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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 inter-connections 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. It has been found that the modified 2-SLS outperforms the conventional 2-SLS. Empirically, it has been established that globalization, democracy, human development and low level of corruption are reinforcing each other and they together explain social progress quite well.

Key words: Globalization, democracy, corruption, human development, social progress, simultaneous equation model, Two-Stage Least Squares, collinearity, Shapley value regression.

JEL Codes: C30, C36, C51, C57, C61, C71, D73, F62, F63, O15

1. 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. 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.

2. 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.

2.1. 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), Scully (1988; 1992), Barro (1989), Pourgerami (1991), 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 (especially democratization). 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 reinforce 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.

2.2. 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 with fits and starts that moves with the oscillatory forces of the international economy cannot uphold human development. Globalization has affected the education sector to turn against the poor. The Human Development Report 1999 tooke 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. Diametrically opposite to this, 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.

Huynen et al. (2005) analyse various pathways in which globalization may affect public health (an important ingredient of human development) and highlights the need to regulate the impacts of globalization so that they do not go against public health. Globalization idealizes and romanticizes "the private", while the bureau-professional regime of public welfare provision is consistently and unthinkingly demonised (Ball, 2005). Yang (2006) points out that the privatization "movement has profound implications, from primary schools to universities. Its impact is particularly damaging to education in countries with a substantial population of poor people. ... Tragic stories often make headlines in the press regarding the despair of working parents that they can never afford to pay their child's education fees." In China, India and many other less developed countries where a rapid transition is undergoing from free education to a fee-based system, it takes a heavy toll on poor families, of whom many see education as their only way out of poverty. 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.

There are many research studies that observe the impact of globalization on human development conditional or partial. Sabi (2007) finds that impact of globalization on human development is not appreciable in developing countries at low or low-middle income groups. Globalization may be important for human development only after certain level of income growth. 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. Bottlenecks in the supply of educated and skilled labour and in public and private investments may condemn a country to marginalisation, exploitation and high levels of domestic unemployment and income inequality.

Along with the human capital, the social capital is crucially important for development. Social capital (Durkheim, 1997) is made up of "goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit … potentiality sufficient to the substantial improvement of living conditions in the whole community." (Hanifan, 1916; pp. 130-131). Social capital not only generates internal economies, it also attracts material capital from abroad and helps in globalization. In this study we use 'corruption' as a prototype to represent social capital. 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. Ades and Di Tella (1997; 1999), Brunetti and Weder (1998), 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 led to decrease in corruption levels.

2.3. Relationship between Globalization and Social Progress

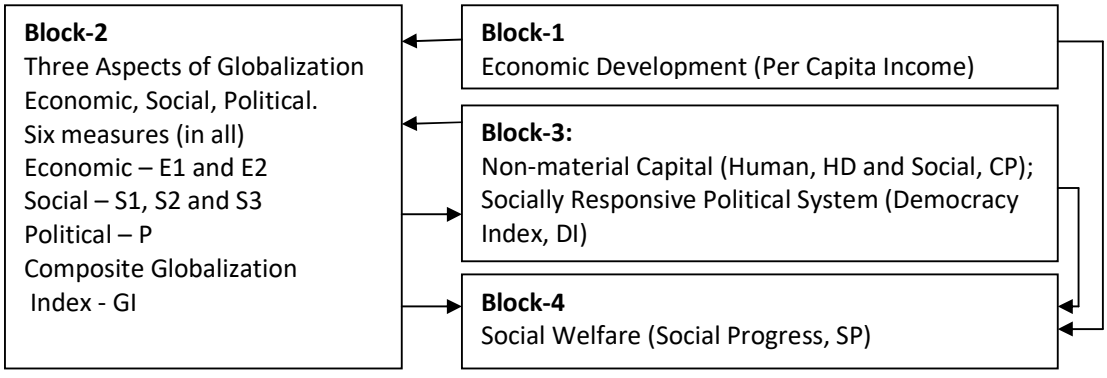
Globalization necessarily favours a market-based economy because it means economic integration of economies through markets. Economic liberalism is its guiding spirit and it is assumed that unrestricted self-interest would bring about the best material results. However, as Keynes (1926) observed long back, it is not a correct deduction from the Principles of Economics that enlightened self-interest always operates in the public interest. Nor is it true that self-interest generally is enlightened. Unrestricted self-interest can be operational only if the society has developed and internalized a strong sense of social obligation because morality of the minimum order is necessary for the functioning of the market system. Further, it requires a mixed-economy framework because market capitalism has never been the basis of political economy in any country, at any time (Hirsch, 1977: p. 190; Naqvi, 2002). Singer (1950) argues that structural differences between developed and developing economies interacting with each other on market principles may introduce a systemic bias in which trans-border trade and investment hinder the growth-promoting process of structural transformation in the developing economy. Streeten (1998) shows how globalization has posed a threat to developing countries by arousing several kinds of social tensions leading to impoverishment, inequalities, work insecurity, a weakening of institutions and social-support systems and an erosion of established identities and values (Naqvi, 2002). As Stiglitz et al. (2009) have pointed out globalization (in the way it has proceeded) has contributed to the weakening of a sense of community. Moreover, globalization is a market-based concept. The correspondence between market-based concepts and non-market based concepts is not yet well established, but it is important to understand more fully the links between various measures of market and non-market activities and of leisure and the quality-of-life metrics such as the social progress index. 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.

