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Marco Caselli

Trying to Measure Globalization

Experiences, Critical Issues and Perspectives

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Assoc. Prof. Marco Caselli
Dipartimento di Sociologia
Università Cattolica del Sacro Cuore
Largo Gemelli 1
20123 Milan, Italy
e-mail: marco.caselli@unicatt.it

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Contents

Introduction

Globalization has perhaps been the notion most widely used and debated by the social sciences in the last decade of the twentieth century and in the first years of the twenty-first. Subject to diverse and sometimes conflicting interpretations, the concept has also been the target—as shown in Chap. 1—of harsh criticisms from authors who have contested its real meaningfulness and extent. One of the main weaknesses of the concept is the difficulty of giving it solid empirical bases and, especially, of obtaining evidence that make it possible to distinguish globalization processes from others which at least partly overlap with them, such as internationalization and regionalization.

Although such empirical evidence can be sought in various ways, an approach frequently adopted over the past 10 years has been to construct indices of globalization: that is, instruments intended to express the extent of the phenomenon with a single, synthetic, value. In the intention of their compilers, these indices should enable the study of the impact and the consequences of globalization in the most disparate sectors and dynamics. Analysis of the main attempts made in this direction—which, moreover, has required additional theoretical reflection on the limits and definition of the term—is the specific subject of this book.

In particular, Chap. 1 is devoted to analysis of the concept of globalization, highlighting its main components as well as ambiguities. Above all, however, the chapter considers the most critical arguments brought against the concept, in an attempt to demonstrate, vice versa, its utility and validity: these being the necessary premises for justifying the book's reflection on the instruments best suited to measuring globalization.

Notwithstanding the marked heterogeneity of interpretations and analyses of globalization processes, commentators agree on their extraordinary complexity; a complexity which makes it particularly difficult to design a synthetic measure of globalization. Given this difficulty, Chap. 2 describes a procedure with which it is possible to construct an instrument that measures any phenomenon however complex. This procedure is made comprehensible to less expert readers by reducing the technical details to the minimum and concentrating instead on the problems to be addressed and on the options open to the researcher. In this regard,

one of the main aims of the chapter is to show that constructing a globalization index requires the researcher to take decisions at each stage of the procedure. These decisions, however, will be based on subjective evaluations. Indeed, an instrument intended to measure a complex social phenomenon always takes the form of an inevitably conventional construct, whose validity can be argued more or less reasonably and convincingly, but which can never be proved objectively. The discussion in this chapter also raises a question whose answer is decisive in justifying the entire body of analysis developed in the book: why measure globalization, and why do so with a synthetic measure—that is, an index?

Chapter 3 is devoted to the main globalization indices proposed to date: in particular those—the great majority—which use the nation-state as their unit of analysis. In this regard, one cannot but point out a paradox reiterated throughout the book: on the one hand, one of the distinctive features of globalization consists in the existence of processes and dynamics that unfold regardless of national borders, thereby gainsaying so-called 'methodological nationalism'; on the other hand, this same phenomenon is nevertheless usually measured in terms of the nation-state, thereby assuming the perspective of methodological nationalism that is deemed necessary to discard. The chapter pays closest attention to the globalization indices which furnish a multidimensional reading of the phenomenon, thus fully recognizing one of its characteristic features. However, the chapter also makes brief mention of instruments which have measured globalization by considering only one of its dimensions—often, but not always, the economic dimension.

In Chap. 4, the globalization indices presented one by one in the preceding part of the book are compared in regard to both their structure and their results. This is also an opportunity to bring criticisms against these instruments; criticisms above all of a technical nature but which also concern the capacity of globalization indices to reflect the essential features of the concept that they are intended to measure. In this regard, it should be immediately pointed that these criticisms are not intended to indicate the most 'correct' globalization index among all those developed to date, on the contrary, the intention is to show that, given the extraordinary complexity of globalization, no instrument is able to capture more than a part of such complexity and will inevitably have limitations and potentialities: full awareness of the former is the necessary precondition for being able to benefit from the latter.

Finally, Chap. 5 starts from the already-mentioned challenge against methodological nationalism to envisage alternative ways to measure globalization. The first of them is based on the study of cities; the second on the study of individual experiences and persons. The chapter also draws a number of conclusions. In particular, on the one hand it emphasizes that the various approaches to the measurement of globalization should be viewed as complementary, and not as antithetical, because each of them is able to grasp some aspects of the phenomenon but not its entirety. On the other hand, the chapter stresses that, despite the wide variety of instruments available, there are some features of globalization which, by

their nature, seemingly evade any attempt at their measurement; features which, in the author's opinion, are those most distinctive of globalization.

Numerous persons have made publication of this book possible. It is therefore with great pleasure that I first of all thank the colleagues with whom, over the years, I have had opportunities to discuss globalization and the methodological aspects of studying social phenomena. I mention in particular Paolo Corvo, Fabio Introini, Clemente Lanzetti, Mauro Magatti, Massimiliano Monaci, Paolo Parra Saiani, and Giancarlo Rovati. I have drawn numerous insights from participating in the initiatives promoted by the Global Studies Association, for which I thank its indefatigable coordinator, Paul Kennedy and, together with him, Shoba Arun, Barrie Axford, Rute Caldeira, John Eade, Robert Grimm, and Leslie Sklair. Rita Bichi, Vincenzo Cesareo and Alberto Vitalini read the first versions of this work: their critical comments, together with those of the three anonymous referees, have enabled me to improve the book significantly. Philippe de Lombardae was among the first to believe in my study on globalization measures, providing valuable support in its publication, while Adrian Belton translated my original texts into English. I also wish to thank the staff at Springer, and especially Hendrikje Tuerlings, who accompanied me with courtesy and professionalism until completion of this book, and the Università Cattolica del Sacro Cuore of Milan, which helped finance the research from which the book has grown.

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Chapter 1
Globalization: In Search of Definition of a Controversial Concept

1.1 Introduction

When setting out to devise an instrument with which to survey or, more specifically, to measure a concept, the indispensable first step is to give a clear and rigorous definition to that concept. In the case of globalization, however, this first step is particularly difficult; and this difficulty—as we shall see—has knock-on effects on all the subsequent phases of constructing an index for the concept's measurement.

Defining the concept of globalization in a clear and unequivocal manner is problematic first of all because of the huge body of scientific work produced on the topic—especially during the 10 years between the late 1990s and the early 2000s. Within this scientific output, moreover, globalization has been addressed from very different perspectives and with very different emphases. As a consequence, the striking quantitative growth of studies on the topic has not led to the creation of a consistent and composite corpus of knowledge. At the beginning of the 1990s, Abu-Lughod (1991, p. 131) remarked, in regard to the scant systematicity of the debate (then at its beginnings) on globalization, that it did not go beyond the level of "global babble". Today, almost 20 years later, it cannot be said that the exponential growth of voices on the matter has significantly improved the situation. Indeed, it has turned the global "babble" into a global "hullabaloo" in which it is difficult to find one's bearings.

In general, the word 'globalization' has been used in many different discursive fields (Fiss and Hirsch 2005): in fact, it has been adopted by diverse scientific disciplines, but it has also been employed externally to them. The term is used, for instance, by sociologists, economists, political scientists, and historians, but also by trade unionists, journalists, politicians, and company managers—and sometimes with very different meanings.

In short, the word 'globalization' has been a victim of its own success. Its widespread use has blurred the term's meaning to such an extent that its usefulness for scientific purposes is doubtful. Nevertheless, this is not sufficient to gainsay the

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importance of the phenomena connected with the term *globalization* (Giaccardi and Magatti 2001, p. 5)—which justifies perseverance in the study of these phenomena and, to this end, the endeavor to give a more precise definition to the concept. This definition is the purpose of this chapter.

Mention has been made of the extraordinary quantitative expansion of the debate and scientific production on the theme of globalization, with the involvement of a large number of scholars working in numerous disciplines. In this regard, some authors (Held and McGrew 2007, p. 5; Holton 2005, pp. 6–11; Martell 2007, pp. 173–176) maintain that studies on globalization have developed in three successive waves, and that a different position can be associated with each of them: that of the hyper-globalists, the sceptics, and the post-sceptics. The first of these positions emphasizes the unprecedented novelty of globalization processes. The second instead disputes the novelty, or indeed the actual existence, of those processes. It consequently contests the utility and meaningfulness of the concept itself. The third position accepts the validity of the concept of globalization but acknowledges the presence of contradictory features in the processes associated with it; processes which, as stressed in a later section, are often profoundly ambivalent.

In light of what has been said, therefore, the debate on the concept of globalization has developed at two different levels. At the first level is the opposition between those who assert and those who deny the validity of the concept and the reality of the processes to which it refers. Between these two extreme positions lie a wide variety of intermediate ones. The second level (considering only those authors who recognize the meaningfulness of the concept) comprises an array of positions and perspectives on the theme of globalization.

Ray (2007, p. 24) maintains that it is possible to identify six fundamental questions around which the scientific debate on globalization rotates—questions which will be treated throughout this book: does globalization actually exist? is it a really new phenomenon? is it the cause or consequence of other social phenomena? does it create homogeneity or difference? what implications does it have for nation-states? is it a phenomenon currently in decline?

Complicating the picture is the fact that the debate on globalization is often joined by voices and proposals with normative intent. This is the position of those who not only analyze ongoing processes but also state in what directions those processes should go. Needless to say, once again, the positions taken up by those who adopt this last perspective are anything but homogeneous.

In short, as Scholte (2005, p. 46) puts it, “the only consensus about globalization is that it is contested”.

Against this background, the following analysis and definition of the concept of globalization will focus on the criticisms made by those authors who deny its utility and validity. In order to rebut these criticisms—which thwart any attempt to measure globalization—consideration is made of the current role of the nation-state and the differences between the concepts of ‘globalization’ and ‘internationalization’. The criticisms previously itemized are then addressed more directly. The following section then illustrates the variety, complexity and ambivalence of the processes referable to the concept of globalization, as well as the

interpretations put forward in the scientific debate. The conclusions to the chapter draw on this scientific debate to propose a definition of globalization that may serve as a benchmark in the analysis of possible instruments for its measurement.

1.2 Three Criticisms of the Concept of Globalization

Attempts to construct an instrument with which to measure globalization therefore encounter, for the reasons illustrated in the previous section, a first obstacle in the lack of an unequivocal definition of the concept. Much more serious from this point of view, however, is that there are scholars who dispute the meaningfulness itself of the concept of globalization, as well as the actual existence of the processes customarily associated with it. If the concept of globalization were indeed devoid of meaning, or if it referred to phenomena for which there was no empirical evidence in contemporary society, it would clearly be pointless and foolish to go in search of a tool for its measurement.

But on what grounds can one claim that the concept of globalization is effectively meaningful in the social sciences? There seem to be two main conditions for the claim to hold: the phenomena denoted by the term must actually exist; the term must be clearly distinguishable from others already used and approved in science. One may therefore legitimately speak of globalization in scientific terms if it is an actually existing phenomenon and if it is significantly different from other phenomena—primarily, internationalization—which can in some way be correlated with it. However, not all the authors involved in the broad debate on globalization regard these conditions as being satisfied: as said, they dispute the validity of the concept, or indeed they deny it. It seems in particular that the criticisms brought against the concept of globalization can be divided into three main strands.

The first of them comprises those who believe, in accordance with Samuel Huntington's theory (1993, 1996) on the clash of civilizations, that globalization is nothing more than a myth—something that does not exist or which, at most, has been greatly overestimated. This is because the world is characterized and traversed by multiple differences, boundaries, and cleavages—if not outright conflicts—which are often entirely irremediable, at least in the short and medium period. These cleavages and differences are manifest in the economic as well as political and cultural spheres (Helliwell 2000; Hirst and Thompson 1999; Wade 1996; Smith 1995). This critical position is also substantially adopted by those who believe that globalization is a phenomenon, today in decline, referable to a very brief historical period which began with the fall of the Berlin Wall and ended with the attack on the Twin Towers in New York. Precisely the events of September 11, it is argued, marked the beginning of a period of de-globalization (Ferguson 2005; Saul 2005).

The second strand of criticism against the concept of globalization consists in positions that do not deny the reality of the processes associated with globalization, but instead dispute their novelty (Sen 2002, p. 4; Hoogvelt 1997, p. 71).

Put otherwise, globalization is a phenomenon which—albeit with an intensity and features varying from one period to the next—substantially traverses the entire history of humankind; or, at least, has characterized its history over the past two centuries (Arrighi 1994). In this regard, there are authors who speak of "archaic globalization" (Bayly 2002, 2004) or "thin globalization" (Held et al. 1999) with particular reference to the pre-modern empires. This strand also includes the thought of those who maintain that the dynamics customarily construed in terms of the concept of globalization are more correctly interpreted in light of other categories which originated in a period long antecedent to the present one. This is the case, for example, of Sparks (2007), and especially of Rosenberg (2005), who adopt a Marxian perspective to argue that what is habitually termed 'globalization' is only a phase in the normal development of the capitalist system—a development characterized by periodic phases of expansion and contraction. Consequently, according to Rosenberg, the error of theories on globalization is that they mistake a merely economic event for an epochal change (ibid, p. 59).

The third position critical of globalization—but which is also implicit in many of the studies which have adopted the concept—maintains that globalization, admitted it exists, concerns only a small part of the planet's population and territories. In the words of an African official of the World Food Programme speaking to an international conference on globalization (Ngongi 2001):

> Globalization means different things to different people. For a Peruvian farmer unable to compete with the low prices of imported foodstuffs, it means losing his income. For a Czech car worker earning enough to buy his own home, it means prosperity. For a poor Ugandan woman tilling her family plot, it means absolutely nothing.

