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A SIMULTANEOUS EQUATION MODEL OF GLOBALIZATION, CORRUPTION, DEMOCRACY, HUMAN DEVELOPMENT AND SOCIAL PROGRESS

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Abstract:

This study builds a simultaneous equation model that establishes interconnections among the measures of globalization, measures of democracy, human development, corruption perception index and per capita income, which in turn jointly influence social progress. The model has eleven equations in which the response variables and the predictor variables are log-linearly related. The empirical data used for estimation of the model pertain to the period 2006-2016 for 116 countries distributed over all the continents. The model has been estimated by the conventional Two-Stage Least Squares (2-SLS) and alternatively by a modified 2-SLS in which, at the second stage, Shapley value regression has been used to ameliorate the detrimental effects of collinearity among the predictor variables. The modified 2-SLS outperforms the conventional 2-SLS. The study finds that globalization positively influences and is influenced by democracy, human development and social capital. Globalization reduces corrupt practices and integrity promotes globalization. Democracy, social capital, human development and globalization affect social progress positively. It has also been found that trans-border personal connection, cultural proximity, democracy and social capital are elastic with respect to their predictors.

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INTRODUCTION

This study investigates into the debated inter-relationships among globalization, political regimes, corruption, human development and social progress in a simultaneous model framework. It recognizes that a school of scholars holds that globalization and democracy uphold each other and they jointly hold back corruption, endorse human development and finally promote social progress. Globalization also positively responds to democratic practices, human development and strong social capital.



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Nevertheless, it is acknowledged that the opponent school of scholars relate globalization to limiting the scope of democracy, promoting corruption, misaligning human and non-human capital with globalization sponsored development and consequently thwarting social progress. In what follows, an attempt has been made to put together the views and most important empirical findings of various scholars and drawing upon the same build as well as estimate a simultaneous equation model that may reveal the structural relationships among the said variables.

A LITERATURE SURVEY ON RELATIONSHIPS AMONG GLOBALIZATION WITH OTHER SOCIO-ECONOMIC VARIABLES

In this section we put together the views and empirical findings of various scholars on the relationship between globalization, political regime, human capital, social capital and social progress as visualized by Stiglitz et al. (2009) and Social Progress Imperative. Human capital is summarily measured by the human development index and corruption perception index has been used as a prototype measure of social capital.

Relationship between Globalization and Political Regime

Numerous studies have been carried out to investigate into the relationship between regime type (democracy to authoritarian) and globalization with the causal arrow indicating towards either direction. A good number of studies investigate into the relationship between regime type and development (Przeworski and Limongi, 1993) that cluster around the Lee thesis and in view of globalization being considered as a means to development have a discernible bearing on the relationship between regime type and globalization. Among such studies, Huntington and Jorge (1975), Marsh (1979), Weede (1983), Landau (1986), Kohli (1986) and Helliwell (1992) provide empirical evidences that indicate negative to inconsequential impact of democracy (or positive to insignificant impact of authoritarianism) on development. On the contrary, Dick (1974), Kormendi and Meguire (1985), Pourgerami (1988, 1991), Scully (1988; 1992), Barro (1989), Remmer (1990), Leblang (1997), Halperin et al. (2005) and Knutsen (2008a; 2008b; 2010) provide empirical evidences of a favourable impact of democracy (or unfavourable impact of authoritarianism) on development. A number of studies assert that there is no direct relationship between regime type and development. There are intermediate factors such as the (already) attained development level (Przeworski, 1966; Adelman and Morris, 1967), type (whether bureaucratic or traditional) of authoritarian regime (Sloan and Tedin, 1987), attributes and inclination of the authoritarian ruler (Barro, 1997), regional factors with the historical, institutional, cultural and geographic specificities that vary over the continents (Grier and Tullock, 1989), degree of entrenchment of the political elite class and political competition that they face (Acemoglu and Robinson, 2006a), etc that modify the relationship between regime type and development and, therefore, one cannot relate them unconditionally. A number of empirical studies establish connection between the regime type and the factors determining development. Boix (2003) and Knutsen (2007) found a positive impact of democracy on rule of law and consequentially the protection of property rights. Knutsen (2008b) and Hegre and Fjelde (2008) found that democratic governments perform better on control of corruption. Rodrik (1998) found that democracy helps increase real wages of workers leading to increase in consumption, which may have efficiency-promoting effects leading to development (Myrdal ,1972: p. 54). Sen (1999) stresses on freedom and social progress, rather than economic development, and favours democracy for that reason.

A number of studies assess the impact of trade and development on the regime type. Schumpeter (1950), Lipset (1959) and Hayek (1960) hold that free trade and capital flows foster demands for democracy via (and also in favour of) enhancement of the efficiency of resource allocation and consequent economic development. Eichengreen and Lebang (2006) find a bi-directional causality that mutually re-enforce democracy and globalization. Kollias and Paleologou (2016) find a positive impact of globalization on democracy, although it is not true for the countries of all income groups. Globalization hardly promotes democracy in poor economies. Acemoglu and Robinson (2006b) shows that key democratizing forces associated with trade openness depend on country's relative factor endowment. Rudra (2005) observes that economic globalization leads to improvements in democracy only if safety nets are used simultaneously as a strategy for providing stability and building political support. Milner and Mukherjee (2009) find that democracy fosters trade and capital account liberalization, but not all the aspects of globalization. Li and Reuveny (2003) find that different constituents of globalization affect democracy in different manner not conformal to each other. Haffoudhi and Bellakhal (2016) find that the efforts of globalization in poor countries suffering from famines, chronic under-nutrition, poor state of human development, low efficiency and poor state of resource allocation would not promote democracy.

There are a number of studies that point out undesirable effects of globalization on the political sphere of less developed countries. Schwartzman (1998) observes that globalization and democracy reinforce each other to facilitate the fulfilment of the interest of the dominant world economic system. Sobhan (2003) observes that the countries with weak democratic institutions and undiversified or externally dependent economies are often exploited. Turyahikayo (2014) observes that globalization has been used as a tool by the established democracies/economies for exploitation of cheap labour and dumping the industrial waste in poor countries. Steiner (2015) observes that globalization may have a negative effect on public participation in the political domain.

Stein (2016) opines that a sovereign state system, democratic governments, and an integrated global marketplace cannot coexist. It is most likely therefore that globalization will affect the sovereignty of less developed countries adversely.

Relationship between Globalization and Non-Material Capital

Scholars are divided on the relationship of globalization with human development. Sirageldin (2002) recognises the complex character of human development which is an outcome of the historical process of symbolic cultural evolution. Globalization may interfere with the social process. The Human Development Report 1999 took note of the adverse consequences of unregulated globalization on human development and recommended stronger global governance (Naqvi, 2002). Rabbanee et al. (2010) observe that while globalisation has often gone along with privatization and reduction of government help to the poor, it affects human development adversely. Huynen et al. (2005) analyse various pathways in which globalization may affect public health and highlights the need to regulate the impacts of globalization. Ball (2005) observes that globalization romanticizes 'the private' and demonizes the public welfare provision for the poor. Yang (2006) laments the pervasive ill effects of privatization of education in China. Globalization has affected the education sector to turn against the poor. As Lake and Baum (2001) point out, democracy is often instrumental in looking into the interest of the weaker section through public provisioning. Globalization may affect government aided public provisioning and affect social welfare, especially of the deprived class, adversely. Diametrically opposite to this, Tsai

(2006) finds that globalization affects human development/welfare positively. Sapkota (2011) studies a large number of countries and finds that all components of globalization (economic, social and political) have positive and statistically significant effect on human development.

There are many research studies that observe the impact of globalization on human development conditional or partial. For Sabi (2007) impact of globalization on human development is not appreciable in developing countries at low or low-middle income groups. Figueroa (2014) finds that in Central and South American countries overall globalization as well as social and political components of it has positive effect, but economic globalization has a negative effect on human development. Asongu (2012) studies African countries and finds that while trade globalization improves human development, financial globalization has the opposite effect. Lee and Vivarelli (2006) hold that levels of economic and human development are crucially important to determine the direction and the scope to globalization forces.

Along with the human capital, the social capital (Durkheim, 1997; Hanifan, 1916) is crucially important for development. Social capital not only generates internal economies, it also attracts material capital from abroad and helps in globalization. It is well acknowledged that corruption and malpractices erode away social capital and discourage inflow of foreign capital while a strong legal framework to check corruption enhances the inflow of foreign capital (Bayer and Alakbarov, 2016).

Knutsen (2008b) and Hegre and Fjelde (2008) found that democratic governments perform better on control of corruption. This control may support globalization. Lalountas et al. (2011) observe that globalization is a powerful weapon against corruption only for middle and high income countries, while for low income countries globalization has no significant impact on corruption. Das and DiRienzo (2009) find a nonlinear relationship between globalization and corruption. The effect of globalization on corruption is dependent on the level of globalization. The highest corruption levels are realized at moderate or transitioning levels of globalization.

Globalization has brought government officials and international businesses and trade agents into a close relationship and consequentially increased the opportunities for rent-seeking. Eisner (1995), Gould (1991) and Jreisat (1997) argue, therefore, that globalization has increased the opportunity of the use of official position for personal gain. Globalization has also made the detection of corrupt practices more difficult (Leiken, 1997; Elliott, 1997). Ewoh et al. (2013) find that while globalization of assets and capital markets has promoted corruption worldwide, it affects developing nations negatively more than it impacts advanced countries. On the contrary, Ades and Di Tella (1997; 1999), Brunetti and Weder (2003), Treisman (2000) and Herzfeld and Weiss (2003) find that globalization leads to reduction in corruption mainly due to openness. Badinger and Nin (2014) find that globalisation (trade and financial openness) has a negative effect on corruption, which is more pronounced in developing countries, while inequalities increase corruption. Golden (2002) found that in Italy globalization lead to decrease in corruption levels.

Relationship between Globalization and Social Progress

Globalization necessarily favours a market-based economy because it means economic integration of economies through markets. However, market that caters to the private interest may go against the public interest (Keynes, 1926; Hirsch, 1977; Naqvi, 2002). Singer (1950), Streeten (1998) and Naqvi (2002) argue that globalization may distort structural transformation, induce social tension, aggravate inequalities and erode the social-support systems as well as the established identities and values. Stiglitz et al. (2009) have pointed out that globalization is market-based and only poorly integrated with

the non-market based social processes, consequently contributing to the weakening of a sense of community. On the contrary, empirically, it has been found that the social progress index responds positively to globalization index (Mishra, 2017).

From the literature cited above, it is understandable that there is no direct relationship among globalization, political regimes, corruption, human development and social progress; they are related with each other through a complex network of institutions, historical precedents, resource endowments, socio-economic class structure and a host of other country-specific attributes. However, when such relationships are investigated for a large number of countries together, the country-specific attributes may be cancelled out to a large extents and some clear pattern might be discernible. The present investigation begins with such an optimistic presupposition.

A SIMULTANEOUS EQUATION MODEL OF GLOBALIZATION, NON-MATERIAL CAPITAL, REGIME TYPE AND SOCIAL PROGRESS

In the light of the literature cited above as well as the reasoning that guides an empirical research in economics, the present study hypothesizes a bi-directional causal relationship between the two sets of variables; the first set incorporating the measures of economic, social and political globalization and the second set consisting of the measures of political regime type and the measures of non-material capital (human development as a measure of human capital and corruption perception as a measure of social capital). Additionally, the measures of globalization and the measures of non-material capital are directly or indirectly influenced by the economic prosperity of a country (represented by per capita income). Finally, it is visualized that social progress is influenced by globalization, non-material capital, political regime type as well as economic development.





The schematic flow diagram of the model (which extends the abridged model in Mishra, 2018) is presented in Chart-1. It is a system of eleven structural equations (Chart-2) of which the first ten make three stimulator and/or moderator blocks while the last equation makes the fourth or final impact or response block. The first three blocks formulate how the different aspects of globalization are self-concordant and how they are influenced by non-material capital, political organization and per capita income of a nation. Per capita income is a stimulant to globalization. Globalization and the measures in the third block are mediator or moderators. They conceptualize how different aspects of



globalization influence as well as are influenced by non-material capital and political organization. The fourth block formulates how globalization, non-material capital, political regime and economic development influence the overall social welfare or social progress of a nation.

The eleven structural equations of the model are presented below. Functional form-wise, it is visualized that the relationships among the variables are linear in logarithm or $\log(y) = \log(\alpha_0) + \sum_{j=1}^{m} \alpha_j \log(x_j)$, where *y* is a response variable, x_j is a stimulus, predictor or explanatory variable, α_0 is a constant and α_j is the coefficient (which may also be interpreted as a measure of elasticity of *y* with respect to x_j).

$$E1_{t} = f(E2_{t}, S1_{t}, PCL_{06}, CP_{06}, HD_{06}, PCY_{06}) \qquad eq.(01)$$

$$E2_{t} = f(S2_{t}, S3_{t}, P_{t}, EPP_{06}, PPN_{06}, CP_{06}, HD_{06}) \qquad eq.(02)$$

$$S1_{t} = f(E1_{t}, S3_{t}, FOG_{06}, PCL_{06}, CVL_{06}, CP_{06}, HD_{06}) \qquad eq.(03)$$

$$S2_{t} = f(E2_{t}, PPN_{06}, PCL_{06}, CVL_{06}, HD_{06}, PCY_{06}) \qquad eq.(04)$$

$$S3_{t} = f(P_{t}, PCL_{06}, CP_{06}, HD_{06}) \qquad eq.(05)$$

$$P_{t} = f(E1_{t}, E2_{t}, S1_{t}, S2_{t}, S3_{t}, PCY_{06}) \qquad eq.(06)$$

$$DI_{16} = f(E2_{t}, S1_{t}, S2_{t}, S3_{t}, P_{t}) \qquad eq.(07)$$

$$CP_{16} = f(E1_{t}, E2_{t}, S1_{t}, S2_{t}, S3_{t}, P_{t}) \qquad eq.(08)$$

$$HD_{15} = f(E1_{t}, S2_{t}, S3_{t}) \qquad eq.(09)$$

$$GI_{10} = f(CP_{06}, HD_{06}, PCY_{06}, DI_{06}) \qquad eq.(10)$$

$$SP_{16} = f\left(DI_{16}, CP_{16}, HD_{15}, GI_{10}, PCY_{06}\right) \qquad eq.(11)$$

Chart-2. Functional Structure of the Model

The lists of endogenous and predetermined/exogenous variables of the model are presented in Chart 3 and Chart-4.

Sl. No.	Symbol	Socio-Economic and political Aspects	Description
1	E1	Economic Globalization Max or Min (2006-14)	Actual economic flows such as trans-border trade, direct investment and portfolio investment.
2	E2	Economic Globalization Max or Min (2006-14)	Relaxation of restrictions on trans-border trade as well as capital movement by means of taxation, tariff, etc.
3	S1	Social Globalization Max or Min (2006-14)	Trans-border personal contacts such as degree of tourism, telecom traffic, postal interactions, etc.
4	S2	Social Globalization Max or Min (2006-14)	Flow of information.

5	S3	Social Globalization Max or Min (2006-14)	Cultural proximity.
6	Р	Political Globalization Max or Min (2006-14)	Trans-national political set up.
7	DI16	Political Regime	Democracy Index for 2016.
8	CP16	Social Capital	Corruption Perception index for 2016.
9	HD15	Human Development	Human Development Index for 2015.
10	GI10	Overall Globalization	Max (2006-2014) or Min (2006-2014)
11	SP16	Social Progress	Social Progress Index for 2016.

