1. Introduction

Globalization is one of the most important processes involving contemporary humanity, and, significantly, for at least fifteen years it has been one of the phenomena most thoroughly studied by the social sciences. Not surprisingly, therefore, in an attempt to acquire an ever greater quantity of information about the phenomenon, numerous researchers and institutions have gone in search of indicators which yield empirical insight into the extent, features and effects of the process. Collections of statistical data on globalization which focus principally on its economic aspects – perhaps most notably the “OECD Economic Globalisation Indicators” (OECD 2005) – have proliferated as a consequence. But some scholars have endeavoured to go beyond this work of collecting and collating sectoral and disaggregated information by seeking to develop a synthetic measure for the globalization process as a whole. This, however, is a difficult undertaking, for at least two reasons.

The first is that globalization is an extremely complex and multiform phenomenon which affects almost every dimension of social life. Although the term initially acquired a certain currency due to scholars working in the field of economics in the broad sense,¹ being consequently considered an exclusively or almost exclusively economic phenomenon, in immediately subsequent years it increasingly attracted the attention of scholars working in

¹ Following a celebrated article by T. Levitt (1983). Not to be overlooked, however, are pioneering studies by authors belonging to other disciplinary fields, most notably Nettl and Robertson (1968).
other disciplines – political science and, in particular, sociology (Axford 1995, Robertson 1992, Held 1995, Waters 1995, Featherstone 1990). Today, thanks to the efforts of these and many other researchers, there is substantial consensus that globalization has at least three fundamental dimensions (which can be broken down into a variety of sub-dimensions): economic, political, and cultural. And these are dimensions which are very difficult to subject to a single instrument of measurement.

The second reason why a satisfactory measure of globalization is so difficult to construct is that despite the large body of scientific output on the matter (or indeed precisely because of it), still not forthcoming is a widely recognized and accepted definition of what globalization actually is. Apart from certain elements on which there is a general tendency to agree, the various approaches adopted are still profoundly heterogeneous. This is apparent (and understandable) if we consider scholars working in different disciplines, but it is equally so internally to individual disciplinary fields. In this regard, now cited are some examples taken from Giaccardi and Magatti (2003: 35-7; emphasis in the original).

There are those who say that globalization coincides with the birth of a great global market. The free circulation of goods and people will not only extend higher levels of well-being to all mankind but will also constitute the founding institution of the new world (Ohmae 1990). […] There are those who instead say that globalization is leading to the construction of a new empire, the rise of an (American-European) power centre which will extend its dominion around the globe following the demise of its only antagonist, the Soviet Union (Chomsky 1998; Hardt and Negri 2000). […] There are those who say that globalization will inevitably provoke a clash of civilizations, where by ‘civilization’ is meant a mixture of economic interests, religious identities and political institutions (Huntington 1996). […] There are those that say globalization will produce new postnational states (Habermas 1998), that is, new forms of political organization which will relinquish their ethnic foundations and instead rely on the capacity of democratic models to manage multiculturalism. […] There are those who say that the crisis of the nation-states is only temporary and that we can expect their resurgence, perhaps with a redistribution of their power and spheres of influence (Gamble 2000). […] There are those who instead say that globalization – by weakening the nation-states – will restore dignity and salience to the local dimension (Le Gales 2003). […] Finally, there are those who say globalization will conclude the modern age, with its ordering pretensions, and that we shall finally enter a fragmented world of cultural creolization (Hannerz 1998; Featherstone et al. 1995).

Besides this mainstream view, it is still widely believed that the economic aspects of globalization constitute its most advanced dimension and therefore drive the process. To be pointed out, however, is the decidedly contrary opinion of M. Waters that it is instead the cultural dimension of globalization which is its engine: “material exchanges localize; political exchanges internationalize; and symbolic exchanges globalize. It follows that the globalization of human society is contingent on the extent to which cultural arrangements are effective relative to economic and political arrangements. We can expect the economy and the polity to be globalized to the extent that they are culturalized, that is, to the extent that the exchanges that take place within them are accomplished symbolically. We would also expect that the degree of globalization is greater in the cultural arena than either of the other two” (1995: 9-10; emphasis in the original).

Another brief overview of the contrasting interpretations of globalization processes in the sociological literature is provided by Fiss and Hirsch (2005: 32). For more thorough surveys of the topic see Sklair (1999) and Guillén (2001).
For these two reasons, any instrument devised to measure the globalization process can only be partial, and it can only grasp some aspects of the process more than others. It will have some strengths but also some weaknesses; and it will gain the consensus of only a part (more or less large) of the scientific community.

The article first briefly outlines the standard procedure that must be followed when constructing an instrument to quantify a complex social phenomenon, and the problems that arise when doing so. Then listed are the theoretically desirable features of an instrument of this kind. After these introductory sections, a description is given of two of the most significant instruments developed for the purpose of measuring globalization: the A.T. Kearney/Foreign Policy Magazine Globalization Index and the CSGR Globalisation Index. The features of these two indices are illustrated and compared, and so too are the results that they yield. At the beginning of the description of each of these two instruments, an attempt is made to justify the choice of that particular instrument rather than others.

The final part of the paper makes some critical remarks concerning these two instruments. A first series of observations are strictly technical in nature and centre on the structure of the instrument and the characteristics of the database used. A second series of remarks more closely concern the nature itself of globalization, which may not be grasped by instruments which use ‘traditional’ methodologies. Emphasised in particular is that the globalization indices proposed today are vitiated by what Ulrich Beck, repposing an expression coined some decades before by Martins (1974), has called ‘methodological nationalism’ (2004), a paradigm no longer suited to studying many contemporary phenomena, but extremely difficult – also from a strictly technical point of view – to supersede.

2. The measurement of complex social phenomena

A complex social phenomenon can only be measured indirectly. Two options are theoretically possible. The first is to identify a single indicator which possesses characteristics such that on its own it represents the entire phenomenon subject to analysis. By way of example, a complex phenomenon like development is very often measured using exclusively per capita GDP as the indicator. This solution has been frequently criticised, and it appears to be entirely impracticable in the case of globalization, given the extraordinary multidimensionality of the phenomenon. The second option is vice versa to identify a more or less large number of different indicators and aggregate them into an overall index which

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4 By ‘indicator’ is meant a specific, empirically measurable, concept able to furnish information about a more general concept which is not empirically measurable (Corbetta 1999: 115).
furnishes a synthetic measure of the phenomenon studied. This latter is the approach adopted by the authors of the two measures of globalization analysed in this article.

But how is an index constructed? The first operation to perform, given the concept that one wishes to measure, is to identify its various dimensions; or better, given that complete coverage of such dimensions is often impossible, to select those dimensions which seem most important in light of the perspective adopted by the researcher, and the purposes which s/he intends to pursue with the measure. Moreover, the researcher must take account of how many factors s/he believes the index can handle.