Globalization, therefore, is not a truly global phenomenon. Rather, it involves only a certain number of regions and countries (or, according to some authors, certain social categories) in the world, namely the most developed of them on the one hand, and the so-called emerging ones on the other (Hoogvelt 1997; Kaldor 1999). For example, there are those who point out that, despite the extraordinary emphasis placed on the Internet as a crucial vehicle, infrastructure and exemplification of globalization, around one-quarter of the planet's population does not have electricity and is consequently unable to access the Web (Sparks 2007, p. 152).

As said, in order to respond to the criticisms just outlined, two aspects essential for the definition of globalization must be considered: the distinction between the concepts of internationalization and globalization; and the role performed by the nation-state in globalization.

1.3 Globalization, Internationalization, and Nation-State

A new concept should only be introduced into the field of the social sciences—or any other science, for that matter—if it denotes and defines a phenomenon different from those comprised in already-existing concepts. In other words,

introducing a new term is pointless if it is synonymous with another term already habitually used. With regard to 'globalization', therefore, it is necessary to make sure that the term refers to a set of processes significantly different from those denoted by other terms already employed in the social sciences, particularly that of 'internationalization' (Scholte 2005, pp. 54–55).[1] It is precisely the failure to distinguish between the concepts of globalization and internationalization that, according to Sklair (1999, pp. 144–145), is one of the main shortcomings that vitiate the interpretative capacity of the bulk of the current literature on globalization.

Given that both terms denote phenomena which, because of their extension, cannot be contained within the boundaries of a single nation-state, what, therefore, if it exists, is the difference between globalization and internationalization? According to Sklair, the principal distinguishing element between them consists in the fact that globalization is characterized by "the emergence of processes and a system of social relations not founded on the system of nation-states" (ibid.). The concept of globalization highlights that, today, "there are an increasing number of social processes that are indifferent to national boundaries" (Beck 2000a, p. 80).[2] The specific feature of globalization processes—we shall return to this point later in the chapter—is the emergence of supraterritorial features and processes. For example, there exist forms of belonging and identity, for instance occupational, which extend beyond national boundaries but are not international—that is, they do not have national affiliations (Sen 2002, p. 63). Again, and we shall return to this point in the next section, there exist risks and problems related, for instance, to global warming and the possibility of nuclear war, in regard to which national boundaries are simply irrelevant.

With a partly different emphasis, Sassen (2007a, pp. 81–82, 92) identifies as the distinctive feature of globalization a certain degree of denationalization deriving from the fact that a few crucial aspects of social life lie at a level which is sometimes higher but also sometimes lower—for example, the city level—than the national one. Globalization thus takes the form of a multi-scalar process within which of particular importance are phenomena situated at both supranational and subnational levels.

In short, therefore, with respect to the notion of internationalization, that of globalization denotes a set of processes which, although they unfold in a context strongly structured by the presence of the nation-states (ibid, p. 92), develop at least to some extent independently of the limits and boundaries imposed by those same states. This raises the question as to the role performed by the state in globalization processes; a question of particular importance here because, as will be shown in the following chapters, the instruments to date devised to measure globalization have almost always used the state as their unit of analysis.[3]

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[1] Scholte (ibid.), in fact, points out that the term 'globalization' is often used to denote nothing more than a particularly intense form of internationalization.

[2] On this see also Scholte (2002) and Ray (2007, p. 28).

[3] On the actual and potential role of states in regard to globalization processes see also Habermas (1998).

In regard to this question, Saskia Sassen singles out four possible answers, or four possible theses concerning the relationships between the state and globalization (ibid, p. 94). The first thesis is that nothing has changed with respect to the past: the state maintains its functions and its importance unaltered. Also the second thesis, which only partially differs from the previous one, asserts that the state maintains its functions, but on condition that it adapts to the new context in which it operates. However, these first two theses clash with the fact that the state is not equipped, nor has been conceived, to meet many of today's challenges and problems (Kuper 2007). Because these problems are global in their extent, they require solutions which are equally global and transcend the competences and capacity for action of a single nation-state. From this follows the third of the possible theses underlined by Sassen: that amid globalization processes, the state gradually loses its importance until it becomes largely irrelevant. This thesis is bolstered by the conviction that, whilst the state is a territorial institution, globalization engenders certain processes which unfold regardless of many of the constraints imposed by physical space.

Also, this last thesis is susceptible to criticism. There are scholars who claim that state and globalization are not two antithetical terms or two incompatible realities (Axford 2007a, p. 176). There exists a large body of empirical evidence to support this position. The first consists in the fact that it is nation-states which install the infrastructures (in particular, transport and communications networks) necessary for the transnational flows and relationships that constitute the core of globalization (Scholte 2005, p. 142). Moreover, the state is still the principal actor in definition of the norms that regulate associative life, as well as, at least partly, the flows of diverse kinds which traverse the planet and which constitute one of the main vehicles of globalization. For example, the state continues to perform a crucial role in the regulation of migratory movements (Ray 2007, p. 86; Billig 1997, p. 141). Finally, again confirming the state's importance is the fact that it continues to control such key aspects of social life as education and taxation (Holton 2005, p. 112).[4] Hence, whilst on the one hand the state sees its traditional role at least partly diminished by globalization processes, on the other it contributes decisively to shaping those same processes and to determining their evolution (Ray 2007, pp. 89–91).

The last of the four theses proposed by Sassen in regard to the relationship between the state and globalization is therefore that the state continues to perform a crucial role in social life, but it is a role significantly different from that of the past.

[4] Moreover, Beck (2000b) emphasizes that within globalization processes there are actors, in particular certain enterprises which, by relocating their activities, at least partly manage to avoid the tax-levying power of states, and thus cause at least potential situations of crisis for the states themselves.

> The state becomes the site for foundational transformations in the relation between the private and the public domains, in the state's internal balance of power, and in the larger field of both national and global forces within which the state now has to function (Sassen 2007a, p. 94).

Further strengthening the position according to which a territorially based institution like the state can continue to perform a significant role in globalization is the fact that the effects of globalization are generally located in specific spatial contexts, and that also the points of access to virtual spaces are located in particular places (Ray 2007, p. 7).

In light of these considerations, my position—which is substantially in line with the fourth of the theses proposed by Sassen and which I shall develop in the next chapter—is that the presence of deterritorialized elements is a distinctive feature of globalization processes. Nevertheless, the latter are also characterized by dynamics in which states still play a crucial role, although, as Sassen argues, this role partly differs from that of the past. Accordingly, in mitigation of the opposition between the concepts of globalization and internationalization emphasised in this section, one may acknowledge that globalization comprises dynamics of an international nature. Indeed, one may perhaps go so far as to admit that globalization is a specific form of internationalization, provided that one recognizes the elements of outright discontinuity with respect to forms of internationalization typical of the past.

1.4 A Reply to the Criticisms

In response to the three criticisms outlined in the Sect. 1.2, the arguments put forward here are that globalization exists; it concerns all the inhabitants of the planet; and it is an unprecedented phenomenon.

Contrary to the claim that globalization, given the cleavages and differences which continue to traverse the planet, is only a myth, or an idea not borne out by the reality of the facts, one may first of all point out that 'globalization' does not signify the creation of something similar to a single great nation-state with a single political system, a single economic system, and a single cultural system (Caselli 2002, p. 31). Consequently, nor does 'globalization' mean the disappearance of every border in the world or the overall homogenization of political, economic, and cultural practices at the planetary level. Globalization instead signifies that our lives are also influenced by events and decisions situated at a great distance from the places where we live. Our planet, even though it is divided by numerous boundaries, today constitutes a single arena within which the lives of us all unfold: it is no longer possible to conceive a set of worlds separate from each other. In other words, at global level, there are increasingly fewer events that do not concern us. Even the most intimate facts of human experience, for example the breast-feeding of a baby, may be conditioned by an event which occurs thousands of kilometres away and beyond apparently impassable political, economic, and

cultural boundaries: this is what happened on the occasion of the Chernobyl disaster, whose effects were manifest to both the east and the west of the Iron Curtain (Beck 1987). Amid globalization, therefore, different economic, political and cultural systems are not necessarily bound to lose their specific features; rather, they are forced to relativize them. As Robertson (1992, p. 137) maintains, the world is not, nor will probably ever be, a single community. Nonetheless, the world has become a single place in which certain phenomena unfold and certain symbolic referents are affirmed, as pointed out in the previous section, regardless of the boundaries—primarily national—that traverse it. For example, Meyer (2007, pp. 263–264) emphasizes that in politics there are models assumed at planetary level, and among them there are ones relative to the features which should characterize a "good society". These are models, generally virtuous, which influence the lives of local political systems; political systems which, at least in theory, are obliged to draw their inspiration from those models.

In response to the criticism of those who claim that globalization is not a new phenomenon, but on the contrary a process with numerous historical antecedents, one must acknowledge that many of its features are not unprecedented. Moreover, quite acceptable is the invitation to read globalization processes in historical terms, identifying the dynamics and elements that have determined the specific forms that they assume today (Axford 2007a, p. 186). This, however, is not enough to deny the presence of a cleavage in the mid-twentieth century between current processes of globalization and the international dynamics distinctive of all, or almost all, previous ages (Scholte 2005, p. 20). This watershed is represented by the facts, first, that satellite communication enables the instantaneous transmission of information from any one part of the planet to any another and, second, certain decisions can today have an immediate impact on the entire population of the world. Which brings us to the next argument. The British Empire of the late nineteenth century exhibited some of the features that distinguish current globalization, to which it has sometimes been compared. Nevertheless, and this is a difference difficult to dispute, Queen Victoria did not have the technical capacity to wipe off human life from the face of the earth; a technical capacity instead available, given their respective nuclear arsenals, to the presidents of the United States of America and the Russian Federation.

As said earlier, the first two criticisms cited here can be associated with the position of those who claim that globalization is a contingent phenomenon—today superseded or in decline—and not an epochal change. This position is often taken by those who give particular or exclusive salience to the economic dimension of globalization, understood as the "integration of national economies into the international economy through trade, direct foreign investment (by corporations and multinationals), short-term capital flows, international flows of workers and humanity generally, and flows of technology" (Bhagwati 2004, p. 3). Now, if it is true that the intensity of the economic processes just listed may vary over time, it should nevertheless be stressed that globalization cannot be reduced to them. As repeatedly argued in this chapter, globalization is a much more complex and, above all, multidimensional phenomenon. Moreover, even among those who

restrict their analyses to the economic aspects of globalization, it is agreed that "we need to be upfront about the irreversibility of the many changes that have occurred in the global economy. Advances in communications and transportation mean that large segments of national economies are much more exposed to international trade and capital flows than they have ever been, regardless of what policymakers choose to do" (Rodrik 1997, p. 9).

The foregoing arguments already partly answer the third criticism made of the term 'globalization': that it denotes a phenomenon in reality important for only some of the world's population. Instead, as just shown, globalization is a significant reality for all the inhabitants of the earth. Nobody can declare themselves extraneous to globalization, although there are very different ways to live within it (Giaccardi and Magatti 2001, p. 28). In particular, all individuals are bound to each other by the existence of uncertainties and problems that affect them regardless of where they live and their level of well-being (Giddens 2000, p. 21). In other words, in the contemporary world there exist global problems and dynamics that involve all of us indiscriminately. This is the case, besides the already-mentioned nuclear threat, of global warming; a problem which concerns all the inhabitants of the earth, including the "poor Ugandan woman tilling her family plot" mentioned in the second section. If global temperatures do indeed rise, she will see her plot dry up and lose her only source of sustenance.

There are consequently numerous authors who maintain that the most distinctive feature of globalization is the existence of global risks, for these create an ineluctable interdependence among all the planet's inhabitants and extend beyond any barrier or border (Beck 1992, p. 36). The most threatening of these global risks has been created by the advent of nuclear weapons, which, in the words of Held and McGrew (2007, p. 22), have united the whole of humanity into "a single, global community of fate—a *schicksalsgemeinschaft*". But global risks also include those of pollution, the squandering of natural resources, terrorism, and economic crises.

These global risks create a level of interdependence on a planetary scale that makes globalization substantially irreversible. This latter is a further element in light of which the position of those who envisage the possibility of a de-globalization process (Therborne 2007, p. 281) is untenable. As said above, in fact, if transnational economic flows—or of other kinds—may diminish in time, just as the progressive opening of markets may come to a halt, these are not the only elements to which globalization refers. As said, globalization now principally concerns the interdependence which binds the different regions and inhabitants of the earth together.

1.5 The Key Features and Components of Globalization

Also on considering the arguments of authors who acknowledge the reality and specificity of globalization, the descriptions and interpretations of the phenomenon set out in the literature are, to say the least, heterogeneous. The debate oscillates

between descriptive accounts and normative recommendations which should always be kept clearly distinct (Axford 2007a, p. 177; Held and McGrew 2007, p. 6), between analysis of globalization as a process and as a condition,[5] between readings of the present and forecasts of the phenomenon's future evolution (Van Der Bly 2005, pp. 879–883).

Notwithstanding this heterogeneity, the diverse analysis and interpretations of globalization processes reveal a number of recurrent features, as well as some points of partial convergence, which most characterize globalization and will be briefly considered in this section.

Apart from transformation of the role of the nation-state—which has already been discussed and to which I shall return in the next chapter—the first of these features is the complex and multidimensional nature of globalization, of which three main dimensions have been identified: economic, political and cultural. These dimensions in their turn are composite (Axford 1995; Waters 2001), closely interwoven, and reciprocally causative. Given this complexity, the numerous substantially monocausal readings of the phenomenon, in which one of the above three dimensions predominates, are unacceptable, or at least debatable. In particular, a preponderant role is often attributed, also implicitly, to the economic dimension of globalization (Tomlinson 2007, p. 150), so that political, and cultural aspects are reduced to simple consequences or effects of that dimension.[6] Indeed, although the instruments devised to measure globalization generally emphasize, or at any rate consider, the multidimensional nature of the phenomenon, they nevertheless often give preponderant weight to its economic aspects. Yet it is precisely the number and the variety of phenomena referable to globalization which demonstrate that it is more than a simple monocausal and linear process (Albert 2007, p. 171).