3. 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 democracy (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 (summarily measured by per capita income). Finally, it is visualized that social progress (which is a more comprehensive or wider concept encompassing economic development and welfare and is summarily measures by the social progress index) is influenced by globalization (especially the trans-border flow of goods, services and information), non-material capital, political regime type as well as economic development (represented by per capita income). Alternatively, economic development (as measured by per capita income) could be substituted for social progress but in our considered opinion the latter is the output of the former (if moving on the right track) and, therefore, it is a preferred choice. The model does not include other variables (such as physical and financial capital) explicitly since it assumes that per capita income and the level of human development incorporate them indirectly. Similarly, institutions are indirectly represented by political regime and corruption perception index.

The model is schematically presented below. It is a system of eleven structural equations of which the first ten make three stimulator and/or moderator blocks while the last one (the eleventh 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 (human and social capital), political organization and economic performance (per capita income) of a nation. Per capita income is a stimulant to globalization. Globalization and the measures in the third block (non-material capital and political regime) 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 (human and social) 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).

$$E1_t = f(E2_t, S1_t, PCL_{06}, CP_{06}, HD_{06}, PCY_{06}) \quad eq.(01)$$

$$E2_t = f(S2_t, S3_t, P_t, EPP_{06}, PPN_{06}, CP_{06}, HD_{06}) \quad eq.(02)$$

$$S1_t = f(E1_t, S3_t, FOG_{06}, PCL_{06}, CVL_{06,} CP_{06}, HD_{06}) \quad eq.(03)$$

$$S2_t = f(E2_t, PPN_{06}, PCL_{06}, CVL_{06}, HD_{06}, PCY_{06}) \quad eq.(04)$$

$$S3_t = f(P_t, PCL_{06}, CP_{06}, HD_{06}) \quad eq.(05)$$

$$P_t = f(E1_t, E2_t, S1_t, S2_t, S3_t, PCY_{06}) \quad eq.(06)$$

$$DI_{16} = f(E2_t, S1_t, S2_t, S3_t, P_t) \quad eq.(07)$$

$$CP_{16} = f(E1_t, E2_t, S1_t, S2_t, S3_t, P_t) \quad eq.(08)$$

$$HD_{15} = f(E1_t, S2_t, S3_t) \quad eq.(09)$$

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

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

In a simultaneous equation framework, it is customary to classify the variables as (1) endogenous and (2) exogenous (or pre-determined). The endogenous variables are those that have been a response variable anywhere in the model while the exogenous variables are those that have not been endogenous (response variable) anywhere in the model. In a dynamic framework, the endogenous variables are of two types (i) current endogenous and (ii) lagged (prior in time) endogenous. In the context of a particular equation, the lagged endogenous variables are called predetermined variables and are treated similar to exogenous variables.

The lists of endogenous and predetermined/exogenous variables are presented below.

Endogenous Variables

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	P	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.

Exogenous/Predetermined 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

4. Data or the Measures Used in this Study

In this study we have drawn 116 countries from all the continents including Africa (38 countries), the Americas (23 countries), Asia (26 countries), Europe (26 countries) and Oceania (3). 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, Table-A-2, and Table-A-4).

In Table-A-1 we present five measures for democracy (EPP_{i06}, FOG_{i06}, PPN_{i06}, PCL_{i06}, CVL_{i06} and DI_{06}; i=1 through 116) for the year 2006 as well as the overall measure of democracy DI_{16} for 2016. In Table-A.2 we present 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). In Table-A-3 and Table-A-4 we present aspect-wise sub-indices as well as overall globalization indices for the two alternative (optimistic and pessimistic) scenarios explained below.

4.1. Measures of Different Aspects of Globalization with Two Scenarios

As it has been pointed out earlier, KOF(2017) visualizes three complementary aspects of globalization: economic, social and political. They construct indices to measure each of these aspects of globalization. They are sub-indices in the sense that merged together they provide the overall index of globalization. We have used those KOF sub-indices for the period 2006-2014 (KOF, 2017). However, the measure of overall globalization ($GI10$) is not that of KOF (Dreher, 2006; Dreher et al., 2008). We have used the AEMC overall index (Mishra, 2016b) of globalization using the 'almost equi-marginal contribution principle' that derives weights differently than KOF (which uses the principal component analysis for constructing the overall index of globalization). By the way, the KOF and AEMC indices of overall globalization are highly correlated (r=0.98). The AEMC index, which we would denote by G, is for 9 years (2006-2014) and 116 countries, i.e. $G_{i,j}; i = 1,2, \dots ,116; j = 2006,2007, \dots ,2014.$