Chart-3. List of Endogenous Variables

Sl. No.	Symbol	Socio-Economic and political Aspects	Description
1	EPP06	Measure of Democratic Practices	Electoral Process and Pluralism for 2006.
2	FOG06	Measure of Democratic Practices	Functioning of Government for 2006.
3	PPN06	Measure of Democratic Practices	Political Participation for 2006.
4	PCL06	Measure of Democratic Practices	Political Culture for 2006.
5	CVL06	Measure of Democratic Practices	Civil Liberties for 2006.
6	CP06	Social Capital	Corruption Perception index for 2006.
7	HD06	Human Development	Human Development Index for 2005.
8	PCY06	Per Capita Income	Per capita Income (in Int\$1000) for 2006
9	DI06	Overall Measure of Democracy	Overall Democracy Index for 2006



DATA OR THE MEASURES USED IN THIS STUDY

This study covers 116 countries drawn from all the continents including Africa (38 countries), the Americas (23 countries), Asia (26 countries), Europe (26 countries) and Oceania (3 countries). These countries together represent all types of political regime (full democracy to authoritarian), all levels of globalization (very low, to very high) and all levels of economic development, social progress, human capital and social capital. The data used by us are presented in the appendix. Table-A-1 present five measures for democracy (EPP_{106} , FOG_{106} , PPN_{106} , PCL_{106} , CVL_{106} and DI_{06} ; i=1 through 116) for the year 2006 as well as the overall measure of democracy DI_{16} for 2016. Table-A.2 presents corruption perception Index, human development Index and also the overall democracy index for 2006 and 2016. Table-A-2 also contains Social Progress Index (2016), Per Capita Income (2015 – in Int\$1000) and overall Globalization Indices scenario-wise (GI^{max} and GI^{min}, explained below). Table-A-3 and Table-A-4 present aspect-wise sub-indices as well as overall globalization indices for the two alternative (optimistic and pessimistic) scenarios explained below.



Measures of Different Aspects of Globalization with Two Scenarios

As it has been pointed out earlier, KOF(2017) visualizes and constructs three complementary aspects of globalization, economic, social and political, which are merged together by using the Principal Component Analysis to provide the overall index of globalization (Dreher, 2006; Dreher et al., 2008). This study uses those KOF sub-indices for the period 2006-2014 (KOF, 2017), but not the KOF measure of overall globalization. Instead, it uses AEMC overall index (Mishra, 2016b) of globalization based on the principle of 'almost equi-marginal contribution' that derives weights differently. Yet, the KOF and AEMC indices of overall globalization are highly correlated (r=0.98). The AEMC index, denote by G, is for 9 years (2006-2014) and 116 countries, i.e. $G_{i,i}$; i = 1, 2, ..., 116; j=2006, 2007, ..., 2014.

The indices of globalization of different countries fluctuate over the years on account of interactions among domestic (country-specific) and international politico-economic forces. Yet, during the study years the fluctuations are within a range. The country-specific ranges are wide or narrow depending on a particular country's domestic socio-political conditions and the overall acceptance of the globalization policy. Since the objective of this study is to gauge into the overall incidence and effects of globalization (and not into the temporal fluctuations) it is visualized that the range limits would provide better measures than the temporal variations. These limits are given by the maximum and the minimum values taken on by the globalization measures. Correspondingly, two scenarios have been visualized; the one that relates to the lower value (pessimistic scenario) and the other that relates to the upper value (optimistic scenario) of the AEMC globalization index of the country concerned. For every G_{ij} there are the associated sub-indices $[E1_{ij}, E2_{ij}, S1_{ij}, S2_{ij}, S3_{ij}$ and P_{ij}]; j=2006 through 2014 and i=1,2,..., 116. A pessimistic scenario vector is formed by:

$$\left[E1_{i}^{min}, E2_{i}^{min}, S1_{i}^{min}, S2_{i}^{min}, S3_{i}^{min}, P_{i}^{min}\right]$$
(1)

which is associated with

$$G_i^{min} = \min_j \left(G_{ij};_{j \in [2006, 2014]} \right), \text{ where } i = 1, 2, ..., 116$$

that gives the set of values associated with the lowest extent of globalization experienced by any country during 2006-2014.

Similarly, the optimistic scenario vector is:

$$\left[E1_i^{max}, E2_i^{max}, S1_i^{max}, S2_i^{max}, S3_i^{max}, P_i^{max}\right]$$
(2)

associated with

$$G_i^{max} = \max_j \left(G_{ij};_{j \in [2006, 2014]} \right), \text{ where } i = 1, 2, ..., 116$$

that gives the set of values associated with the highest extent of globalization experienced by any country during 2006-2014.

We have these two scenario vectors of globalization as our endogenous variables (along with other endogenous variables) for estimation of our model. These scenarios influence and are also influenced by other variables such as the measures of democracy, human and social capital, the social progress, etc.

The Measures of Non-Material Capital, democracy, economic development and social Progress

This study uses the human development index as a comprehensive measure of human capital. The corruption perception index is uses as a prototype measure of social capital.

The Economist Intelligence Unit (EIU) of the Economist Group has published the Democracy Index for 2006 onwards for several years, including 2016. The index is based on 60 indicators grouped in five different categories namely, Electoral process and pluralism (EPP), Functioning of government (FOG), Political participation (PPN), Political culture (PCL) and Civil liberties (CVL), and a linear aggregation of indicators under each category provides a sub-index of democracy in that category or aspect. Subsequently, these five sub-indices of different aspects of democracy are linearly aggregated to yield an overall index (DI or the Index of Democracy). On the basis of the overall score value of DI the political systems of different countries may be classified into full democracies, flawed democracies, hybrid regimes and authoritarian regimes. The present study uses the aspect-wise sub-indices for 2006 and the overall indices of democracy (DI) for 2006 and 2016.

Per capita income is a standard measure of potentialities to save and invest, productivity, the level of economic activities as well as the purchasing power of a country and, therefore, by implication, the proclivities to globalization. This study uses per capita income as a promoter of globalization. Yet, per capita income may not be a good measure social welfare. In view of this, the social progress index constructed by Social Progress Imperative may be a better measure. In the present study per capita income has been considered as an input variable while the social progress index has been considered as an output variable.

METHODOLOGICAL ASPECTS OF ESTIMATION OF THE MODEL

To estimate the parameters (of the structural equations) of the model this study uses Two-Stage Least Squares (2-SLS) method, which may be considered as instrumental variable method of estimation (Reiersøl, 1945). The 2-SLS uses the Least Squares methods to estimate reduced form as well as structural parameters. However, the very procedure adopted by the 2-SLS - that at the second stage it uses the linear function of all exogenous variables together with some exogenous variables (explicitly) as predictors - renders it susceptible to collinearity, which may have deleterious effects on the standard errors of the estimated parameters, including sign reversal (Smith and Brainard, 1976). To ameliorate the obnoxious effects of collinearity, this study uses the Shapley value regression (Lipovetsky, 2006; Mishra, 2016a) at the second stage of the 2-SLS. Optimization has been done by the Differential Evolution method of global optimization (Storn and Price, 1997).

FINDINGS

In what follows, the main findings of estimation of the model using the conventional as well as Shapley value based 2-SLS are presented for both alternative scenarios of globalization. As mentioned earlier, the use of Shapley value regression to estimate the parameters of the model is motivated by the presence of strong collinearity among the predictor variables that may not only render the coefficients estimated by conventional 2-SLS statistically insignificant, they also may bear incorrect sign. The findings presented in the next section corroborate to this concern.

The relative performance of Shapley-value based 2-SLS vis-à-vis the conventional 2-SLS in explaining different endogenous (response) variables also is important. To this end, the correlation matrices, presented in appendix Table-A-7 (pessimistic globalization scenario) and Table-A-8 (optimistic globalization scenario), are helpful. The correlation coefficients are: $r_{ii} = r(y_i, \hat{y}_i)$, where y_i is the *i*th observed endogenous variable and \hat{y}_i is the j^{th} endogenous variable estimated by conventional 2-SLS. It may be noted that $r_{i,i}^2 = r^2(y_i, \hat{y}_i)$ is the usual R^2 or the coefficient of determination that one reports in the regression results. Similarly, $r_{ij} = r(y_i, \breve{y}_j)$, where y_i is the i^{th} observed endogenous variable and \breve{y}_i is the *j*th endogenous variable estimated by Shapley value regression based 2-SLS. The coefficient of correlation between conventional 2-SLS estimated endogenous variable and Shapley value regression based 2-SLS is $r_{ii} = r(\hat{y}_i, \tilde{y}_i)$. A large value of $r(\hat{y}_i, \tilde{y}_i)$ indicates that the correlation between the conventional 2-SLS predicted and Shapley value regression based 2-SLS predicted vectors (of the same endogenous variable) is large or, in other words, the conventional 2-SLS and Shapley value regression based 2-SLS are highly conformal. Throughout it may be seen that $r_{ii} = r(\hat{y}_i, \tilde{y}_i)$ is large for all endogenous variables (Panel-3). Further, $r(y_i, \hat{y}_i)$ and $r(y_i, \tilde{y}_i)$ are very close to each other for all endogenous variables, although the latter is somewhat smaller than the former. This is the cost that one must pay to circumvent the deleterious effects of collinearity. These results confirm that Shapley value regression based 2-SLS will not mislead us.

Estimated Structural Equations for the Pessimistic Scenario of Globalization

The reduced form coefficients for the pessimistic scenario of globalization are presented in appendix Table-A-5. Therefore, only the estimated structural equations are presented here. Figures in the 2nd row are standard error of estimates.

Structural Equation Coefficients based on Conventional 2-SLS E1 = <u>0.0867E2</u> - <u>0.1246S1</u> - <u>0.1520PCL06</u> + <u>0.1721CP06</u> + <u>0.6295HD06</u> + <u>0.0946PCY06</u> + <u>1.1074</u>; R² = 0.5338 [0.4416 0.3006 0.1338 0.2098 0.4074 0.0851 0 86961 E2 = -1.6849S2 + 0.0748S3 + 0.4677P + 0.0223EPP06 - 0.0423PPN06 + 0.1577CP06 + 1.8505HD06 + 0.5884 ; R²= 0.6266 0.0755 [0.6781 0.0721 0.3723 0.0205 0.0530 0.5959 1.7255 S1 = -1.2730E1 + 0.2712S3 - 0.1795FOG06 - 0.1008PCL06 - 0.0246CVL06 + 0.6649CP06 + 1.2937HD06 + 1.4017; R²= 0.6794 [0.6973 0.1288 0.0694 0.1731 0.1143 0.1766 0.5043 1.84601 $S2 = -0.3332E2 + 0.0021PPN06 + 0.0284PCL06 + 0.0588CVL06 + 0.9389HD06 + 0.0659PCY06 + 0.9355; R^{2} = 0.8341$ 0.0224 [0.1968 0.0587 0.0387 0.1590 0.0274 0.4344] S3 = 4.2123P - 1.3758PCL06 + 0.9656CP06 + 2.1926HD06 - 22.0713; R²= 0.6902 [1.0359 0.4660 0.4750 2.86741 0.3107 $P = -0.5449E1 + 0.2950E2 - 0.1128S1 + 0.2904S2 + 0.0653S3 + 0.0756PCY06 + 3.9656; R^{2} = 0.2035$ 0.3470 0.1179 [0.2997 0.3903 0.1904 0.1131 1.2918] DI16 = 1.7965E2 + 0.0748S1 - 0.9651S2 - 0.0911S3 + 1.8591P - 7.1053; $R^2 = 0.7815$ [0.2541 0.1214 0.2408 0.0689 0.2439 1.3829] $CP16 = -0.1142E1 + 1.3943E2 + 1.0962S1 - 1.5450S2 - 0.1005S3 + 0.4666P - 0.7490; R^{2} = 0.7966$ [0.2737 0.2621 0.1197 0.2829 0.0724 0.2852 1.5387] HD15 = 0.1109E1 + 0.8247S2 - 0.0205S3 - 1.8695; R² = 0.9658 [0.0533 0.0598 0.0119 0.1799] GI10 = 0.1028CP06 + 0.2957HD06 + 0.1003PCY06 + 0.0802DI06 + 1.7130 ; R²= 0.8485 [0.0452 0.0897 0.0257 0.0349 0.30571

SP16 = 0.0916DI16 + 0.0792CP16 + 0.5984HD15 + 0.0646GI10 + 0.0083PCY06 + 2.0611; R² = 0.9407[0.0290 0.0456 0.1091 0.2180 0.0250 0.4869]

It is observed that in explaining E1 (Actual economic flows such as trans-border trade, direct investment and portfolio investment) most of the predictor variables bear statistically insignificant coefficients. The coefficients that are not statistically different from zero even at 10% level of significance have been underlined. Only HD06 (human development index) has the coefficient significantly different from zero at 10% significance. Relaxation of restrictions on trans-border trade as well as capital movement by means of taxation, tariff, etc (E2) has a negative coefficient (significant at 5%) associated with S2 (flow of information) which is not expected. Similarly, effects of trans-border trade, flow of finance etc (E1) and functioning of the government (FOG) affect S1 (trans-border personal contacts) adversely, which is contrary to expectation. Flow of information (S2) is adversely affected by relaxation of restrictions on trans-border trade and capital movement (E2), cultural proximity (S3) is adversely affected by political culture (PCL), political aspect of globalization (P) is adversely influenced by trans-border flow of goods, services and capital (E1) and so on which are contrary to expectation. In short, the conventional 2-SLS gives the results that are unexpected or contrary to expectation.

However, the structural coefficients associated with all predictor variables estimated by the Shapley value based 2-SLS (presented below) are positive as expected and except for a few (viz. FOG in predicting S1 and PPN in predicting S2) all others are significant at 5% or less (1% or even 0.1%). None of the coefficients is statistically insignificant (beyond 10% level of significance). It may be noted that there is no straightforward method to obtain standard error of estimates of the structural coefficients estimated by the Shapley value regression, and hence the Student's t values as well, which may be used for

testing the maintained hypothesis. This study, therefore, obtains the standard error of estimates of the Shapley value based structural parameters by jackknife resampling (presented in row 2 for every equation) and the associated t values (row 3 for every equation) are based on those standard error of estimates.

Structural Equation Coefficients based on Shapley Value Regression based 2-SLS
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SP16 = 0.1063Dl16 + 0.1115CP16 + 0.2175HD15 + 0.1997Gl10 + 0.0398PCY06 + 1.9393; R ² =0.9182 (0.0086) (0.0057) (0.0113) (0.0088) (0.0017) (0.0846) 12.40(0.01%) 19.67(0.01%) 19.30(0.01%) 22.78(0.01%) 23.30(0.01%) 22.92(0.01%)

Estimated Structural Equations for the Optimistic Scenario of Globalization

The reduced form coefficients for the optimistic scenario of globalization are presented in appendix Table-A-6. Here the estimated structural equation coefficients only are presented.