In order to emphasize its multidimensional nature, the key features of globalization mentioned in this section are united by the fact that they simultaneously involve the economic, political, and cultural spheres.

So, the second feature to be highlighted is that globalization is an open-ended process whose outcomes are not predetermined because they are the consequence of human decisions (Holton 2005, p. 188; Martell 2007, p. 176). Globalization, therefore, to use the expression of Giaccardi and Magatti (2001), is not a "destiny"; on the contrary, it is a phenomenon that can and must be governed. Moreover, the fact that globalization processes are nonlinear and have uncertain

[5] In this regard, Beck (2000b, p. 87) suggests the use of the term 'globalization' when speaking of the process and the term 'globality' when speaking of the outcome of that process.

[6] To be mentioned in this regard is the original position taken by Malcolm Waters, who argues that the cultural dimension is the catalyst of globalization processes by virtue of its symbolic nature. Vice versa, the economic dimension, which comprises material elements requiring a specific spatial location, is inevitably anchored to particular physical places and can become really globalized to the extent that it resorts to symbolic elements—that is, to the extent that it is culturalized. In fact, as Waters (2001, p. 20) writes: "material exchanges localize; political exchanges internationalize; and symbolic exchanges globalize".

outcomes considerably complicates the task of devising an instrument for their measurement; an operation which would instead be simpler if it were possible to identify the final outcome of the process—that is, a theoretical state of maximum globalization.

A third feature stressed by the literature on globalization is that it comes about amid the increasingly dense and intricate web of relations, exchanges, interconnections and interdependences that enwraps the entire planet (Beck 2000a, p. 80; Held et al. 1999; Zürn 1998). In this regard, Tomlinson (1999, p. 2) defines globalization in terms of a "complex connectivity". The world is today traversed by a multiplicity of flows whereby people, goods, money, information, images, values, technologies, pollutants, decisions, and so on, are simultaneously conveyed from one place to another. The regions of the world are therefore, as said, profoundly interdependent, and they are so because of a plurality of factors. This not to deny the asymmetry of relations among the various areas of the planet. But these relations cannot be read in unidirectional terms, nor according to simple cause/effect relations, these too unidirectional (Beck 2006, pp. 79–80).

A fourth distinctive feature of globalization is the emergence of genuinely global phenomena. That is to say, these phenomena are not global because they repeat themselves in almost identical manner from one state to another, but because they manifest themselves independently of the system of nation-states (Martin et al. 2006, p. 503). In other words, as already emphasized in the section on the state's role in globalization processes, they are phenomena for which national boundaries are simply irrelevant (Beck 2000a, p. 80).

The reference to this disappearing importance of territorial boundaries in regard to particular phenomena introduces a further feature of globalization: the transformation of the role performed by space in shaping and constraining relations among territories and among people. In this regard, numerous authors have spoken of a "time–space compression" (Harvey 1990, Giddens 1996; Appadurai 1990; Lash 1994; Albrow 1996; Adam 1998). Thanks to the extraordinary development of means of communication and transport—what Scidà (1996, 2007) has called the "mobiletic revolution"[7]—distances can be covered very rapidly in the case of things and people, and indeed instantaneously in the case of information. Space thus seemingly loses its importance in shaping actions and social relationships: indeed, there are those who speak of the "end of geography" (O'Brien 1992). This view, however, is incorrect. In the age of globalization, the importance of space is different from what it used to be in the past, but it has not diminished. For example, the fact that certain actors and economic activities are technically free to move from one side of the planet to the other does not debase the specific qualities of spaces; on the contrary, it enhances them. Those able to settle wherever they want will choose the best place to do so: "as spatial barriers diminish so we become much more sensitized to what the world's spaces contain" (Harvey 1990, p. 294). To this must be added that not all distances reduce to the same extent, and

[7] See also Gross (1966) and Russett (1967).

not in the same way for everybody. So, one witnesses a double relativization of space which qualitatively increases the differences among places and people. Some places in particular, those that Sassen (1991) calls the "global cities", have infrastructural endowments which enable them considerably to reduce the distances that separate them from every other corner of the world: for example, for someone wanting to travel from one African capital to another, the most rapid route is very often via London or Paris, which are therefore 'closer' to numerous African cities than the latter are to each other. More than the *compression* of space, therefore, one should speak of the *distortion* of space, with some distances significantly diminishing and others still as long as they have always been. But as said, the degree to which distances have been compressed depends not only on the places involved but also on the people who intend to travel such distances. For a citizen of the Schengen area, with a good knowledge of English and a credit card, Kenya or any other African country is only a few hours' journey away. Vice versa, this same space that separates Europe from Africa may be impossible to travel for most citizens of the latter.

In such a context also the relationship between the global and local dimension of social life becomes complex. 'Global' and 'local' are not necessarily antithetical; nor can they be simply considered the extremes of a linear continuum (Urry 1995, p. 244). There exist, in fact, intermediate situations between the global and the local scale (Cox 1997, p. 140); but above all there exist situations in which the two dimensions interweave, because, as Axford (2007b, p. 323) points out, the infrastructures that make transnational flows possible, as well as the points of access to contexts of global action, are supplied on the local scale. In order to denote this interconnection of the global and local, Robertson (1995, p. 30) suggests the term 'glocalization', which highlights that the local dimension of social action cannot be opposed to the global one. Indeed, the specific feature of globalization is the interpenetration of these two dimensions (Kennedy 2010).

A further feature, the sixth, which can be considered distinctive of globalization is the advent of a new form of social stratification which is no longer structured on a national scale but on a planetary one. Bauman (1998) maintains that this new stratification centers around the opposition between a globalized upper class, on the one hand, and a localized lower class on the other. The former class consists of all those persons whose material resources and capacities enable them to move around the planet so that they can grasp all the opportunities available (for business, leisure, safety, etc.). These are therefore people for whom—to reiterate the above point—distances have shrunk to such an extent that they have lost practically all importance as obstacles against action. The latter class instead consists of all those persons who do not possess such resources, and who are almost entirely bound to their places of origin, of which they follow, for good or ill, the destinies. They are persons, that is, for whom distances are still as extensive as they have always been and raise sometimes insurmountable barriers. Sassen (2007b, pp. 164–199) includes among the globalized upper class the professional elites, senior executives, and government officials involved in transnational action

networks.[8] But she nevertheless also identifies a global class of the disadvantaged; a class created by the diasporas of migrants.

A final distinctive feature of globalization is the emergence and spread of what can be called a "planetary consciousness" (Giddens 1991; Robertson 1992; Sklair 1999). This consists in the growing awareness of an increasing number of the planet's inhabitants that the regions and populations of the earth are interdependent and interconnected. In other words, people grow ever more aware that their local community is embedded in a dense web of relationships and relations which extends around the world. Moreover, this awareness, which Robertson (1992, p. 9) calls the "subjective dimension" of globalization, may have very different consequences at both the individual and collective levels; consequences which range from the affirmation of cosmopolitanism to particularist closure, from a search for dialogue with the Other to fundamentalism, from transnational and transcultural solidarity to even violent intolerance.

1.6 Globalization: A Possible Definition of an Ambivalent Concept

This chapter began by pointing out that essential for the measurement of a concept—even for its use only in the social sciences (Rosenberg 2007)—is its rigorous definition. Accordingly now put forward is a possible definition of 'globalization'. It is a definition which does not claim to synthesize the numerous pronouncements made on the matter over the years; rather, it seeks to draw together some of the most significant elements, as recalled in the preceding pages, of the debate on the concept of globalization. It will then serve, in the chapters that follow, as a template with which to appraise critically the various tools proposed for the measurement of this phenomenon.

Given this premise, globalization can be defined as the set of processes whereby:

(a) the exchanges, flows, and interdependencies among the different areas of the planet increase in their number and intensity (the dimension of "complex connectivity" emphasised by Tomlinson);
(b) space and time change (but do not lose) their capacity to shape and constrain flows and interdependences among the different areas of the planet (the dimension of "time–space compression" described by Harvey, but declined in the terms specified above);

[8] Sklair (2009, p. 529) divides the globalized upper class into the following four groups: "(1) Those who own and control major TNCs and their local affiliates (corporate fraction); (2) Globalizing state and inter-state politicians and officials (state fraction); (3) Globalizing professionals (technical fraction); (4) Merchants and media (consumerist fraction)".

(c) awareness of this global interconnectedness (the "subjective dimension" of globalization identified by Robertson) spreads at planetary level.

To complete the definition, globalization is essentially a multidimensional process characterized by numerous ambivalences. In particular, 'globalization' is not synonymous with 'planetary homogenization': where it is true that there are some practices that tend to spread and be adopted by all, or almost all, the societies of the world (Ritzer 1993; Bryman 1999), it is also true that globalization is accompanied by dynamics of differentiation (Cesareo 2000, p. 128), as well as by the birth of hybrid realities (Nederveen Pieterse 1995; García Canclini 1995). As said, globalization does not mean the tendency towards something akin to a single, great nation-state of planetary compass characterized by a single political system, a single economic system, and a single cultural system all perfectly integrated with each other. It means instead that all societies and all cultures are required to 'relativize' themselves: that is, to acknowledge that, notwithstanding all the differences, cleavages and barriers that traverse our planet, it is a single arena in which all of us live and work.

To conclude the analysis of the concept around which this book rotates, it should be stressed that the debate on the globalization is reflected to only a minor extent by the attempts made to develop an instrument with which to measure the concept. In particular, it will be shown that the indexes of globalization proposed find it hard to grasp the genuinely global aspects of the phenomena considered. However, having described some of the most important issues addressed by the debate will aid in understanding the limitations and the potentialities of the measures proposed, and it will enable proper interpretation of the results obtained through their use.

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Chapter 2
Measuring Complexity

2.1 What Do We Measure? More on the Problem of Definition

As said at the beginning of the previous chapter, the clear and rigorous definition of the concept that one wishes to measure is the indispensable first step in constructing an instrument suited to that purpose.[1] But in the specific case of globalization the process is particularly problematic. As already emphasised, the theoretical and scientific debate on the topic has been unable to reach a generally approved definition of the term. Consequently, despite the numerous attempts described in this book, neither has it been possible to devise a unanimously approved tool for the measurement of globalization. Indeed, it is precisely the large number of such attempts that testifies to the lack of a generally accepted definition of globalization.

The definition of the concept that one intends to measure determines all subsequent steps in construction of the relative instrument, beginning with the choice of the indicators of which it is composed (Horn 1993, pp. 68–69). Consequently because different definitions are given to the same concept, different and incomparable tools for its measurement are devised. Given the multiplicity of the possible meanings of the term 'globalization', therefore, the goodness of the tools developed for its measurement cannot be easily evaluated in general terms. They can be so only in relation to the specific definitions of the concept on which such tools have been based.

Given this situation, Dreher et al. (2008, p. 5) suggest that construction of a tool for the measurement of globalization should start from a definition of the concept that is as broad and generic as possible, characterized by multidimensionality, and with a certain degree of flexibility. This suggestion, which in truth seeks more to sidestep the problem than to solve it, has been largely followed by those scholars

[1] As the *Handbook on Constructing Composite Indicators* (OECD 2008, p. 22) puts it, "what is badly defined is likely to be badly measured".

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who have engaged in attempts of this kind. Moreover, one gains the impression that such instruments originate, not from generic and flexible definitions, but rather from a somewhat vague notion of globalization. Often, the only aspect of the concept explicitly evoked is that of multidimensionality. Measures of globalization almost always try to reflect this aspect overtly, but in doing so they raise another problem. While one notes a modicum of convergence among the various proposals put forward—or at any rate considerable refinement in the devising of those parts of the instrument intended to gauge the economic aspects of globalization—decidedly coarser are the attempts made to quantify its political and cultural aspects. This reiterates the point made in the previous chapter: it has often been the economic dimension of globalization that has attracted the closest attention and the greatest interest from researchers. As a consequence, the political and cultural dimensions of globalization have often been treated as mere adjuncts to the economic one. In other words, analysis in the literature on the economic aspects of globalization is much more profound than the analysis on its political and cultural aspects. As we shall see in the next two chapters, this has had significant repercussions on how globalization measures have been constructed.

2.2 How Can Complexity be Measured?[2]

2.2.1 Indirect Measurement: Indicators and Indices

While the adequate measurement of a concept depends on its definition, whether or not such measurement can be made directly will depend largely on that concept's degree of complexity—which consequently should not be too high.

Given that the specific characteristic of globalization is precisely its complexity, it follows that the phenomenon can only be measured indirectly by means of indicators—that is, concepts which are measured not because they are of interest in themselves[3] but because they are surrogates for other, non-measurable concepts (Bauer 1967, p. 45; Cartocci 1984, p. 76). An indicator, in fact, is a specific concept which can be given an operational definition that makes it directly measurable.[4] It is able to represent a general concept or, more often, one of its parts (Corbetta 1999, p. 115; Cartocci 1984, p. 76). The connection established between the specific concept (indicator) and the general concept (object of analysis) has been called the 'indication relationship' (Marradi 1994, p. 184).

[2] This section develops discussion already conducted in Caselli (2001, pp. 45–49).

[3] This obviously does not rule out that such indicators, besides their use to measure a third concept, can themselves constitute interesting objects of analysis.