On the basis of our AEMC index of overall globalization, we have formed two scenarios, the one we call a pessimistic scenario and the other an optimistic scenario. It may be noted that for every G_{ij} we have 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. We have constructed a scenario vector:

$$(1) \qquad \left[E1_i^{min},\ E2_i^{min},\ S1_i^{min}, S2_i^{min}, S3_i^{min}, P_i^{min}\right]$$

which is associated with

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

that gives us the set of values associated with the lowest extent of globalization experienced by any country during 2006-2014. This gives us the pessimistic scenario (associated with G^{min}).

Similarly, we have constructed the other scenario vector:

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

which is associated with

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

that gives us the set of values associated with the highest extent of globalization experienced by any country during 2006-2014. This gives us the optimistic scenario (associated with G^{max}).

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.

4.2. The Measures of Non-Material Capital

Socio-economic development is squarely based on availability of capital, which may be material (physical and financial) and non-material. Role of material capital in promoting development need not be overemphasized here. Yet, the role of non-material capital, which consists of human and social capital, must be outlined. Human capital is made of the health and the skill embodied in the people of a country. It is a determinant of labour productivity that not only helps socio-economic development but also facilitates globalization. A comprehensive measure of human capital is provided by the human development index which incorporates some basic measures of health and education of the people of a country. This measure is provided by. Similarly, a prototype measure of social capital is provided by the corruption perception index.

4.3. The Measures of Democracy

Political structure of a country that necessarily divides the political agents into two classes, the governor (ruler) and the governed (subject), may have in-built mechanism to respond to each other such that they function in coordination with each other in order to cater to the lofty ideals of a civilized society ensuring law and order, protection of life and property, rule of law, justice, freedom of different types given to the citizens including a scope to alter the governing agents or the administrative system according to some rules and some procedure of doing so, transparency, participation, enhancement of social capital, an environment for realization of potentialities of the society and so on. One may classify the political regimes on the basis of meeting these criteria. Fully democratic regimes provide opportunities to the subject to alter members of the government in pursuance to ensure that they are better fit to meet the ideals while autocratic or authoritarian regimes do not provide such scope. 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. In the present study we have used the aspect-wise sub-indices for 2006 and the overall indices of democracy (DI) for 2006 and 2016.

4.4. The Measures of Economic Development and Social Progress

Per capita income is a standard measure of productivity and level of economic activities of a country as well as it represents the mean level of purchasing power of a representative individual agent. Higher per capita income is likely to support higher per capita consumption expenditure encouraging trade and globalization. Higher per capita income is also associated with higher domestic savings and investment. Yet, per capita income may not be a good measure of real social progress or social welfare. Social Progress Imperative, an international organization, has been constructing every year the social progress index for a large number of countries. The index

measures the extent to which countries cover social and environmental needs of its citizenry. It is constructed by aggregating a large number of indicators covering three areas or dimensions - basic human needs, foundations of wellbeing and opportunities. This index is considered as an output of a right type of economic progress and does not incorporate the economic variables (such as income) into it. It can work very well as a measure complementing per capita income. In our model per capita income has been considered as an input variable while the social progress index has been considered as an output variable.

5. Methodological Aspects of Estimation of the Model

To estimate the parameters (of the structural equations) in our model we have used Two-Stage Least Squares (2-SLS) method. This method estimates the equations (of a simultaneous equation model) one by one - without a necessity of any sequence to be followed. At the first stage, all endogenous variables are subjected to Ordinary Least Squares (OLS) estimation procedure in which all exogenous variables are used as predictor or explanatory variables. Expected vectors of all endogenous variables are obtained. At the second stage, these expected vectors are used in place of their original vectors wherever any of them is a predictor. Thus, the predicted vectors of endogenous variables are used as their representatives or 'instruments'. Notably, the original endogenous variable is used as the response variable or 'regressand' in every equation. Since in $\hat{y} = y - \kappa e_{ols}$ (where y is the observed endogenous variable, $\hat{y}$ is expected value, e_{ols} is the residual obtained at the first stage) $\kappa = 1$, the 2-SLS is also called the $\kappa\text{-}class\ estimator$ for $\kappa = 1$. The 2-SLS is easy to apply and free from the undesirable effects of misspecification of other equations in the model. Since in this study little is known about correct specification of different equations in our model, we have used the 2-SLS method of estimation. It has an added advantage that it uses the instrumental variable method of estimation (Reiersøl, 1945) in a very natural manner.

However, it may be noted that 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. Collinearity among the predictor variables has deleterious effects on the standard errors of the estimated parameters. At times, the sign borne by an estimated coefficient may be wrong (Smith and Brainard, 1976). To ameliorate the obnoxious effects of collinearity, we have used 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).