Once the researcher has identified the fundamental dimensions – which may then be broken down into sub-dimensions – s/he must identify suitable indicators for each of them. In this regard, some authors have pointed out that it is usually easier to identify the dimensions of a concept than the relative indicators, because when the latter are being selected, the constraints and practical requirements imposed by empirical inquiry inevitably arise (McGranahan 1971: 66).5

When the indicators have been selected, the next and controversial step is to decide the weight to attribute to each of them when constructing the overall index. Once again, the decision should be taken on the basis of theoretical considerations, and bearing the research objectives in mind. Nevertheless, the choice is always arbitrary. To be stressed is that, when an index is being constructed, this arbitrariness arises at various levels: in definition of the concept to be analysed; in the choice of the dimensions to consider, and of the relative indicators; in determination of the weights; and, as we shall see, in the choice of techniques to normalize and aggregate the variables on the basis of which the index is calculated. It is important never to conceal the existence of this arbitrariness – for instance by employing particularly complex mathematical formulas – and never to present the index proposed as being endowed with objective validity (Drewnowski 1970: 21-3).

Finally, the value of each of the variables must be expressed in a form homogeneous with those of the others, so that they can be aggregated into the overall index, or into the sub-indices, which in their turn are integrated. In particular, if the values of the indicators are expressed in cardinal or quasi-cardinal form, they must be normalized, that is, related to a common scale of reference, for example 0-1 or 0-100. In other words, the values of the indicators must be transformed into index numbers. For this purpose a maximum value and a minimum number corresponding to the extremes of the normalized scale must be identified for each variable. Sometimes this maximum and/or minimum are intrinsically given – for example, the literacy rate cannot be less than 0% or more than 100% – but in other cases they must be determined by the researcher, who for that matter may also decide to use thresholds other than ‘natural’ ones if s/he believes that the latter are not congruent

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5 When selection is made of the indicators for each of the dimensions identified, a balance must be struck between two criteria: (a) optimal representativeness with respect to the dimension considered; (b) availability, quality, timeliness, and cost of the corresponding information.
with his/her purposes. Determination of these maximum and minimum values therefore introduces a further arbitrariness into construction of the index.

The values of each factor must therefore be transposed onto the normalized scale. This operation may be performed by complying rigidly with the criterion of proportionality between the ‘natural’ scale and the normalized one, or alternative options may be chosen (for example, the use of logarithmic scales) if they are deemed better suited to the objectives for which the index is being constructed. And this once again is an arbitrary choice.

Once the various indicators have been normalized, it is finally possible to get the overall value of the index, which can be obtained by summing the indicators or by calculating an average (arithmetic mean, geometric mean, median, etc.).

As said, just described is the case comprising indices with cardinal or quasi-cardinal indicators. However, the indicators may also be expressed by dichotomous variables (presence/absence). In this case, indices can be constructed by summing – and once again the weight assigned to each factor will be decisive – or typological indices can be created. Again, one may have nominal variables, and in this case too typological indices must be used. Particular solutions may then be devised for the ordinal indicators, for example by transforming them into quasi-cardinal or dichotomous variables.

Finally, it is possible to envisage indices which combine indicators of diverse nature. In this case, the aggregation technique must be selected case by case according to the types of indicator employed.

3. **The features that a measure of a complex social phenomenon should possess**

This section describes the main features that a researcher should consider and seek to achieve when constructing an index to measure a complex social phenomenon – and in particular when constructing an index of globalization. As stressed in the previous section, this construction will inevitably be based on arbitrary choices which can never be objectively justified.\(^6\)

Firstly, an instrument of measurement must be *valid*: that is, it must accurately and specifically measure the concept that it has been designed to measure. In particular, it should be as *complete* as possible, in the sense that it considers all the main dimensions of the phenomenon examined, while also giving them *right coverage*: each of the phenomenon’s elements must be represented in proportion to its importance within the phenomenon.

The measurement must be repeatable after an interval of time, and it must be able to record any variations in the phenomenon precisely and promptly. It must, that is, be sensitive. This feature is especially important when analysing globalization, given the rapidity with which the phenomenon evolves.

The measurement instrument must also be reliable: if its use is repeated, the results must be consistent. Above all, it must yield the same results when used by different subjects. In this regard, given the arbitrary nature of the choices that lead to the instrument’s creation, the criteria and procedures on which construction of the indices has been based must be clearly specified and made public. The value of a globalization measure – to remain on topic – can never be demonstrated on the basis of objective criteria; its value can only result from scrutiny by the scientific community, and this scrutiny can only be possible if the nature and structure of the index is as ‘transparent’ as possible.

The instrument, in its mode of use and results obtained, must be adequate to its purpose. That is, it must be efficacious. And it must also be efficient, in the sense that there must be a good ratio between the costs of using the instrument and the benefits obtained.

The measurement instrument must also be able to furnish the information required in timely manner: there must be a minimum gap between the moment when the information becomes available and the moment to which it refers. For this to be possible, the instrument must be easy to handle and must not require excessively complex calculations or other operations. It is also important that the measure is based on easily accessible and good quality data.

If an index of globalization is to gain broad recognition, it must – as a whole and in its individual parts – be relevant, meaningful and easily understandable for experts, but not only these, given that the concept of globalization is used well beyond the strictly academic community. Finally, a measurement instrument should furnish results that are clear, easily interpretable and unambiguous.

4. The A.T. Kearney/Foreign Policy Magazine Globalization Index

Now discussed are two of the most significant measures of globalization proposed to date, beginning with the A.T. Kearney/Foreign Policy Magazine Globalization Index. It seems mandatory to consider this instrument first of all because the A.T. Kearney/Foreign Policy Magazine Globalization Index is at present the most widely used and cited index of globalization. Moreover, it is referred to by all the other authors – though often to highlight its limitations – who have sought to develop other instruments for the same purpose. Over the years, this is an instrument undergone various modifications in the number and nature of the indicators used, and the procedures for calculating the index itself. Described here is the
The latest version of the index, published in 2006 and using data relative to the year 2004 (Foreign Policy 2006).7

The A.T. Kearney/Foreign Policy Magazine Globalization Index considers four fundamental dimensions of globalization:8 economic integration, technological connectivity, personal contact, political engagement. Corresponding to each of these dimensions are two or more variables, for a total of twelve (there were 14 in the 2004 version and 13 in the 2003 version); each variable in its turn corresponds to one or more indicators. Each variable is normalized on the scale 0-1, where corresponding to 1 is the highest value recorded among all countries for that variable in the year in question,9 while all the other values are considered proportionally in fractions of 1. However, this normalization technique (which requires identification for each variable of a maximum value which varies from year to year) has the drawback that analysis of the variation over time of the index for a particular country has little significance. To deal with this problem, the normalized values are multiplied by a ‘scale factor’ which is set equal to 100 for each value referring to 1998 and varies proportionally to the increase or decrease in the maximum value of each variable relative to each year.10