Structural Ed	quation Coe	fficients ba	ased on Con	ventional 2-SLS
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$E1 = \frac{-0.2781E2}{[0.5333]} - \frac{0.162651}{0.3063} - 0.2172PCL06 + 0.3275CP06 + \frac{0.5875HD06}{0.4848} + \frac{0.0492PCY06}{0.0792} + 2.9741; R^2 = 0.3351$
E2 = -1.063652 + 0.063253 - 0.0332P + 0.0012EPP06 + 0.0381PPN06 + 0.1861CP06 + 1.1882HD06 + 2.7324; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.6503 + 0.01861CP06 + 0.03899 + 0.03899 + 0.0424; R2 = 0.0424; R
$S1 = \frac{-0.5193E1}{[0.4077]} + \frac{0.1369S3}{0.0911} - \frac{0.1285FOG06}{0.0599} - \frac{0.0747PCL06}{0.1658} + \frac{0.0942CVL06}{0.0892} + \frac{0.5033CP06}{0.1611} + \frac{0.8058HD06}{0.3457} + \frac{0.7127}{1.8352}; R^2 = 0.6901$
S2 = $\frac{-0.2673E2}{[0.2195]}$ + $\frac{0.0337PPN06}{0.0207}$ + $\frac{0.0005PCL06}{0.0530}$ - $\frac{0.0150CVL06}{0.0333}$ + $\frac{0.7537HD06}{0.1701}$ + $\frac{0.0825PCY06}{0.0246}$ + $\frac{1.7271}{0.4198}$ = 0.8332
S3 = $5.1359P - 1.4324PCL06 + \frac{0.4062CP06}{0.3314} + 3.0841HD06 - 27.6722; R2 = 0.6838$ [1.5817 0.5067 0.3314 0.4628 4.8116]
$P = \frac{0.0895E1}{[0.1699} + 0.4338E2 - \frac{0.1234S1}{0.1898} - \frac{0.1982S2}{0.2957} - \frac{0.0565S3}{0.0700} + 0.1352PCY06 + 3.0562; R2 = 0.2201$
DI16 = $1.9196E2 + 0.1973S1 = 1.7623S2 + 0.0592S3 + 1.5784P = 4.2575; R^2 = 0.7436$ [0.2937 0.1685 0.3234 0.0586 0.3065 1.5561]
$CP16 = \frac{-0.0461E1}{[0.1921]} + 1.0973E2 + 1.2227S1 - 1.5718S2 - 0.1300S3 + 0.9546P - 2.3406; R^2 = 0.7624$
HD15 = $\frac{-0.0358E1}{[0.0495]}$ + 0.8084S2 + 0.0307S3 - 1.3796; R ² = 0.9519 [0.0495] 0.0640 0.0128 0.2542]
GI10 = 0.1173CP06 + 0.2686HD06 + 0.0756PCY06 + 0.0511Dl06 + 2.0800 ; R ² = 0.8525 [0.0379 0.0752 0.0216 0.0292 0.2563]
$SP16 = 0.0949D116 + 0.0854CP16 + 0.6199HD15 + 0.0136G110 + 0.0133PCY06 + 2.1679; R2 = 0.9407 \\ [0.0269 0.0421 0.0824 0.1387 0.0175 0.3643]$

The highlights of the findings based on the structural coefficients estimated by the conventional 2-SLS are: (i) political culture (PCL) affects E1 (trans-border trade and flow of capital) adversely; (ii) flow of information (s2) affects relaxation of restriction on flow of trans-border trade, capital, etc adversely; (iii) functioning of the government (FOG) affects trans-border personal contacts (S1) adversely; (iv) political culture (PCL) affects cultural proximity (S3) adversely; (v) trans-border flow of information (S2) affects democracy adversely (DI) and (vi) trans-border flow of information (S2) and cultural proximity (S3) affect corruption perception (CP) adversely. These findings are contrary to what one may expect and hence misguiding.

However, as in the case of the pessimistic scenario noted earlier, the structural coefficients associated with all predictor variables estimated by the Shapley value based 2-SLS (presented below) are positive as expected and except one (EPP in predicting E2); all others are statistically significant at 5% (or less) level of significance. None of the structural coefficients is statistically insignificant (beyond 10% level of significance). As mentioned before, the standard error of estimates for the estimated structural parameters obtained by Shapley value regression have been worked out by jackknife resampling and the associated t values are based on those standard error of estimates.



Structural Equation Coefficients based on Shapley Value Regression based 2-SLS

0.067751 + 0.0687PCL06 + 0.0721CP06 + 0.1092HD06 + 0.0255PCY06 + 2.2979; R² = 0.2994E1 = 0.1288E2 + (0.0248) (0.0126) (0.0248) (0.0144) (0.0245) (0.0059) (0.3085) 5.20(0.01%) 5.36(0.01%) 2.76(0.05%) 5.02(0.01%) 4.46(0.01%) 4.33(0.01%) 7.45(0.01%) E2 = 0.180552 + 0.035653 + 0.2978P + 0.0083EPP06 + 0.0301PPN06 + 0.0889CP06 + 0.1804HD06 + 0.7549; R² = 0.6113 (0.0178) (0.0039) (0.0368) (0.0055) (0.0072) (0.0127) (0.0244) (0.2680)1.51(10%) 10.13(0.01%) 9.10(0.01%) 8.09(0.01%) 4.16(0.01%) 7.00(0.01%) 7.41(0.01%) 2.82(0.05%) S1 = 0.3940E1 + 0.0785S3 + 0.0569FOG06 + 0.1825PCL06 + 0.1005CVL06 + 0.2029CP06 + 0.3477HD06 - 1.7141; R² = 0.6548 (0.0393) (0.0087) (0.0289) (0.0306) (0.0300)(0.0244) (0.0474) (0.3749)10.01(0.01%) 9.02(0.01%) 1.97(2.5%) 5.97(0.01%) 3.35(0.01%) 8.32(0.01%) 7.34(0.01%) -4.57(0.01%) S2 = 0.2692E2 + 0.0345PPN06 + 0.1043PCL06 + 0.0450CVL06 + 0.2492HD06 + 0.0542PCY06 + 1.0607; R² = 0.7776 (0.0194) (0.0105) (0.0153) (0.0136) (0.0197) (0.0046) (0.1492)13.85(0.01%) 3.30(0.01%) 6.83(0.01%) 3.31(0.01%) 12.66(0.01%) 11.85(0.01%) 7.11(0.01%) 0.5145PCL06 + 0.6073CP06 + 1.6646HD06 S3 = 2.9327P + - 20.9113; R² = 0.5998 (0.3861) (0.1492) (0.0741) (0.1958) (1.6362) 7.59(0.01%) 3.45(0.01%) 8.19(0.01%) 8.50(0.01%) -12.78(0.01%) P = 0.0650E10.0730E2 + 0.0327S1 + 0.0570S2 + 0.012153 + 0.0168PCY06 + 3.2792; $R^2 = 0.2029$ (0.0133) (0.0022) (0.0241)(0.0257)(0.0059) (0.0053)(0.1990)2.70(0.05%) 2.84(0.05%) 5.51(0.01%) 4.28(0.01%) 5.60(0.01%) 3.14(0.01 16.48(0.01%) $1.9679; R^2 = 0.5856$ DI16 =0.3937F2 + 0.0954S1 + 0.2359S2+ 0.0411S3 + 0.6754P (0, 0797)(0.0226) (0.0413) (0.0072) (0.1306) (0.6259) 4.94(0.01%) 4.21(0.01%) 5.71(0.01%) 5.70(0.01%) 5.17(0.01%) -3.14(0.01%)CP16 = 0.1741E1 + 0.2614E2 + 0.1980S1 + 0.2251S2 + 0.0368S3 + 0.4877P $1.9664; R^2 = 0.6318$ (0.0470)(0.0423)(0.0272)(0.0294)(0.0058)(0.1417)(0.6529)3.71(0.01%) 6.17(0.01%) 7.27(0.01%) 7.65(0.01%) 6.33(0.01%) 3.44(0.01%) -3.01(0.05%) 1.1973: R² = 0.9157 HD15 = 0.3420E1 + 0.3611S2 + 0.0642S3_ (0.0253)(0.0129) (0.0027) (0.1189) 13.50(0.01%) 27.93(0.01%) 24.16(0.01%) -10.07(0.01%) GI10 = 0.1333CP06 + 0.2350HD06 + 0.0594PCY06 + 0.1100DI06 + 1.9826; R² = 0.8452(0.0083) (0.0183) (0.0039) (0.0115) (0.1164)15.99(0.01%) 12.85(0.01%) 15.42(0.01%) 9.56(0.01%) 17.03(0.01%) SP16 = 0.1084DI16 + 0.1121CP16 + 0.2258HD15 + 0.2238GI10 + 0.0396PCY06 + 1.7957; $R^2 = 0.9179$ (0.0089)(0.0056) (0.0128) (0.0111) (0.0017) (0.0907) 12.12(0.01%) 19.88(0.01%) 17.70(0.01%) 20.22(0.01%) 23.42(0.01%) 19.80(0.01%)

The Sum of Elasticities

The structural equations of model in this study are all log-linear (or $y = \alpha_0 \prod_{j=1}^m x_j^{\alpha_j}$ in the natural form) and, therefore, α_j may be interpreted as the elasticity of y with respect to x_j . The sum total of elasticities $(s = \sum_{j=1}^m a_j)$ determines the degree of homogeneity of a function. If every x_j is multiplies by a constant (say, λ) then y will be multiplies by λ^s . The Table-1 below presents the sum of elasticities for different endogenous variables under the alternative procedures of estimation. The sum of elasticities for E1, E2, S2, P, HD15, GI10 and SP16 are all below unity. A 10% increase (λ =1.1) in the present values of their predictors would give rise to less than 10% (or λ^s ;0<s<1) increase in the quantity of those response variables. The elasticity in case of P and GI are only slightly more than 0.5. However, the value of s for S3, DI and CP is greater than unity and, therefore, 10% increase in the present values of their predictors would give rise to greater than 33 is hyper-elastic (s>5). As to S1 the conventional 2-SLS and

Shapley value based 2-SLS give quite different results. However, in view of better performance of the latter, one may conclude that S1 is elastic (since s for both the scenarios is greater than unity). These results clearly suggest that even if the pace of globalization would be tapering off over time, its impacts on trans-border personal connections (S1), acculturation or cultural proximity, democratization (DI) and social capital (corruption perception, CP) will continue increasing with acceleration. It may suggest that globalization will have more impact on socio-cultural and political spheres than economic sphere.

Scenario	Estimator	E1	E2	S1	S2	S3	Р	DI ₁₆	CP ₁₆	HD ₁₅	GI ₁₀	SP ₁₆
Pessimistic	Conven- tional	0.7063	0.8458	0.6519	0.7609	5.9947	0.0686	2.6742	1.1974	0.9151	0.5790	0.8421
Scenario	Shapley	0.7757	0.8099	1.2750	0.8226	5.2738	0.2692	1.3885	1.0830	0.6364	0.6310	0.6748
Optimistic	Conven- tional	0.3063	0.3800	0.8177	0.5881	7.1938	0.2804	1.9922	1.5267	0.8033	0.5126	0.8271
Scenario	Shapley	0.4720	0.8216	1.3630	0.7564	5.7191	0.2566	1.4415	1.3831	0.7673	0.5377	0.7097

Table-1. Degree of homogeneity or Sum of Elasticities (the Structural Coefficients) for Endogenous Variable

CONCLUDING REMARKS

The present study purported to investigate into the relationship among globalization, political regime type, human capital, social capital and social progress. A literature survey suggested differing views of the scholars, supported by arguments as well as empirical findings. Suggestions abound that hinted at bi-directional causality among the variables of interest.

The study formulated a simultaneous equation model connecting globalization, political regime type, human capital, corruption, per capita income and the social progress index. The specification of the model depended partly on the literature review and partly on reasoning. As to the structural equations, the endogenous variables were conceived to be connected to the predictor variables in a log-linear form. The model was estimated by the conventional 2-SLS method. It was found that the structural coefficients of the model were poorly estimated by the conventional 2-SLS owing to collinearity among the predictor variables. When the collinearity problem was treated by using the Shapley value regression (at the second stage of 2-SLS) much better and unambiguous results were obtained. All the estimated structural parameters bore the expected sign. Additionally, only a few of them were significant at 10% or 5% while most of them were significant at 1% level of significance. On the ground of the findings, it may be asserted that in predicting globalization FOG, PPN and EPP have been relatively weaker than other two (PCL and CVL) measures of regime type. On the other side, globalization affects democracy, social capital, human capital and social progress positively and in a statistically significant manner.

The findings confirm that globalization measures are consistent and conformal among themselves. Globalization positively influences and is influenced by democracy, human development and social capital. Globalization reduces corrupt practices and integrity promotes globalization. Finally, democracy, social capital (integrity) human development and globalization affect social progress positively. It has also been found that trans-border personal connection (S1), cultural proximity (S3) democracy (DI) and social capital (CP) are elastic (with the degree of homogeneity larger than unity) with respect to their predictors.

As a policy consideration, the findings suggest that economic globalization requires more political support, especially in matters of the functioning of the government, political participation by the people or people's representatives on their behalf and pluralistic political climate. It will curb the practices discouraging economic globalization. Social globalization is likely to follow the suit automatically.

In spite of notable and statistically significant findings, the present study has several limitations. First of all, the model does not include many variables (such as physical and financial capital, freedom index, innovation index, income inequalities, etc.) explicitly since it assumes that per capita income and the level of human development incorporate them indirectly. Incorporation of such relevant variables explicitly may shed more light on the relationships studied here. Similarly, institutions are indirectly represented by political regime and corruption perception index. However, many potent measures of social institutions can be included. Corruption is only a minor measure of social capital. The scope of social capital is vast and it requires many more indicators to represent it.

As to estimation of the model, it has been accomplished by a method that ignores correlation among the residuals of the endogenous variables across the equations. It directly speaks on the efficiency of estimation. System methods of estimation together with more concern shown to specification of the model in every equation may be the next step to refine the present work.

REFERENCES

- Acemoglu, D. and Robinson, J.A. (2006a). Economic Backwardness in Political Perspective. *American Political Science Review*, 100(1), 115-131.
- Acemoglu, D., and Robinson, J. A. (2006b). *Economic Origins of Dictatorship and Democracy*. Cambridge, Mass: Cambridge University Press.
- Adelman, I. and Morris, C, (1967). *Society, Politics and Economic Development*. Baltimore, Johns Hopkins University Press.
- Ades, A. and Di Tella, R. (1997) The new economics of corruption: a survey and some new results, *Political Studies*, XLV, 496-515.
- Ades, A., and Di Tella, R. (1999) Rents, competition and corruption. *The American Economic Review*, 89 (4), 982-993.
- Asongu, S.A. (2012). Globalization and Africa: implications for human development. MPRA Paper No. 36546, https://mpra.ub.uni-muenchen.de/36546/
- Badinger, H. and Nin, E. (2014). Globalisation and Corruption, Revisited. The World Economy, 37(10), 1424-1440.
- Ball, S. (2005). The Commercialisation of Education in England: Towards a New Form of Social Relations. Keynote address to the Japan-UK Education Forum, Kyoto.
- Barro, R. J. (1997). *Determinants of Economic Growth. A Cross-Country Empirical Study*. Cambridge, MA, The MIT Press.
- Barro, R.J. (1989). A cross-country study of growth, saving, and government. *NBER Working Paper No. 2855*. <u>http://www.nber.org/papers/w2855</u>. Cambridge, National Bureau of Economic Research.
- Bayer, Y. and Alakbarov, N. (2016). Corruption and foreign direct investment in emerging market economies. *Ecoforum*, 5(2:9), 303-308.
- Boix, C. (2003). Democracy and Redistribution. New York, Cambridge University Press.
- Brunetti, A. and Weder, B. (2003) A free press is bad news for corruption. *Journal of Public Economics*, 87(7-8), 1801-1824.
- Das, J. and DiRienzo, E. (2009). The Nonlinear Impact of Globalization on Corruption. *The International Journal of Business and Finance Research*, 3(2), 33-46.