6. Main Findings

In what follows, we present our main findings of estimation of our model for both alternative scenarios of globalization with the conventional as well as Shapley value based 2-SLS. As mentioned earlier, the use of Shapley value regression to estimate the parameters of our 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. Our empirical findings presented in the next section corroborate to this concern.

It may also be a matter to interest to inquire the relative performance of Shapley-value based 2-SLS vis-à-vis the conventional 2-SLS in explaining different endogenous (response) variables. We have presented correlation matrices in appendix Table-A-7 (pessimistic globalization scenario) and Table-A-8 (optimistic globalization scenario). The correlation coefficients are: $r_{ij} = r(y_i, \hat{y}_j)$, where y_i is the i^{th} observed endogenous variable and $\hat{y}_j$ is the j^{th} endogenous variable estimated by conventional 2-SLS. By the way, $r_{i,i}^2 = r^2(y_i, \hat{y}_i)$ is the usual R^2 or the coefficient of determination that one reports in the regression results. Similarly, $r_{ij} = r(y_i, \tilde{y}_j)$, where y_i is the i^{th} observed

endogenous variable and $\breve{y}_j$ 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 $r_{ij}= r(\hat{y}_i, \breve{y}_j)$. A large value of $r(\hat{y}_i, \breve{y}_i)$ 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 we find (Panel-3) that $r_{ii}= r(\hat{y}_i, \breve{y}_i)$ is large for all endogenous variables. Further, $r(y_i, \hat{y}_i)$ and $r(y_i, \breve{y}_i)$ are very close to each other for all endogenous variables, although the latter is somewhat smaller than the former. This is the cost that we must pay to circumvent the deleterious effects of collinearity. These results confirm that Shapley value regression based 2-SLS will not mislead us.

6.1. 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. Here we will discuss the estimated structural equation coefficients only. First of all we present the results obtained by estimating the model by the conventional 2-SLS. Figures in the 2nd row are standard error of estimates.

Structural Equation Coefficients based on Conventional 2-SLS

E1 = 0.0867E2 - 0.1246S1 - 0.1520PCL06 + 0.1721CP06 + 0.6295HD06 + 0.0946PCY06 + 1.1074 ; R^2= 0.5338
[0.4416 0.3006 0.1338 0.2098 0.4074 0.0851 0.8696]

E2 = -1.6849S2 + 0.0748S3 + 0.4677P + 0.0223EPP06 - 0.0423PPN06 + 0.1577CP06 + 1.8505HD06 + 0.5884 ; R^2= 0.6266
[0.6781 0.0721 0.3723 0.0205 0.0530 0.0755 0.5959 1.7255]

S1 = -1.2730E1 + 0.2712S3 - 0.1795FOG06 - 0.1008PCL06 - 0.0246CVL06 + 0.6649CP06 + 1.2937HD06 + 1.4017 ; R^2= 0.6794
[0.6973 0.1288 0.0694 0.1731 0.1143 0.1766 0.5043 1.8460]

S2 = -0.3332E2 + 0.0021PPN06 + 0.0284PCL06 + 0.0588CVL06 + 0.9389HD06 + 0.0659PCY06 + 0.9355 ; R^2= 0.8341
[0.1968 0.0224 0.0587 0.0387 0.1590 0.0274 0.4344]

S3 = 4.2123P - 1.3758PCL06 + 0.9656CP06 + 2.1926HD06 - 22.0713 ; R^2= 0.6902
[1.0359 0.4660 0.3107 0.4750 2.8674]

P = -0.5449E1 + 0.2950E2 - 0.1128S1 + 0.2904S2 + 0.0653S3 + 0.0756PCY06 + 3.9656 ; R^2= 0.2035
[0.2997 0.3903 0.1904 0.3470 0.1179 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 ; R^2= 0.9658
[0.0533 0.0598 0.0119 0.1799]

GI10 = 0.1028CP06 + 0.2957HD06 + 0.1003PCY06 + 0.0802DI06 + 1.7130 ; R^2= 0.8485
[0.0452 0.0897 0.0257 0.0349 0.3057]

SP15 = 0.0916DI16 + 0.0792CP16 + 0.5984HD15 + 0.0646GI10 + 0.0083PCY06 + 2.0611 ; R^2= 0.9407
[0.0290 0.0456 0.1091 0.2180 0.0250 0.4869]

We observe 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 for the coefficients (estimated structural parameters) of the Shapley value regression, there is no straightforward method to obtain standard error of estimate and, therefore, Student's t values, too, which may be used for testing the maintained hypothesis. Hence, in this study, the standard error of estimates (row 2 for every equation) for the estimated structural parameters obtained by Shapley value regression have been worked out by jackknife resampling 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