Once the index numbers for each variable have been determined, the problem arises of their aggregation into the overall globalization index, and in particular the problem of the weight which should be attributed to each of the variables considered. The solution adopted for the A.T. Kearney/Foreign Policy Magazine Globalization Index is to assign the weights on the basis of theoretical considerations on the importance of each of the dimensions (and sub-dimensions) of the globalization process initially identified. This choice is obviously arbitrary and is therefore susceptible to criticism. Nevertheless, as said, there are no objectively valid criteria that can be applied, and the arbitrariness is inevitable. Table 1 gives the complete list of the variables comprised in the A.T. Kearney/Foreign Policy Magazine Globalization Index, together with the weight for each of them and the weight consequently attributed to each of the four fundamental dimensions of the index. To be

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7 The version published in 2006 is identical to the one of 2005. This is the first time that the index has not been modified from one year to the next.
8 The authors of the index acknowledge that these dimensions capture only some aspects of globalization, and that it would be appropriate to include cultural exchanges as well. This is not done, however, because of the lack of reliable data on this dimension (Foreign Policy 2003: 63).
9 That is, the maximum value on the basis of which the normalization is performed varies from year to year for each variable. Previously, only one maximum value (and the minimum value, now not considered) was used for normalization and corresponded to the highest (and the lowest) of all those recorded for the variable since 1998.
10 The problem is that, for each variable, the maximum value from year to year may refer to different countries. Yet information on how this ‘scale factor’ is calculated have not been published. Is a reference country taken as the benchmark, or is recalculation made of all the ‘scale factors’ on the basis of the country which, at that particular moment in time, records the highest value for that particular variable? Also to be pointed out is that, because this procedure is subsequent to normalization on the scale 0-1, it may unduly increase the effective weights in the overall index of the factors for which substantial growth has been recorded in recent years, for example those relative to the technological dimension. Indeed, the United States is given high rankings by the A.T. Kearney/Foreign Policy Magazine Globalization Index precisely because of its good performance on the technological dimension (year of reference 2004), although the latter nominally accounts for just 10% of the overall value of the index.
emphasised is the preponderant value assumed by economic variables in the overall index on account of the weights assigned to them. These variables determine 50% of the value of the overall index, and this may impair its multidimensionality.

Table 1 – Dimensions, variables, indicators and weights in the A.T. Kearney/Foreign Policy Magazine Globalization Index

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Variables</th>
<th>Indicators</th>
<th>Weight of the variables</th>
<th>Weight of the dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic integration</td>
<td>Trade</td>
<td>Imports and exports, divided by the country’s GDP</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Foreign Direct Investment</td>
<td>FDI inflows and outflows, divided by the country’s GDP</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Personal contact</td>
<td>Telephone</td>
<td>Minutes of inward and outward international telephone traffic, divided by the country’s population</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Travel</td>
<td>Inward and outward visitors, divided by the country’s population</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remittances and personal transfers</td>
<td>Cross-border remittances and personal transfers (including worker remittances, compensation to employees, and other person-to-person and nongovernmental transfers), divided by the country’s GDP</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Technological connectivity</td>
<td>Internet users</td>
<td>Number of Internet users, divided by the country’s population</td>
<td>1/3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Internet hosts</td>
<td>Number of Internet hosts, divided by the country’s population</td>
<td>1/3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secure servers</td>
<td>Number of secure servers through which encrypted transactions are carried out, divided by the country’s population</td>
<td>1/3</td>
<td></td>
</tr>
<tr>
<td>Political engagement</td>
<td>Memberships in international organizations</td>
<td>Memberships in a variety of representative international organizations (absolute number)</td>
<td>1/4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Contributions to U.N. peacekeeping missions</td>
<td>Weighted average of financial contribution divided by the country’s GDP, and the country’s personnel contribution divided by the country’s population</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ratification of multilateral treaties</td>
<td>Ratification of selected multilateral treaties (absolute number)</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Governmental transfers</td>
<td>Amounts of governmental transfer payments and receipts, divided by the country’s GDP</td>
<td>1/4</td>
<td></td>
</tr>
</tbody>
</table>
When the weights have been assigned, the value of the overall index is given by the sum of the index numbers relative to each variable multiplied by its respective weight.

In its 2006 version – the data for which, as said, refer to 2004 – the A.T. Kearney/Foreign Policy Magazine Globalization Index is calculated for 62 countries, corresponding to 85% of the world’s population.

5. The CSGR Globalisation Index

Whilst, as said, the decision to consider the A.T. Kearney/Foreign Policy Magazine Globalization Index was well-nigh obligatory, selecting the second instrument to analyse proved more complex. Among the various, though not numerous, attempts to develop a synthetic measure of globalization processes, immediately discarded were the WMRC G-Index (Randolph 2001), the instrument devised by Andersen and Herbertsson (2003) and that proposed by Agénor (2004), because they consider only the economic aspects of the process. They thus traduce its multidimensionality, which as said in the first section, is one of its crucial features. Added to this is the fact that Andersen and Herbertsson’s index – also because of the techniques used and not solely because of a problem of data availability – has been calculated for only 23 countries. The multidimensionality of globalization processes has instead been grasped by the instrument proposed by Dreher (2006). However, this globalization index was discarded because it is grounded on theoretical and technical assumptions which appear unacceptable. For instance, Dreher interprets the cultural dimension of globalization in terms of the “domination of American cultural products”, thus to discover – lo and behold! – that the most culturally globalized country is the USA. The instruments worth considering therefore reduce to the CSGR Globalisation Index developed by Ben Lockwood and Michela Redoano (2005) at the Centre for the Study of Globalisation and Regionalisation of the University of Warwick (UK), and the globalization index devised by Pim Martens and Daniel Zywietz (2006) at the International Centre for Integrative Studies of the University of Maastricht. Incidentally, these two instruments are similar in various respects because they are both attempts to improve the A.T. Kearney/Foreign Policy Magazine Globalization Index – without, however, being no more than a simple recasting of the way it is constructed, as is instead the case of those proposed by Heshmati (2003) and Bhandari and Heshmati (2005). The former was selected for two main reasons. Firstly

11 Some criticisms of the WMRC G-Index are made by Martens and Zywietz (2006).
12 Dreher’s position is even more untenable if we consider that he measures this dimension more concretely by using the number of McDonald’s restaurants on the national territory as his indicator. But why, one asks, should one not instead measure the level of cultural globalization in terms of the number of Chinese restaurants or Italian pizzerias?
13 Proposals which merely modify the system whereby weights are attributed to the various variables considered in the A.T. Kearney/Foreign Policy Magazine Globalization Index.
because the analyses by Ben Lockwood (2001, 2004) of the topic were among the stimuli for construction of both Martens and Zywietz’s index and the other globalization indexes cited above. Secondly because the CSGR Globalisation Index is backed by substantial statistical documentation which enables analysis of the evolution – across two decades – of the phenomenon and its components. And this is an aspect of particular importance for the study of globalization processes.