- Dick, W.G. (1974). Authoritarian versus Nonauthoritarian Approaches to Economic Development. *Journal of Political Economy*, 82(4): 817-27.
- Dreher, A. (2006). Does Globalization Affect Growth? Evidence from a new Index of Globalization. *Applied Economics*, 38(10), 1091-1110.
- Dreher, A., Gaston, N. and Martens, P. (2008). *Measuring Globalisation: Gauging its Consequences*. New York: Springer.
- Durkheim, E. (1997). *The Division of Labour in Society*. (Trans. W. D. Halls, intro. Lewis A. Coser). New York, Free Press.
- Eichengreen, B. and Leblang, D. (2006). Democracy and Globalization. *NBER Working Paper 12450*. Cambridge, Mass: National Bureau of Economic Research.
- Eisner, M. (1995). The state in the American political economy. Englewood Cliffs, NJ: Prentice Hall.
- Elliott, K.A. (1997) Corruption as an International Policy Problem: Overview and Recommendations, in Kimberly Ann Elliott (ed.), Corruption and the Global Economy, 175–233, (Washington, DC: Institute For International Economics, 1997).
- Ewoh, A.I.E., Matei, A. and Matei, L. (2013). Corruption, public integrity, and globalization in South-Eastern European states. A comparative analysis. *Theoretical and Applied Economics*, 20(1:578), 7-34.
- Figueroa, A.M. (2014). The impact of globalization on human development in the developing countries: the case of Central and South America. *Revista Eletrônica de Ciência Política*, 5(2), 24-41.
- Golden, M. (2002) Does globalization reduce corruption? Some political consequences of economic integration. Unpublished Paper. http://www.sppsr.ucla.edu/cgpr/docs/ MiriamGoldenpaper.pdf
- Gould, D. (1991). Administrative corruption: Incidence, causes, and remedial strategies. In A. Farazmand (Ed.), Handbook of comparative and development public administration. New York: Marcel Dekker, pp. 467–484.
- Grier, K.B. and Tullock, G. (1989). An empirical analysis of cross-national economic growth, 1951-80. *Journal of Monetary Economics*, 24(2), 259-76.
- Haffoudhi, H. and Bellakhal, R. (2016). Threshold Effect of Globalization on Democracy: The Role of Demography. SSRN: <u>https://ssrn.com/abstract=2906308</u>.
- Halperin, M.H., Siegle, J.T. and Weinstein, M.M. (2005). *The Democracy Advantage: How Democracies Promote Prosperity and Peace*. New York, Routledge.
- Hanifan, L. J. (1916). The Rural School Community Center. *Annals of the American Academy of Political and Social Science*, 67(1), 130-138.
- Hayek, F.A. (1960). The Constitution of Liberty. Chicago: University of Chicago Press.
- Hegre, H. and Fjelde, H. (2008). Democracy Depraved: Political Corruption and Institutional Transitions. Paper presented at *the Norwegian National Political Science Conference, Tromsø*, 28th-30th April, 2008.
- Helliwell, J.F. (1992). Empirical linkages between democracy and economic growth. NBER Working Paper # 4066.
 National Bureau of Economic Research, Cambridge. Published as Helliwell, J.F. (1994). Empirical Linkages
 Between Democracy and Economic Growth. British Journal of Political Science, 24(2), 225-248.
- Herzfeld, T. and Weiss, C. (2003) Corruption and legal (in)-effectiveness: An empirical investigation. European Journal of Political Economy 19(3), 621-632.
- Hirsch F. (1977). Social Limits to Growth. London: Routledge and Kegan Paul.
- Huntington, S.P. and Jorge, I.D. (1975). Political Development. In Greenstein, F. I. and N. W. Polsby, N.W. (1975) eds. *Handbook of Political Science*. 3. Reading: Boston, Addison-Wesley, 1-114.
- Huynen, M.M., Martens, P. and Hilderink, H.B.M. (2005). The health impacts of globalisation: A conceptual framework. Global Health, 1(14). <u>https://www.ncbi.nlm.nih.gov/pmc/articles/</u>C1208931/ pdf/1744-8603-1-14.pdf
- Jreisat, J. (1997) Politics without process: Administering development in the Arab world. Boulder, Co: Lynne Reinner.
- Keynes, J. M. (1926). The End of Laissez-Faire. In Collected Writings (of J.M. Keynes), Volume 9, (1971-73), London: St Martin. See <u>https://www.panarchy.org/keynes/laissezfaire.1926.html</u>.

- Knutsen, C.H. (2007). Democracy and Property Rights A theoretical and empirical analysis on the effects of political regime type on property rights arrangements. Master's Thesis, Department of Economics, Oslo, University of Oslo.
- Knutsen, C.H. (2008a). From James Monroe and the Quing Dynasty to George W. Bush and the Communist Party: The historical evidence on how democracy and dictatorship affect economic growth. *Working Paper*. Department of Political Science, Oslo, University of Oslo.
- Knutsen, C.H. (2008b). The Economic Effects of Democracy An Empirical Analysis. *Working Paper*, Department of Political Science, Oslo, University of Oslo.
- Knutsen, C.H. (2010). Investigating the Lee-thesis: How bad is democracy for Asian economies? *European Political Science Review*, 2(3), 451–473. [Original manuscript of the paper (2009) at http://www.ibrarian.net/navon/paper/Investigating_the_Lee_thesis__How_bad_is_democrac.pdf?paperid=13409918].
- KOF [Konjunkturforschungsstelle or Economic Research Centre of ETH Zurich]. (2017). 2017 Index of globalization. http://globalization.kof.ethz.ch/media/filer_public/2017/04/19/rankings_2017.pdf
- Kohli, A. (1986). Democracy and Development. In Lewis, J.P. and Kallab, V. (1986) eds. *Development Strategies Reconsidered*. New Brunwick, Transaction Books, 153-82.
- Kollias, C. and Paleologou, S.M. (2016). Globalization and Democracy: A Disaggregated Analysis by Income Group. *Global Economy Journal*, 16(2), 213–228.
- Kormendi, R.C. and Meguire, P.G. (1985). Macroeconomic Determinants of Growth: Cross-Country Evidence. *Journal of Monetary Economics*, 16(2), 141-63.
- Lake, D.A. and Baum, M.A. (2001). The Invisible Hand of Democracy: Political Control and the Provision of Public Services. *Comparative Political Studies*, 34(6), 587-621.
- Lalountas, D.A., Manolas, G.A. and Ioannis, S.V. (2011). Corruption, globalization and development: How are these three phenomena related? *Journal of Policy Modeling*, 33(4), 636-648.
- Landau, D. (1986). Government and Economic Growth in the Less Developed Countries: An Empirical Study for 1960-1980. *Economic Development and Cultural Change*, 35(1), 35-75.
- Leblang, D.A. (1997). Political Democracy and Economic Growth: Pooled Cross-Sectional and Times-Series Evidence. *British Journal of Political Science*, 27 (3), 453-472.
- Lee, E. and Vivarelli, M. (2006). The Social Impact of Globalization in the Developing Countries. IZA DP No. 1925, Institute for the Study of Labor, Bonn, Germany.
- Leiken, R. S. (1997) Controlling the global corruption epidemic. Foreign Policy, Winter, 55–73.
- Li, Q. and Reuveny, R. (2003). Economic Globalization and Democracy: An Empirical Analysis. *British Journal of Political Science*, 33(1), 29-54.
- Lipovetsky, S. (2006). Entropy Criterion in Logistic Regression and Shapley Value of Predictors. *Journal of Modern Applied Statistical Methods*, 5(1), 95-106.
- Lipset, S.M. (1959). Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *American Political Science Review*, 53(1), 69-105.
- Marsh, R.M. (1979). Does democracy hinder economic development in the latecomer developing nations? *Comparative Social Research*, 2(2), 215-48.
- Milner, H.V. and Mukherjee, B. (2009). Democratization and Economic Globalization. *Annual Review Political Science*, 12(1), 163-181.
- Mishra, S.K. (2016a). Shapley Value Regression and the Resolution of Multicollinearity. *Journal of Economics Bibliography*, 3(3), 498-515.
- Mishra, S.K. (2016b). A Note on Construction of a Composite Index by Optimization of Shapley Value Shares of the Constituent Variables. *Turkish Economic Review*, 3(3), 466-472.
- Mishra, S.K. (2017). Trends in Globalization of Select Asian Countries. *Journal of Economic and Social Thought*, 4(4), 451-466.

- Mishra, S.K. (2018). A Study on Regime Type and Globalization in Simultaneous Equation Framework. *Journal of Economics and Financial Analysis*, 2(1), 99-128.
- Myrdal, G. (1972). *Asian Drama: An Inquiry into the Poverty of Nations*. (Abridged version by S.S. King of The Twentieth Century Fund Study). New York, Vintage Books.
- Naqvi, S.N.H. (2002). Globalization and human development: An overview. In Perspectives and Overview of Life Support Systems and Sustainable Development, Vol-II, Encyclopedia of Life Support Systems (UNESCO-EOLSS). Paris; UNESCO.
- Pourgerami, A. (1988). The political economy of development: A cross-national causality test of developmentdemocracy-growth hypothesis. *Public Choice*, 58(2), 123-41.
- Pourgerami, A. (1991). The political economy of development. An empirical investigation of the wealth theory of democracy. *Journal of Theoretical Politics*, 3(2), 189-211.
- Przeworski, A. (1966). *Party Systems and Economic Development*. Ph.D. dissertation: Illinois, North- western University.
- Przeworski, A. and Limongi, F. (1993). Political Regimes and Economic Growth. *The Journal of Economic Perspectives*, 7(3), 51-69.
- Rabbanee, F.K., Haque, M.M. and Hasan, F. (2010). Globalization and Human Development Realities and Recommendations for Developing Countries. *Asian Affairs*, 30(1), 32-49.
- Reiersøl, O. (1945). Confluence Analysis by Means of Instrumental Sets of Variables. *Arkiv for Mathematic, Astronomi, och Fysik. 32A*. Uppsala: Almquist & Wiksells.
- Remmer, K. (1990). Democracy and economic crisis: the Latin American experience. World Politics, 42(3), 315-35.
- Rodrik, D. (1998). Democracies Pay Higher Wages. *NBER Working Paper No. 6364*. National Bureau of Economic Research, Cambridge, Mass. http://www.nber.org/papers/w6364.
- Rudra, N. (2005). Globalization and the Strengthening of Democracy in the Developing World. *American Journal* of *Political Science*, 49(4), 704-730.
- Sabi, M. (2007).Globalization and Human Development. International Conference on Globalization and Its Discontents, Cortland. http://eco.ieu.edu.tr/wp-content/proceedings/2007/0707.pdf
- Sapkota, J.B. (2011). Globalization and Human Aspect of Development in Developing Countries: Evidence from Panel Data. Journal of Globalization Studies, 2(1), 78-96. https://www.socionauki.ru/journal/articles/132655/
- Schumpeter, J.A. (1950). Capitalism, Socialism and Democracy. New York: Harper & Row.
- Schwartzman, K.C. (1998). Globalization and democracy. Annual Review of Sociology, 24(1), 159-81.
- Scully, G.W. (1988). The Institutional Framework and Economic Development. *Journal of Political Economy*, 96(3), 652-62.
- Scully, G.W. (1992). Constitutional Environments and Economic Growth. Princeton, Princeton University Press.
- Sen, A.K. (1999). Development as freedom. New York, Oxford University Press.
- Singer, H. W. (1950). The distribution of gains between investing and borrowing countries. *American Economic Review*, 40(2), 473–485.
- Sirageldin, I. (2002). Sustainable Human Development in the Twenty-First Century: An Evolutionary Perspective. In Perspectives and Overview of Life Support Systems and Sustainable Development, Encyclopedia of Life Support Systems (UNESCO-EOLSS). Paris; UNESCO.
- Sloan, J. and Tedin, K.T. (1987). The Consequences of Regimes Type for Public-Policy Outputs. *Comparative Political Studies*, 20(1), 98-124.
- Smith, G., and Brainard, W. (1976). The Value of a priori Information in Estimating a Financial Model. *Journal of Finance*, 31(5), 1299-1322.
- Sobhan, R. (2003). Globalization and the Challenge to Democracy. *International Journal of Development Issues*, 2(2), 1-14.
- Stein, A.A. (2016). The Great Trilemma: Are Globalization, Democracy, and Sovereignty Compatible? *International Theory*, 8(2), 297-340.

- Steiner, N.D. (2015). Essays on Globalization and Democracy. D. Phil dissertation, vorgelegt dem Fachbereich 02 – Sozialwissenschaften, Medien und Sport der Johannes Gutenberg Univ., Mainz. https://nilssteiner.com/ wp-content/uploads/2017/01/Dissertation_Steiner_Introduction-only.pdf
- Stiglitz, J.E., Sen, A. and Fitoussi, J. (2009). The measurement of economic performance and social progress revisited. OFCE Centre de recherche en économie de Sciences Po, France.
- Storn, R. and Price, K. (1997). Differential evolution a simple and efficient heuristic for global optimization over continuous spaces. *Journal of Global Optimization*, 11(4), 341–359.
- Streeten, P. (1998). Globalization: threat or opportunity. Pakistan Development Review, 37(4), 51-85.
- Treisman, D. (2000) The causes of corruption: A cross-national study. Journal of Public Economics 76(3), 399-457.
- Tsai, M.C. (2006). Does Globalization Affect Human Well-being? Paper presented in XVI ISA World Congress of Sociology (WG06 Social Indicators Session), July 23-29, 2006 in Durban, South Africa. <u>https://pdfs.seman-ticscholar.org/1720/acc411e5437f6ecf0b6319fb79c50dde08dd.pdf</u>
- Turyahikayo, E. (2014). The Impact of Globalization on Domestic Political Structures in Established, Transitional and Non-Democracies. *Journal of Good Governance and Sustainable Development in Africa*, 2(2), 94-109.
- Weede, E. (1983). The Impact of Democracy on Economic Growth: Some Evidence from Cross-National Analysis. *Kyklos*, 36(1), 21-39.
- Yang, R. (2006). The Commodification of Education and Its Effects on Developing Countries: A Focus on China. *Journal für Entwicklungpolitik*, 22(4), 52-69.

APPENDIX [DATA USED IN THE PRESENT STUDY]

SL	Country		Dimension	Democracy Index 2006	Democracy Index 2016			
		EPP	FOG	PPN	PCL	CVL	DI ₀₆	DI ₁₆
1	Albania	7.33	5.07	4.44	5.63	7.06	5.91	5.91
2	Argentina	8.75	5.00	5.56	5.63	8.24	6.63	6.96
3	Australia	10.00	8.93	7.78	8.75	10.00	9.09	9.01
4	Austria	9.58	8.21	7.78	8.75	9.12	8.69	8.41
5	Azerbaijan	3.08	0.79	3.33	3.75	5.59	3.31	2.65
6	Burundi	4.42	3.29	3.89	6.25	4.71	4.51	2.40
7	Belgium	9.58	8.21	6.67	6.88	9.41	8.15	7.77
8	Benin	6.83	6.43	3.89	6.88	6.76	6.16	5.67
9	Burkina_Faso	4.00	1.79	2.78	5.63	4.41	3.72	4.70
10	Bulgaria	9.58	5.71	6.67	5.00	8.53	7.10	7.01
11	Bolivia	8.33	5.71	4.44	3.75	7.65	5.98	5.63
12	Brazil	9.58	7.86	4.44	5.63	9.41	7.38	6.90
13	Bhutan	0.08	4.64	1.11	3.75	3.53	2.62	4.93
14	Botswana	9.17	7.86	5.00	6.88	9.12	7.60	7.87
15	CAfr_Rep	0.42	1.43	1.67	1.88	2.65	1.61	1.61
16	Canada	9.17	9.64	7.78	8.75	10.00	9.07	9.15
17	Switzerland	9.58	9.29	7.78	8.75	9.71	9.02	9.09