E1 = 0.2191E2 + 0.1069S1 + 0.1011PCL06 + 0.0968CP06 + 0.2062HD06 + 0.0456PCY06 - 3.0655; R^2=0.5031
(0.0333) (0.0116) (0.0198) (0.0114) (0.0324) (0.0077) (0.3093)
6.59(0.01%) 9.23(0.01%) 5.10(0.01%) 8.50(0.01%) 6.36(0.01%) 5.88(0.01%) -9.91(0.01%)

E2 = 0.1769S2 + 0.0412S3 + 0.2695P + 0.0105EPP06 + 0.0295PPN06 + 0.0942CP06 + 0.1881HD06 - 3.2541; R^2=0.5866
(0.0182) (0.0051) (0.0448) (0.0064) (0.0138) (0.0154) (0.0243) (0.2807)
9.70(0.01%) 8.14(0.01%) 6.01(0.01%) 1.65(5%) 2.14(2.5%) 6.10(0.01%) 7.75(0.01%) -1.59(0.01%)

S1 = 0.3116E1 + 0.0804S3 + 0.0533FOG06 + 0.1877PCL06 + 0.0920CVL06 + 0.2239CP06 + 0.3261HD06 - 4.9740; R^2=0.6342
(0.0290) (0.0089) (0.0325) (0.0394) (0.0264) (0.0269) (0.0435) (0.3962)
10.76(0.01%) 9.08(0.01%) 1.64(10%) 4.77(0.01%) 3.49(0.01%) 8.31(0.01%) 7.50(0.01%) -12.55(0.01%)

S2 = 0.2704E2 + 0.0344PPN06 + 0.1143PCL06 + 0.0580CVL06 + 0.2875HD06 + 0.0580PCY06 - 3.3337; R^2=0.7787
(0.0204) (0.0219) (0.0175) (0.0165) (0.0230) (0.0049) (0.1524)
13.26(0.01%) 1.57(10%) 6.52(0.01%) 3.51(0.01%) 12.52(0.01%) 11.87(0.01%) -21.88(0.01%)

S3 = 2.5375P + 0.5987PCL06 + 0.6933CP06 + 1.4443HD06 - 21.6822; R^2=0.6207
(0.3369) (0.1354) (0.0786) (0.1631) (1.4241)
7.53(0.01%) 4.42(0.01%) 8.82(0.01%) 8.86(0.01%) -15.23(0.01%)

P = 0.0773E1 + 0.0713E2 + 0.0285S1 + 0.0593S2 + 0.0175S3 + 0.0153PCY06 - 1.0534; R^2=0.1630
(0.0293) (0.0393) (0.0125) (0.0305) (0.0068) (0.0062) (0.2313)
2.64(0.05%) 1.82(5%) 2.28(2.5%) 1.94(5%) 2.58(0.05%) 2.45(1%) -4.55(0.01%)

DI16 = 0.3713E2 + 0.0814S1 + 0.1827S2 + 0.0464S3 + 0.7067P - 5.6630; R^2=0.6373
(0.0592) (0.0209) (0.0269) (0.0055) (0.1237) (0.5068)
6.27(0.01%) 3.90(0.01%) 6.81(0.01%) 8.47(0.01%) 5.71(0.01%) -11.18(0.01%)

CP16 = 0.1368E1 + 0.2605E2 + 0.2023S1 + 0.1936S2 + 0.0388S3 + 0.2510P - 4.2995; R^2=0.6308
(0.0253) (0.0402) (0.0262) (0.0211) (0.0057) (0.1077) (0.5081)
5.41(0.01%) 6.48(0.01%) 7.72(0.01%) 9.16(0.01%) 6.85(0.01%) 2.33(1%) -8.46(0.01%)

HD15 = 0.2646E1 + 0.3106S2 + 0.0612S3 - 2.5089; R^2=0.9406
(0.0100) (0.0095) (0.0023) (0.0651)
26.33(0.01%) 32.76(0.01%) 26.17(0.01%) -38.56(0.01%)

GI10 = 0.1523CP06 + 0.2759HD06 + 0.0705PCY06 + 0.1323DI06 - 2.5071; R^2=0.8414
(0.0109) (0.0215) (0.0047) (0.0151) (0.1336)
13.95(0.01%) 12.84(0.01%) 15.13(0.01%) 8.74(0.01%) - 8.76(0.01%)

SP16 = 0.1063DI16 + 0.1115CP16 + 0.2175HD15 + 0.1997GI10 + 0.0398PCY06 - 2.2223; R^2=0.9182
(0.0086) (0.0057) (0.0113) (0.0088) (0.0017) (0.0769)
12.40(0.01%) 19.67(0.01%) 19.30(0.01%) 22.78(0.01%) 23.30(0.01%) -28.90(0.01%)

6.2. 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 we discuss the estimated structural equation coefficients only.