[4] Once an indicator has been given an operational definition, it becomes a variable. The concept of 'variable' is therefore more specific than that of 'indicator' (Corbetta 1999, p. 118), and it will be used in this way here. It should be pointed out, however, that the distinction between the two terms is not always clearly defined in the current scientific debate, and they are used in different ways by different authors.

An indicator is therefore a tool able to furnish information about the state—not directly measurable—of the concept that one wishes to analyse (Parra Saiani 2009, p. 28). Such information may take the form of simple presence or absence, an indication of direction or—and this is usually the aspect of greatest interest—a level with respect to some scale of reference (Horn 1993, p. 7).

The indication relationship—or the degree of correspondence between the indicator and the concept to be measured—can be identified empirically or theoretically. However, the relationship identified empirically—for example, by means of a factor analysis in which the variables are the indicators, and the factors identified (or latent variables) constitute the concept indicated—should then be justified on theoretical bases (Scamuzzi 1996, pp. 18–19; McGranahan 1972, p. 91).

The indication relationship is generally founded on a part/whole or cause/effect relation. In the former case, although a particularly complex concept may not be directly measurable in its entirety, some of its parts may be quantifiable. In the latter case, two different situations are possible. The first is the situation in which the effect is assumed to be the indicator of the cause, on the principle that "a phenomenon which cannot be directly observed will nevertheless leave traces which, properly interpreted, permit the phenomenon to be identified and studied" (Lazarsfeld and Barton 1961, p. 100). For an indication relationship to be valid, however, it is necessary that the effect (indicator) be not the possible consequence of several causes; or at least that the researcher be able to keep these other possible causes under control. The second situation is more complex. It is the one in which the indicator constitutes the cause and the concept its effect.[5] Here, the optimal situation is where the indicator is the necessary and sufficient cause of the effect under study. If it is not, it is essential to identify, and to transform into indicators, also the further possible causes of the phenomenon: an operation which is rarely possible, and in any case not easy to perform.

A not-directly-measurable concept can usually be represented by means of a plurality of indicators: in this regard, Lazarsfeld (1959, p. 48) speaks of a "universe of indicators". Furthermore, the multidimensionality and complexity of a concept like that of globalization mean that a very large number of indicators are theoretically available for its measurement. Various procedures, described in the next section, can be used to aggregate these indicators into a single measure of the concept to be investigated. This overall measure is termed an *index* or a *composite indicator* (OECD 2008).

When an index is constructed, a series of difficulties arise—also of a strictly technical nature—which will be considered in the next section. However, aside from the specific problems encountered when constructing an index, there are more general factors which may render the index itself problematic.

According to Bauer (1967, pp. 80–85), a first problem may be a *lack of correspondence* between the indicators selected—or at least some of them—and

[5] This situation occurs rather frequently: for example, when attempts are made to measure the concept of development. For a critical survey see Caselli (2001).

the concept to be measured. Secondly, there may be a problem of *inaccuracy* due, for example, to errors in measuring the indicators. Different indicators, moreover, may furnish incongruent information on the same concept. A further problem may be the lack of data for certain units of analysis with respect to the indicators identified: in this case, the index is not calculable for a part of the population studied. Lastly, the validity of an index intended to measure a complex concept may prove problematic because of disagreement on the choices and judgements that have led to the construction of that same index.

2.2.2 The Construction of an Index and the Problem of Weights

But how is an index constructed?[6] 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 subdimensions—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, p. 66). To be stressed, however, is that it is usually possible to identify a plurality of indicators for each dimension of the concept to be measured. How, then, can one select the indicator or indicators to be included in the instrument being constructed? The answer is that the selection, which although motivated will be essentially subjective, is made by the researcher, who will have to bear in mind, as said, the actual availability of the indicator selected—a problem to which we shall return in a later section.[7] But the researcher must also take account of the fact that no indicator refers solely to the concept subject to inquiry: in other words, an indicator almost always comprises an "indicating part" and an "extraneous part" (Marradi 1980, p. 36). The choice of the indicators to include in the index should therefore fall, as far as possible, on those in which the indicating part is larger than the extraneous part (Corbetta 1999, p. 116).

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[6] This section draws on and develops discussion in Caselli (2008, pp. 385–387).

[7] This is a subjective but not entirely arbitrary selection, in that it is in any case conditioned by constraints of a technical nature, i.e. the possibility of obtaining the data, and secondly by the need to be able to defend the choices made before the scientific community.

When the indicators have been selected, the next—and controversial—step is deciding 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.[8] Nevertheless, the choice is always subjective; and this subjectivity has induced some authors to doubt whether any index has real meaningfulness (Sharpe 2004). In particular, if there are no overlaps or imbalances among the indicators selected and among their underlying dimensions, and in the absence of explicit indications from theoretical analysis, according to some authors a reasonable choice would be to attribute the same weight to all indicators. Besides obviously simplifying the calculations, this approach would reduce to the minimum the incidence of each indicator on the overall value of the index and, consequently, also reduce to the minimum the impact, again on the overall value of the index, of possible errors in a particular indicator (Morris 1979, p. 48). However, this solution is acceptable only provided that there is nothing to suggest that one or more of the indicators considered is of especial importance in relation to the concept to be measured: in this case, the use of diversified weights is essential. Whatever the case may be, it should be stressed that the possible choice of not attributing any weight to the indicators selected—that is, of attributing the same weight to all of them—is no less subjective than the choice of attributing diversified weights to them (Parra Saiani 2009, p. 29; Tufte 1970).

Finally, the value of each of the indicators 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 subindices, which in their turn are aggregated. In particular, if the values of the indicators are expressed in cardinal or quasi-cardinal (metrical) form,[9] 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 indicator. Sometimes this maximum and/or minimum is 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 with his/her purposes.[10] Determination of these maximum and minimum values therefore introduces a further element of subjectivity into construction of the index. This operation may be particularly problematic if the intention is to construct an index to measure globalization processes. This is because, as emphasized in the previous chapter, the outcome of

[8] Also the choice, which will be illustrated in the next chapter, to attribute the weights by means of statistical procedures ultimately derives from a particular theoretical position.

[9] That is to say, to use more common terminology, if they assume the form of *ratio* or *interval* variables.

[10] For a complete survey of techniques for normalizing the value of the indicators see OECD (2008, pp. 27–31).

globalization can be neither taken for granted nor, even less, predicted because it depends on the complex overlapping of numerous human choices (Martell 2007, p. 176): consequently, nor can one take for granted the value that can be associated for each indicator with a maximum or minimum level of globalization. Not by chance, in some of the globalization indexes described in the next chapter, the attribution of the limit values of the various indicators comes about in relative and not absolute form: for example, chosen as the threshold value of a particular indicator may be the maximum value for that same indicator recorded in a certain interval of time.

The values of each indicator 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.).

Described above is the case of indices with cardinal or quasi-cardinal (metrical) 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 by creating typological indices. 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.

2.2.3 How Many Indicators to Select

Therefore, when constructing an index designed to measure a complex concept indirectly, a crucial juncture comes when *what* indicators to include in that index must be decided. However, this decision is closely connected with another choice, which at least partly precedes it: the choice of *how many* indicators should be selected to create the index.

This choice, too, is particularly delicate; and all the more so because the researcher is caught between two contrasting exigencies. There is a series of reasons, in fact, for including the largest possible number of indicators in an index intended to measure a particularly complex social phenomenon. At the same time, however, another series of reasons contrarily suggest including the smallest possible number of indicators in the aforesaid index.

The principal reason for using a large number of indicators is the need to take account of the manifold dimensions of a complex concept like, in our case, globalization. A further reason is that on increasing the number of indicators, one concomitantly reduces the contribution of each of them to the overall measure, thereby reducing the impact on the latter of possible errors made when calculating a particular indicator. Nevertheless, the decision to construct an index using a large number of indicators also has numerous drawbacks. Firstly, the use of numerous indicators generally makes construction of the index more complex. Consequently, there is a higher likelihood that errors will be committed in its determination and, in parallel, a lower likelihood that an external user will be able to exert control over the instrument.[11] Above all, however, the decision to use a large number of indicators leads to problems in data collection. Gathering data relative to numerous indicators may require a great deal of effort and time, with a high probability that in some cases the data will not be available. For example, if it is decided to use the state as the unit of analysis with which to measure globalization—a topic addressed in the next section—it is likely that increasing the number of indicators to include in the index will reduce the number of the states for which that index is calculable. Again, increasing the number of indicators makes it more likely that the overall measure will be based on qualitatively heterogeneous data. It not rarely happens, in fact, that data collected at the appropriate moment must be 'frozen' while waiting, even for two or three years, until the data relative to the other indicators become available. Lastly, as already said, the presence of a large number of indicators substantially reduces the impact of each of them on the overall measure: every extra indicator therefore entails a significant increase in data collection operations and efforts, but with only a very slight increase in the information yielded by the index.

Conversely, basing an index on a small number of indicators reduces the difficulties and the amount of time required to collect the information necessary for construction of the instrument. The latter thus becomes more rapidly useable and manageable, as well as calculable. An extreme solution in this case might be that of identifying a single indicator of such significance that on its own it can represent the complex concept subject to analysis—in our case globalization—and furnish a satisfactory measurement thereof. This solution would have significant advantages. Firstly, a measurement instrument consisting of a single indicator is extremely simple to construct and to manage. Moreover, if only one datum is required to determine a country's level of globalization, all efforts can be concentrated on collecting that datum in timely manner, and on limiting possible measurement errors. But the greatest advantage that derives from measuring a complex concept with a single indicator is, probably, that it by-passes the problem of how to aggregate several indicators and, particularly, avoids the difficulty of choosing the weights to attribute to each of the elements that instead make up an index—difficulties which

[11] In this regard, Sachs (1995, p. 7) maintains that it is impossible to handle measurement instruments consisting of more than 15 or 20 indicators.

were mentioned earlier. Nevertheless, it seems doubtful that it is possible to find a single indicator able to represent on its own such a complex phenomenon as globalization,[12] and attempts to do so would not obtain substantial consensus. For that matter, the problem with any measurement made with a single indicator is that it is extremely vulnerable to possible errors in the data on which it is based. This latter situation, however, is ambivalent: while it is true that when a single indicator is used, any error may have severe repercussions, it is equally true that the probability of committing a significant error in this case tends to diminish considerably, given that the quality of the datum relative to a single indicator is more easily verifiable than when a long list of indicators must be checked.

In light of these considerations, probably the optimal solution—even if it is not yet particularly widely used—for construction of a measure of globalization is that of designing instruments composed of a limited number of indicators: for example, three or four, but in any case more than one. This solution makes it possible to combine coverage of the concept's multidimensionality with the advantages connected with the instrument's manageability, and with the ease of gathering the data necessary for its construction.

2.3 Choosing the Unit of Analysis as a Specific Problem in the Measurement of Globalization

The choice of the most appropriate indicators with which to create a globalization measure depends first of all on the definition given to the concept by the analyst. But it also depends on the unit of analysis in reference to which the measure will be constructed (Cartocci 1984, p. 84): of what is the degree of globalization to be measured? However, also the choice of the unit of analysis depends on the definition adopted of the phenomenon subject to study. Therefore, if definition of the subject of analysis is as problematic and controversial as it is in the case of globalization, inevitably just as problematic is the choice of the unit of analysis best suited to measuring the concept.

Nevertheless, if we consider the attempts made to date to measure globalization—attempts described in the next chapter—we find that the difficulty is resolved by a choice taken for the sake of convenience, so to speak. Notwithstanding, in fact, all the theoretical reflection that may be devoted to the nature and characteristics of globalization, the unit of analysis usually selected for its measurement is the nation-state. This choice is made 'for convenience' because most of the statistical data, and therefore indicators, available in regard to globalization have the state as the unit of analysis (Scholte 2005, pp. 86–87). But this is not surprising

[12] An example of a single indicator used to measure a complex phenomenon is provided by the concept of 'development', which is usually measured in terms of per capita GDP, that is, with a single indicator. On this see Caselli (2001).

if we consider that statistics and the use of indicators originally arose in regard to the state (Parra Saiani 2009, pp. 9–10)—as demonstrated by the etymology itself of the word 'statistics'.

Yet the somewhat obligatory choice of this unit of analysis raises some particularly problematic issues. One suspects, in fact, that measuring globalization by referring to the nation-state is to distort the very essence of the concept studied. As already pointed out in the previous chapter, it is of crucial importance to distinguish between globalization and internationalization: while the latter refers to processes and dynamics occurring within and in relation to the system of nation-states, the concept of globalization refers (also) to processes that unfold heedless of that system (Sklair 1999, pp. 144–145). In this regard, various authors have stressed that the distinctive feature of globalization is deterritorialization (Sassen 2000; Giaccardi and Magatti 2003; Scholte 2000, pp. 48–49), or the emergence of processes entirely free of territorial constraints—processes, that is, which may be situated anywhere or, conversely, nowhere (in virtual space for example).

In light of these considerations, reflection on the theme of globalization has induced several authors to dispute what has been variously labeled 'methodological nationalism' (Beck 2004), 'embedded statism' (Sassen 2000), or 'methodological territorialism' (Scholte 2000): that is, the perspective largely dominant since the origins of the social sciences and which envisages a substantial overlap between the concept of society and that of the nation-state, which is therefore considered the natural container of economic, cultural, and political processes.