The CSGR Globalisation Index considers three fundamental dimensions of globalization: economic globalisation, social globalisation (divided into two sub-dimensions: people and ideas), and political globalisation. Corresponding to each of these dimensions is a minimum of three and a maximum of nine variables, for a total of 16. Corresponding to each variable are one or more indicators.

The value of each of the variables is normalized on a scale from 0 to 1, where 1 is the maximum value recorded by the variable in the period 1970-2001\(^{14}\), and 0 is the minimum value recorded in the same period.\(^{15}\) These minimum and maximum values are the same for all the years considered by the index (panel normalization).\(^{16}\)

When all the variables have been normalized and before an overall measure can be obtained, the awkward problem arises of the weight to assign to each of the variables. The solution adopted by the authors of the CSGR Globalisation Index is purely statistical in nature. It is based on the principal component weighting method, a technique which retains as much information as possible about each country during aggregation.\(^{17}\) This solution has the same validity as that adopted by the authors of the A.T. Kearney/Foreign Policy Magazine Globalization Index, who, as we have seen, assigned weights according to strictly theoretical considerations. In both cases, the choice is arbitrary (nor could it be otherwise), and one should not commit the error of believing that the method used in the case of the CSGR Globalisation Index is more objective because it is based on a statistical procedure.\(^{18}\) This does not mean that any arbitrary choice is in principle equally valid. Instead, it simply means that, in the specific case, the reasons adduced in justification of the two different

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\(^{14}\) Where the figure for such a long time interval is available. If the interval considered for the normalization is not specified, one may presume that it is the maximum interval for which the figure is available, or else the authors may have resorted to an estimate.

\(^{15}\) Using the well-known formula: normalized value = (observed value – minimum value)/(maximum value – minimum value).

\(^{16}\) As the authors themselves acknowledge, “panel normalisation has both advantages and disadvantages. The advantage is that with panel-normalised data, we can make meaningful comparison over time for a given country or indeed between countries. A disadvantage, discussed in detail in Lockwood (2004), is that when additional years of data are added to the database, the maximum or minimum value of a variable may change, and those variables affected then have to be re-normalised”. This problem can be solved by fixing, on the basis of past observations and predictions for the future, of minimum and maximum invariable thresholds. However, in its turn, this solution has the drawback of identifying a situation of maximum possible globalization, which seems to conflict with the profoundly dynamic nature of a process whose future outcomes at present seem difficult to predict in full.

\(^{17}\) For technical details on this procedure see Lockwood – Redoano (2005).

\(^{18}\) Equally arbitrary (and therefore criticizable) is the solution adopted by Martens and Zywietz (2006), whose globalization index assigns equal weight to all the indicators considered.
choices are equally defensible. Also to be noted is that, given the method of determination selected, every updating of the database necessarily requires revision of the weights assigned to each variable in the CSGR Globalisation Index, and this increases the complexity of the instrument.\footnote{Note that, following a recent updating of the data, the weights attributed to the various indicators do not seem to have been revised.}

It should be added that the variables relative to the economic dimension are subjected to further refinement. The basic idea is that the amount of economic flows (of goods and money) across the borders of a country depend not only on its degree of trade openness (and therefore, in the authors’ view, on its degree of globalization) but also on certain characteristics of the country. Very small and/or underpopulated countries are more obliged to trade. For this reason, the four economic variables considered by the CSGR Globalisation Index are transformed into a new variable given by the difference between the value actually observed and that predictable by a least squares regression which takes account of certain characteristics – non-economic – capable of influencing a country’s openness to trade. These characteristics are population (year of reference: 1998), surface area, and a dummy variable recording whether or not the country is landlocked.\footnote{For technical details on this regression see Lockwood – Redoano (2005).}

When all the variables have been normalized (and when the economic ones have been refined as just described), they are aggregated into partial indices relative to each dimension by means of an arithmetic mean which takes account of the weights assigned. The three partial indices are then aggregated into the overall index by means of a simple arithmetic mean. It should be stressed, however, that on this point there is a discrepancy between the information given in the technical notes and the structure of the published database.\footnote{Although the authors have been repeatedly questioned on this point, they have not furnished explanations.} Table 2 lists the variables and respective indicators used to construct the CSGR Globalisation Index, together with the respective weights divided for each of the dimensions considered.

The authors of the CSGR Globalisation Index have created a database to collect the information, on all the countries in the world, required to construct the index from 1982 to 2004. For obvious reasons to do with the impossibility of obtaining data, this database is largely incomplete.\footnote{When possible, the missing data are estimated by means of a linear interpolation procedure.} With reference to the final year considered, namely 2004, the overall globalization index has been calculated for 103 countries. The CSGR Globalisation Index therefore covers a larger number of countries than the A.T. Kearney/Foreign Policy Magazine Globalization Index, which, as said, is calculated for only 62 countries. It should be pointed out, however, that the latter covers 11 countries not classified by the CSGR Globalisation Index: Czech Republic, Croatia, Slovenia, Slovakia, Uganda, Taiwan, Botswana, Ukraine, Saudi Arabia, Turkey and Iran.
Table 2 – Dimensions, variables, indicators and weights in the CSGR Globalisation Index

