilled citizens. Global social networking is making it easier to move toward the areas of better opportunities. Difference in the mobility of skilled and unskilled labour increases the wages of skilled labour toward world level, consequently, leaving less for immobile labour. Moreover, the structural change induced by globalization increases inequalities among regions. The general perception that shifting of manufacturing from developed to less developed world has created job opportunities for skilled workers but has adversely affected the market of low skilled workers, thereby causing income inequality in developing countries. Further by mopping up profits from around the world, multinational global business has also widened the gap between rich and poor in developed countries.

The results show that the economic and political aspects of globalization differ in their effects on unemployment. The impact of economic globalization is positive on unemployment, while political globalization appears to be negatively related to unemployment. Therefore, it shows that economic interdependence increases unemployment, while political relationship decreases it. Globalization promotes the adoption of more advanced technologies; however, it may have undesirable effects on unemployment particularly in developing countries. Technological advancement is directly related to growth and structural transformation without bringing necessary increase in job. Technological advancement has created new electronic services, which results in disappearance of innumerable jobs in many sectors. It can be concluded that unemployment is not due to negative economic trend but it is due to structural shift in economies brought about by globalization. These structural changes are not only affecting the lower skilled workers but it is also making it hard for older workers to re-enter employment.

Economic, political and social globalization has positive influence on HDI. The integrated global economy has taken all the activities at the global level, which seems to be beneficial in the improvement of socioeconomic performance of a country measured as HDI. The global networks are appeared to be influential in combating the economic and social evils as these international networks are providing assistance to uplift the economic and social status of citizens. As a consequence, the collaborative efforts results in human development of a country. It shows that global integration has ability to affect human well-being by improving per capita income, health and education.

The third part of the results in Table 5 is about the impact of socioeconomic variables on three types of globalization. This part provides understanding in explaining

the variation in the density of globalization due to variations in poverty, income inequality, unemployment and HDI across counties as well as over time.

The study finds significant adverse effect of poverty on political and social globalization, while the effect on economic globalization is insignificant. It indicates that countries with widespread poverty tend to remain socially and politically non-integration with the rest of the world. Poor and unskilled labour cannot get benefit from trade and social reform as they do not have access to the global social networks, which weakens the process of global integration. In addition, global political network become less effective due to internal structural problems, such as poverty.

Income inequality increases economic and social globalization, while it decreases political globalization. Income inequality shows concentration of wealth in few hands. Wealthy people consume smaller share of their income than ordinary people, hence, higher income inequality decreases the consumption share of GDP, which in turn increases national saving. This saving can be channelized to achieve the target of higher growth and exports to expedite the process of economic globalization, particularly trade. Another type of income inequality occurs when growing share of GDP is retained by businesses or state.

Policies aimed at forcing down the household share of GDP have been practiced by many countries, making domestic business more competitive in international market. These types of national polices restrict global governance from influencing the income distribution and, thereby, weakens the political integration.

Unemployment has statistically insignificant effect on economic, political and social globalization. Finally, HDI is positively related to all the three types of globalization. Countries that perform well in the ranking of HDI promote economic, political and social globalization with the rest of the world.

The fourth part of result is regarding the relationships among socioeconomic indicators while controlling for globalization. Income inequality is positively related to unemployment and poverty. There are various sources of income inequality, which include differences in education that generates wage inequality, capital mobility for the search of cheap labour that creates regional inequality and deliberate efforts to increase the share of capitalist to increase economic growth. Inequalities that arise either from internal policies or external policies, badly affects poverty and unemployment. Gap between rich and poor creates two groups in which one gets benefit at the cost of other. Higher income inequality decreases the access to education and training of a poor worker, which limits the employment opportunities, thereby making them more poor.

The results also show that poverty is directly related to income inequality and unemployment. Moreover, unemployment also increases income inequality. This means that the nexus of poverty, inequality and unemployment is tightly and closely related to one another. That is whether we start with inequality, poverty or unemployment we will find deterioration in other variables directly or indirectly. For instance, poor individuals do not have the ability to invest in human capital, which results in unemployment in competitive markets or they have limited opportunities in low-paid jobs, thereby increasing inequality. It is like a vicious circle among poverty, unemployment and inequality.