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18	Chile	9.58	8.93	5.00	6.25	9.71	7.89	7.78
19	China	0.00	4.64	2.78	6.25	1.18	2.97	3.14
20	Cote_d'Ivoire	1.25	2.86	3.33	5.63	3.82	3.38	3.81
21	Cameroon	0.92	3.21	2.78	5.63	3.82	3.27	3.46
22	Congo_Rep.	4.58	0.36	2.78	3.75	2.35	2.76	2.91
23	Colombia	9.17	4.36	5.00	4.38	9.12	6.40	6.67
24	Costa_Rica	9.58	8.21	6.11	6.88	9.41	8.04	7.88
25	Cyprus	9.17	6.79	6.67	6.25	9.12	7.60	7.65
26	Germany	9.58	8.57	7.78	8.75	9.41	8.82	8.63
27	Denmark	10.00	9.64	8.89	9.38	9.71	9.52	9.20
28	Domin_Rep	9.17	4.29	3.33	5.63	8.24	6.13	6.67
29	Algeria	2.25	2.21	2.22	5.63	3.53	3.17	3.56
30	Ecuador	7.83	4.29	5.00	3.13	7.94	5.64	5.81
31	Egypt	2.67	3.64	2.78	6.88	3.53	3.90	3.31
32	Spain	9.58	7.86	6.11	8.75	9.41	8.34	8.30
33	Ethiopia	4.00	3.93	5.00	6.25	4.41	4.72	3.60
34	Finland	10.00	10.00	7.78	8.75	9.71	9.25	9.03
35	Fiji	6.50	5.21	3.33	5.00	8.24	5.66	5.64
36	France	9.58	7.50	6.67	7.50	9.12	8.07	7.92
37	Gabon	0.50	3.21	2.22	5.63	2.06	2.72	3.74
38	U.K.	9.58	8.57	5.00	8.13	9.12	8.08	8.36
39	Ghana	7.42	4.64	4.44	4.38	5.88	5.35	6.75
40	Guinea	1.00	0.79	2.22	3.75	2.35	2.02	3.14
41	Gambia	4.00	4.64	4.44	5.63	3.24	4.39	2.91
42	Greece	9.58	7.50	6.67	7.50	9.41	8.13	7.23
43	Guatemala	8.75	6.79	2.78	4.38	7.65	6.07	5.92
44	Guyana	8.33	5.36	4.44	4.38	8.24	6.15	6.25
45	Honduras	8.33	6.43	4.44	5.00	7.06	6.25	5.92
46	Haiti	5.58	3.64	2.78	2.50	6.47	4.19	4.02
47	Hungary	9.58	6.79	5.00	6.88	9.41	7.53	6.72
48	Indonesia	6.92	7.14	5.00	6.25	6.76	6.41	6.97
49	India	9.58	8.21	5.56	5.63	9.41	7.68	7.81
50	Ireland	9.58	8.93	7.78	8.75	10.00	9.01	9.15
51	Iceland	10.00	9.64	8.89	10.00	10.00	9.71	9.50
52	Israel	9.17	6.64	7.78	7.50	5.29	7.28	7.85
53	Italy	9.17	6.43	6.11	8.13	8.82	7.73	7.98
54	Jamaica	9.17	7.14	5.00	6.25	9.12	7.34	7.39
55	Jordan	3.08	3.79	3.89	5.00	3.82	3.92	3.96
56	Japan	9.17	7.86	5.56	8.75	9.41	8.15	7.99

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57	Kenya	4.33	4.29	5.56	6.25	5.00	5.08	5.33
58	Cambodia	5.58	6.07	2.78	5.00	4.41	4.77	4.27
59	South_Korea	9.58	7.14	7.22	7.50	7.94	7.88	7.92
60	Kuwait	1.33	4.14	1.11	5.63	3.24	3.09	3.85
61	Lebanon	7.92	2.36	6.11	6.25	6.47	5.82	4.86
62	Lesotho	7.92	6.43	4.44	6.25	7.35	6.48	6.59
63	Luxembourg	10.00	9.29	7.78	8.75	9.71	9.10	8.81
64	Morocco	3.50	3.79	2.78	5.63	3.82	3.90	4.77
65	Moldova	9.17	4.29	6.11	5.00	7.94	6.50	6.01
66	Madagascar	5.67	5.71	5.56	6.88	5.29	5.82	5.07
67	Mexico	8.75	6.07	5.00	5.00	8.53	6.67	6.47
68	Mali	8.25	5.71	3.89	5.63	6.47	5.99	5.70
69	Malta	9.17	8.21	6.11	8.75	9.71	8.39	8.39
70	Myanmar	0.00	1.79	0.56	5.63	0.88	1.77	4.20
71	Montenegro	9.17	5.71	5.00	5.63	7.35	6.57	5.72
72	Mongolia	9.17	6.07	3.89	5.63	8.24	6.60	6.62
73	Mauritania	1.83	4.29	2.22	3.13	4.12	3.12	3.96
74	Mauritius	9.17	8.21	5.00	8.13	9.71	8.04	8.28
75	Malawi	6.00	5.00	3.89	4.38	5.59	4.97	5.55
76	Malaysia	6.08	5.71	4.44	7.50	6.18	5.98	6.54
77	Niger	5.25	1.14	1.67	3.75	5.88	3.54	3.96
78	Nigeria	3.08	1.86	4.44	4.38	3.82	3.52	4.50
79	Nicaragua	8.25	5.71	3.33	3.75	7.35	5.68	4.81
80	Netherlands	9.58	9.29	9.44	10.00	10.00	9.66	8.80
81	Norway	10.00	9.64	10.00	8.13	10.00	9.55	9.93
82	Nepal	0.08	3.57	2.22	5.63	5.59	3.42	4.86
83	New_Zealand	10.00	8.57	8.33	8.13	10.00	9.01	9.26
84	Pakistan	4.33	5.36	0.56	4.38	5.00	3.92	4.33
85	Panama	9.58	7.14	5.56	5.63	8.82	7.35	7.13
86	Peru	8.75	3.29	5.56	5.00	7.94	6.11	6.65
87	Philippines	9.17	5.36	5.00	3.75	9.12	6.48	6.94
88	Poland	9.58	6.07	6.11	5.63	9.12	7.30	6.83
89	Portugal	9.58	8.21	6.11	7.50	9.41	8.16	7.86
90	Paraguay	7.92	5.00	5.00	4.38	8.53	6.16	6.27
91	Romania	9.58	6.07	6.11	5.00	8.53	7.06	6.62
92	Rwanda	3.00	3.57	2.22	5.00	5.29	3.82	3.07
93	Saudi_Arabia	0.00	2.36	1.11	4.38	1.76	1.92	1.93
94	Senegal	7.00	5.00	3.33	5.63	5.88	5.37	6.21
95	Singapore	4.33	7.50	2.78	7.50	7.35	5.89	6.38

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96	Sierra_Leone	5.25	2.21	2.22	3.75	4.41	3.57	4.55
97	El_Salvador	9.17	5.43	3.89	4.38	8.24	6.22	6.64
98	Sweden	10.00	10.00	10.00	9.38	10.00	9.88	9.39
99	Swaziland	1.75	2.86	2.22	3.13	4.71	2.93	3.03
100	Syr_Arab_Rep	0.00	1.79	1.67	6.88	1.47	2.36	1.43
101	Chad	0.00	0.00	0.00	5.00	3.24	1.65	1.50
102	Тодо	0.00	0.79	0.56	5.63	1.76	1.75	3.32
103	Thailand	4.83	6.43	5.00	5.63	6.47	5.67	4.92
104	Trinid & Tobago	9.17	6.79	6.11	5.63	8.24	7.18	7.10
105	Tunisia	0.00	2.36	2.22	6.88	3.82	3.06	6.40
106	Turkey	7.92	6.79	4.44	3.75	5.59	5.70	5.04
107	Tanzania	6.00	3.93	5.06	5.63	5.29	5.18	5.76
108	Uganda	4.33	3.93	4.44	6.25	6.76	5.14	5.26
109	Uruguay	10.00	8.21	5.00	6.88	9.71	7.96	8.17
110	U.S.A.	8.75	7.86	7.22	8.75	8.53	8.22	7.98
111	Venezuela_RB	7.00	3.64	5.56	5.00	5.88	5.42	4.68
112	Vietnam	0.83	4.29	2.78	4.38	1.47	2.75	3.38
113	Yemen_Rep.	2.67	2.71	2.78	4.38	2.35	2.98	2.07
114	South_Africa	8.75	7.86	7.22	6.88	8.82	7.91	7.41
115	Congo_D_Rep.	4.58	0.36	2.78	3.75	2.35	2.76	1.93
116	Zambia	5.25	4.64	3.33	6.25	6.76	5.25	5.99

Table-A-1. Scores Obtained by Countries on the Measures in Different Dimensions of Democracy [Source: https://en.wikipedia.org/wiki/Democracy_Index]

SL#	Country	Corru Perce	iption ption	Hur Develo	nan opment	PC In- come	Social Pro- gress	Democracy Index		Overall zation (AE	Overall Globali- zation Index (AEMC)	
		CP06	CP16	HD06	HD15	PCY06	SP16	DI06	DI16	GI (Min)	GI (Max)	
1	Albania	26	39	7.03	7.64	4.90	69.79	5.91	59.10	50.86	61.61	
2	Argentina	29	36	7.88	8.27	13.70	75.20	6.63	69.60	57.09	59.19	
3	Australia	87	79	9.18	9.39	32.00	89.13	9.09	90.10	82.24	84.03	
4	Austria	86	75	8.60	8.93	32.90	86.60	8.69	84.10	91.36	93.95	
5	Azerbaijan	24	30	7.08	7.59	4.70	63.76	3.31	26.50	52.78	54.69	
6	Burundi	24	20	3.09	4.04	0.60	37.33	4.51	24.00	26.92	34.79	
7	Belgium	73	77	8.71	8.96	31.90	86.19	8.15	77.70	92.32	93.75	
8	Benin	25	36	4.38	4.85	1.10	50.03	6.16	56.70	41.61	48.99	
9	Burkina_Faso	32	42	3.34	4.02	1.20	49.34	3.72	47.00	41.27	49.12	
10	Bulgaria	40	41	7.55	7.94	9.00	72.14	7.10	70.10	69.36	76.34	
11	Bolivia	27	33	6.26	6.74	2.70	64.74	5.98	56.30	53.62	56.38	

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12	Brazil	33	40	7.00	7.54	8.40	71.70	7.38	69.00	55.59	58.16
13	Bhutan	60	65	5.50	6.07	1.40	65.65	2.62	49.30	35.44	47.07
14	Botswana	56	60	6.30	6.98	10.00	67.04	7.60	78.70	49.05	60.64
15	CAfr_Rep	24	20	3.30	3.52	1.10	30.03	1.61	16.10	34.45	37.27
16	Canada	85	82	8.94	9.20	32.90	89.50	9.07	91.50	86.39	87.51
17	Switzerland	91	86	9.11	9.39	35.30	88.87	9.02	90.90	91.37	93.18
18	Chile	73	66	7.97	8.47	11.30	82.12	7.89	77.80	69.54	72.77
19	China	33	40	6.59	7.38	6.30	62.11	2.97	31.40	55.12	56.85
20	Cote_d'Ivoire	21	34	4.18	4.74	1.50	48.97	3.38	38.10	48.82	53.08
21	Cameroon	23	26	4.56	5.18	1.90	47.22	3.27	34.60	40.16	42.75
22	Congo_Rep.	22	20	5.17	5.92	0.70	49.74	2.76	29.10	47.78	57.31
23	Colombia	39	37	6.75	7.27	7.10	70.84	6.40	66.70	54.44	58.23
24	Costa_Rica	41	58	7.34	7.76	10.10	80.12	8.04	78.80	61.03	63.45
25	Cyprus	56	55	8.36	8.56	20.30	80.75	7.60	76.50	78.44	89.36
26	Germany	80	81	8.98	9.26	29.80	86.42	8.82	86.30	85.16	87.44
27	Denmark	95	90	9.04	9.25	33.40	89.40	9.52	92.00	88.85	91.90
28	Domin_Rep	28	31	6.85	7.22	6.60	65.66	6.13	66.70	55.44	67.20
29	Algeria	31	34	6.90	7.45	7.20	61.19	3.17	35.60	42.36	53.32
30	Ecuador	23	31	6.96	7.39	3.90	69.57	5.64	58.10	51.64	56.77
31	Egypt	33	34	6.44	6.91	4.40	60.75	3.90	33.10	53.67	59.62
32	Spain	68	58	8.49	8.84	25.20	85.88	8.34	83.00	84.60	86.71
33	Ethiopia	24	34	3.62	4.48	0.80	43.50	4.72	36.00	37.47	39.87
34	Finland	96	89	8.73	8.95	30.60	90.10	9.25	90.30	85.04	87.36
35	Fiji	40	40	6.98	7.36	6.10	66.50	5.66	56.40	57.81	61.30
36	France	74	69	8.73	8.97	30.00	84.79	8.07	79.20	87.32	89.36
37	Gabon	30	35	6.45	6.97	5.80	60.22	2.72	37.40	51.79	59.46
38	U.K.	86	81	8.89	9.10	30.90	88.58	8.08	83.60	88.15	89.91
39	Ghana	33	43	5.19	5.79	2.40	60.38	5.35	67.50	50.64	55.67
40	Guinea	19	27	3.64	4.14	2.20	41.66	2.02	31.40	40.45	46.82
41	Gambia	25	26	4.20	4.52	1.80	50.30	4.39	29.10	51.12	54.92
42	Greece	44	44	8.55	8.66	22.80	78.27	8.13	72.30	80.21	83.44
43	Guatemala	26	28	5.78	6.40	5.20	61.69	6.07	59.20	56.59	57.71
44	Guyana	25	34	6.20	6.38	3.80	60.00	6.15	62.50	49.78	59.99
45	Honduras	25	30	5.90	6.25	2.80	60.65	6.25	59.20	57.05	60.57
46	Haiti	18	20	4.58	4.93	1.60	43.15	4.19	40.20	34.53	38.47
47	Hungary	52	48	8.09	8.36	16.10	76.88	7.53	67.20	86.30	87.02
48	Indonesia	24	37	6.38	6.89	3.70	62.28	6.41	69.70	54.53	57.96
49	India	33	40	5.46	6.24	3.40	53.92	7.68	78.10	47.98	50.87
50	Ireland	74	73	9.02	9.23	34.10	87.94	9.01	91.50	89.89	95.20



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51	Iceland	96	78	8.87	9.21	34.90	88.45	9.71	95.00	71.77	81.39
52	Israel	59	64	8.72	8.99	22.30	75.32	7.28	78.50	75.13	80.79
53	Italy	49	47	8.62	8.87	28.40	82.49	7.73	79.80	81.77	83.57
54	Jamaica	37	39	7.14	7.30	4.20	71.94	7.34	73.90	62.05	66.57
55	Jordan	53	48	7.36	7.42	4.80	65.44	3.92	39.60	69.18	73.94
56	Japan	76	72	8.77	9.03	30.70	86.54	8.15	79.90	65.61	68.81
57	Kenya	22	26	4.94	5.55	1.20	53.72	5.08	53.30	42.55	45.80
58	Cambodia	21	21	4.95	5.63	2.20	54.29	4.77	42.70	49.02	54.22
59	South_Korea	51	53	8.67	9.01	20.40	80.92	7.88	79.20	61.36	66.05
60	Kuwait	48	41	7.87	8.00	22.80	71.84	3.09	38.50	67.03	72.18
61	Lebanon	36	28	7.31	7.63	5.30	64.43	5.82	48.60	67.36	74.20
62	Lesotho	32	39	4.40	4.97	3.00	52.39	6.48	65.90	36.96	48.77
63	Luxembourg	86	81	8.77	8.98	55.60	91.00	9.10	88.10	83.89	89.59
64	Morocco	32	37	5.81	6.47	4.30	61.93	3.90	47.70	56.51	64.33
65	Moldova	32	30	6.56	6.99	2.10	64.74	6.50	60.10	58.36	61.70
66	Madagascar	31	26	4.83	5.12	0.90	45.91	5.82	50.70	39.25	42.98
67	Mexico	33	30	7.31	7.62	10.10	70.03	6.67	64.70	57.99	61.61
68	Mali	28	32	3.63	4.42	1.00	46.24	5.99	57.00	44.06	46.72
69	Malta	64	55	8.08	8.56	19.00	84.60	8.39	83.90	76.39	78.24
70	Myanmar	19	28	4.84	5.56	1.60	49.84	1.77	42.00	32.04	38.40
71	Montenegro	28	45	7.62	8.07	2.70	68.17	6.57	57.20	56.97	66.92
72	Mongolia	28	38	6.61	7.35	2.20	62.81	6.60	66.20	46.41	55.63
73	Mauritania	31	27	4.75	5.13	2.00	46.08	3.12	39.60	43.65	52.55
74	Mauritius	51	54	7.20	7.81	13.20	73.24	8.04	82.80	60.47	66.81
75	Malawi	27	31	3.87	4.76	0.60	53.44	4.97	55.50	40.16	46.09
76	Malaysia	50	49	7.36	7.89	10.40	70.08	5.98	65.40	79.14	81.07
77	Niger	23	35	2.93	3.53	0.80	41.63	3.54	39.60	41.05	50.86
78	Nigeria	22	28	4.77	5.27	1.00	46.49	3.52	45.00	48.17	52.53
79	Nicaragua	26	26	6.01	6.45	2.40	63.04	5.68	48.10	51.57	53.56
80	Netherlands	87	83	8.99	9.24	30.60	88.66	9.66	88.00	93.78	95.24
81	Norway	88	85	9.34	9.49	42.40	88.70	9.55	99.30	85.24	86.83
82	Nepal	25	29	4.86	5.58	1.50	57.41	3.42	48.60	34.44	36.70
83	New_Zealand	96	90	8.91	9.15	24.20	88.46	9.01	92.60	78.48	80.12
84	Pakistan	22	32	5.05	5.50	2.40	49.13	3.92	43.30	48.64	51.16
85	Panama	31	38	7.43	7.88	7.10	73.02	7.35	71.30	65.63	67.56
86	Peru	33	35	6.96	7.40	6.10	70.10	6.11	66.50	62.50	65.24
87	Philippines	25	35	6.48	6.82	5.10	65.93	6.48	69.40	55.98	59.19
88	Poland	37	62	8.08	8.55	12.70	79.76	7.30	68.30	76.61	79.32
89	Portugal	66	62	7.97	8.43	18.60	83.88	8.16	78.60	83.54	88.21