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Sub-dimensions</th>
<th>Variables</th>
<th>Indicators</th>
<th>Weight of the variables</th>
<th>Weight of the dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic globalisation</td>
<td></td>
<td>Trade</td>
<td>Exports plus imports of goods and services as a proportion of GDP</td>
<td>0.418</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign Direct Investment</td>
<td>Inflows plus outflows of FDI as a proportion of GDP</td>
<td>0.092</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Portfolio investment</td>
<td>Inflows plus outflows of portfolio investments as a proportion of GDP</td>
<td>0.220</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Income</td>
<td>Employee compensation paid to non-resident workers and investment income</td>
<td>0.270</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>from foreign assets owned by domestic residents plus employee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>compensation paid to resident workers working abroad and investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>income from domestic assets owned by foreign residents, as a</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>proportion of GDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social globalisation</td>
<td>People</td>
<td>Foreign stock</td>
<td>Stock of foreign population as proportion of total population</td>
<td>0.266</td>
<td>1 (0.331 for People;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign Flow</td>
<td>Inflows of foreign population as proportion of total population</td>
<td>0.629</td>
<td>0.669 for Ideas)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker remittances</td>
<td>Worker remittances (receipts) as a proportion of GDP</td>
<td>0.079</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tourists</td>
<td>Number of tourists (arrivals plus departures) as proportion of total</td>
<td>0.026</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>population</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ideas</td>
<td>Phone calls</td>
<td>International outgoing telephone traffic (minutes) per capita</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet users</td>
<td>Internet users as a percentage of population</td>
<td>0.303</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Films</td>
<td>Number of films imported and exported</td>
<td>0.061</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Books and newspaper</td>
<td>Sum of value of books and newspapers imported and exported per capita</td>
<td>0.577</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mail</td>
<td>Number of international letters delivered and sent per capita</td>
<td>0.054</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political</td>
<td>Embassies</td>
<td>Number of foreign embassies in country</td>
<td>0.378</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>globalisation</td>
<td>UN Mission</td>
<td>Number of UN peacekeeping operations in which country participates</td>
<td>0.357</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organisations</td>
<td>Number of memberships of International organisations</td>
<td>0.266</td>
<td></td>
</tr>
</tbody>
</table>
6. The CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index: a comparison

There are close similarities between the two globalization indices described in previous sections but also numerous and significant differences, which give rise, as we shall see, to discrepancies among the results obtained.

As regards the similarities, these are not surprising to find, given that the CSGR Globalisation Index originated from criticisms of the A.T. Kearney/Foreign Policy Magazine Globalization Index and an attempt by Ben Lockwood (2001) to correct it. Some terminological differences notwithstanding, the main dimensions of the two indices almost perfectly overlap. Both indices have an economic dimension and a political dimension, and, once operationalized, the social globalization of the CSGR Globalisation Index is very similar to the personal contact and technological connectivity set in the A.T. Kearney/Foreign Policy Magazine Globalization Index. There are also evident similarities in the variables selected. Fully 8 of the 12 variables used by the A.T. Kearney/Foreign Policy Magazine Globalization Index (and indeed 10 of the 14 in the 2004 version and 11 of the 13 in the 2003 version) reappear in identical or almost identical form in the CSGR Globalisation Index, although this uses a wider range of variables (16).

Instead, there are significant differences between the two instruments as regards the processing and aggregation of data. The main differences consist (i) in the different weights given to the various dimensions making up the index, and (ii) the differing technique by which weights are assigned to the variables within each dimension. The CSGR Globalisation Index, in fact, attributes the same weight to all three of the dimensions identified, while the A.T. Kearney/Foreign Policy Magazine Globalization Index gives decidedly greater weight to the economic dimension, to the detriment of the political one. It consequently seems that the CSGR Globalisation Index is better able than the A.T. Kearney/Foreign Policy Magazine Globalization Index to capture the intrinsic complexity and multidimensionality of globalization processes. As regards the aggregation of the variables within each dimension, the weights to be attributed are decided on the basis of theoretical considerations by the A.T. Kearney/Foreign Policy Magazine Globalization Index, and on the basis of statistical procedures by the CSGR Globalisation Index. It has already been said that both these solutions are arbitrary, valid, and at the same time criticisable. Finally, in regard to its economic variables, the CSGR Globalisation Index introduces a correction factor intended to reduce the impact on the results of the index of certain demographic and morphological features of the countries studied. Put otherwise: in the absence of this factor, smaller countries would tend to be more globalized than larger ones. Although the authors of the A.T. Kearney/Foreign Policy Magazine Globalization
Index are aware of this problem, they play down its significance and do not consider it necessary to introduce a corrective. However, a first reading of the results obtained with the instrument seems to support the stance taken by the authors of the CSGR Globalisation Index: a large number of smaller and less-population countries occupy the highest places in the classification.\textsuperscript{23}

Now compared – albeit, for reasons of space, only partially – are the results obtained using the CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index. Table 3 sets out the classifications of the 20 most globalized countries according to the two instruments, with reference to the most recent year considered by both, i.e. 2004. Also given for each country is its position in the other classification considered here.

A first finding is that countries with relatively small populations also occupy the uppermost positions in the CSGR Globalisation Index. This means that, despite the correction made while constructing the index, small countries are still those most closely involved in transnational flows.

The second feature to stress is the substantial similarity (with few but significant exceptions) between the classifications obtained using the CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index. Specifically, of the 20 most globalized countries according to the CSGR Globalisation Index, only 4 rank below 20th place in the A.T. Kearney/Foreign Policy Magazine Globalization Index. And of the 10 most globalized countries according to the CSGR Globalisation Index, only 2 rank below 10th place in the A.T. Kearney/Foreign Policy Magazine Globalization Index. In both classifications, moreover, Singapore occupies first place. Also to be noted is that the second most globalized country according to the CSGR Globalisation Index, namely Belgium, does not figure among the countries for which scores are available on the A.T. Kearney/Foreign Policy Magazine Globalization Index. In its turn, the CSGR Globalisation Index does not include two of the countries occupying the top twenty positions in the A.T. Kearney/Foreign Policy Magazine Globalization Index, namely Czech Republic and Slovenia.

The most significant discrepancy between the classifications compiled using the two instruments is the case of Russia, which ranks among the top twenty countries in the CSGR Globalisation Index but occupies one of the lowest positions in the A.T. Kearney/Foreign Policy Magazine Globalization Index.

\textsuperscript{23} Also confirming the presence of this dynamic is the fact that the WMRC G-Index – cited above – ranks Liechtenstein as the most globalized country in the world (Randolph 2001). Liechtenstein does not appear in the lists of either the CSGR Globalisation Index or the A.T. Kearney/Foreign Policy Magazine Globalization Index.
Table 3 – The 20 most globalized countries according to the CSGR Globalisation Index (CSGR) and to the A.T. Kearney/Foreign Policy Magazine Globalization Index (KFP)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>KFP rank</th>
<th>Country</th>
<th>CSGR rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Singapore</td>
<td>1</td>
<td>Singapore</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Belgium</td>
<td>n.i.</td>
<td>Switzerland</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Canada</td>
<td>6</td>
<td>United States</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>United Kingdom</td>
<td>12</td>
<td>Ireland</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>United States</td>
<td>3</td>
<td>Denmark</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Austria</td>
<td>9</td>
<td>Canada</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Sweden</td>
<td>10</td>
<td>Netherlands</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>Switzerland</td>
<td>2</td>
<td>Australia</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>France</td>
<td>23</td>
<td>Austria</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>Denmark</td>
<td>5</td>
<td>Sweden</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>Ireland</td>
<td>4</td>
<td>New Zealand</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>Germany</td>
<td>18</td>
<td>United Kingdom</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>Italy</td>
<td>27</td>
<td>Finland</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>Malaysia</td>
<td>19</td>
<td>Norway</td>
<td>26</td>
</tr>
<tr>
<td>15</td>
<td>Finland</td>
<td>13</td>
<td>Israel</td>
<td>30</td>
</tr>
<tr>
<td>16</td>
<td>Australia</td>
<td>8</td>
<td>Czech Republic</td>
<td>n.i.</td>
</tr>
<tr>
<td>17</td>
<td>Netherlands</td>
<td>7</td>
<td>Slovenia</td>
<td>n.i.</td>
</tr>
<tr>
<td>18</td>
<td>New Zealand</td>
<td>11</td>
<td>Germany</td>
<td>12</td>
</tr>
<tr>
<td>19</td>
<td>Russian Fed.</td>
<td>47</td>
<td>Malaysia</td>
<td>14</td>
</tr>
<tr>
<td>20</td>
<td>Korea, Rep.</td>
<td>29</td>
<td>Hungary</td>
<td>32</td>
</tr>
</tbody>
</table>