That of the nation-state, therefore, cannot be the only perspective, the only lens through which one studies and analyses a multidimensional and above all multiscalar process like globalization (Sassen 2007). However, this does not mean that it is illegitimate to use the nation-state as the unit of analysis for construction of a globalization measure. Affirming the existence of deterritorialized dynamics and processes is not to deny the persisting and in many respects renewed—as highlighted in the previous chapter—importance of the spatial dimension of globalization. Globalization in fact, as repeatedly said, is an extremely complex phenomenon, and part of its complexity resides in the fact that it can be interpreted from different points of view: the deterritorialized dimension of globalization does not exclude the localized one, and the global dimension does not exclude the local one. The national point of view is therefore one of the many legitimate points of view from which globalization can be read (Beck 2004). This is of particular importance if one considers that the state contributes substantially to shaping globalization processes: for example, it has already been pointed out in the previous chapter that it is the state which furnishes the infrastructures—particularly for transport and communications—that make possible the transnational flows that constitute the essence itself of globalization (Axford 2007, pp. 322–323). Added to this is the fact that nation-states continue to be key actors in the economic and social spheres (Ray 2007, p. 75) as well as essential referents in the everyday lives of all the planet's inhabitants.

Apart from practical convenience, therefore, using the nation-state as the unit of analysis in the study and measurement of globalization processes is in many respects an acceptable procedure. However, this should not obscure the fact that this procedure, however legitimate, allows the analyst to grasp only some aspects of globalization and not others, even though they are extremely significant. It has been pointed out, for example, that it is almost impossible to measure the ecological aspects of globalization by working on national bases (Dreher et al. 2008, p. 38). More generally, there is the problem of grasping more genuinely global aspects of the process on the basis of international data (Scholte 2005, pp. 86–87). Nevertheless, to conclude this discussion, if globalization processes are distinguished by their multi-scalar nature, the problem is not so much finding and using units of analysis alternative to the nation-state as combining several units of analysis and, therefore, different perspectives of inquiry. This is said in the awareness that no perspective and no unit of analysis, on its own, can enable an exhaustive account to be made of the complexity of globalization processes. We shall return to this topic in the final chapter.

2.4 Globalization Measures as Subjective Constructs

The fact that a concept in a particular setting can be described by means of quantitative information suggests, to those who use it, that this information has entirely objective value. This belief is reinforced if the information is presented as resulting from the application of complex mathematical formulas—mathematical formulas, for that matter, which receive very little attention from the users of statistical and social reports, who are generally much more interested in the results than in the procedures used to produce them (Parra Saiani 2009, pp. 61–62).

This perception of objectivity, however, is entirely unfounded. With reference to the subject of this book, to be stressed is that the researcher must make frequent choices throughout the process of constructing an index to measure globalization. The rationale for these choices can be argued before the scientific community, but it cannot be demonstrated incontrovertibly (Corbetta 1999, p. 116). This is because, as said, such choices are essentially subjective. This subjectivity operates at various levels: in the definition of the concept to be analyzed; in the choice of the dimensions to consider, and of the relative indicators; in determination of the weights; and, finally, in the choice of techniques to normalize and aggregate the variables on the basis of which the index is calculated. None of these choices is, so to speak, neutral; on the contrary, they result from specific decisions taken by the researcher (Atta Mills 1980, p. 23). They depend primarily on the researcher's values and on his/her personal vision of the concept under study.

Added to this is the fact that, at a stage so crucial as the choice of the indicators to constitute the globalization index, the researcher must mediate between the exigency imposed by theoretical analysis—the requirement that the indicators must reflect the nature of the concept as closely as possible—and the pragmatic

exigencies related to the real possibility of obtaining the data necessary to construct the index, as well as their quality, updatedness and, not least, their cost. Once again, the success of this mediation between exigencies will depend on the abilities and the judgements, evidently subjective, of the researcher.

If, therefore, the validity of a globalization measure can arise only from critical scrutiny by the scientific community (OECD 2008, p. 14), the process of constructing that measure must be as transparent as possible (Dreher et al. 2008, p. 26). In particular, the procedure with which a globalization index has been constructed—but this applies to any other index—must be described with the maximum clarity, and so must the assumptions on whose basis the various decisions leading to the procedure's definition have been taken.

Moreover, when stating the data obtained from calculation of a globalization index, it is advisable—to the benefit especially of less experienced and competent users—that the partial and stipulative nature of the instrument proposed be made clearly explicit. Yet, as mentioned above, this lack of objectivity is not infrequently dissimulated. It is so, for example, through the application of particularly complex mathematical formulas in construction of the index. In this regard, Drewnowski (1970, pp. 21–23) argues that the calculation procedures, in particular those relative to attribution of weights to the indicators making up the index, must be the most elementary possible. This is necessary both to render the conventional nature of such attribution entirely explicit and to facilitate critical review of the work by the scientific community; critical revision whose importance was emphasized above. Moreover, the fact that the procedure for construction of the index is clearly comprehensible, also to a broader public, assists the users in understanding the instrument's potentials and limits, and, therefore, its real heuristic capacity.

2.5 The Characteristics of a Good Globalization Measure

As emphasized in the previous section, construction of an instrument for the measurement of a complex social phenomenon, and in particular of an instrument for the measurement of globalization, is a process which frequently involves the researcher's subjectivity.[13] It accordingly seems appropriate to specify what should be the desirable characteristics of a globalization measure so that such considerations can orient the researcher's choices.[14] To be noted is that the majority of the characteristics now described are desirable in any measurement

[13] This section draws on and develops discussion conducted in Caselli (2008, p. 387).

[14] Without specifications for each of the points that follow, these are the texts referred to here to identify the desirable features of an index constructed to measure a complex social phenomenon: UNDP (2000), Scamuzzi (1996), Graziosi (1979), Cipolla (1987), United Nations (1989), Morris (1979), Scidà (1997), Alberti et al. (1995), Drewnowski (1970), Cartwright (2000), Church and McHarry (1994).

instrument; but some of them are especially important for an instrument designed to measure a complex social phenomenon like globalization.

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 analyzing 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 researchers. In this regard, given the subjective 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 result only 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 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*. In this regard, it has already been emphasized the importance of ensuring that the construction procedure of the measure proposed is as transparent as possible.

Besides all these elements, Dreher et al. (2008, p. 26) point out that the construction of a globalization index is only justifiable if the instrument is able to furnish added value to the understanding and analysis of the process studied. In particular, a globalization index must yield information in some respects better than that obtainable from analysis of the individual indicators of which the index is composed. Dreher et al. also emphasize, again with regard to added value, that a globalization measure should in the final analysis be something different from and

more specific than a measure of internationalization, Westernization, or economic development.

2.6 Why Measure Globalization? And Why Do So With a Synthetic Measure?

Having reached this point in the discussion, and before moving, in the next chapter, to analysis of the main instruments developed to measure globalization, it is advisable to address a question which is sometimes neglected but certainly crucial: why measure globalization? Answering this question not only serves to justify the efforts made in this direction; but it is also necessary in order to evaluate the adequacy of the instruments developed to date, as well as those that will be proposed in the future: to what extent are such instruments coherent with the purposes for which they have been devised?

The so-called 'social indicators movement' sprang originally from the conviction that the possibility to translate social phenomena into numbers guaranteed the objectivity of knowledge (Parra Saiani 2009, p. 55). More recently, and in relation to the specific topic of this book, Martens and Zywietz (2006, p. 332) have claimed that measuring globalization is "an important first step in putting the globalization debate on a more scientific base". While the quantophrenic excesses of these two assertions are to be rejected, I nevertheless believe that it is difficult to dispute that reflection on the methods and instruments most appropriate for the measurement of a concept contributes significantly to refining the definition of that concept, as well as to identifying its nature and essential features. The indicators used to measure a concept help clarify its definition (Horn 1993, p. 6). In the specific case of globalization, there are those who argue that the tendential indeterminacy of the concept of globalization is due to the absence of general agreement on what indicators and measures are most appropriate for it (Rosenberg 2005, p. 15).

But reflection on globalization does not restrict itself solely to the problem of the concept's definition. On the contrary, it also investigates, among other things, the effects of the phenomenon. In this regard, a measure of globalization may therefore be an important resource with which to identify and, where possible and useful, to quantify those effects, even if the results often vary according to the measurement instrument used (Ray 2007, p. 141). Moreover, it should be stressed that identifying a statistical relationship between an index of globalization and the indicator or indicators of another social phenomenon is an important step in the analysis of globalization's effects; analysis, however, that cannot be restricted to this element alone. In particular, it should be borne in mind that, once a correlation between the globalization index and other variables has been established, it is difficult to identify the direction of any cause/effect relationship (Dreher 2006).

To be noted, however, is that those who set out to study the effects of globalization often concentrate on the economic aspects of the phenomenon. Consequently, some of the indices proposed for measurement of globalization allow separation from the

overall index of information relative to the phenomenon's economic dimension—which moreover, as said, is less difficult to measure than the other dimensions, mainly political and cultural. The difficulties that arise when measuring the political and cultural aspects of globalization will be discussed in the following chapters.

Beyond every other consideration, however, the fact that globalization measures are increasingly used in studies and research is probably the most evident proof of the usefulness of these tools of inquiry. For example, Dreher et al. (2008, pp. 75–79) counted more than thirty studies in which the KOF index (discussed in the next chapter) was used to measure globalization.

Given the existence of a conspicuous number of indicators able to grasp the diverse aspects of globalization, one wonders why some researchers have attempted to identify a synthetic—and therefore single—measure. The question becomes all the more significant if one considers the doubts—legitimate in my view—raised as to whether a complex, multiform and manifold concept like that of globalization can be captured and represented by means of a single value. One can reply that a synthetic measure certainly does not tell us anything more than a battery of indicators; indeed, the aggregation of these indicators, whatever procedure is used, inevitably entails a loss of information. Nevertheless, a single measure is much more convenient and manageable; and it is able—considerably more than a battery of indicators perhaps accompanied by rich qualitative analysis—to focus the attention of public opinion, as well as that of the scientific community. It can thus stimulate debate. A single measure is eye-catching, it has psychological impact and appeal; and, as such, it has a better chance of influencing decision-making processes (Streeten 1995, p. 28). Finally, a single measure of globalization—or any other phenomenon—makes comparisons easier: comparisons among units of analysis but also among different periods, which make a valuable contribution to analysis of a concept's history. Adequate measures of globalization can probably furnish a better understanding and description of the historical evolution of the process (Caselli 2008, p. 400). As a consequence of all these considerations, one must conclude that the attractiveness of single measures is as such to justify the efforts put into their development, so that the doubts about their validity are overcome (Horn 1993, p. 70).

It is nevertheless important to emphasize that a synthetic measure of globalization can only be a instrument which supplements the batteries of indicators available and qualitative investigations. In no way it can replace them (Caselli 2001, p. 34).

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Chapter 3
Measuring Globalization: The State-Based Approach

3.1 Introduction

It was said in the first chapter that globalization processes cast doubt on the validity of so-called 'methodological nationalism': by which is meant the approach whereby the concept of society overlaps with that of the state, and which consequently considers the latter as the privileged domain of analysis for the social sciences. This approach still largely predominates today; so much so, in fact, that it contaminates the tools used to measure the process which by definition transcends national boundaries: namely globalization. In effect, still today, almost all of the synthetic globalization measures devised by researchers assume the state as their unit of analysis. Given this premise, the fifth chapter will investigate some possible globalization measures based on approaches of a different kind. This chapter will instead survey the principal instruments used to measure the level of globalization from a state-centric perspective.

First discussed will be the *A.T. Kearney/Foreign Policy Globalization Index*. It seems mandatory to consider this instrument first because it is at present the most widely used and cited index of globalization. Moreover, it is referred to by all those other authors—though often to highlight its shortcomings—who have sought to develop other instruments for the same purpose. Also analyzed will be the *CSGR Globalisation Index*, the *KOF Index of Globalization*, and the *Maastricht Globalisation Index*. It has been decided to devote particular space—in this chapter and the next—to these four indexes because they have been developed and repeatedly updated over time, and consequently do not represent merely sporadic exercises. Nevertheless, also described, albeit more rapidly, are numerous other instruments which seek to measure globalization both by adopting a multidimensional approach and by reducing globalization to just one of its constitutive dimensions, which in almost all cases is the economic one.

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3.2 The A.T. Kearney/Foreign Policy Globalization Index

This survey of instruments devised to measure globalization therefore begins with the *A.T. Kearney/Foreign Policy Globalization Index*. Over the years, this instrument has undergone various modifications in the number and nature of the indicators used, and the procedures for calculating the index itself. Described here is the latest version of the index, published in 2007 and using data relative to the year 2005 (Foreign Policy 2007).[1]

The *A.T. Kearney/Foreign Policy Magazine Globalization Index* considers four fundamental dimensions of globalization[2]: *economic integration*, *personal contact*, *technological connectivity*, *political engagement*. Corresponding to each of these dimensions are two or more indicators (sub-dimensions), for a total of twelve (there were 14 in the 2004 version, 12 in the 2003 version and the 2002 version, 11 in the 2001 version); each indicator in its turn corresponds to one or more variables. Each indicator is normalized on a scale from 0 to 1, where corresponding to 1 is the highest value recorded among all countries for that indicator in the year in question,[3] while all the other values are considered proportionally in fractions of 1. However, this normalization technique (which requires identification for each indicator 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 indicator relative to each year.[4] Table 3.1 illustrates use of the scale factor by means of an example.

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[1] The version published in 2007 is substantially identical to the ones of 2005 and 2006, with only minor differences in the definitions given to three of the indicators used. Until 2005, by contrast, the number and type of indicators used were often modified from one year to the next.

[2] 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. They say this is not done, however, because of the lack of reliable data on this dimension (Foreign Policy 2003; p. 63).

[3] That is, the maximum value on the basis of which the normalization is performed varies from year to year for each indicator. 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 indicator since 1998.

[4] The problem is that, for each indicator, the maximum value from year to year may refer to different countries. Yet information on how this 'scale factor' is calculated has 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 indicator? It is also important to note 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 2005), although the latter nominally accounts for just 10% of the overall value of the index.

