

A FORAY INTO THE TANGLE OF GLOBALIZATION MEASUREMENT

PhD Iulia LUPU*

Abstract

The concerns over globalization and its impact on the different aspects of life amplified over the recent years and generated the need to measure this phenomenon so as to know its effects and to get prepared to manage them. This paper makes a critical presentation of the main indicators that measure the phenomenon of globalization and selected one indicator, seemingly the most comprehensive, and applied it to Romania in order to see its rank when comparing with other countries, according to the values of the indicator and its components.

Keywords: globalization indices; economic, social and political globalization

JEL: F60, F69

1. Indices of globalization – identification and description

As many developing countries were only recently involved in the global economy, the concerns for the phenomenon of globalization and its impact on the different aspects of life amplified over the recent years. This prompted the need to measure the phenomenon of globalization so as to know its effects and to get prepared to manage them.

The measurement of the cultural and environmental elements, of the economic and political factors is a real challenge, and the task gets even more difficult if we also include the phenomenon of international integration. Several proposals were done for the construction of

* *Scientific researcher III, "Victor Slăvescu" Centre for Financial and Monetary Research, Romanian Academy.*

globalization indices that attempt to capture the relation between international integration and the social progress.

At the beginning, several papers have been published, with a special focus on **competitiveness** and **international opening**, such as the World Economic Forum's indicator of competitiveness, which appeared in 1979 (Lopez-Claros et al., 2006), the studies of Gwartney and Lawson on the economic liberty (1996, 2006) and the globalization index (G-index) developed by the World Market Research Centre (Randolph 2001). G-index measures the depth, extension and interdependence between the national and global economies. Most variables describe the economic dimension of globalization.

The indicators constructed by the **Organisation for Economic Development and Cooperation** (OECD) are intended to measure the magnitude and intensity of the economic globalization in four areas: international trade, direct foreign investments, activity of the multinational companies and the international generation and dissemination of technology.

The **index of globalization A. T. Kearney/FOREIGN POLICY** is generally reckoned as the first proposal for a composite, multidimensional indicator of globalization, supported by a statistical database. It considers the economic, technological, political and personal aspects of globalization, being inspired by the Human Development Index developed by the United Nations Development Programme. This indicator was calculated for just 62 countries (72 in 2007); some variables are taken into consideration two times (direct foreign investments, internet and phone traffic) and the variables are not adjusted for the geographical dimension. The smaller countries tend to hold the top positions because of the importance bestowed on the direct foreign investments, while the cultural globalization is not introduced.

Some other indicators aimed appeared to improve AT Kearney's indicator. Thus, Lockwood and Redoano (2005), designed the **CSGR¹ globalisation indicator**, in which they introduced a small set of new variables, but which is much different from AT Kearney's indicator in terms of components' adjusting, normalization and weighing. Caselli

¹ *Centre for the Study of Globalisation and Regionalisation.*

(2006) made a critical review of the instruments developed for the measurement of a complex phenomenon, such as globalization. After a brief presentation of the standard procedures that should be observed when such indicator is constructed and of the problems that appear when designing them, the author focuses on the most significant instruments measuring globalization that had been developed up to the moment of his study: A. T. Kearney/FOREIGN POLICY and CSGR indicator.

Martens and Zywietz (2004, 2006), starting from Zywietz (2003), proposed a **Modified Globalisation Index** (MGI) starting from AT Kearney's indicator which they improved technically. However, they started from a broad definition of globalization which includes environmental and military dimensions, thus reducing the economic component.

Heshmati (2006) didn't change the variables considered for the construction of A. T. Kearney's indicator, but added a complicated procedure of weighing them. Dreher (2005) expanded the number of variables referring to the personal contact and flow of information, introduced variables that measure the cultural convergence and reintroduced the measures of economic policy which Kearney used initially to measure the international economic integration.

The **New Globalization Index** (NGI) was developed by Vujakovic (2010) and it uses the analysis of the main components for a set of five new variables (and a total of 21 variables). The geographical distances between countries are introduced in the index through the variable for trade with the purpose to distinguish between globalization and regional integration. The final indicator measured the phenomenon of globalization for 70 countries and covered the period 1995-2005.