Structural Equation Coefficients based on Conventional 2-SLS

E1 = -0.2781E2 - 0.1626S1 - 0.2172PCL06 + 0.3275CP06 + 0.5875HD06 + 0.0492PCY06 + 2.9741; R^2 = 0.3351
[0.5333 0.3063 0.1252 0.1832 0.4848 0.0792 0.8412]

E2 = -1.0636S2 + 0.0632S3 - 0.0332P + 0.0012EPP06 + 0.0381PPN06 + 0.1861CP06 + 1.1882HD06 + 2.7324 ; R^2 = 0.6503
[0.5188 0.0546 0.3756 0.0199 0.0424 0.0701 0.3899 1.5804]

S1 = -0.5193E1 + 0.1369S3 - 0.1285FOG06 - 0.0747PCL06 + 0.0942CVL06 + 0.5033CP06 + 0.8058HD06 + 0.7127 ; R^2 = 0.6901
[0.4077 0.0911 0.0599 0.1658 0.0892 0.1611 0.3457 1.8352]

S2 = -0.2673E2 + 0.0337PPN06 + 0.0005PCL06 - 0.0150CVL06 + 0.7537HD06 + 0.0825PCY06 + 1.7271; R^2 = 0.8332
[0.2195 0.0207 0.0530 0.0333 0.1701 0.0246 0.4198]

S3 = 5.1359P - 1.4324PCL06 + 0.4062CP06 + 3.0841HD06 - 27.6722 ; R^2 = 0.6838
[1.5817 0.5067 0.3314 0.4628 4.8116]

P = 0.0895E1 + 0.4338E2 - 0.1234S1 - 0.1982S2 - 0.0565S3 + 0.1352PCY06 + 3.0562; R^2 = 0.2201
[0.1699 0.3114 0.1898 0.2957 0.0700 0.0814 1.0815]

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 = -0.0461E1 + 1.0973E2 + 1.2227S1 - 1.5718S2 - 0.1300S3 + 0.9546P - 2.3406 ; R^2 = 0.7624
[0.1921 0.2888 0.1670 0.3203 0.0581 0.3031 1.5771]

HD15 = -0.0358E1 + 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 + 0.0511DI06 + 2.0800 ; R^2 = 0.8525
[0.0379 0.0752 0.0216 0.0292 0.2563]

SP16 = 0.0949DI16 + 0.0854CP16 + 0.6199HD15 + 0.0136GI10 + 0.0133PCY06 + 2.1679 ; R^2 = 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 our expectation 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 the standard error of estimates.

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

E1 = 0.1288E2 + 0.0677S1 + 0.0687PCL06 + 0.0721CP06 + 0.1092HD06 + 0.0255PCY06 - 1.8740; R^2 = 0.2994
(0.0248) (0.0126) (0.0248) (0.0144) (0.0245) (0.0059) (0.2963)
5.20(0.01%) 5.36(0.01%) 2.76(0.05%) 5.02(0.01%) 4.46(0.01%) 4.33(0.01%) -6.33(0.01%)

E2 = 0.1805S2 + 0.0356S3 + 0.2978P + 0.0083EPP06 + 0.0301PPN06 + 0.0889CP06 + 0.1804HD06 - 3.3461; R^2 = 0.6113
(0.0178) (0.0039) (0.0368) (0.0055) (0.0072) (0.0127) (0.0244) (0.2612)
10.13(0.01%) 9.10(0.01%) 8.09(0.01%) 1.51(10%) 4.16(0.01%) 7.00(0.01%) 7.41(0.01%) -12.81(0.01%)

S1 = 0.3940E1 + 0.0785S3 + 0.0569FOG06 + 0.1825PCL06 + 0.1005CVL06 + 0.2029CP06 + 0.3477HD06 - 5.4161; R^2 = 0.6548
(0.0393) (0.0087) (0.0289) (0.0306) (0.0300) (0.0244) (0.0474) (0.3649)
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%) -4.84(0.01%)

S2 = 0.2692E2 + 0.0345PPN06 + 0.1043PCL06 + 0.0450CVL06 + 0.2492HD06 + 0.0542PCY06 - 3.0881; R^2 = 0.7776
(0.0194) (0.0105) (0.0153) (0.0136) (0.0197) (0.0046) (0.1474)
13.85(0.01%) 3.30(0.01%) 6.83(0.01%) 3.31(0.01%) 12.66(0.01%) 11.85(0.01%) -0.94(0.01%)

S3 = 2.9327P + 0.5145PCL06 + 0.6073CP06 + 1.6646HD06 - 23.8201; R^2 = 0.5998
(0.3861) (0.1492) (0.0741) (0.1958) (1.5784)
7.59(0.01%) 3.45(0.01%) 8.19(0.01%) 8.50(0.01%) -15.09(0.01%)

P = 0.0650E1 + 0.0730E2 + 0.0327S1 + 0.0570S2 + 0.0121S3 + 0.0168PCY06 - 1.0305; R^2 = 0.2029
(0.0241) (0.0257) (0.0059) (0.0133) (0.0022) (0.0053) (0.1961)
2.70(0.05%) 2.84(0.05%) 5.51(0.01%) 4.28(0.01%) 5.60(0.01%) 3.14(0.01%) -5.26(0.01%)