Table 3.1 Determination and use of the 'scale factor' in relation to the indicator 'Trade' (variable: 'Trade as a share of GDP')

	Value of the indicator		Indicator normalized on the scale 0–1		Scale factor	Value of the indicator after normalization and application of the 'scale factor'	
Year	Singapore (%)	Norway (%)	Singapore	Norway		Singapore	Norway
1998	302.4	73.4	1	0.24	100	100	24.3
1999	333.5	71.1	1	0.21	110.3	110.3	23.5
2000	353.6	75.9	1	0.21	116.9	116.9	25.1
2001	341.5	74.1	1	0.22	112.9	112.9	24.5
2002	339.4	69.1	1	0.20	112.2	112.2	22.9

Source Document furnished by the A.T. Kearney offices on 2 October 2005

Once the index numbers for each indicator 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 indicators 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 subdimensions) of the globalization process initially identified. This choice is obviously stipulative and is therefore susceptible to criticism. Nevertheless, as said, there are no objectively valid criteria that can be applied, and the lack of objectivity is inevitable. Table 3.2 gives the complete list of the indicators and 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.[5] To be emphasized is the preponderant value assumed by economic indicators in the

[5] The indicators used in previous versions of the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, grouped according to the latter's dimensions, were the following. 2001 Edition: convergence of domestic prices with international prices, international trade as a share of GDP (*goods and services*); inward- and outward-directed foreign investment, portfolio capital flows, income payments and receipts as shares of GDP (*finance*); cross-border remittances and other transfers as a share of GDP, minutes of international phone calls per capita, number of international travellers per capita (*personal contact*); percentage of population online, number of Internet hosts per capita, number of secure servers per capita (*technology*). 2002 and 2003 Editions: international trade, foreign direct investment and portfolio capital flows, income payments and receipts as shares of GDP (*economic integration*); international travel and tourism, international telephone traffic, cross-border transfers (*personal contact*); number of Internet users, Internet hosts, secure servers (*technology*); number of memberships in international organizations, U.N. Security Council missions in which each country participates, foreign embassies that each country hosts (*political engagement*). 2004 Edition: international trade, foreign direct investment, portfolio capital flows, investment income (*economic integration*), number of Internet users, Internet hosts, secure servers (*technology*); international travel and tourism, international telephone traffic, remittances, and personal transfers (*personal contact*); memberships in international organizations, personnel and financial contribution to U.N. Security Council missions, international treaties ratified, governmental transfers (*political engagement*).

Table 3.2 Dimensions, indicators, variables and weights in the *A.T. Kearney/Foreign Policy Magazine Globalization Index*

Dimensions	Indicators (Sub-dimensions)	Variables	Weight of the indicators	Weight of the dimensions
Economic integration	Trade	Imports and exports (goods and services), divided by the country's GDP	2	5
	Foreign direct investment	FDI inflows and outflows, divided by the country's GDP	3	
Personal contact	Telephone	Minutes of inward and outward international telephone traffic, divided by the country's population	1	3
	Travel and tourism	Tourist arrivals and departures, divided by the country's population	1	
	Remittances and personal transfers	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	1	
Technological connectivity	Internet users	Number of Internet users, divided by the country's population	1/3	1
	Internet hosts	Number of Internet hosts, divided by the country's population	1/3	
	Secure servers	Number of secure servers through which encrypted transactions are carried out, divided by the country's population	1/3	
Political engagement	Memberships in international organizations	Memberships in a variety of representative international organizations (absolute number)	1/4	1
	Contributions to U.N. peacekeeping missions	Weighted average of financial contribution divided by the country's GDP, and the country's personnel contribution divided by the country's population	1/4	
	Ratification of multilateral treaties	Ratification of selected multilateral treaties (absolute number)	1/4	
	Governmental transfers	Total government transfers (credits and debits), divided by the country's GDP	1/4	

overall index on account of the weights assigned to them. These indicators determine 50% of the value of the overall index, and this may impair its multidimensionality.

When the weights have been assigned, the value of the overall index is given by the sum of the index numbers relative to each indicator multiplied by its respective weight.

In its 2007 version—the data for which, as said, refer to 2005—the *A.T. Kearney/Foreign Policy Magazine Globalization Index* was calculated for 72 countries, ten more than in the previous year, corresponding to 97% of the world's GDP and to 88% of the world's population. With reference to this last edition of the instrument, Table 3.3 shows the classification of countries drawn up according to the scores obtained on the overall globalization index and in relation to its four dimensions.[6] Table 3.4 instead provides a comparison among the positions occupied by the countries for which the *A.T. Kearney/Foreign Policy Magazine Globalization Index* has been calculated for the various years in which the *Foreign Policy Magazine* has published the data relative to this instrument. However, the comparison has purely indicative value, because, as said, over the years the methods used to calculate the *A.T. Kearney/Foreign Policy Magazine Globalization Index* has undergone modifications such to render the data relative to different years noncomparable.

3.3 The CSGR Globalisation Index

The *CSGR Globalisation Index* is an instrument developed by Ben Lockwood and Michela Redoano at the Centre for the Study of Globalisation and Regionalisation of the University of Warwick (UK). This 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 indicators, for a total of 16.

The value of each indicator is normalized on a scale from 0 to 1, where 1 is the maximum value recorded in the period 1970–2001,[7] and 0 is the minimum value

[6] In reporting the results of the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, like those of all the other indices presented in this chapter, I show the classification of countries but not the scores obtained. This is both because the datum relative to the score is not always available and because, in the texts to which reference is made, it seems that the data are interpreted predominantly on the basis of the relative positions of states.

[7] 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.

Table 3.3 Classification of countries based on the *A.T. Kearney/Foreign Policy Magazine Globalization Index* as a whole and its four sub-indices—Reference year: 2005 (Foreign Policy 2007)

	Overall Index	Economic integration	Personal contact	Technological connectivity	Political engagement
1	Singapore	Hong Kong	Hong Kong	United States	Jordan
2	Hong Kong	Singapore	Switzerland	Canada	Ghana
3	Netherlands	Estonia	Singapore	Australia	France
4	Switzerland	Netherlands	Ireland	New Zealand	Austria
5	Ireland	Denmark	Jordan	Denmark	Ireland
6	Denmark	Ireland	Czech Republic	Netherlands	Britain
7	United States	Belgium	Belgium	Switzerland	Denmark
8	Canada	Panama	Austria	Sweden	Netherlands
9	Jordan	Malaysia	Croatia	Britain	Portugal
10	Estonia	Jordan	Estonia	Finland	Sweden
11	Sweden	Switzerland	Canada	Norway	Italy
12	Britain	Czech Republic	Israel	Japan	Slovenia
13	Australia	Bulgaria	Denmark	Ireland	Canada
14	Austria	Hungary	Philippines	Austria	Hungary
15	Belgium	Sweden	Ghana	Singapore	Japan
16	New Zealand	Slovakia	Netherlands	Germany	Belgium
17	Norway	Ukraine	Slovenia	Hong Kong	Senegal
18	Finland	Britain	Uganda	Taiwan	Spain
19	Czech Republic	Vietnam	Sweden	Israel	Germany
20	Slovenia	Austria	Malaysia	South Korea	Argentina
21	Israel	Thailandia	Britain	Estonia	Greece
22	Germany	Colombia	Morocco	Belgium	Botswana
23	Malaysia	Slovenia	New Zealand	Slovenia	Tanzania
24	Hungary	Croatia	Portugal	France	Slovakia
25	France	Israel	Taiwan	Spain	Estonia
26	Croatia	Australia	Hungary	Italy	Norway
27	Bulgaria	Chile	Norway	Portugal	Finland
28	Japan	Taiwan	Saudi Arabia	Hungary	Switzerland
29	Spain	Romania	France	Czech Republic	Uganda
30	Panama	Morocco	Spain	Croatia	Poland
31	Portugal	France	Bulgaria	Malaysia	Chile
32	Slovakia	Costa Rica	Sri Lanka	Slovakia	Czech Republic
33	Ghana	Egypt	Greece	Costa Rica	Bulgaria
34	Italy	Canada	Germany	Chile	New Zealand
35	South Korea	Norway	Tunisia	Greece	Romania
36	Romania	Botswana	Finland	Poland	South Africa
37	Taiwan	Tunisia	Romania	Panama	Mexico
38	Philippines	Finland	Italy	Argentina	Kenya
39	Costa Rica	Nigeria	Australia	Brazil	Croatia
40	Morocco	Spain	United States	Bulgaria	Singapore
41	Poland	Philippines	Poland	Mexico	Australia
42	Ukraine	Ghana	Pakistan	Romania	Brazil
43	Chile	China	Bangladesh	Turkey	Panama
44	Uganda	Poland	Costa Rica	South Africa	South Korea
45	Greece	Germany	Mexico	Peru	Nigeria

(continued)

Table 3.3 (continued)

	Overall Index	Economic integration	Personal contact	Technological connectivity	Political engagement
46	Tunisia	Saudi Arabia	Senegal	Russia	Costa Rica
47	Botswana	South Korea	Egypt	Morocco	Peru
48	Vietnam	Indonesia	Botswana	Venezuela	Tunisia
49	Mexico	Russia	Ukraine	Thailandia	Philippines
50	Colombia	Mexico	Vietnam	Jordan	Israel
51	Senegal	Turkey	Kenya	Colombia	United States
52	Saudi Arabia	Tanzania	South Korea	Vietnam	Russia
53	Thailandia	Venezuela	Peru	Ukraine	Algeria
54	Argentina	Portugal	Slovakia	Iran	Bangladesh
55	Egypt	Sri Lanka	Panama	Tunisia	Ukraine
56	Sri Lanka	Italy	Colombia	China	Colombia
57	Nigeria	New Zealand	Thailandia	Saudi Arabia	Vietnam
58	Peru	South Africa	Nigeria	Indonesia	Turkey
59	South Africa	Senegal	India	Egypt	Venezuela
60	Kenya	Peru	Russia	Pakistan	Sri Lanka
61	Tanzania	Argentina	Chile	Philippines	Morocco
62	Russia	Uganda	Algeria	Algeria	Indonesia
63	Pakistan	Pakistan	Argentina	India	Malaysia
64	Bangladesh	Kenya	South Africa	Senegal	Pakistan
65	Turkey	Iran	Japan	Nigeria	China
66	China	India	Turkey	Botswana	Saudi Arabia
67	Brazil	Bangladesh	China	Kenya	Egypt
68	Venezuela	Greece	Indonesia	Sri Lanka	Thailandia
69	Indonesia	Brazil	Tanzania	Ghana	India
70	Algeria	Japan	Venezuela	Uganda	Iran
71	India	United States	Brazil	Tanzania	Hong Kong
72	Iran	Algeria	Iran	Bangladesh	Taiwan

recorded in the same period.[8] These minimum and maximum values are the same for all the years considered by the index (panel normalization).[9]

[8] Using the well-known formula: normalized value = (observed value – minimum value)/(maximum value – minimum value).

[9] As the authors themselves acknowledge, "panel normalisation has both advantages and disadvantages. The advantage is that with panel-normalized 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, 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.

Table 3.4 Classification of countries based on the *A.T. Kearney/Foreign Policy Magazine Globalization Index*. Data from 1999 to 2005 (Foreign Policy 2001, 2002, 2003, 2004, 2005, 2006, 2007)

	1999*	2000*	2001*	2002*	2003	2004	2005
1	Singapore	Ireland	Ireland	Ireland	Singapore	Singapore	Singapore
2	Netherlands	Switzerland	Switzerland	Singapore	Ireland	Switzerland	Hong Kong
3	Sweden	Singapore	Sweden	Switzerland	Switzerland	United States	Netherlands
4	Switzerland	Netherlands	Singapore	Netherlands	United States	Ireland	Switzerland
5	Finland	Sweden	Netherlands	Finland	Netherlands	Denmark	Ireland
6	Ireland	Finland	Denmark	Canada	Canada	Canada	Denmark
7	Austria	Canada	Canada	United States	Denmark	Netherlands	United States
8	United Kingdom	Denmark	Austria	New Zealand	Sweden	Australia	Canada
9	Norway	Austria	United Kingdom	Austria	Austria	Austria	Jordan
10	Canada	United Kingdom	Finland	Denmark	Finland	Sweden	Estonia
11	Denmark	Norway	United States	Sweden	New Zealand	New Zealand	Sweden
12	United States	United States	France	United Kingdom	United Kingdom	United Kingdom	United Kingdom
13	Italy	France	Norway	Australia	Australia	Finland	Australia
14	Germany	Germany	Portugal	Czech Republic	Norway	Norway	Austria
15	Portugal	Portugal	Czech Republic	France	Czech Republic	Israel	Belgium
16	France	Czech Republic	New Zealand	Portugal	Croatia	Czech Republic	New Zealand
17	Hungary	Spain	Germany	Norway	Israel	Slovenia	Norway
18	Spain	Israel	Malaysia	Germany	France	Germany	Finland
19	Israel	New Zealand	Israel	Slovenia	Malaysia	Malaysia	Czech Republic
20	Malaysia	Malaysia	Spain	Malaysia	Slovenia	Hungary	Slovenia
21			Australia	Slovakia	Germany	Panama	Israel
22			Croatia	Israel	Portugal	Croatia	Germany
23			Hungary	Croatia	Hungary	France	Malaysia
24			Italy	Spain	Panama	Portugal	Hungary
25			Slovenia	Italy	Slovakia	Spain	France
26			Greece	Hungary	Spain	Slovakia	Croatia

(continued)

Table 3.4 (continued)