90	Paraguay	26	30	6.49	6.93	4.90	67.45	6.16	62.70	56.32	59.39
91	Romania	31	48	7.66	8.02	8.40	72.24	7.06	66.20	64.99	73.36
92	Rwanda	25	54	4.24	4.98	1.30	51.91	3.82	30.70	34.22	43.83
93	Saudi_Arabia	33	46	7.73	8.47	12.90	66.31	1.92	19.30	66.57	69.75
94	Senegal	33	45	4.25	4.94	1.70	55.65	5.37	62.10	51.75	54.59
95	Singapore	94	84	8.73	9.25	29.90	82.19	5.89	63.80	87.04	91.52
96	Sierra_Leone	22	30	3.57	4.20	0.90	44.22	3.57	45.50	36.81	48.29
97	El_Salvador	40	36	6.57	6.80	5.10	66.37	6.22	66.40	59.25	64.02
98	Sweden	92	88	8.95	9.13	29.80	88.80	9.88	93.90	89.13	91.73
99	Swaziland	25	43	5.08	5.41	5.50	51.76	2.93	30.30	47.23	51.92
100	Syr_Arab_Rep	29	13	6.44	5.36	3.40	52.10	2.36	14.30	45.17	50.02
101	Chad	20	20	3.06	3.96	1.80	36.38	1.65	15.00	39.14	41.70
102	Тодо	24	32	4.43	4.87	1.70	49.03	1.75	33.20	47.25	54.25
103	Thailand	36	35	6.87	7.40	8.30	67.44	5.67	49.20	62.95	71.71
104	Trinid & Tobago	32	35	7.60	7.80	12.90	69.00	7.18	71.00	59.84	65.62
105	Tunisia	46	41	6.95	7.25	7.60	68.01	3.06	64.00	58.22	60.63
106	Turkey	38	41	6.97	7.67	7.90	67.83	5.70	50.40	65.92	69.88
107	Tanzania	29	32	4.57	5.31	0.70	49.99	5.18	57.60	34.91	37.42
108	Uganda	27	25	4.42	4.93	1.70	50.69	5.14	52.60	42.80	45.69
109	Uruguay	64	71	7.60	7.95	16.00	80.12	7.96	81.70	66.74	68.14
110	U.S.A.	73	74	9.01	9.20	42.00	84.62	8.22	79.80	78.47	81.15
111	Venezuela_RB	23	17	7.28	7.67	6.50	63.46	5.42	46.80	48.92	55.45
112	Vietnam	26	33	6.25	6.83	3.00	63.47	2.75	33.80	42.59	54.98
113	Yemen_Rep.	26	14	4.77	4.82	0.80	41.76	2.98	20.70	42.64	46.66
114	South_Africa	46	45	6.12	6.66	12.10	67.61	7.91	74.10	64.93	67.54
115	Congo_D_Rep.	20	21	3.70	4.35	0.80	46.23	2.76	19.30	24.95	42.31
116	Zambia	26	38	4.92	5.79	0.90	50.00	5.25	59.90	46.41	54.04
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Table-A-2. Corruption Perception Index, Human Development Index, Per Capita Income, Social Progress Index, Democracy Index and Overall Globalization Index in the Countries under Study

Sources: Wikipedia for Corruption Perception, Human Development, Per-capita Income (in Int\$1000), Social Progress and Democracy Indices. For Overall Globalization Index, GI(Max) and GI(Min) based on AEMC principle, see Tables 3 and 4 below.

SL	Country	Year-H	E1	E2	S 1	S2	\$3	Р	KOF	AEMC
1	Albania	2009	56.57	73.00	52.55	73.90	2.42	80.69	61.60	61.61
2	Argentina	2008	45.92	39.11	43.30	71.50	41.47	92.07	59.95	59.19
3	Australia	2007	74.79	81.24	73.40	87.55	94.03	89.71	83.80	84.03
4	Austria	2007	89.34	86.56	87.06	92.06	95.54	96.86	91.87	93.95
5	Azerbaijan	2007	67.38	63.70	37.92	77.61	34.96	54.01	57.02	54.69
6	Burundi	2014	23.53	33.37	21.02	37.22	3.10	62.17	35.04	34.79



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7	Belgium	2007	96.71	82.81	81.94	96.39	91.22	97.67	92.41	93.75
8	Benin	2014	53.79	42.92	28.55	39.46	2.48	75.17	46.67	48.99
9	Burkina_Faso	2014	59.67	46.84	19.43	44.62	2.17	76.88	48.69	49.12
10	Bulgaria	2013	80.04	72.93	51.55	77.71	85.30	84.96	76.98	76.34
11	Bolivia	2006	62.03	59.79	39.52	51.01	3.78	75.69	54.42	56.38
12	Brazil	2014	51.77	52.82	24.46	70.50	39.58	94.30	61.40	58.16
13	Bhutan	2014	60.64	56.77	46.83	45.54	6.87	38.85	43.58	47.07
14	Botswana	2008	77.58	59.64	59.54	57.17	5.88	59.28	55.50	60.64
15	CAfr_Rep	2014	49.56	28.29	13.44	40.71	2.24	58.39	36.34	37.27
16	Canada	2007	76.20	82.03	80.78	94.74	96.09	92.91	87.15	87.51
17	Switzerland	2014	95.02	70.51	91.77	87.57	94.47	93.40	88.79	93.18
18	Chile	2007	82.68	87.08	41.25	77.69	41.18	87.67	74.31	72.77
19	China	2014	43.49	62.19	18.71	65.65	78.37	84.26	62.02	56.85
20	Cote_d'Ivoire	2007	63.35	40.17	41.85	52.15	2.85	70.72	49.83	53.08
21	Cameroon	2014	44.96	38.31	16.91	52.02	2.24	73.16	44.20	42.75
22	Congo_Rep.	2014	96.24	41.58	35.45	43.93	1.25	63.67	51.83	57.31
23	Colombia	2013	58.32	57.38	33.46	69.69	38.12	79.65	60.15	58.23
24	Costa_Rica	2007	64.79	73.30	60.37	78.75	45.65	58.63	63.66	63.45
25	Cyprus	2008	93.50	84.06	88.10	95.69	93.84	78.36	87.32	89.36
26	Germany	2007	81.36	84.49	76.35	87.52	92.57	92.43	86.48	87.44
27	Denmark	2007	87.80	89.09	83.64	89.59	93.06	93.75	90.01	91.90
28	Domin_Rep	2014	64.15	59.56	53.70	64.97	79.14	73.31	66.45	67.20
29	Algeria	2006	55.36	52.55	32.39	64.92	1.93	80.65	54.00	53.32
30	Ecuador	2006	55.97	46.00	36.82	65.37	38.22	79.01	57.39	56.77
31	Egypt	2013	42.96	48.68	27.64	66.78	77.77	93.01	63.10	59.62
32	Spain	2007	78.33	81.36	74.93	87.72	90.22	95.93	85.92	86.71
33	Ethiopia	2014	24.93	28.39	19.32	33.17	2.85	82.51	39.33	39.87
34	Finland	2007	85.16	87.39	72.07	90.60	91.67	91.64	87.22	87.36
35	Fiji	2014	74.43	25.70	56.98	57.20	43.56	69.68	57.56	61.30
36	France	2007	76.99	87.19	80.56	88.36	91.79	97.96	88.23	89.36
37	Gabon	2014	75.55	42.75	52.22	63.44	2.36	72.30	55.96	59.46
38	U.K.	2006	81.91	89.75	79.57	90.54	93.30	94.90	89.06	89.91
39	Ghana	2014	62.30	54.48	27.85	45.77	3.96	85.72	54.17	55.67
40	Guinea	2014	57.21	31.29	21.72	41.38	2.73	76.19	44.40	46.82
41	Gambia	2006	70.76	49.68	45.63	57.79	6.31	61.86	51.78	54.92
42	Greece	2007	68.15	83.53	76.51	83.41	85.44	92.38	82.59	83.44
43	Guatemala	2014	48.00	74.96	26.23	57.23	42.95	83.01	60.42	57.71
44	Guyana	2006	80.52	62.07	56.43	55.51	44.10	43.34	56.44	59.99
45	Honduras	2014	74.61	71.19	28.45	58.46	39.51	71.84	61.42	60.57

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46	Haiti	2010	34.21	62.93	28.71	50.84	1.00	45.88	39.36	38.47
47	Hungary	2009	92.14	85.86	65.93	89.31	89.62	91.47	86.99	87.02
48	Indonesia	2014	56.25	71.79	20.40	49.92	33.89	86.83	59.65	57.96
49	India	2014	43.78	44.93	14.10	45.12	32.98	91.23	52.38	50.87
50	Ireland	2014	99.52	89.78	89.37	91.72	91.88	90.47	92.15	95.20
51	Iceland	2008	89.32	64.89	81.47	80.36	91.88	70.11	77.86	81.39
52	Israel	2010	71.59	83.51	75.06	67.25	90.37	80.29	78.15	80.79
53	Italy	2007	68.17	83.24	70.46	78.72	86.52	97.92	82.85	83.57
54	Jamaica	2007	80.64	70.00	63.13	69.52	7.11	68.56	62.72	66.57
55	Jordan	2006	79.36	59.47	67.97	71.54	41.11	84.27	70.31	73.94
56	Japan	2014	50.41	76.54	43.39	75.59	87.91	88.10	72.26	68.81
57	Kenya	2007	27.19	46.79	29.61	46.02	3.72	82.92	46.46	45.80
58	Cambodia	2014	85.86	50.76	29.52	48.48	1.31	62.36	50.69	54.22
59	South_Korea	2014	62.52	63.76	43.81	73.55	42.42	89.58	67.03	66.05
60	Kuwait	2008	61.31	75.01	78.96	76.28	90.41	59.54	70.76	72.18
61	Lebanon	2006	86.92	62.30	70.38	81.04	43.26	74.55	70.50	74.20
62	Lesotho	2014	80.48	41.22	25.58	48.74	6.87	54.09	45.94	48.77
63	Luxembourg	2007	100.00	88.46	96.09	97.51	48.25	80.06	85.62	89.59
64	Morocco	2014	60.71	53.68	45.87	83.86	37.71	89.50	65.95	64.33
65	Moldova	2007	67.96	69.67	44.90	84.17	39.27	67.22	64.04	61.70
66	Madagascar	2014	62.47	36.71	11.21	48.02	2.73	65.10	42.90	42.98
67	Mexico	2014	63.45	68.45	44.30	68.92	40.12	71.72	62.29	61.61
68	Mali	2014	50.97	41.67	22.46	44.10	1.12	75.98	46.07	46.72
69	Malta	2009	99.76	87.06	83.18	96.04	49.74	52.58	76.16	78.24
70	Myanmar	2014	56.93	56.33	11.89	42.07	1.00	44.74	39.03	38.40
71	Montenegro	2010	81.65	79.55	72.69	94.41	5.08	56.33	65.48	66.92
72	Mongolia	2014	84.88	65.73	16.76	59.40	1.43	71.89	56.91	55.63
73	Mauritania	2014	79.30	58.16	19.77	51.82	1.37	66.99	51.45	52.55
74	Mauritius	2014	91.12	84.89	58.78	82.06	42.61	45.32	66.61	66.81
75	Malawi	2013	49.90	52.47	26.25	41.95	6.99	64.35	45.40	46.09
76	Malaysia	2010	89.03	69.62	64.71	75.92	87.52	83.17	79.12	81.07
77	Niger	2014	54.67	50.44	32.41	35.30	1.74	74.33	47.92	50.86
78	Nigeria	2009	65.10	47.51	12.39	52.93	3.47	89.37	54.36	52.53
79	Nicaragua	2012	61.15	61.69	34.97	56.57	40.24	57.38	53.99	53.56
80	Netherlands	2014	97.64	88.48	85.98	93.26	92.75	95.41	92.84	95.24
81	Norway	2013	80.32	72.93	81.74	85.52	91.68	92.27	84.48	86.83
82	Nepal	2013	13.26	39.95	24.97	44.85	2.79	70.69	38.18	36.70
83	New_Zealand	2008	76.62	90.04	79.32	91.46	50.44	80.05	79.17	80.12
84	Pakistan	2007	40.85	43.25	23.40	44.12	32.38	87.55	51.83	51.16

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85	Panama	2009	89.59	71.32	50.84	81.17	47.74	60.74	67.70	67.56
86	Peru	2011	69.02	82.53	32.33	58.27	36.87	84.74	66.14	65.24
87	Philippines	2006	65.22	52.73	30.26	49.70	39.96	81.96	58.39	59.19
88	Poland	2014	77.73	76.38	57.40	92.23	89.22	88.82	81.32	79.32
89	Portugal	2007	82.71	87.10	76.48	91.10	88.73	93.85	87.61	88.21
90	Paraguay	2012	62.44	56.59	36.33	65.09	39.86	77.61	60.13	59.39
91	Romania	2014	60.67	83.22	48.07	82.02	82.39	89.82	76.51	73.36
92	Rwanda	2014	34.81	63.91	17.27	39.87	7.05	71.53	45.56	43.83
93	Saudi_Arabia	2009	62.95	76.19	69.00	71.18	83.25	60.43	68.43	69.75
94	Senegal	2012	57.58	47.32	29.33	58.91	3.53	87.90	54.64	54.59
95	Singapore	2009	99.01	95.35	92.18	88.25	96.12	71.77	88.27	91.52
96	Sierra_Leone	2011	69.70	46.89	19.84	38.92	3.16	65.10	45.90	48.29
97	El_Salvador	2007	61.06	72.79	49.35	64.68	40.80	75.40	63.79	64.02
98	Sweden	2007	88.33	86.26	80.84	84.38	94.73	96.03	89.41	91.73
99	Swaziland	2014	77.83	43.61	59.31	60.20	6.37	36.55	47.48	51.92
100	Syr_Arab_Rep	2011	53.48	55.43	51.94	65.49	1.00	52.73	48.93	50.02
101	Chad	2006	55.49	27.21	23.94	32.35	2.91	60.04	38.37	41.70
102	Togo	2014	78.62	46.54	25.04	57.99	3.72	73.38	53.70	54.25
103	Thailand	2012	83.87	59.54	42.90	72.93	80.93	81.22	72.06	71.71
104	Trinid & Tobago	2012	86.13	68.86	58.65	67.24	41.73	53.54	63.09	65.62
105	Tunisia	2008	70.83	48.71	41.68	76.78	2.67	86.29	60.45	60.63
106	Turkey	2014	51.09	66.13	50.76	72.49	81.59	91.88	71.33	69.88
107	Tanzania	2007	35.61	53.20	16.78	31.93	3.04	55.74	37.71	37.42
108	Uganda	2013	44.01	58.02	21.59	37.01	4.52	70.23	45.48	45.69
109	Uruguay	2008	65.66	68.87	51.35	65.92	42.10	85.45	67.23	68.14
110	U.S.A.	2007	65.17	85.34	67.13	82.45	91.90	92.10	81.80	81.15
111	Venezuela_RB	2006	62.32	47.83	38.48	68.43	41.65	65.68	56.17	55.45
112	Vietnam	2014	80.26	49.28	16.43	63.78	31.92	71.13	56.69	54.98
113	Yemen_Rep.	2008	53.37	63.83	23.57	41.91	1.68	62.24	46.51	46.66
114	South_Africa	2014	72.64	65.18	41.53	61.39	41.93	88.04	66.72	67.54
115	Congo_D_Rep.	2013	69.13	37.26	6.23	43.38	1.00	62.03	41.67	42.31
116	Zambia	2007	64.24	63.96	27.92	45.69	4.09	73.93	52.96	54.04

E1, E2, S1, S2, S3, P and KOF are for the **Year-H** when the overall index AEMC attained **maximum** (Gmax) during 2006-2014. AEMC Indices are computed by the author.