DI16 = 0.3937E2 + 0.0954S1 + 0.2359S2 + 0.0411S3 + 0.6754P - 5.9764; R^2 = 0.5856
(0.0797) (0.0226) (0.0413) (0.0072) (0.1306) (0.6075)
4.94(0.01%) 4.21(0.01%) 5.71(0.01%) 5.70(0.01%) 5.17(0.01%) -9.84(0.01%)

CP16 = 0.1741E1 + 0.2614E2 + 0.1980S1 + 0.2251S2 + 0.0368S3 + 0.4877P - 5.6749; R^2 = 0.6318
(0.0470) (0.0423) (0.0272) (0.0294) (0.0058) (0.1417) (0.6548)
3.71(0.01%) 6.17(0.01%) 7.27(0.01%) 7.65(0.01%) 6.33(0.01%) 3.44(0.01%) -8.67(0.01%)

HD15 = 0.3420E1 + 0.3611S2 + 0.0642S3 - 3.1117; R^2 = 0.9157
(0.0253) (0.0129) (0.0027) (0.1125)
13.50(0.01%) 27.93(0.01%) 24.16(0.01%) -27.66(0.01%)

GI10 = 0.1333CP06 + 0.2350HD06 + 0.0594PCY06 + 0.1100DI06 - 2.1348; R^2 = 0.8452
(0.0083) (0.0183) (0.0039) (0.0115) (0.1079)
15.99(0.01%) 12.85(0.01%) 15.42(0.01%) 9.56(0.01%) -19.79(0.01%)

SP16 = 0.1084DI16 + 0.1121CP16 + 0.2258HD15 + 0.2238GI10 + 0.0396PCY06 - 2.3654; R^2 = 0.9179
(0.0089) (0.0056) (0.0128) (0.0111) (0.0017) (0.0828)
12.12(0.01%) 19.88(0.01%) 17.70(0.01%) 20.22(0.01%) 23.42(0.01%) -28.58(0.01%)

6.3. A Summary of the Findings on the Estimated Structural Coefficients of the Model

To summarize, we find that the structural coefficients of the model (for both the scenarios) are poorly estimated by the conventional 2-SLS owing to the collinearity among the predictor variable. Once we treat the collinearity problem by using the Shapley value regression (at the second stage of 2-SLS) we obtain much better and unambiguous results. On the ground of the findings (based on the Shapley value regression based estimation) we note that FOG in predicting S1 and PPN in predicting S2 are weak in the pessimistic scenario while EPP in predicting E2 is weak in the optimistic scenario, although their coefficients are positive (but significant only at 10%) . All the three are sub-indices of democracy. However, other two sub-indicators of democracy (viz. political culture, PCL and civil liberties, CVL) unwaveringly affect the measures of globalization in a positive and statistically significant manner. On the other side, globalization affects democracy, social capital, human capital and social progress positively and in a statistically significant manner.

6.4. The Sum of Elasticities

The structural equations in our model 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. In the Table-1 below we have presented 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 ($\lambda = 1.1$) in the present values of their predictors would give rise to less than 10% (or $\lambda^s; 0 < s < 1$) increase in the quantity of those endogenous (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 unity and, therefore, 10% increase in the present values of their predictors would give rise to greater than 10% (or $\lambda^s; s > 1$) increase in the quantity of those endogenous (response) variables. It suggests that CP is elastic and S3 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, we tend to conclude that S1 is elastic (since s for both the scenarios are 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.

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

Scenario	Estimator	E1	E2	S1	S2	S3	P	DI_{16}	CP_{16}	HD_{15}	GI_{10}	SP_{16}
Pessimistic Scenario	Conventional	0.7063	0.8458	0.6519	0.7609	5.9947	0.0686	2.6742	1.1974	0.9151	0.5790	0.8421
	Shapley	0.7757	0.8099	1.2750	0.8226	5.2738	0.2692	1.3885	1.0830	0.6364	0.6310	0.6748
Optimistic Scenario	Conventional	0.3063	0.3800	0.8177	0.5881	7.1938	0.2804	1.9922	1.5267	0.8033	0.5126	0.8271
	Shapley	0.4720	0.8216	1.3630	0.7564	5.7191	0.2566	1.4415	1.3831	0.7673	0.5377	0.7097

7. Concluding Remarks

We began with the vexed and much debated relationships among globalization, political regime type, human capital, social capital (especially corruption) and social progress. Among the researchers, there are the protagonists of globalization who believe that globalization will help democracy, building up of human and social capital and promote social progress. There are antagonists of globalization who believe the just opposite. It may often be so that the train of thought depends on how one argues and what one believes. Man is not a rational animal but a rationalising animal. He can think up a reason for anything he wants to believe. There are empirical evidences in favour of both the camps. Nevertheless, empirical evidences are based on data and the methods used to process them for drawing conclusions. Therefore, accuracy of data is as important as the correct choice of methods. In matters of the secondary data (especially the country level data for a large number of countries) a researcher does not have much choice (even though one knows that such data are collected with differently accountable systems). But, the choice of analytical methods is well within the reach of a researcher.