1999*	2000*	2001*	2002*	2003	2004	2005
27		Slovakia	Panama	Italy	Italy	Bulgaria
28		South Korea	Greece	Japan	Japan	Japan
29		Morocco	Japan	Greece	South Korea	Spain
30		Panama	Botswana	South Korea	Romania	Panama
31		Chile	Poland	Poland	Philippines	Portugal
32		Poland	South Korea	Philippines	Greece	Slovakia
33		Botswana	Philippines	Uganda	Poland	Ghana
34		Taiwan	Argentina	Chile	Chile	Italy
35		Japan	Tunisia	Romania	Taiwan	South Korea
36		Uganda	Taiwan	Taiwan	Uganda	Romania
37		Nigeria	Chile	Tunisia	Tunisia	Taiwan
38		South Africa	Uganda	Botswana	Botswana	Philippines
39		Tunisia	Romania	Ukraine	Ukraine	Costa Rica
40		Romania	Senegal	Morocco	Morocco	Morocco
41		Senegal	Saudi Arabia	Senegal	Senegal	Poland
42		Ukraine	Nigeria	Mexico	Mexico	Ukraine
43		Kenya	Ukraine	Sri Lanka	Argentina	Chile
44		Sri Lanka	Russia	Nigeria	Saudi Arabia	Uganda
45		Russia	Mexico	Saudi Arabia	Thailand	Greece
46		Egypt	Pakistan	Thailand	Sri Lanka	Tunisia
47		Thailand	Morocco	Argentina	Russia	Botswana
48		Argentina	Thailand	South Africa	Nigeria	Vietnam
49		Mexico	South Africa	Kenya	South Africa	Mexico
50		Pakistan	Colombia	Pakistan	Peru	Colombia
51		China	Sri Lanka	Colombia	China	Senegal
52		Philippines	Peru	Russia	Brazil	Saudi Arabia

(continued)

Table 3.4 (continued)

1999*	2000*	2001*	2002*	2003	2004	2005
53		Turkey	Brazil	Peru	Kenya	Thailandia
54		Bangladesh	Kenya	China	Colombia	Argentina
55		Colombia	Turkey	Venezuela	Egypt	Egypt
56		India	Bangladesh	Turkey	Pakistan	Sri Lanka
57		Brazil	China	Brazil	Turkey	Nigeria
58		Indonesia	Venezuela	Bangladesh	Bangladesh	Peru
59		Peru	Indonesia	Egypt	Venezuela	South Africa
60		Venezuela	Egypt	Indonesia	Indonesia	Kenya
61		Saudi Arabia	India	India	India	Tanzania
62		Iran	Iran	Iran	Iran	Russia
63						Pakistan
64						Bangladesh
65						Turkey
66						China
67						Brazil
68						Venezuela
69						Indonesia
70						Algeria
71						India
72						Iran

* The A.T. Kearney/Foreign Policy Magazine Globalization Index for years previous to 2003 was calculated using a different method. The information reported in these columns is therefore not, strictly speaking, comparable with that relative to the years 2003, 2004 and 2005. Reports for the years 1999 and 2000 have published classifications of the most globalized countries restricted to the first 20 positions

When all the indicators have been normalized and before an overall measure can be obtained, the awkward problem arises of the weight to assign to each of the indicators. 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.[10] 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 stipulative (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. This does not mean that any choice is in principle equally valid. Instead, it simply means that, in the specific case, the reasons adduced in justification of the two different 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 indicator in the *CSGR Globalisation Index*, and this increases the complexity of the instrument. In this regard, however, it should be pointed out that when data relative to the years 2002, 2003, and 2004[11] were added to the database on which the CSGR Globalisation Index is calculated, it does not seem that the weights were recalculated. Likewise, following this updating, it does not seem that the operation of normalization on a scale from 0 to 1 was again performed on the basis of the new maximum values of the various indicators considered.[12] It should be added that the indicators 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

[10] For technical details on this procedure see Lockwood and Redoano (2005).

[11] When the *CSGR Globalisation Index* was published for the first time, the most recent data on which its calculation was based were relative to 2001.

[12] Because the normalization was not recalculated on the 0–1 scale on the basis of the new maximum values, some indicators—and consequently the globalization index and the relative sub-indices for some countries—were greater than 1. For this reason, a note posted online on 6 July 2006 (www2.warwick.ac.uk/fac/soc/csgr/index/update) stated that a new normalization on a 0–1 scale had been performed on the value of the overall index and on the values of the three sub-indexes. Consequently, two separate normalization operations were performed: the first on the indicators, the second on the index and on the sub-indexes. It would perhaps have been more reasonable to maintain the initial procedure—there is no justification for the fact that this has been changed—and update the values of the indicators used to perform the normalization. Moreover, the overlap between these two different normalization processes makes the data published on the CSGR website, and on which the index is calculated, less comprehensible (and therefore less verifiable). For example, because the normalization is performed separately on the overall index and on the sub-indexes, the value of the former is not equal to the average of the values of the latter. Added to this is the fact that the CSGR researchers have not published the raw data on which the index is based, but instead the data already normalized from 0 to 1. The assumption that the calculations have been correctly performed therefore requires an act of faith in the work of the researchers who have developed the CSGR Globalisation Index.

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 indicators 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—noneconomic—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.[13]

When all the indicators 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.[14] Table 3.5 lists the indicators and the variables 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.[15] With reference to the final year considered, namely 2004, the overall globalization index has been calculated for 103 countries; the economic globalization index and the social globalization index are instead available for 134 countries and the political globalization index for fully 189.

Table 3.6 shows for the most recent year available—2004—the classification of the countries based on the *CSGR Globalisation Index* and on its three sub-indexes. Table 3.7 instead shows how this classification – with reference to the overall index—has been modified from year to year, from 1999 to 2004.

3.4 The KOF Index of Globalization

The *KOF Index of Globalization* has been developed by Axel Dreher, of the KOF Swiss Economic Institute at ETH Zurich. Published for the first time in 2002 (Dreher 2002, 2006), the KOF Index of Globalization underwent significant changes in 2008 (Dreher et al. 2008). The data on which the instrument is based were updated during 2010 (http://globalization.kof.ethz.ch). On that occasion, the

[13] For technical details on this regression see Lockwood and Redoano (2005).

[14] As stated in one of the previous notes, the aggregation of the sub-indexes into the overall index comes about before they are normalized on a scale from 0 to 1.

[15] When possible, the missing data are estimated by means of a linear interpolation procedure.

Table 3.5 Dimensions, indicators and weights in the *CSGR Globalisation Index*

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators	Weight of the dimensions
Economic globalisation		Trade	Exports plus imports of goods and services as a proportion of GDP	0.418	1
		Foreign direct investment	Inflows plus outflows of FDI as a proportion of GDP	0.092	
		Portfolio investment	Inflows plus outflows of portfolio investments as a proportion of GDP	0.220	
		Income	Employee compensation paid to non-resident workers and investment income from foreign assets owned by domestic residents plus employee compensation paid to resident workers working abroad and investment income from domestic assets owned by foreign residents, as a proportion of GDP	0.270	
Social globalisation	People	Foreign stock	Stock of foreign population as proportion of total population	0.266	1 (0.331 for People; 0.669 for Ideas)
		Foreign Flow	Inflows of foreign population as proportion of total population	0.629	
		Worker remittances	Worker remittances (receipts) as a proportion of GDP	0.079	
		Tourists	Number of tourists (arrivals plus departures) as proportion of total population	0.026	

(continued)

Table 3.5 (continued)

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators	Weight of the dimensions
	Ideas	Phone calls	International outgoing telephone traffic (minutes) per capita	0.004	
		Internet users	Internet users as a percentage of population	0.303	
		Films	Number of films imported and exported	0.061	
		Books and newspaper	Sum of value of books and newspapers imported and exported per capita (US dollars)	0.577	
		Mail	Number of international letters delivered and sent per capita	0.054	
Political globalisation		Embassies	Number of foreign embassies in country	0.378	1
		UN Mission	Number of UN peacekeeping operations in which country participates	0.357	
		Organizations	Number of memberships of International organizations	0.266	

Table 3.6 Classification of countries based on the overall *CSGR Globalisation Index* and its three sub-indexes—Reference year: 2004 (www2.warwick.ac.uk/fac/soc/csgr/index/)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
1	Singapore	Luxembourg	Bermuda	France	19	Russia	Congo, Republic	Barbados	Jordan
2	Belgium	Net. Antilles	Singapore	USA	20	Korea, Republic	Cambodia	Ireland	Turkey
3	Canada	Singapore	Hong Kong	Russia	21	Japan	Mongolia	Israel	Ireland
4	U.K.	Hong Kong	Switzerland	China	22	Spain	Panama	Germany	Romania
5	USA	Ireland	New Zealand	U.K.	23	China	Papua N.G.	UA Emirates	Japan
6	Austria	Malaysia	Austria	Canada	24	Jordan	Niger	Slovenia	Kenya
7	Sweden	Belgium	Canada	Belgium	25	Malta	China	Macao	Switzerland
8	Switzerland	Guyana	Net. Antilles	Egypt	26	Norway	Aruba	Korea, Republic	Argentina
9	France	Swaziland	Sweden	Germany	27	Poland	Bulgaria	Qatar	Ghana
10	Denmark	Thailand	Denmark	Italy	28	Iceland	Austria	France	Uruguay
11	Ireland	Angola	U.K.	Sweden	29	Egypt	Germany	Kuwait	Spain
12	Germany	Bahrain	Malta	Austria	30	Israel	Kazakhstan	Cyprus	Czech Republic
13	Italy	Hungary	Iceland	India	31	Portugal	Azerbaijan	Norway	Brazil
14	Malaysia	Malta	Belgium	Poland	32	Hungary	Switzerland	Italy	Korea, Republic
15	Finland	Philippines	Australia	Malaysia	33	Romania	Jordan	Japan	Finland
16	Australia	Moldova	Finland	Pakistan	34	India	U.K.	Estonia	Bangladesh
17	Netherlands	Estonia	Netherlands	Denmark	35	Kuwait	Russia	Czech Republic	South Africa
18	New Zealand	Ukraine	USA	Nigeria	36	Estonia	Canada	Aruba	Nepal

(continued)

Table 3.6 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
37	Argentina	Tunisia	Slovak Republic	Ukraine	55	Jamaica	Dominican Republic	Bulgaria	Slovak Republic
38	Chile	Indonesia	Spain	Portugal	56	Latvia	Mexico	Greece	Thailand
39	Pakistan	Lithuania	Bahrain	Greece	57	Tunisia	Netherlands	Poland	Bulgaria
40	Greece	Yemen, Republic	Latvia	Croatia	58	Senegal	Denmark	Oman	Paraguay
41	Cyprus	Cote d'Ivoire	Brunei	Australia	59	Peru	Jamaica	Grenada	Ethiopia
42	Uruguay	India	Malaysia	Netherlands	60	Zambia	South Africa	Belize	Iran
43	Kenya	Sweden	Jamaica	Norway	61	Mexico	Botswana	Guyana	Cameroon
44	Bulgaria	Mozambique	St. Lucia	Indonesia	62	Lithuania	Gabon	Saudi Arabia	Mexico
45	Nigeria	France	St. Kitts and Nevis	Hungary	63	Algeria	Italy	Mauritius	Sri Lanka
46	Brazil	Korea, Republic	Portugal	Zambia	64	Bolivia	Costa Rica	Romania	Yemen, Republic
47	Barbados	Chile	Croatia	Senegal	65	Costa Rica	Romania	Uruguay	Niger
48	South Africa	Morocco	Dominica	Morocco	66	Guyana	Portugal	Trinidad &T	Benin
49	Bahrain	Spain	Jordan	Chile	67	Paraguay	Oman	Yugoslavia	Guatemala
50	Thailand	Poland	Seychelles	Peru	68	Venezuela	Paraguay	Russia	Saudi Arabia
51	Indonesia	Namibia	Lithuania	Bolivia	69	Moldova	Algeria	Argentina	New Zealand
52	Morocco	Vanuatu	Chile	Algeria	70	Yemen, Republic	Kuwait	Mexico	Venezuela
53	Bangladesh	Sri Lanka	Costa Rica	Tunisia	71	Libya	Mali	Gabon	Ecuador
54	Philippines	Honduras	Hungary	Philippines	72	Sri Lanka	Israel	Moldova	Mali

(continued)

Table 3.6 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
73	El Salvador	Libya	St. Vincent and the Gr.	Guinea	91	Dominica	Bahamas	Kyrgyz Republic	UA Emirates
74	Cote d'Ivoire	USA	Turkey	Namibia	92	Trinidad &T	Pakistan	Suriname	Malawi
75	Panama	Togo	Panama	Bosnia and Herzegovina	93	Malawi	Norway	Samoa	Singapore
76	St. Lucia	Seychelles	Morocco	Zimbabwe	94	Belize	Zambia	Guatemala	Uganda
77	Oman	Finland	Brazil	Yugoslavia	95	Congo, Republic	Belize	Syria	Syria
78	Guatemala	Malawi	Peru	El Salvador	96	Grenada	Lao PDR	China	Lebanon
79	Ecuador	Egypt	Venezuela	Mozambique	97	Honduras	Mauritania	Ecuador	Fiji
80	Cameroon	Latvia	Libya	Gambia, The	98	Papua N.G.	Japan	Indonesia	Kyrgyz Republic
81	Mozambique	Armenia	Thailand	Libya	99	Sudan	Argentina	Philippines	Iraq
82	Colombia	Mauritius	El Salvador	Cuba	100	Albania	Cameroon	Senegal	Mongolia
83	Togo	Kenya	Macedonia	Israel	101	Vanuatu	Ecuador	Ghana	Vietnam
84	Seychelles	Cyprus	Dominican Republic	Burkina Faso	102	St. Vincent and the Gr.	Georgia	Egypt	Sudan
85	Mali	Trinidad &T	South Africa	Tanzania	103	Samoa	El Salvador	Togo	Chad
86	Gabon	Brazil	Colombia	Togo	104		Greece	Kiribati	Dominican Republic
87	Mauritius	Sao Tome & P	Fiji	Colombia	105		Iceland	Kenya	Qatar
88	Dominican Republic	Senegal	Tunisia	Kuwait	106		New Zealand	Paraguay	Madagascar
89	Zimbabwe	Bangladesh	Cote d'Ivoire	Cote d'Ivoire	107		Colombia	Congo, Republic	Congo, Dem. Republic
90	St. Kitts and Nevis	Venezuela	Zimbabwe	Slovenia	108		Australia	Bolivia	Albania