The **KOF indicator** was introduced by Axel Dreher in 2006, and then improved by Dreher, Gaston and Martens (2008). It covers the economic, social and political dimensions of globalization, being one of the most appreciated indices, with an impressive available statistical database.

Samimi, Lim and Buang (2012) reviewed the indices of globalization and came up with a synthesis, which eases the comparison between different indices of globalization. The authors consider that the indicators that include the criteria regarding the foreign capital, direct

foreign investments, current commercial flow, trade and capital restrictions, culture, information and contact, political dimension, geographic adjustment and environment, are more precise than the indicators that don't include these criteria.

2. Brief critical presentation of the globalization indices

The results of the design and construction of indices measuring globalization can vary in line with the purpose and intentions of the researcher or of the economic policy decision makers. An analysis of the globalization indices may be difficult or incomplete because the used methodologies are often incompletely or unclearly presented and the access to the underlying data is partial or inexistent.

One of the criticisms to the manner in which such indices are constructed refers to the **participants** involved in this process: states, regions, individuals, companies etc. By selecting a particular indicator, the behaviour of some participants is implicitly privileged to the detriment of others. An example of indices that reflect the activity of global actors is OECD study on the activity of multinational companies (OECD 2005a and 2010a).

The economic theory needs a **conceptual clarification**. In practice, many times, the globalization indices or some of the secondary indices reflect rather different, although linked phenomena. As Scholte (2002) and Martens & Zywietz (2006) say, the globalization indices should be better differentiated from other economic indices that measure integration or the economic openness, the level of universalization orientation towards western economies.

Sometimes, the addition of supplemental dimensions may be deleterious to the significance of the globalization indices due to the **double recording** of the flows. As noticed by De Lombaerde and Lapadre (OECD, 2008), if the cultural or military dimensions are added by introducing the arm deals or exchange of cultural goods between nations, they use or replicate some records from the transactions of goods and services. Their suggestion is to disregard the arm deals or the exchange of cultural goods from the total trade of goods and services.

In the economic literature (De Lombaerde and Van Langenhove, 2006; Scholte, 2002) is observed the need to distinguish between **globalization as phenomenon and as process**. Conceptually, there is a consensus when we say that globalization is a long and complex process, but we must draw a difference from the perspective of the observer – we observe the process in time, while the particular state at a specific moment is given by a snapshot. When some indices of globalization are constructed, it is obvious that some logic components will refer to inputs, other to characteristics of the process or to outputs (such as the results and effects). Some authors (such as Heshmati, 2006), consider that the purpose of constructing a globalization indicator is to make use of its capacity of quantifying both the sources and impact of globalization, which would not include the characteristics and progress of the phenomenon. Brahmabatt (1998) suggested that the globalization indices should include the premises (such as the progressive reduction of the official barriers to the economic transactions between countries, the reduction of the cost of economic transactions) and the results (enhanced commercial and financial transactions, enhanced workforce migration or international convergence of prices).

One of the most often criticisms regards the use of an **excessive large number of variables** in the attempt to cover as many aspects of globalization as possible. It goes without saying that when an aggregate indicator is used, the idea is to simplify and synthesise a phenomenon, most times without expressing its complexity. The inclusion of a large number of variables draws other problems too: data availability for the countries covered by the study and therefore reduction of the sample (surveyed number of countries and period of time). On the other hand, a large number of variables may reduce the control on the quality of information and thus the veracity of the indicator. At the same time, the statistics are used with a rather large delay (about two years between the publication of the globalization indices and the surveyed period), which means that valuable time was lost since the globalization phenomenon evolves extremely rapidly.

Although most times the number of variables is impressively large, the **underground economy remains unregistered**, and many

markets that contribute to globalization operate at the limit or outside the law (human trafficking, arms, drugs and animal smugglers, etc.)

Unavoidably, the construction of a composite indicator of globalization **needs weighing the secondary indices**. Various weighing procedures are employed based on methodological or theoretical considerations, but we cannot say that one is better than another one.

3. Reason for selecting KOF indicator for statistical analysis (definitions, methodology)

KOF indicators of globalization is one of the **most recent, updated and complete indices of globalization**. KOF indicator allows comparison between the different levels of globalization, for a large number of countries and for a period of almost 40 years. Using individually weighed data series, KOF indicator seems to provide the best image of the reality. The three dimensions (economic, political and social) are described by 24 variables.