Overall, the fact that there are no striking differences between the results yielded by the two indices is at least partial proof of their reliability. But it also tells us – and counsels caution when information obtained from indices of this kind is used – that a small difference of position between one country and another is likely to result more from the nature of the instrument than from an actual difference in levels of globalization.

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24 However, the proof would be much more convincing if these were two instruments with radically different structures.
7. Some technical criticisms of the CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index

This section presents some criticisms, mainly technical, which can be brought against the two globalization indices discussed. Some of these criticisms concern both instruments; others are directed at one rather than the other. In a later section, criticisms of a more substantial nature will be put forward: in particular, it will be shown that both indices are at risk of distorting the essential nature of globalization processes. It will also be emphasised that many of the criticisms that follow can also be applied to the other globalization indices cited above but not subjected to direct analysis.

To begin with the strictly technical criticisms, the main defect of both the CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index is that they use an excessively large number of variables and indicators. The presence of so many variables in both instruments is due to their attempt to cover all the numerous aspects of the globalization process – an attempt, that is, not to traduce its complexity. It should be pointed out, however, that constructing an index is always an operation of synthesis and simplification which inevitably does violence to the phenomenon studied.

The excessive use of variables by the two indices gives rise to many and different problems. The first of them is that as the indicators increase (i.e. the greater the amount of information required to calculate the value of the index), there is a concomitant decrease in the number of countries for which it is possible to obtain the data needed to determine the value of the index. Not by chance, as already pointed out, the A.T. Kearney/Foreign Policy Magazine Globalization Index can be calculated for only 62 countries – although the authors stress that these are the most important ones in demographic and economic terms – and the CSGR Globalisation Index for 103. Testifying further to the seriousness of the problem is the fact that both instruments omit not only under-developed countries (for which the difficulty of obtaining reliable statistics is notorious) but also numerous advanced ones, as well as others with large populations (in respect to which information furnished by the index would instead be interesting and significant). For example, the A.T. Kearney/Foreign Policy Magazine Globalization Index does not include Belgium (the country which, as said, the CSGR Globalisation Index ranks as the second most globalized in the world), Iceland and Algeria; whilst the CSGR Globalisation Index omits Czech Republic, Croatia, Slovenia, Slovakia, Ukraine, Saudi Arabia, Turkey and Iran.

Secondly, the excessive use of variables hampers control on the quality of the information corresponding to them, and therefore diminishes the reliability of the instrument. On the other hand, however, the use of numerous variables reduces the influence exerted by errors in one of the variables on the overall value of the index.

Thirdly, the need to acquire a large amount of disparate information from diverse sources reduces the timeliness of such information. In this regard, to be noted is that both in
the case of the *A.T. Kearney/Foreign Policy Magazine Globalization Index* and that of the *CSGR Globalisation Index* the value is available with a two-year delay (the values for 2004 were published in 2006). However, it should be pointed out that when the *CSGR Globalisation Index* was first published, the data were delayed by fully four years. This is an extremely serious problem, all the more so because it concerns a phenomenon – globalization – among whose fundamental features is the rapidity of the changes that it induces.

Lastly, the excessive use of variables restricts the instrument’s comprehensibility – outside the strictly academic or scientific community especially – and thus limits its chances of gaining broad international recognition.

In this regard and to concentrate on the *CSGR Globalisation Index*, to be noted is that, given the technique of weights assignment chosen, it is difficult to justify the inclusion of some of the variables in the index. In fact, the statistical procedure used entails the attribution of practically negligible weights to some variables (see Table 2). For example, *Phone calls* is given a weight of just 0.004 in the *Ideas* sub-dimension, which represents around two-thirds of the overall value of the *Social globalization* sub-index. Consequently, this variable accounts for approximately one-thousandth of the overall value of the *CSGR Globalisation Index*. Likewise, extremely limited weights are assigned to *Foreign Direct Investment* (which, note, is given much greater weight in the *A.T. Kearney/Foreign Policy Magazine Globalization Index*), *Worker remittances*, *Tourists*, *Films*, and *Mail*. Therefore, should it be wished to maintain the statistical method of weights attribution, these variables can easily be discarded, with only minimum impact on the overall value of the index.

Turning to the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, the scant importance that it gives to the political dimension – which accounts for just one-tenth of the index’s overall value – is questionable; and so too is the decision to omit the cultural dimension entirely. As said, the authors justify this decision by the difficulty of finding appropriate indicators. Yet the *CSGR Globalisation Index* includes indicators of this kind (*Films* and *Books and newspapers*), albeit doing so in perhaps not entirely satisfactory manner, because the cultural aspects of globalization extend well beyond the dynamics monitored by these indicators.

Again with reference to the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, to be reiterated is what was pointed out in a previous footnote: the introduction of the ‘scale factor’ – the purpose of which is to enable diachronic comparison of the results obtained – gives rise to an undue and substantial increase in the weights of some indicators, with a consequent distortion in the index’s overall structure.

Convincing to some extent is the operation performed within the *CSGR Globalisation Index* to correct the economic variables on the basis of certain geo-demographic characteristics of the country considered. Albeit in a somewhat different manner, this technique is also used – drawing on early work by the authors of the *CSGR* – in the
globalization index devised by Martens and Zywietz (2006). Its impact is rather limited, though, in that small countries with small populations – Switzerland, Austria, Denmark and Singapore (see Table 3) – rank topmost in both the CSGR Globalisation Index and the A.T. Kearney/Foreign Policy Magazine Globalization Index (which does not make this correction). To be pointed out further is that this correction could also be made on some of the non-economic variables – for instance Tourists, Phone calls, Films, Books and newspapers, Mail – because the same considerations apply to these variables as prompted introduction of the correction factor in the economic variables. At least for some variables, a further possibility, alternative or complementary to the correction factor, would be to distinguish the provenance (and origin) of the international flows considered: for instance, with exclusion of those from adjoining or neighbouring countries. For example, if the large part of the international trade flows that traverse Ireland originate from or are directed towards the United Kingdom, this does not mean that Ireland is highly globalized; vice versa if the flows originate from or are directed towards other countries. This option, however, is impracticable given the complications that it would cause in calculation and data collection.