The results indicate that poverty, inequality, unemployment have negative effects on HDI. On the other hand, it is observed that improvement in value of HDI helps in

Table 6 Results of panel VECM of Model 1

	ΔECOG	ΔPOLG	ΔSOCG	ΔPoverty	ΔUnemp	ΔHDI	ΔGini	ECT
ΔECOG		2.828**	1.482	0.344	0.850	0.903	0.727	− 0.814***
		(0.023)	(0.204)	(0.847)	(0.493)	(0.460)	(0.573)	(0.000)
ΔPOLG	2.060*		3.836***	2.581**	0.653	5.177***	1.598	− 0.538**
	(0.083)		(0.004)	(0.035)	(0.624)	(0.000)	(0.171)	(0.022)
ΔSOCG	5.744***	0.9974		1.516	2.169*	1.632	1.852	− 0.443**
	(0.000)	(0.407)		(0.194)	(0.070)	(0.163)	(0.116)	(0.043)
ΔPoverty	0.491	0.066	0.528		1.890*	4.339***	2.568**	− 0.520**
	(0.742)	(0.991)	(0.714)		(0.104)	(0.001)	(0.036)	(0.012)
ΔUnemp	1.260	1.947*	1.276	0.667		4.608***	0.527	− 0.615***
	(0.283)	(0.099)	(0.276)	(0.614)		(0.001)	(0.715)	(0.003)
ΔHDI	5.708***	2.310*	1.337	3.026**	2.620**		3.570***	− 0.443*
	(0.000)	(0.055)	(0.253)	(0.016)	(0.033)		(0.006)	(0.072)
ΔGini	0.468	1.263	0.887	3.421***	0.174	0.584		− 0.314*
	(0.759)	(0.282)	(0.470)	(0.008)	(0.951)	(0.673)		(0.101)

The symbols *, ** and *** show significance at 10%, 5% and 1% levels, respectively

p values are given in parentheses

declining the rate of poverty, while it is insignificant in affecting income inequality and unemployment.

5.3 Panel VECM

Results indicate cointegration relationship; therefore, VECM is used to examine the direction of causality. Panel VECM is estimated by following the two step procedure suggested by Engle and Granger (1987). First step is the estimation of long run equations (model 1) of each country to obtain the residuals. The second step is the estimation of the dynamic error correction model by defining the lagged residuals as error correction term.

Residual is estimated from model 1 which is expressed as VECM. Akaike Information Criteria (AIC) is selected to determine the number of lags of explanatory variables. The lag structure is four as determined by the said criteria. Short run causality tests the joint significance of lagged difference explanatory variables. This joint significance of lagged explanatory variables is tested by F-statistics. In the current analysis, the joint test is applied on prescribed four lag length. The long run causality is related to the coefficient of error correction term (ECT). The results are displayed in Table 6.

The results of Short run behaviour of the variables are discussed in three parts: (a) causality between different categories of globalization; (b) causality between socio-economic variables and one of the three categories of globalization and (c) causality between socio-economic variables.

Bidirectional causality is found between political and economic globalization. This means that political linkages around the globe bring economic integration among countries and economic ties are also creating political relations. One way causality from social globalization to political globalization is predicted by this study. Direct experience of social globalization can be illustrated by tourism, international travel and immigration across borders, which exposes individuals to

different life-style, customs and trend found in other cultures and alternative beliefs. It increases the confidence of individuals in multilateral cooperation and global governance to overcome common global challenges. As a result social globalization causes political integration.

Results indicate one-way causality running from economic globalization to social globalization. Movement of goods and services across globe is not just trade but it brings global integration. Acceleration and deepening of trans-border flow of goods and information provide new opportunities to learn about the world and other places indirectly. As a consequence, this process deepens cosmopolitan orientations, which cause global integration.

The second part of causality analysis shows some interesting results. It indicates unidirectional causality from economic and political globalization to HDI. It shows that economic interdependencies and global political networks show positive effects on human welfare. Furthermore, there exists unidirectional causality from political globalization to unemployment. The study also shows that HDI causes political globalization.

Third part of the results shows causality relationship among socio-economic variables. Feedback effect is established between (i) income inequality and poverty (ii) HDI and poverty and (iii) HDI and unemployment. One-way causality is found from unemployment to poverty and inequality to HDI. Findings show that socio-economic variables not only cause each other but they also improve or deteriorate human welfare that is measured by HDI.

Long run causality is examined by the significance of lagged error correction term,ECT_{t-1}. Results indicate that all variables cause each other as error correction term is significant. Negative sign of the estimated coefficient of error correction term shows convergence toward long run equilibrium, and the speed of adjustment toward long run equilibrium per year is observed by the value of the coefficient. Results indicate convergence of all the variables of model 1 toward long run equilibrium.

6 Summary and conclusions

Globalization is the integration of national economies in various economic and financial relations. However, the global interconnectedness has also extended to political, social and cultural spheres. It is important to highlight that technological advancement and the cost of transportation and communication has significantly shape the current state of globalization. Countries are following the policies of liberalization in recent years which has increasing the concerns regarding globalization and its influence on major macroeconomic variables such as growth and other social indicators including health, unemployment, poverty, inequality or education. It is not only affecting quality of life at micro level but its consequences can be observed at society level as well. Different degree of globalization has shown different results and development pattern in countries. Hence, the relationship of globalization and socio-economic variables is a debatable issue among policy makers, politicians and researchers. Keeping in view the inconclusive results on the consequences of globalization, the current study has taken this issue to analyze the possible connection among these variables.