Table-A-3. Economic, Social and Political Dimensions and Overall Indices of Globalization in Different Countries [Source: http://globalization.kof.ethz.ch]

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SL	Country	Year-L	E 1	E2	S 1	S2	\$3	Р	KOF	AEMC
1	Albania	2006	35.89	58.68	52.56	69.39	2.24	67.63	51.18	50.86
2	Argentina	2012	41.13	30.68	43.54	72.69	40.54	92.83	57.89	57.09
3	Australia	2013	68.41	78.01	73.79	85.80	92.90	90.42	81.97	82.24
4	Austria	2013	85.52	76.50	86.51	91.31	95.46	96.36	89.09	91.36
5	Azerbaijan	2009	59.96	57.99	38.90	78.95	34.51	55.51	55.35	52.78
6	Burundi	2006	24.06	35.17	16.96	35.39	4.15	36.97	27.89	26.92
7	Belgium	2013	95.51	73.19	84.04	96.99	91.01	96.51	90.70	92.32
8	Benin	2006	28.32	40.26	28.88	35.40	2.54	71.83	40.22	41.61
9	Burkina_Faso	2006	16.39	50.78	32.95	36.90	3.90	71.57	40.68	41.27
10	Bulgaria	2010	71.76	74.41	50.21	82.83	40.81	83.13	70.59	69.36
11	Bolivia	2011	56.44	50.56	37.79	58.44	2.91	76.81	52.76	53.62
12	Brazil	2008	48.27	53.34	20.26	68.50	38.23	92.27	59.38	55.59
13	Bhutan	2007	34.97	56.40	46.37	41.28	5.32	21.18	33.12	35.44
14	Botswana	2012	60.07	53.50	56.45	55.16	4.95	39.77	45.21	49.05
15	CAfr_Rep	2007	40.14	22.02	15.27	32.43	2.24	57.98	32.80	34.45
16	Canada	2013	74.03	77.68	81.23	92.24	94.97	92.94	85.60	86.39
17	Switzerland	2011	94.70	60.22	91.35	89.06	94.96	92.44	86.84	91.37
18	Chile	2013	77.71	75.92	38.21	76.16	40.69	88.74	71.11	69.54
19	China	2012	41.21	56.27	16.75	65.54	78.02	84.80	60.42	55.12
20	Cote_d'Ivoire	2013	56.86	36.44	29.24	53.69	2.61	74.19	47.92	48.82
21	Cameroon	2010	35.79	41.44	16.83	51.95	2.73	70.25	42.67	40.16
22	Congo_Rep.	2008	91.35	37.23	31.94	40.90	1.74	39.88	42.91	47.78
23	Colombia	2008	54.98	42.87	30.73	70.80	38.22	78.48	56.48	54.44
24	Costa_Rica	2013	62.90	66.25	55.31	81.31	45.89	59.43	62.05	61.03
25	Cyprus	2006	91.53	84.62	86.55	95.34	47.57	59.05	76.11	78.44
26	Germany	2013	75.94	73.34	79.32	85.40	92.01	91.93	83.41	85.16
27	Denmark	2013	84.52	80.70	81.47	88.35	93.53	91.65	86.99	88.85
28	Domin_Rep	2009	54.07	57.06	53.37	67.39	36.62	56.88	55.00	55.44
29	Algeria	2007	49.62	47.76	33.94	64.81	2.05	48.49	43.47	42.36
30	Ecuador	2014	40.55	36.53	34.14	62.25	38.21	80.97	52.78	51.64
31	Egypt	2012	41.62	46.07	22.45	66.66	35.94	93.45	56.99	53.67
32	Spain	2013	75.24	74.68	73.88	86.21	89.60	95.51	83.68	84.60
33	Ethiopia	2011	28.98	21.94	10.54	29.29	2.17	81.88	36.82	37.47
34	Finland	2009	77.81	86.19	72.26	88.86	91.36	90.25	85.08	85.04
35	Fiji	2009	64.73	25.64	56.01	50.18	43.87	66.56	53.75	57.81
36	France	2013	73.58	78.12	81.13	89.14	92.48	97.29	86.09	87.32
37	Gabon	2011	75.77	31.78	51.97	61.25	2.36	51.11	47.92	51.79
38	U.K.	2014	80.71	85.27	76.35	87.66	93.64	94.67	87.26	88.15



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39	Ghana	2008	36.37	51.83	35.82	43.80	4.52	83.98	49.19	50.64
40	Guinea	2010	35.70	31.29	21.36	39.92	4.15	71.90	39.38	40.45
41	Gambia	2009	50.86	50.47	45.99	61.95	5.38	64.80	50.18	51.12
42	Greece	2012	61.28	77.37	75.14	84.24	84.42	91.33	79.82	80.21
43	Guatemala	2010	46.46	68.40	27.08	56.03	43.98	82.47	58.89	56.59
44	Guyana	2013	61.74	58.98	48.79	58.06	5.76	44.66	47.60	49.78
45	Honduras	2010	63.36	65.10	30.16	60.23	39.72	70.29	58.38	57.05
46	Haiti	2014	35.21	68.47	6.41	51.82	1.00	48.28	38.81	34.53
47	Hungary	2011	91.22	81.45	66.67	89.18	90.33	90.93	86.05	86.30
48	Indonesia	2008	49.64	69.02	17.85	47.95	33.79	84.05	56.64	54.53
49	India	2006	35.28	43.76	13.64	46.46	32.53	89.37	50.22	47.98
50	Ireland	2008	97.80	88.49	91.12	92.11	48.10	87.41	85.93	89.89
51	Iceland	2013	89.48	59.80	80.56	78.37	50.11	54.09	67.32	71.77
52	Israel	2011	69.88	76.98	75.38	66.87	90.37	65.01	72.46	75.13
53	Italy	2013	64.98	75.44	70.42	78.44	88.21	97.52	80.94	81.77
54	Jamaica	2014	73.94	51.72	57.00	67.13	6.93	72.58	58.43	62.05
55	Jordan	2013	72.22	61.91	52.07	69.51	42.37	86.09	67.93	69.18
56	Japan	2011	43.92	65.57	42.19	76.22	87.85	88.66	69.25	65.61
57	Kenya	2012	25.69	44.87	19.21	48.47	3.59	82.94	45.16	42.55
58	Cambodia	2011	70.40	50.86	26.14	44.44	2.17	59.93	46.83	49.02
59	South_Korea	2006	54.55	65.58	39.06	76.10	41.38	83.59	63.92	61.36
60	Kuwait	2013	53.45	65.47	70.68	73.63	89.69	60.31	66.44	67.03
61	Lebanon	2011	77.07	56.80	70.26	90.02	45.95	60.76	65.70	67.36
62	Lesotho	2006	59.43	37.57	24.70	45.45	6.68	33.39	35.69	36.96
63	Luxembourg	2006	99.72	87.43	96.37	96.87	48.06	60.97	80.05	83.89
64	Morocco	2006	49.22	40.66	35.46	67.40	37.20	87.73	57.63	56.51
65	Moldova	2014	60.52	63.40	40.67	84.06	37.77	69.00	61.39	58.36
66	Madagascar	2011	56.71	28.24	8.15	49.42	2.67	63.64	39.71	39.25
67	Mexico	2008	55.23	60.32	42.67	70.30	41.09	70.95	59.27	57.99
68	Mali	2007	44.08	41.64	20.96	36.32	2.17	73.60	43.06	44.06
69	Malta	2006	97.19	87.13	83.62	96.07	50.17	47.77	74.50	76.39
70	Myanmar	2009	47.20	49.84	9.82	27.94	1.00	36.00	31.86	32.04
71	Montenegro	2006	52.52	76.75	73.23	94.86	6.25	46.57	57.31	56.97
72	Mongolia	2006	54.54	60.02	19.54	57.15	2.05	65.31	48.72	46.41
73	Mauritania	2006	72.75	40.60	25.64	43.51	1.37	45.02	40.79	43.65
74	Mauritius	2006	57.62	70.87	59.49	85.06	40.57	57.79	61.85	60.47
75	Malawi	2009	32.32	44.30	27.07	39.17	6.74	61.73	39.76	40.16
76	Malaysia	2014	88.91	66.95	57.96	77.28	87.65	83.69	78.14	79.14

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77	Niger	2007	24.17	37.19	32.59	30.52	1.68	71.94	38.88	41.05
78	Nigeria	2014	46.48	52.49	9.46	46.64	1.43	90.79	50.24	48.17
79	Nicaragua	2008	53.72	63.14	35.68	56.50	39.11	55.74	52.42	51.57
80	Netherlands	2009	95.28	88.51	84.91	90.53	92.90	93.23	91.35	93.78
81	Norway	2006	81.16	70.67	79.65	83.91	91.99	88.88	82.87	85.24
82	Nepal	2008	11.40	31.69	25.16	37.96	3.35	68.10	34.85	34.44
83	New_Zealand	2013	72.83	85.72	78.84	89.57	50.42	80.03	77.41	78.48
84	Pakistan	2014	33.87	45.27	19.22	48.01	32.32	87.30	51.02	48.64
85	Panama	2006	91.07	65.78	50.23	73.96	47.74	56.13	64.69	65.63
86	Peru	2006	66.78	67.15	32.70	54.46	37.01	84.09	62.39	62.50
87	Philippines	2014	58.47	49.32	24.22	54.23	41.28	82.83	56.84	55.98
88	Poland	2011	72.22	68.03	56.29	91.86	87.36	89.58	78.67	76.61
89	Portugal	2013	79.89	82.09	68.63	91.19	89.70	88.98	84.05	83.54
90	Paraguay	2008	53.18	57.92	36.26	60.83	37.09	75.13	57.14	56.32
91	Romania	2006	60.44	60.73	44.18	78.72	38.69	89.91	66.50	64.99
92	Rwanda	2006	19.54	34.11	23.81	38.03	4.27	60.31	34.49	34.22
93	Saudi_Arabia	2006	52.82	76.19	70.24	69.12	82.06	57.24	65.22	66.57
94	Senegal	2006	40.99	38.14	40.60	58.22	4.09	86.13	50.65	51.75
95	Singapore	2014	99.01	96.53	93.20	85.75	96.53	54.77	83.64	87.04
96	Sierra_Leone	2009	30.15	41.28	19.63	33.56	3.22	61.16	36.20	36.81
97	El_Salvador	2011	57.17	63.11	35.53	66.64	41.19	78.63	60.89	59.25
98	Sweden	2013	85.48	75.35	81.30	81.02	93.46	94.65	86.05	89.13
99	Swaziland	2007	63.20	36.36	61.97	54.71	6.37	33.68	42.40	47.23
100	Syr_Arab_Rep	2007	49.06	38.95	43.38	63.66	1.00	54.93	44.26	45.17
101	Chad	2011	50.22	28.12	19.94	36.74	2.91	58.55	37.11	39.14
102	Тодо	2008	53.50	37.49	28.74	54.91	3.53	71.19	46.93	47.25
103	Thailand	2008	74.06	55.41	39.67	68.67	37.94	78.48	62.87	62.95
104	Trinid & Tobago	2007	79.71	71.95	61.64	66.92	5.76	47.01	56.82	59.84
105	Tunisia	2011	68.94	42.49	40.06	78.34	2.48	83.92	58.35	58.22
106	Turkey	2006	46.77	69.54	40.93	72.69	78.12	89.96	69.07	65.92
107	Tanzania	2006	27.06	50.59	17.16	33.54	2.61	55.17	35.78	34.91
108	Uganda	2006	35.99	52.16	24.19	35.24	3.53	67.77	42.31	42.80
109	Uruguay	2012	60.28	67.75	52.98	69.97	42.11	84.09	66.43	66.74
110	U.S.A.	2009	59.05	78.48	66.91	81.46	91.77	91.43	79.14	78.47
111	Venezuela_RB	2010	40.82	37.04	38.46	70.34	40.30	66.51	50.75	48.92
112	Vietnam	2006	70.58	39.35	17.13	59.33	3.04	50.33	43.21	42.59
113	Yemen_Rep.	2014	35.99	54.18	26.38	44.10	1.12	65.01	42.99	42.64
114	South_Africa	2011	67.26	63.98	39.51	61.09	40.86	86.20	64.64	64.93

115	Congo_D_Rep.	2006	19.87	28.69	8.76	34.02	1.00	44.96	26.11	24.95
116	Zambia	2012	50.36	55.83	16.51	43.66	3.78	73.04	47.36	46.41

E1, E2, S1, S2, S3, P and KOF are for the **Year-L** when the overall index AEMC attained **minimum** (Gmin) during 2006-2014. AEMC Indices are computed by the author.

Table-A-4. Economic, Social and Political Dimensions and Overall Indices of Globalization in Different Countries [Source: http://globalization.kof.ethz.ch]

Endo-		Exogeno	ous / Prede	etermine V	Variables (Predictor	s at 2-SLS	Stage-1)		Con-	D?
genous	EPP06	FOG06	PPN06	PCL06	CVL06	CP06	HD06	PCY06	DI06	stant	K²
E1	0.0353	-0.0880	-0.0779	-0.2510	-0.3210	0.2066	0.7242	0.0561	0.4427	1.0808	0.5649
(SEE)	0.0351	0.0590	0.0706	0.1780	0.1642	0.1192	0.2361	0.0645	0.3166	0.8970	
E2	0.0093	0.0414	-0.1017	-0.1346	-0.1563	0.1731	0.5338	-0.0120	0.4174	0.9137	0.6268
SEE	0.0263	0.0443	0.0529	0.1335	0.1231	0.0894	0.1771	0.0484	0.2374	0.6728	
S1	0.0538	-0.0133	0.0376	0.2887	0.5016	0.3852	0.6971	0.1551	-0.9627	-0.9281	0.6954
(SEE)	0.0440	0.0742	0.0887	0.2236	0.2063	0.1498	0.2967	0.0810	0.3978	1.1271	
		-									
S2	0.0039	-0.0384	0.0397	0.0642	0.0830	-0.0389	0.7784	0.0656	-0.1078	0.5895	0.8359
(SEE)	0.0171	0.0287	0.0343	0.0866	0.0799	0.0580	0.1149	0.0314	0.1540	0.4363	
\$3	0.0452	0.0456	-0.3037	-0.8856	-0.2577	0.0937	0.8872	0.7382	1.3123	-4.0018	0.7214
(SEE)	0.1046	0.1761	0.2107	0.5311	0.4899	0.3558	0.7047	0.1925	0.9447	2.6769	
Р	-0.0140	-0.0413	0.0590	0.1266	0.0154	-0.1374	-0.1605	0.0990	0.2297	3.5050	0.2545
(SEE)	0.0317	0.0533	0.0638	0.1607	0.1483	0.1077	0.2133	0.0582	0.2859	0.8101	
		-									
DI16	-0.0383	0.1010	-0.0229	0.0314	0.2141	0.0861	0.0778	-0.0198	0.5551	0.0727	0.8427
(SEE)	0.0220	0.0370	0.0443	0.1117	0.1030	0.0748	0.1482	0.0405	0.1987	0.5630	
CP16	0.0026	0.0985	-0.0403	0.0812	0.1666	0.6498	-0.1923	0.0657	-0.1688	1.3076	0.8135
(SEE)	0.0244	0.0410	0.0491	0.1237	0.1141	0.0829	0.1641	0.0448	0.2200	0.6233	
HD15	0.0025	-0.0054	-0.0162	0.0176	-0.0085	0.0002	0.8315	-0.0015	0.0510	-1.6935	0.9822
(SEE)	0.0044	0.0075	0.0090	0.0226	0.0208	0.0151	0.0300	0.0082	0.0402	0.1138	
		-									
GI10	0.0138	-0.0258	-0.0116	-0.0043	-0.0235	0.1206	0.3406	0.0936	0.0985	1.6204	0.8527
(SEE)	0.0149	0.0251	0.0300	0.0756	0.0697	0.0507	0.1003	0.0274	0.1345	0.3810	
SP16	-0.0103	0.0007	-0.0031	-0.0005	0.0125	0.0715	0.4939	0.0169	0.1301	1.2664	0.9420
(SEE)	0.0075	0.0127	0.0151	0.0382	0.0352	0.0256	0.0507	0.0138	0.0679	0.1924	