We formulated a simultaneous equation model connecting globalization, political regime type, human capital, corruption, per capita income and the social progress index. The specification of our model depended partly on the literature review and partly on reasoning. As to the structural equations, we chose the endogenous variables to be connected to the predictor variables in a log-linear form. We estimated the model by the conventional 2-SLS method. We found that many among the estimated parameters in different equations (in the pessimistic as well as the optimistic scenario) are either insignificant or bear the sign opposite to what reasoning may be able to uphold. They together suggested that globalization forces are non-conformal among themselves as well as they are unexpectedly correlated with other variables.

We suspected that such unexpected results obtained from the conventional 2-SLS have been due to collinearity among the predictor variables in almost all structural equations. Hence, at the second stage of the 2-SLS, we used the Shapley value regression to estimate the structural parameters. The results were spectacular. 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.

Our 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. We have also 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.

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Appendix
[Data Used in the Present Study]

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	Dimensions of Democracy – 2006					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	C._Afr_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
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

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
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	Togo	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-2. Corruption Perception Index, Human Development Index, Per Capita Income, Social Progress Index, Democracy Index and Overall Globalization Index in the Countries under Study

SL#	Country	Corruption Perception		Human Development		PC Income	Social Progress	Democracy Index		Overall Globalization 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
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	C._Afr_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
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	Togo	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

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.

Table-A-3. Economic, Social and Political Dimensions and Overall Indices of Globalization in Different Countries [Source: http://globalization.kof.ethz.ch]										
SL	**Country**	**Year-H**	**E1**	**E2**	**S1**	**S2**	**S3**	**P**	**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
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	C._Afr_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
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
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-4. Economic, Social and Political Dimensions and Overall Indices of Globalization in Different Countries [Source: http://globalization.kof.ethz.ch]

SL	Country	Year-L	E1	E2	S1	S2	S3	P	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	C._Afr_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
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
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	Togo	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-5. Coefficients of the Reduced Form Equation with their Standard Error of Estimate (SEE): Pessimistic Scenario											
Endo-genous	Exogenous / Predetermine Variables (Predictors at 2-SLS Stage-1)									Constant	R^2
	EPP06	FOG06	PPN06	PCL06	CVL06	CP06	HD06	PCY06	DI06		
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	
S3	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	
P	-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	

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Table-A-6. Coefficients of the Reduced Form Equation with their Standard Error of Estimate (SEE): Optimistic Scenario											
Endo-genous	Exogenous / Predetermine Variables (Predictors at 2-SLS Stage-1)									Constant	R^2
	EPP06	FOG06	PPN06	PCL06	CVL06	CP06	HD06	PCY06	DI06		
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	
S3	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	
P	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	

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

Variable	E1	E2	S1	S2	S3	P	DI_{16}	CP_{16}	HD_{15}	GI_{10}	SP_{16}
Panel-1: Observed Response Variable and Expected Response Variable (Conventional 2-SLS or C-2-SLS) or $r(y, \hat{y})$											
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
S1	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
S3	0.703	0.760	0.783	0.883	**0.831**	0.430	0.771	0.770	0.944	0.905	0.953
P	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 $r(y, \breve{y})$											
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
S3	0.671	0.748	0.778	0.850	**0.788**	0.453	0.784	0.819	0.911	0.897	0.941
P	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 $r(\hat{y}, \breve{y})$											
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
S3	0.961	0.991	0.975	0.982	**0.948**	0.979	0.984	0.985	0.976	0.981	0.980
P	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)											

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Table-A-8. Correlation between Original, Expected (C-2-SLS) and (SV-2-SLS) for Optimistic Globalization Scenario											
Variable	**E1**	**E2**	**S1**	**S2**	**S3**	**P**	**DI_{16}**	**CP_{16}**	**HD_{15}**	**GI_{10}**	**SP_{16}**
Panel-1: Observed Response Variable and Expected Response Variable (Conventional 2-SLS or C-2-SLS) or $r(y, \hat{y})$											
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
S3	0.575	0.776	0.794	0.894	**0.827**	0.452	0.716	0.732	0.962	0.910	0.947
P	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 $r(y, \breve{y})$											
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
S3	0.538	0.762	0.793	0.856	**0.774**	0.504	0.756	0.822	0.916	0.908	0.940
P	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 $r(\hat{y}, \breve{y})$											
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
S3	0.949	0.984	0.967	0.973	**0.937**	0.983	0.982	0.984	0.987	0.965	0.964
P	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)											