Therefore, the objective of this study is to examine the association among the three dimensions of globalization to socio-economic indicators, which include poverty, inequality, unemployment and HDI. Recent panel data techniques are applied which allows cross-sectional dependence. It is also one of the distinguishing features of this study, because the modern wave of globalization has created an interdependent environment, therefore; allowing cross-sectional dependence is meaningful and highly relevant. At first, stationarity of the variables has been determined, which indicated stationarity of that all the variables at first difference. Thereafter, Westerlund (2007) test of cointegration is applied which shows long run cointegration relationship between the three types of globalization and socio-economic indicators.

The coefficients are estimated by applying DOLS. Results of DOLS indicate that economic, political and social globalization is positively related to each other. It is pertinent to highlight that all the three types of globalization decreases poverty but the economic dimension is appeared to be insignificant. Some negative or adverse effect of globalization on income inequality and unemployment is also reported by this study.

Finally, the traditional link between inequality, poverty and unemployment in the presence of globalization is also examined in this study. These three variables are closely related to one another, deterioration in any one variable has adverse effects on other variable. Moreover, poor performance of these indicators badly affects human welfare, which is measured by HDI.

Results of VECM show bidirectional causality between political and economic globalization, while there is one-way causality from social globalization to political globalization. Results indicate one-way causality from economic globalization to social globalization and political globalization.

Findings also show that socio-economic variables not only cause each other but they also improve human welfare that is measured by HDI. Long run causality indicates that all variables cause each other as error correction term is significant. Positive and beneficial effects of globalization are predicted by present study. Hence, it can be concluded that there is no danger in endorsing the process of globalization that creates economic, political and social interdependence among countries. The negative effects of globalization on inequality and unemployment may be avoided by regulating globalization in the policies of national interest. Globalization induces structural change that results in job destruction. Technological advancement has created new electronic services, which results in disappearance of innumerable jobs in many sectors. The economic crises in terms of unemployment, inequality and poverty can become social crises and social protest against the national and international policies. The solution requires a change in the way the whole globe is governed by international organizations. Markets and political institution needs to redefine their role in strengthening the international economic organizations to regulate global markets. It is, therefore, recommended to create new jobs in the area of heath care services, social services to individuals, research and education to avoid unemployment and underemployment in the traditional sectors of production. Finally, properly regulated globalization is the most powerful force for economic, political and social good for the whole world.

Appendix

See Table 7

Table 7 List of countries

1	Albania	27	Costa Rica	53	Iceland	79	Mexico	105	Serbia
2	Algeria	28	Cote	54	India	80	Moldova	106	Sierra Leone
3	Argentina	29	Croatia	55	Indonesia	81	Mongolia	107	Singapore
4	Armenia	30	Cyprus	56	Iran	82	Morocco	108	Slovakia
5	Australia	31	Czech Republic	57	Ireland	83	Mozambique	109	Slovenia
6	Austria	32	Denmark	58	Israel	84	Myanmar	110	South Africa
7	Azerbaijan	33	Dominican	59	Italy	85	Namibia	111	Spain
8	Bahamas	34	Ecuador	60	Jamaica	86	Nepal	112	Sudan
9	Bangladesh	35	Egypt	61	Japan	87	Netherland	113	Swaziland
10	Belarus	36	El Salvador	62	Jordan	88	New Zealand	114	Sweden
11	Belgium	37	Estonia	63	Kazakhstan	89	Nicaragua	115	Switzerland
12	Belize	38	Ethiopia	64	Kenya	90	Niger	116	Tajikistan
13	Benin	39	Fiji	65	Korea	91	Nigeria	117	Tanzania
14	Bolivia	40	Finland	66	Kyrgyzstan	92	Norway	118	Thailand
15	Botswana	41	France	67	Latvia	93	Pakistan	119	Tunisia
16	Brazil	42	Gabon	68	Lebanon	94	Panama	120	Turkey
17	Bulgaria	43	Gambia	69	Lesotho	95	Papua N. Guinea	121	Uganda
18	Burundi	44	Greece	70	Lithuania	96	Paraguay	122	UK
19	Cambodia	45	Georgia	71	Luxemburg	97	Peru	123	Ukraine
20	Cameroon	46	Germany	72	Madagascar	98	Philippines	124	Uruguay
21	Canada	47	Ghana	73	Malawi	99	Poland	125	US
22	Central African	48	Guatemala	74	Malaysia	100	Portugal	126	Venezuela
23	Chad	49	Guyana	75	Mali	101	Romania	127	Vietnam
24	Chile	50	Haiti	76	Malta	102	Russian	128	Zambia
25	China	51	Honduras	77	Mauritania	103	Rwanda	129	Zimbabwe
26	Colombia	52	Hungary	78	Mauritius	104	Senegal		

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