Table-A-5. Coefficients of the Reduced Form Equation with their Standard Error of Estimate (SEE): Pessimistic Scenario

Endo-		Exogeno	us / Prede	etermine V	Variables (Predictor	s at 2-SLS	Stage-1)		Con-	n²
genous	EPP06	FOG06	PPN06	PCL06	CVL06	CP06	HD06	PCY06	DI06	stant	K-
E1	0.0720	-0.1249	-0.0406	-0.2353	-0.3101	0.2985	0.4259	0.0228	0.2710	2.7392	0.4213
(SEE)	0.0317	0.0534	0.0639	0.1611	0.1486	0.1079	0.2138	0.0584	0.2866	0.8120	
E2	0.0055	0.0438	-0.0611	-0.1000	-0.0985	0.1624	0.5962	-0.0295	0.2559	0.9869	0.6512
SEE	0.0231	0.0389	0.0466	0.1174	0.1083	0.0786	0.1557	0.0425	0.2088	0.5916	
S1	0.0331	0.0119	-0.0114	0.2058	0.4477	0.2694	0.8125	0.1278	-0.7073	-1.1285	0.7051
(SEE)	0.0407	0.0686	0.0821	0.2069	0.1908	0.1386	0.2745	0.0750	0.3680	1.0427	
S2	0.0051	-0.0192	0.0634	0.0511	0.0611	0.0081	0.6361	0.0736	-0.1898	1.3097	0.8366
(SEE)	0.0154	0.0260	0.0311	0.0783	0.0723	0.0525	0.1040	0.0284	0.1394	0.3949	
\$3	0.0601	0.0847	-0.3366	-1.0896	-0.5415	-0.1104	1.3049	0.7577	1.5880	-4.1574	0.7269
(SEE)	0.1062	0.1789	0.2139	0.5394	0.4975	0.3614	0.7157	0.1955	0.9594	2.7185	
Р	0.0164	-0.0399	0.0444	0.1394	-0.0656	-0.0102	-0.1109	0.0651	0.1193	3.7019	0.2994
(SEE)	0.0231	0.0389	0.0465	0.1173	0.1082	0.0786	0.1556	0.0425	0.2086	0.5912	
DI16	-0.0383	0.1010	-0.0229	0.0314	0.2141	0.0861	0.0778	-0.0198	0.5551	0.0727	0.8427
(SEE)	0.0220	0.0370	0.0443	0.1117	0.1030	0.0748	0.1482	0.0405	0.1987	0.5630	
CP16	0.0026	0.0985	-0.0403	0.0812	0.1666	0.6498	-0.1923	0.0657	-0.1688	1.3076	0.8135
(SEE)	0.0244	0.0410	0.0491	0.1237	0.1141	0.0829	0.1641	0.0448	0.2200	0.6233	
HD15	0.0025	-0.0054	-0.0162	0.0176	-0.0085	0.0002	0.8315	-0.0015	0.0510	-1.6935	0.9822
(SEE)	0.0044	0.0075	0.0090	0.0226	0.0208	0.0151	0.0300	0.0082	0.0402	0.1138	
GI10	0.0332	-0.0379	-0.0074	0.0012	-0.0758	0.1441	0.3184	0.0739	0.0590	2.1082	0.8716
(SEE)	0.0118	0.0199	0.0238	0.0600	0.0553	0.0402	0.0796	0.0217	0.1066	0.3022	
SP16	-0.0103	0.0007	-0.0031	-0.0005	0.0125	0.0715	0.4939	0.0169	0.1301	1.2664	0.9420
(SEE)	0.0075	0.0127	0.0151	0.0382	0.0352	0.0256	0.0507	0.0138	0.0679	0.1924	

Table-A-6. Coefficients of the Reduced Form Equation with their Standard Error of Estimate (SEE): Optimistic Scenario

Variable	E1	E2	S1	S2	S 3	Р	DI ₁₆	CP ₁₆	HD ₁₅	GI ₁₀	SP ₁₆
	Pa	anel-1: O	bserved	Response	e Variabl	e and Ex	pected R	esponse	Variable		
			(Conve	entional	2-SLS or	C-2-SLS) or <i>r</i> (<i>y</i>	$, \hat{y})$			
E1	0.731	0.760	0.790	0.896	0.821	0.376	0.678	0.759	0.970	0.904	0.951
E2	0.701	0.792	0.754	0.853	0.811	0.403	0.790	0.788	0.944	0.889	0.952
S 1	0.700	0.732	0.824	0.863	0.806	0.388	0.690	0.829	0.915	0.904	0.930
S2	0.712	0.740	0.782	0.913	0.807	0.396	0.676	0.708	0.982	0.893	0.950
\$3	0.703	0.760	0.783	0.883	0.831	0.430	0.771	0.770	0.944	0.905	0.953
Р	0.590	0.707	0.706	0.805	0.791	0.451	0.807	0.724	0.859	0.830	0.887
DI16	0.551	0.708	0.628	0.693	0.712	0.463	0.884	0.759	0.761	0.780	0.836
CP16	0.601	0.698	0.769	0.723	0.729	0.377	0.756	0.893	0.771	0.831	0.843
HD15	0.724	0.737	0.782	0.914	0.801	0.389	0.653	0.700	0.983	0.893	0.946
GI10	0.713	0.764	0.809	0.886	0.831	0.422	0.740	0.814	0.948	0.921	0.958
SP16	0.709	0.778	0.787	0.894	0.820	0.417	0.767	0.780	0.973	0.908	0.970

Panel-2: Observed Response Variable and Expected Response Variable (Shapley Value 2-SLS or SV-2-SLS) or $r(v, \breve{v})$

			(r	/			· · · · ()	,,,,			
E1	0.709	0.762	0.813	0.875	0.812	0.411	0.730	0.832	0.941	0.916	0.953
E2	0.695	0.766	0.783	0.879	0.822	0.446	0.794	0.786	0.943	0.908	0.957
S1	0.701	0.778	0.796	0.867	0.820	0.427	0.787	0.832	0.938	0.914	0.959
S2	0.695	0.774	0.783	0.882	0.819	0.441	0.795	0.793	0.954	0.909	0.965
\$3	0.671	0.748	0.778	0.850	0.788	0.453	0.784	0.819	0.911	0.897	0.941
Р	0.733	0.763	0.805	0.895	0.837	0.404	0.703	0.779	0.960	0.919	0.953
DI16	0.692	0.765	0.780	0.876	0.831	0.456	0.798	0.784	0.938	0.909	0.954
CP16	0.721	0.766	0.809	0.894	0.835	0.420	0.739	0.794	0.957	0.922	0.959
HD15	0.738	0.757	0.792	0.902	0.832	0.397	0.682	0.740	0.970	0.911	0.949
GI10	0.702	0.771	0.802	0.871	0.824	0.431	0.779	0.832	0.935	0.917	0.958
SP16	0.698	0.771	0.803	0.872	0.828	0.431	0.784	0.830	0.936	0.916	0.958

Panel-3: C-2-SLS based Expected Response Variable and SV-2-SLS,

Expected Response Variable or $r(\hat{y}, \check{y})$

			r		r		$-\cdot (),)$)			
E1	0.971	0.961	0.965	0.965	0.925	0.990	0.954	0.982	0.990	0.968	0.968
E2	0.963	0.968	0.983	0.978	0.945	0.964	0.966	0.968	0.956	0.974	0.974
S1	0.982	0.944	0.966	0.949	0.946	0.973	0.947	0.976	0.958	0.974	0.974
S2	0.957	0.960	0.948	0.966	0.929	0.977	0.957	0.976	0.984	0.953	0.955
\$3	0.961	0.991	0.975	0.982	0.948	0.979	0.984	0.985	0.976	0.981	0.980
Р	0.889	0.925	0.911	0.933	0.904	0.895	0.944	0.909	0.881	0.916	0.929
DI16	0.846	0.891	0.896	0.896	0.909	0.812	0.903	0.843	0.788	0.887	0.886
CP16	0.922	0.880	0.927	0.885	0.907	0.870	0.878	0.890	0.829	0.923	0.923
HD15	0.955	0.956	0.944	0.960	0.925	0.977	0.951	0.974	0.987	0.948	0.947
GI10	0.994	0.984	0.992	0.988	0.975	0.993	0.986	0.996	0.982	0.996	0.996
SP16	0.982	0.986	0.989	0.994	0.967	0.983	0.983	0.990	0.979	0.987	0.988

Note: y = Observed response variable; \hat{y} = Expected response variable (C-2-SLS);

 \breve{y} = Expected response variable (SV-2-SLS)

Table-A-7. Correlation between Observed, Expected (C-2-SLS) and (SV-2-SLS) for Pessimistic Globalization Scenario



Variable	E1	E2	S1	S2	\$3	Р	DI ₁₆	CP ₁₆	HD ₁₅	GI ₁₀	SP ₁₆
	Pa	anel-1: O	bserved	Respons	e Variabl	e and Ex	pected R	esponse	Variable		
			(Conve	entional	2-SLS or	C-2-SLS) or <i>r</i> (<i>y</i>	$, \hat{y})$			
E1	0.579	0.748	0.797	0.867	0.784	0.392	0.613	0.783	0.913	0.888	0.907
E2	0.540	0.806	0.781	0.861	0.807	0.436	0.776	0.775	0.958	0.888	0.958
S1	0.555	0.767	0.831	0.878	0.813	0.440	0.716	0.812	0.942	0.912	0.949
S2	0.541	0.761	0.799	0.913	0.815	0.431	0.654	0.709	0.977	0.895	0.944
\$3	0.575	0.776	0.794	0.894	0.827	0.452	0.716	0.732	0.962	0.910	0.947
Р	0.552	0.750	0.782	0.837	0.797	0.469	0.691	0.827	0.889	0.902	0.913
DI16	0.469	0.725	0.674	0.686	0.715	0.480	0.862	0.791	0.777	0.801	0.845
CP16	0.496	0.717	0.779	0.755	0.717	0.461	0.785	0.873	0.813	0.850	0.873
HD15	0.548	0.765	0.810	0.913	0.820	0.433	0.665	0.727	0.976	0.902	0.948
GI10	0.555	0.777	0.825	0.887	0.821	0.468	0.733	0.821	0.946	0.923	0.957
SP16	0.536	0.796	0.810	0.889	0.821	0.455	0.767	0.780	0.973	0.906	0.970

Panel-2: Observed Response Variable and Expected Response Variable (Shapley Value 2-SLS or SV-2-SLS) or $r(v, \tilde{v})$

			(onepie	<i>j</i> • u iue 2	OLO OI		, or i ()	, y)			
E1	0.547	0.776	0.822	0.876	0.800	0.469	0.732	0.836	0.938	0.917	0.952
E2	0.554	0.782	0.800	0.880	0.815	0.489	0.774	0.792	0.943	0.917	0.955
S1	0.556	0.790	0.809	0.864	0.814	0.482	0.787	0.828	0.935	0.919	0.956
S2	0.528	0.789	0.803	0.882	0.815	0.481	0.788	0.791	0.956	0.907	0.965
\$3	0.538	0.762	0.793	0.856	0.774	0.504	0.756	0.822	0.916	0.908	0.940
Р	0.580	0.775	0.823	0.896	0.835	0.450	0.696	0.781	0.958	0.926	0.951
DI16	0.556	0.784	0.810	0.885	0.826	0.485	0.765	0.794	0.953	0.923	0.961
CP16	0.575	0.779	0.821	0.891	0.828	0.474	0.733	0.795	0.955	0.930	0.957
HD15	0.600	0.764	0.806	0.894	0.830	0.441	0.657	0.739	0.957	0.921	0.936
GI10	0.547	0.782	0.816	0.871	0.817	0.482	0.777	0.833	0.935	0.919	0.958
SP16	0.543	0.783	0.819	0.871	0.821	0.478	0.781	0.831	0.937	0.918	0.958

Panel-3: C-2-SLS based Expected Response Variable and SV-2-SLS,

based Expected Response Variable or $r\left(\widehat{y}, \widecheck{y}
ight)$

E1	0.945	0.929	0.933	0.916	0.900	0.964	0.930	0.949	0.960	0.940	0.936
E2	0.961	0.970	0.979	0.978	0.944	0.961	0.972	0.967	0.949	0.970	0.971
S1	0.985	0.960	0.974	0.966	0.953	0.985	0.973	0.982	0.966	0.983	0.983
S2	0.954	0.961	0.943	0.966	0.933	0.978	0.969	0.972	0.975	0.951	0.951
\$3	0.949	0.984	0.967	0.973	0.937	0.983	0.982	0.984	0.987	0.965	0.964
Р	0.972	0.945	0.962	0.944	0.960	0.960	0.959	0.959	0.940	0.969	0.966
DI16	0.868	0.888	0.919	0.891	0.893	0.832	0.887	0.865	0.803	0.901	0.900
CP16	0.940	0.902	0.942	0.908	0.932	0.888	0.909	0.910	0.846	0.940	0.941
HD15	0.961	0.967	0.952	0.970	0.937	0.985	0.974	0.979	0.981	0.959	0.960
GI10	0.995	0.983	0.989	0.985	0.977	0.992	0.992	0.994	0.973	0.996	0.995
SP16	0.981	0.983	0.986	0.994	0.966	0.981	0.990	0.987	0.965	0.986	0.988

Note: y = Observed response variable; \hat{y} = Expected response variable (C-2-SLS);

 \breve{y} = Expected response variable (SV-2-SLS)

Table-A-8. Correlation between Original, Expected (C-2-SLS) and (SV-2-SLS) for Optimistic Globalization Scenario

MODEL SIMULTANIH JEDNAČINA GLOBALIZACIJE, KORUPCIJE, DEMOKRATIJE, LJUDSKOG RAZVOJA I DRUŠTVENOG NAPRETKA

Rezime:

Ova studija gradi model simultane jednačine koji uspostavlja međusobne veze između mera globalizacije, mera demokratije, ljudskog razvoja, indeksa percepcije korupcije i dohotka po glavi stanovnika, što zajednički utiče na društveni napredak. Model ima jedanaest jednačina u kojima su varijable odgovora i varijable prediktora logično-linearno povezane. Empirijski podaci korišćeni za procenu modela odnose se na period 2006-2016. godine za 116 zemalja raspoređenih na svim kontinentima. Model je procenjen na osnovu konvencionalnih dvostepenih kvadrata (2-SLS) i alternativno modifikovanih 2-SLS u kojem je u drugoj fazi korišćena Shapley-eva vrednost regresijea za poboljšanje štetnih efekata kolinearnosti između varijabli prediktora. Modifikovani 2-SLS nadmašuje konvencionalni 2-SLS. Studija utvrđuje da globalizacija pozitivno utiče na demokratiju, ljudski razvoj i društveni kapital. Globalizacija smanjuje korupciju dok integritet promoviše globalizaciju. Demokratija, društveni kapital, ljudski razvoj i globalizacija pozitivno utiču na društveni napredak. Takođe je utvrđeno da su prekogranična lična veza, kulturna blizina, demokratija i društveni kapital elastični u odnosu na svoje prediktore.

Ključne reči:

globalizacija, demokratija, društveni napredak, model simultanih jednačina, Shapley-eva vrednost regresije.