The *economic globalization*, as described by the authors, is characterized by flows of goods, capital and services, but also by the information and perceptions that accompany the exchanges. We actually find here two dimensions, i.e. the actual economic flow and the trade and capital restrictions.

The *social globalization* includes three categories: personal contacts (gives information about the interaction between people living in different countries), flow of information (unlike the previous variables which were constructed to display the measurable interaction between people, this category includes variables that can identify the potential flow of ideas and images) and the cultural proximity (most difficult to quantify²).

The *political globalization* usually refers to the increase in number of power of some organizations, unions, which influence and govern the

² Besides the variables included in the indicator, it also intended to use data on the number of English songs in the national list of music hits, or the number of Hollywood movies running in national cinema halls, but the authors of the indicator gave up this idea because of the lack of information in most countries included in the sample.

world. The measure of this indicator is the number of embassies and high-level commissions in a particular country, the number of international organizations to which the country is affiliated, the number of UN peace missions in which the country was involved and the number of treaties signed between two or more states as of 1945.

Although this indicator can give us an idea on globalization, it has some deficiencies, nevertheless. One disadvantage of KOF indicator is that the results are sometimes influenced by the extreme observations or by the missing data. The accuracy of some variables became obsolete, in the recent years, as the internet developed: information such as number on international letters or trade in books and newspapers has no longer the same importance. Measuring the foreign population can be difficult or at least inexact because many developed countries are confronted with the illegal immigration.

Unlike other indicators, KOF also attempts to include the cultural proximity, only that the cultural globalization refers to the dominance of US cultural products. As Rosendorf (2000) showed, the leading role of the USA in the socio-economic sphere is disputable.

4. KOF indicator – statistical analysis by country

KOF indicator (last version released on 16 March 2012) shows that the phenomenon of globalization is still on the rise, being supported by the economic and political globalization, while the social globalization is in standby.

In 2000-2009, Belgium was the country with the highest indicator of globalization, although it didn't rank on the top position in any category. In terms of economic globalization Luxemburg (2000-2005) leads, being followed by Singapore for 2006-2009. The highest values of social globalization display the lowest values within the three dimensions, but they all are above 91 points. Singapore was leader in this category in 2000-2006, followed by Cyprus in 2007-2009; the values were lower, however, for the latter 3-year period. The political globalization gathered the highest values overall; the leaders at this category were Austria (2000), United Kingdom (2001-2003), France (2004-2006) and Italy (2007-2009).

Table 1 – Top values of KOF indicator (including the secondary indices) for 2000-2009

	Economic globalization		Social globalization	
	Country	Score	Country	Score
2000	Luxemburg	97.64	Singapore	91.80
2001	Luxemburg	97.64	Singapore	92.06
2002	Luxemburg	97.17	Singapore	92.27
2003	Luxemburg	98.05	Singapore	92.83
2004	Luxemburg	98.88	Singapore	93.25
2005	Luxemburg	95.92	Singapore	92.63
2006	Singapore	95.81	Singapore	92.62
2007	Singapore	96.42	Cyprus	92.55
2008	Singapore	97.52	Cyprus	92.19
2009	Singapore	97.39	Cyprus	91.76
	Political globalization		KOF indicator of globalization	
	Country	Score	Country	Score
2000	Austria	97.28	Belgium	92.72
2001	United Kingdom	97.31	Belgium	92.38
2002	United Kingdom	97.31	Belgium	92.31
2003	United Kingdom	97.31	Belgium	92.25
2004	France	96.86	Belgium	92.17
2005	France	97.11	Belgium	91.96
2006	France	97.77	Belgium	92.14
2007	Italy	98.21	Belgium	92.78
2008	Italy	98.21	Belgium	92.84
2009	Italy	98.43	Belgium	92.76

Source: authors' calculation using KOF database, Swiss Economic Institute (available at <http://globalization.kof.ethz.ch/>, retrieved on 22 November 2012)

If we look at the minimal and maximal values of the KOF indicator for the entire available period (1970-2009), we may notice that the secondary indices peaked in 2004 (Luxemburg for economic globalization and Singapore for social globalization). The lowest values are characteristic to less developed countries, particularly in the 1970 and 1980 years.