A final criticism, which specifically concerns the A.T. Kearney/Foreign Policy Magazine Globalization Index, is the insufficient clarity of the methodological notes published, and the incomplete accessibility of the database used. Also to be criticised is the fact that the various changes introduced into the instrument’s construction have never been openly stated, even less justified. Indeed – and this is a serious methodological error – the reports which comment on the results discuss the variations over time (without the index being recalculated) in the relative positions of countries. Yet it is likely that these variations are (also) due to the different way in which the index is constructed from year to year, and not solely to actual variations in the property considered.

8. Some lessons from a success story

Finding an instrument to measure a phenomenon of such complexity and such significance for humanity is a challenge both fascinating and demanding. There are two main difficulties: first, constructing an instrument adequate to the purpose; second, gaining its international endorsement by the scientific community and the public at large. The second of these difficulties seems more formidable than the first.

There are similarities between the route followed to date in measuring globalization and the route pursued, in past years, to construct satisfactory measures of development. The latter is a phenomenon which, like globalization, is both complex and important. The difference between them is that in the case of development an instrument of measurement –
per capita GDP/GNP – was found very early on and enjoyed great success. However, it was then subject to numerous criticisms, and since the 1960s – although some attempts were made prior to that decade – the need to develop alternatives has grown urgent. To be mentioned in particular are the measures proposed by Bennett (1937), Drewnowski and Scott (1966), Dellacasa (1979), and Morris (1979). None of these attempts gained international acceptance. Why not? In the case of the instruments proposed by Bennett, Drewnowski and Scott, and Dellacasa one of the main reasons was their excessive complexity, in particular their overly large number of indicators, for which data was often difficult to obtain. As a consequence, these instruments could be used for a very small number of countries, and they were cumbersome and untimely. Vice versa, the Physical Quality of Life Index proposed by Morris was extremely simple and consisted of only three indicators. It substantial failure was do to the fact that it was not officially used by any of the main international organizations.

Good success has instead been achieved by the Human Development Index (HDI) proposed since 1990 by the UNDP. The HDI has not been able to displace per capita GDP/GNP as the main measure of development. Nevertheless, it is widely recognized internationally, and its value is quoted – together with per capita GDP/GNP – by almost all the statistical reports of the main international organizations.

What are the reasons for this (at least partial) success? The first is undoubtedly the simplicity of the instrument. The HDI is based on three fundamental dimensions, which are given equal weights, and has a total of just four indicators. Moreover, these indicators are easily understood and widely available, and their importance is generally recognized. The process of aggregating these indicators is likewise extremely simple, the database is made public in its entirety, and the methodological notes are clear and exhaustive. In the latest edition of the Human Development Report published by the UNDP in 2006, the HDI value is available for fully 177 countries and refers to 2004. The HDI too is obviously susceptible to criticisms (not set out here), but to be emphasised is the broad endorsement that it has received. And another reason for its success has indubitably been its adoption by an agency of the United Nations.

What lessons can those endeavouring to construct an index of globalization learn from the HDI? Essentially two. The first is that a measure of this kind must be as simple, concise and as readily understandable as possible. Excessive sophistication in construction is pointless if the instrument thereby created has scant applicability and little acceptance.

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25 The definitions of GDP and GNP are not reported here, assuming that they are sufficiently well known. To be noted only is that these two indicators are largely interchangeable in the literature. Scidà (1997) has pointed out that whereas GNP was initially preferred, GDP is now more widely used.


27 For a detailed examination of the history of development measures and a description of all the instruments mentioned in this section, see Caselli (2001).
Moreover, as said, given that construction of an index for a complex phenomenon requires its drastic synthesis and simplification, an excess of refinement in an index’s structure has a very limited impact on the results obtained anyway, and on the goodness of fit with the phenomenon. As a consequence, it is largely useless. The second lesson is that it is advisable, indeed necessary, for the authors of an index to get their work known and accepted by at least one prestigious international organization.

9. A more substantial criticism: on the nature of globalization

Besides the above technical criticisms, it seems that the most significant shortcoming of the globalization measures proposed to date is that they traduce the essential nature of globalization. Firstly, it has been authoritatively shown that globalization comprises not only an ‘objective’ dimension but also a ‘subjective’ one understood as a ‘revolution in consciousness’ (Robertson 1992: 9). Yet all the instruments developed to date to measure globalization have concentrated on its ‘objective’ aspects. Globalization indexes should therefore be integrated with subjective indicators based on information collected by ad hoc sample-based surveys.

However, the point to be stressed here is different. The crucial feature of globalization, the one which distinguishes it from mere internationalization, is the pervasiveness of the phenomenon of deterritorialization (Giacciardi and Magatti 2003, Sassen 2000, Scholte 2000). There was a substantial coincidence in the modern age between the concepts of ‘society’ and ‘nation-state’, and the nation-state was the natural container of economic, cultural and political processes. This is no longer the case today (Beck 2000), both because there are processes that traverse national borders (which would simply be internationalization) and because there are processes entirely free of territorial constraints – processes, that is, which may be situated anywhere or, conversely, nowhere (in virtual space for example).

Take, for instance, telephone calls, electronic finance and the depletion of stratospheric ozone. Such phenomena cannot be situated at a fixed territorial location. They operate largely without regard of territorial distance. They substantially bypass territorial borders. Thus, technologically speaking, a telephone conversation can occur across an ocean as readily as across a street. Today money deposited with a major bank is mostly stored in ‘placeless’ cyberspace than in a vault. Ozone depletion exists everywhere on earth at the same time, and its relative distribution across different parts of the world shifts without regard to territorial distances or borders. The geography of these global conditions cannot be understood in terms of territoriality alone; they also reside in the world as a single place – that is, in a transworld space (Scholte 2000; emphasis in the original).
Given this situation, it is paradoxical and misconceived to insist on studying reality in general, and globalization all the more so, with instruments that take the nation-state as their unit of analysis. It is at most possible to study internationalization in this way, but not globalization. In other words, the globalization measures currently available are vitiated by what has been variously called methodological nationalism (Beck 2004), embedded statism (Sassen 2000), or methodological territorialism (Scholte 2000) – a perspective which distorts the essence of globalization precisely when its study begins, and which yields data that “in the best of cases are irrelevant and in the worse misleading, or even false” (Beck-Gernsheim 2004). Evident, therefore, is the need to identify genuinely global indicators: ones, that is, which are not merely the sums or averages of national data (EU 1998; Bhalla 2002: 130-131). Yet the results obtained to date in this regard have been largely inadequate (Scholte 2005: 87).

Instruments which adopt the perspective of methodological nationalism fail to grasp particularly important aspects and dynamics of globalization.

The first of these is the qualitative differentiation of spaces within an individual nation-state. Globalization does not make space irrelevant, in fact. Quite the reverse. For example, the fact that capital is today relatively free to move from one place to another induces its owners to be extremely careful when choosing where to invest it, so that they can exploit even the minimum advantage offered by a particular place (Harvey 1990). Often associated with deterritorialization is a reterritorialization which displays new and sometimes surprising dynamics. Several commentators have pointed out that globalization heightens the importance of urban centres – the so-called ‘global cities’ – which perform a crucial role in the global economy, political system and culture because they attract many of the flows – of tangible goods, money, people, and ideas – which today traverse the planet (Eade 1997; King 1990; Sassen 1991). In this regard, it should be feasible to construct indices which measure the degree of globalization of cities rather than nation-states. To be mentioned in this regard is, for example, the interesting attempt by Peter Taylor (2004) to measure the level of global network connectivity of 315 cities in the world.

Besides differentiating the spaces internal to individual states, globalization also differentiates among people. Although the contemporary age has made evading the restraints of space and place technically possible, not everyone is able to do so. Indeed, the possibility is open to only a small minority of the world’s population. Bauman (1998) emphasises that now arising on a planetary scale is a new form of social stratification which divides the globalized upper classes from the localized lower classes. Even in the most advanced countries, young professionals who speak foreign languages, are frequent fliers, have friends and acquaintances around the globe, and make skilfully use of the computer and modern communication technologies live alongside (but hardly ever in contact with) factory workers approaching retirement, who speak mainly dialect, cannot use a computer,
and rarely leave the town in which they live and work. In this regard, it should be feasible to develop instruments which measure the incidence of globalization among individuals.

Another and very important point to be stressed is that besides factors that diversify spaces and individual experiences, globalization is also distinguished – and this is the feature that most sharply differentiates it from internalization – by the presence of ‘indivisible’ factors which involve all the inhabitants of the earth, regardless of their spatial location and social circumstances (Caselli 2004). These factors are, for example, the sustainability and exploitation of natural resources, or the threat raised by the existence of nuclear weapons. Mankind’s technical ability to destroy life itself on our planet in just a few seconds – in the case of a large-scale nuclear war – is a phenomenon that marks a radical break with the past and transcends any cleavage that may traverse the planet. To be noted is that, not coincidentally, a major stimulus for reflection on globalization was the Chernobyl disaster, which proved incontrovertibly that nuclear fears were not mere academic hypotheses, while it also – extremely importantly – made a mockery of the boundaries drawn by politics and history, above all the notorious ‘Iron Curtain’, demonstrating that it is by now impossible to conceive of closed ‘worlds’. The linkage between the nuclear threat and the problem of sustainability/unsustainability is the concept of risk. If overall globalization processes generate profoundly ambivalent dynamics, while simultaneously give rise to unity and rupture, there are those who argue – the main reference cannot but be to Beck and his celebrated *Risk Society* (1986) – that risk is the most unifying and levelling factor in contemporary human experience. Measurement of this last aspect of globalization is therefore difficult, if not impossible, given that risk is differentiated on neither a personal basis nor a territorial one: accordingly, the only conceivable unit of analysis is the planet (or humanity) in its entirety.

Finally, a further element that evades the instruments hitherto developed to measure globalization, but which nonetheless characterizes the phenomenon very significantly, is the existence of certain procedures, techniques and ‘expert systems’ now used on a truly global scale. These are the procedures, techniques and ‘expert systems’ which make possible the flows of money, products, ideas and people that the current globalization indices seek to measure. Consider for example the rules that regulate the transport and communications system at planetary level; to the fact that there exists a currency – the dollar and now to some extent the euro as well – utilizable for trading or purchasing in every corner of the globe; and to the fact that all the computers in the world are now designed so that they can connect with the worldwide web.

Globalization thus confronts the social sciences with a fascinating and complex methodological challenge. Whilst it is clear that methodological nationalism is increasingly unsatisfactory, or even misleading, less clear is what can take its place.
10. Conclusions: a brief but crucial question

What judgement can be passed on the globalization indices described here, and more generally on all the instruments developed to measure the phenomenon? The question can only be left in abeyance. Nevertheless, it should be stressed that its answer necessarily depends on the reply given to another brief but crucial question: why measure globalization?

In this regard, Martens and Zywietz (2006) affirm that measuring globalization is “an important first step in putting the globalization debate on a more scientific base”. While balking at the positivist thrust of this remark, one can agree that such instruments may contribute significantly to study of the phenomenon and to analysis of the processes connected with it. Some authors have sought to use particular indices to verify the impact of globalization on significant dynamics and processes of contemporary reality. Besides the criticisms that can be brought against the globalization index utilized, these experiments are highly debatable, both because the indicators selected to measure the phenomena set in relation to globalization appear unsatisfactory (Foreign Policy 2005), and because, once a correlation between the globalization index and other variables has been established, it is difficult to identify the direction of any cause/effect relationships (Dreher 2006). Nevertheless, this seems a road worth pursuing in order to achieve results more convincing than those hitherto obtained. In the same way, adequate measures of globalization can probably furnish a better understanding and description of the historical evolution of the process, as well as its diversified impact on regions and people.

Whatever the case may be, granted that globalization is a phenomenon of such complexity that it cannot be captured in its entirety by any single instrument, the problem is not so much verifying the goodness of a globalization index in absolute terms, as determining its greater or lesser ability to fulfil particular knowledge objectives.

Also to be stressed is that all instruments designed to measure complex social phenomena are necessarily arbitrary constructs. Their value cannot be demonstrated irrefutably, but only argued before the scientific community. Given their nature, these instruments are always susceptible to criticism. But such criticism may prove very useful not only for refining the instruments themselves but also for demonstrating their limits and range of application. One may conclude by saying that both the A.T. Kearney/Foreign Policy Magazine Globalization Index and the CSGR Globalisation Index are – apart, perhaps from their need of some technical ‘fine tuning’ – useful tools with which to grasp certain dynamics of globalization and the intensity, and in part the structure, of the principal flows of goods and information that traverse the planet. It should be borne in mind, however, that they grasp only a particular – and perhaps not the most important – aspect of globalization. They do not account for the phenomenon in its entirety.
REFERENCES