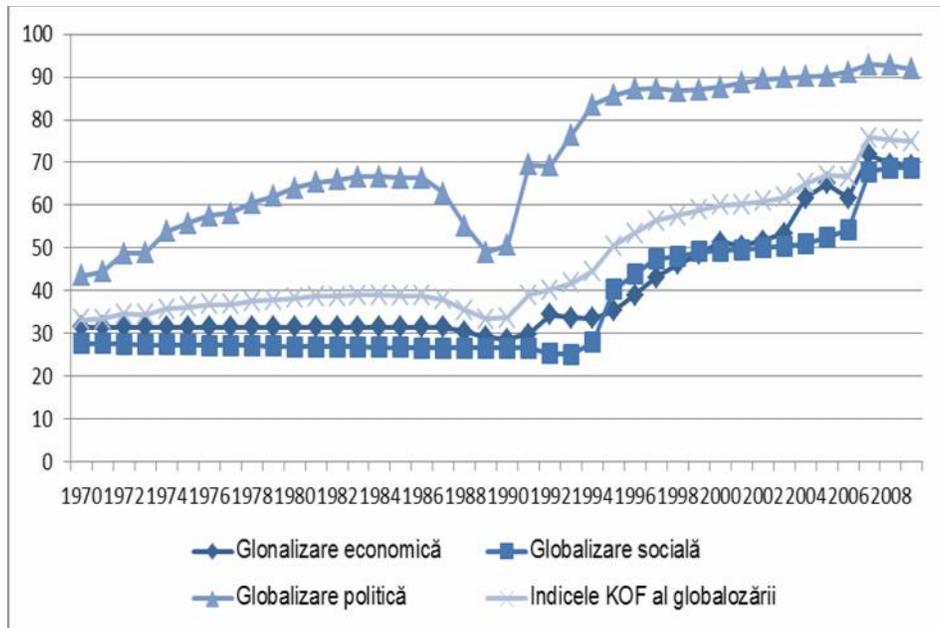
**Table 2 – Minimal and maximal values of the KOF indicator
(secondary indicators included) for 1970-2009**

	Maximal value			Minimal value		
	Country	Score	Year	Country	Score	Year
Economic globalization	Luxemburg	98.87	2004	Rwanda	9.41	1972
Social globalization	Singapore	93.25	2004	Myanmar	5.68	1987
Political globalization	France	98.56	1995	Mayotte	1.00	2004
KOF indicator of globalization	Belgium	92.83	2008	Zimbabwe	30.54	1980

*Source: authors' calculation using KOF database, Swiss Economic Institute
(available at <http://globalization.kof.ethz.ch/>, retrieved on 22 November 2012)*

The values calculated for Romania (1970-2009) display a constant trend (ranking between 25 and 40, except the political globalization component which displayed a particular evolution) until the beginning of the 1990 years. As of that moment, the values of the indicators started to increase somehow in a similar manner, the political component (again) displaying the highest values, after decreasing at the middle of the surveyed period.

Chart 1 – Values of KOF indicator calculated for Romania, 1970-2009



Source: authors' calculation using KOF database, Swiss Economic Institute (available at <http://globalization.kof.ethz.ch/>, retrieved on 22 November 2012)

If we analyse the ranking of Romania according to KOF indicator, for 2000-2009, we may notice that its position increased with the lapse of time. A considerable increase was noticed in 2007, when is observed a sharp ascension in the top (slower increase for the political component, but this ranking is the highest of all components, although the advancement was slower). KOF indicator is calculated for 208 countries, which means that Romania ranks within the top quarter of the classification, being a country open towards the exterior in all three domains included by the indicator.

Table 3 – Ranking of Romania according to KOF indicator for 2000-2009

Year	Economic globalization	Social globalization	Political globalization	KOF indicator of globalization
2005	58	75	21	45
2006	73	72	23	47
2007	50	46	20	33
2008	51	43	21	36
2009	51	41	24	34

Source: authors' calculation using KOF database, Swiss Economic Institute (available at <http://globalization.kof.ethz.ch/>, retrieved on 22 November 2012)

5. Concluding remarks

Although the phenomenon of globalization has been studied for a long time, it is still disputable whether it is good or bad to be on top or at the bottom of the classification. Some say that it is better to be on top because there is cultural diversity and access to people and goods worldwide. For other people, this is a bad thing because the national culture is lost and the country becomes homogenous.

References

1. Brahmhatt, M., 1998. Measuring Global Economic Integration: A Review of the Literature and Recent Evidence, *Working Paper, The World Bank*, Washington.
2. Caselli, M., 2006, On the nature of globalization and its measurement. Some notes on the AT Kearney Foreign Policy Magazine Globalization Index and the CSGR Globalization Index., *UNU-CRIS Occasional Papers. Universita Cattolica del Sacro Cuore*, Milano.

3. De Lombaerde, P., L. Van Langenhove, 2006. Indicators of Regional Integration: Conceptual and Methodological Aspects, in: P. De Lombaerde, ed. *Assessment and Measurement of Regional Integration*, London: Routledge, pp. 9-41.
4. De Lombaerde, P., Iapadre, L., 2008. International Integration and Societal Progress: A Critical Review of Globalisation Indicators, in: *OECD, Statistics, Knowledge and Policy 2007: Measuring and Fostering the Progress of Societies*, OECD Publishing, Paris, pp. 327-331.
5. Dreher, A., 2005, Does Globalisation Affect Growth? Evidence from a New Index of Globalisation, *Research Paper Series, Thurgauer Wirtschaftsinstitut*, (6).
6. Dreher, A., 2006. Does Globalization Affects Growth? Empirical Evidence from a New Index. *Applied Economics*, 6(38(10)), pp. 1091-1110.
7. Dreher, A., Gaston, N., Martens, P., 2008. *Measuring globalisation: Gauging its consequences*: Springer Verlag.
8. Gwartney, J., Lawson, R., Block, W., 1996. *Economic Freedom of the World: 1975-1995*, Vancouver: Fraser Institute.
9. Gwartney, J., Lawson, R., Hall, J., 2011. *Economic Freedom of the World: 2011 Annual Report*. Fraser Institute.
10. Heshmati, A., 2006. Measurement of a Multidimensional Index of Globalisation, *Global Economy Journal*, 6(2), pp. 1-28.
11. Lockwood, B. Redoano, M., 2005. The CSGR Globalisation Index: an Introductory Guide, *CSGR Working Paper*, 155.
12. Lopez-Claros, A., Porter, M., Sala-i-Martin, X., Schwab, K., 2006. *Global Competitiveness Report 2006-2007*, London: Palgrave McMillan.
13. Martens, P., Zywietz, D., 2004. *Rethinking Globalisation. A Modified Globalisation Index*, e-Readers, University College Maastricht, (LS212).
14. Martens, P., Zywietz, D., 2006. Rethinking Globalisation. A Modified Globalisation Index, *Journal of International Development*, 18(3), pp. 331-350.
15. OECD, 2005a, 2010a. *Measuring Globalisation: OECD Handbook on Economic Globalisation Indicators*, Paris.

16. OECD, 2005b, 2010b. *Measuring Globalisation: OECD Economic Globalisation Indicators*. Paris.
17. Randolph, J., 2001. G-index: Globalisation Measured, *World Markets Research Center* (presently HIS Global Insight)
18. Rosendorf, N. M., 2000. Social and Cultural Globalization: Concepts, History and America's Role. In Nye, J. S., and Donahue, J. D., eds. *Governance in a Globalizing World*. Washington, D.C.: Brookings Institution Press, pp. 109–134.
19. Samimi, P., Lim, G.C., Buang, A.A., 2012. A Critical Review on Synthetic Globalization Indexes, *International Journal of Fundamental Psychology and Social Sciences*, 2(1), pp. 28-31.
20. Scholte, J.A., 2002. What is Globalisation? The Definitional Issue – Again. *CSGR Working Paper*, 109/02, Warwick: CSGR, University of Warwick.
21. Vujakovic, P., 2010. How to Measure Globalization? A New Globalization Index (NGI), *Atlantic Economic Journal*, 38(2), pp. 237-23.
22. Zywiets, D., 2003, Measuring Globalisation. Constructing a Modified Indicator, Maastricht: *Faculty of Economics and Business Administration, Maastricht University*.