(continued)

Table 3.6 (continued)

Overall index	Economic globalization	Social globalization	Political globalization	Overall index	Economic globalization	Social globalization	Political globalization
109	Guinea	Vanuatu	Cyprus	127	St. Lucia	Mozambique	Oman
110	Nigeria	Honduras	Kazakhstan	128	St. Kitts and Nevis	Central African Republic	Korea, Dem. Republic
111	Bolivia	Nicaragua	Jamaica	129	St. Vincent and the Gr.	Bangladesh	Mauritius
112	Sudan	Sudan	Moldova	130	Dominica	Mali	Mauritania
113	Cape Verde	India	Luxembourg	131	Zimbabwe	Madagascar	Sierra Leone
114	Guatemala	Albania	Lithuania	132	Rwanda	Nigeria	Somalia
115	Guinea-Bissau	Djibouti	Gabon	133	Tonga	Ethiopia	Central African Republic
116	Peru	Papua N.G.	Panama	134	Comoros	Myanmar	Belarus
117	Liberia	Sri Lanka	Angola	135			Trinidad &T
118	Albania	Zambia	Costa Rica	136			Macedonia
119	Sierra Leone	Nepal	Honduras	137			Georgia
120	Burkina Faso	Algeria	Estonia	138			Cambodia
121	Grenada	Pakistan	Iceland	139			Malta
122	Lebanon	Bhutan	Uzbekistan	140			Turkmenistan
123	Samoa	Chad	Bahrain	141			Papua N.G.
124	Barbados	Yemen	Nicaragua	142			Congo, Republic
125	Benin	Malawi	Latvia	143			Djibouti
126	Uruguay	Cameroon	Azerbaijan	144			Afghanistan

(continued)

Table 3.6 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
145				Armenia	163				Burundi
146				Botswana	164				Eq. Guinea
147				Mayotte	165				St. Lucia
148				Guyana	166				Cape Verde
149				Haiti	167				Seychelles
150				Myanmar	168				Swaziland
151				Tajikistan	169				Lesotho
152				Guinea-Bissau	170				Dominica
153				Lao PDR	171				St. Vincent and the Gr.
154				Liberia	172				Antigua and Barbuda
155				Eritrea	173				Comoros
156				Grenada	174				Bahamas
157				Rwanda	175				Sao Tome & P
158				Belize	176				Samoa
159				Brunei	177				Maldives
160				Barbados	178				Solomon Islands
161				Suriname	179				St. Kitts and Nevis
162				Vanuatu	180				Tonga

(continued)

Table 3.6 (continued)

Overall index	Economic globalization	Social globalization	Political globalization	Overall index	Economic globalization	Social globalization	Political globalization
181			Kiribati	186			Bhutan
182			Monaco	187			Palau
183			San Marino	188			Timor-Leste
184			Marshall Is.	189			Andorra
185			Micronesia				

Table 3.7 Classification of countries based on the *CSGR Globalisation Index*. Data from 1998 to 2004 (www2.warwick.ac.uk/fac/soc/csgr/index/)

	1998	1999	2000	2001	2002	2003	2004
1	Belgium	Canada	Belgium	Belgium	Singapore	Singapore	Singapore
2	Canada	Belgium	Canada	Singapore	Belgium	Belgium	Belgium
3	Switzerland	Sweden	Singapore	United Kingdom	United States	United Kingdom	Canada
4	United States	Switzerland	United Kingdom	United States	Austria	Austria	United Kingdom
5	Sweden	United Kingdom	Switzerland	Canada	Canada	Canada	United States
6	Ireland	United States	United States	Sweden	United Kingdom	United States	Austria
7	Singapore	Singapore	Sweden	Switzerland	Sweden	Switzerland	Sweden
8	United Kingdom	France	Denmark	Ireland	Switzerland	Sweden	Switzerland
9	France	Ireland	Ireland	Denmark	Ireland	France	France
10	Denmark	Denmark	France	France	France	Ireland	Denmark
11	Finland	Germany	Germany	Germany	Denmark	Denmark	Ireland
12	Norway	Finland	Netherlands	Finland	Germany	Germany	Germany
13	Germany	Norway	Finland	Norway	Italy	Italy	Italy
14	Russia	Italy	Norway	Netherlands	Netherlands	Netherlands	Malaysia
15	Italy	Russia	Italy	Italy	Malaysia	Malaysia	Finland
16	Egypt	Netherlands	Russia	Malaysia	Finland	Finland	Australia
17	Netherlands	Australia	Malaysia	Russia	Australia	Australia	Netherlands
18	Poland	Poland	Australia	Korea, Republic	Russia	Korea, Republic	New Zealand
19	Australia	Egypt	Korea, Republic	Australia	Korea, Republic	Russia	Russia
20	Argentina	Malaysia	Spain	Japan	New Zealand	Japan	Korea, Republic
21	Indonesia	Portugal	Japan	Portugal	Norway	New Zealand	Japan
22	New Zealand	Spain	New Zealand	China	Poland	Norway	Spain
23	China	New Zealand	Poland	Spain	Japan	Spain	China
24	Malaysia	India	Egypt	Poland	Spain	Poland	Jordan
25	Portugal	Argentina	Nigeria	New Zealand	Jordan	Jordan	Malta
26	Nigeria	Pakistan	Portugal	Iceland	Portugal	China	Norway

(continued)

Table 3.7 (continued)

	1998	1999	2000	2001	2002	2003	2004
27	Pakistan	Nigeria	China	Egypt, Arab Republic	Hungary	Hungary	Poland
28	Japan	Japan	Hungary	Hungary	China	Iceland	Iceland
29	Spain	Korea, Republic	Iceland	Nigeria	Egypt	Portugal	Egypt
30	Kenya	Iceland	India	Greece	Iceland	Egypt	Israel
31	Hungary	China	Jordan	Argentina	Argentina	Malta	Portugal
32	India	Jordan	Pakistan	Jordan	Greece	Kuwait	Hungary
33	Korea, Republic	Bangladesh	Argentina	India	Pakistan	Israel	Romania
34	Bangladesh	Hungary	Greece	Pakistan	India	Estonia	India
35	Brazil	Indonesia	Kenya	Chile	Chile	Greece	Kuwait
36	Iceland	Kenya	Chile	Indonesia	Israel	India	Estonia
37	Greece	Greece	Estonia	Estonia	Estonia	Chile	Argentina
38	Tunisia	Uruguay	Thailand	Kenya	Thailand	Romania	Chile
39	Chile	Brazil	Bangladesh	Thailand	Kuwait	Cyprus	Pakistan
40	Senegal	Thailand	Indonesia	Bangladesh	Malta	Bahrain	Greece
41	Romania	Senegal	Malta	Malta	Indonesia	Bulgaria	Cyprus
42	Thailand	Romania	Romania	Romania	Kenya	Argentina	Uruguay
43	Malta	Chile	Uruguay	Uruguay	Bangladesh	Pakistan	Kenya
44	Uruguay	Malta	South Africa	Bulgaria	Nigeria	Thailand	Bulgaria
45	Mexico	Tunisia	Tunisia	Tunisia	Bahrain	Indonesia	Nigeria
46	South Africa	South Africa	Bulgaria	Israel	Romania	South Africa	Brazil
47	Venezuela	Philippines	Senegal	Brazil	Uruguay	Latvia	Barbados
48	Panama	Estonia	Brazil	Cyprus	Cyprus	Nigeria	South Africa
49	Philippines	Mexico	Philippines	Philippines	Brazil	Brazil	Bahrain
50	Cyprus	Venezuela	Israel	South Africa	South Africa	Uruguay	Thailand
51	Estonia	Zimbabwe	Cyprus	Mexico	Bulgaria	Kenya	Indonesia
52	Kuwait	Cyprus	Mexico	Senegal	Tunisia	Bangladesh	Morocco

(continued)

Table 3.7 (continued)

	1998	1999	2000	2001	2002	2003	2004
53	Israel	Israel	Peru	Morocco	Mexico	Barbados	Bangladesh
54	Zimbabwe	Morocco	Morocco	Algeria	Philippines	Mexico	Philippines
55	Morocco	Panama	Algeria	Venezuela, RB	Venezuela, RB	Jamaica	Jamaica
56	Congo, Republic	Kuwait	Venezuela	Guyana	Morocco	Philippines	Latvia
57	Algeria	Algeria	Zambia	Peru	Algeria	Tunisia	Tunisia
58	Cote d'Ivoire	Zambia	Kuwait	Kuwait	Costa Rica	Morocco	Senegal
59	Guyana	Bolivia	Panama	Zambia	Guyana	Guyana	Peru
60	Gabon	Cote d'Ivoire	Guyana	Panama	Senegal	Algeria	Zambia
61	Zambia	Gabon	Zimbabwe	Paraguay	Peru	Peru	Mexico
62	Colombia	Guyana	Bolivia	Cote d'Ivoire	Jamaica	Costa Rica	Lithuania
63	Peru	Peru	Cote d'Ivoire	Lithuania	Cote d'Ivoire	Venezuela	Algeria
64	Costa Rica	Colombia	Colombia	Colombia	Lithuania	Zambia	Bolivia
65	Togo	Costa Rica	Ecuador	Costa Rica	Bolivia	Lithuania	Costa Rica
66	Lithuania	Ecuador	Sri Lanka	Mauritius	Panama	Senegal	Guyana
67	Ecuador	Togo	Lithuania	Gabon	Latvia	Cote d'Ivoire	Paraguay
68	Sri Lanka	Lithuania	Costa Rica	Bolivia	Zimbabwe	Panama	Venezuela
69	Honduras	Congo, Republic	Trinidad & T.	Cameroon	Zambia	Bolivia	Moldova
70	Trinidad & T.	Trinidad & T.	Gabon	Seychelles	Oman	Oman	Yemen, Republic
71	Jamaica	Sri Lanka	Barbados	Trinidad & T.	Mozambique	Zimbabwe	Libya
72	Barbados	Mauritius	Mauritius	Barbados	Libya	Moldova	Sri Lanka
73	Paraguay	Barbados	Jamaica	Ecuador	Barbados	Libya	El Salvador
74	Dominican R.	Jamaica	Honduras	Dominican R.	St. Kitts & N.	Gabon	Cote d'Ivoire
75	Mauritius	Honduras	Paraguay	Jamaica	Colombia	Colombia	Panama
76	Latvia	Cameroon	Dominican R.	Congo, Republic	Grenada	Sri Lanka	St. Lucia
77	El Salvador	Dominican R.	Congo, Republic	Sri Lanka	Trinidad & T.	Grenada	Oman
78	Oman	Latvia	El Salvador	Latvia	Sri Lanka	St. Kitts and Nevis	Guatemala

(continued)

Table 3.7 (continued)

	1998	1999	2000	2001	2002	2003	2004
79	Cameroon	El Salvador	Latvia	Honduras	Gabon	El Salvador	Ecuador
80	Papua N.G.	Papua N.G.	Oman	Zimbabwe	Mauritius	Mozambique	Cameroon
81	Guatemala	Oman	Papua N.G.	El Salvador	Moldova	St. Lucia	Mozambique
82	Moldova	Paraguay	Cameroon	Oman	Ecuador	Seychelles	Colombia
83	Bolivia	Malawi	Seychelles	Malawi	Dominica	Dominica	Togo
84	St. Lucia	Guatemala	Moldova	Papua N.G.	Dominican R.	Trinidad & T.	Seychelles
85	St. Kitts & N.	Moldova	Guatemala	Moldova	Belize	Mauritius	Mali
86	Malawi	Seychelles	Vanuatu	Sudan	Seychelles	Ecuador	Gabon
87	Grenada	Grenada	Grenada	Guatemala	Honduras	Paraguay	Mauritius
88	Dominica	St. Kitts & N.	Malawi	Albania	Paraguay	Dominican R.	Dominican R.
89	Belize	Belize	Belize	Belize	Mali	Mali	Zimbabwe
90	Vanuatu	Dominica	Dominica	Grenada	El Salvador	Yemen, Republic	St. Kitts & N.
91	Seychelles	St. Lucia	Albania	Togo	Congo, Republic	Belize	Dominica
92	St. Vincent and the Gr.	Vanuatu	Togo	Dominica	Yemen, Republic	Congo, Republic	Trinidad & T.
93		St. Vincent and the Gr.	St. Kitts & N.	Vanuatu	Cameroon	Honduras	Malawi
94			St. Lucia	St. Kitts and Nevis	Papua N.G.	Guatemala	Belize
95			St. Vincent and the Gr.	St. Lucia	Sudan	Cameroon	Congo, Republic
96				St. Vincent and the Gr.	Guatemala	Malawi	Grenada
97					Malawi	Papua N.G.	Honduras
98					Albania	Sudan	Papua N.G.
99					Togo	Togo	Sudan
100					St. Lucia	Albania	Albania
101					Vanuatu	St. Vincent and the Gr.	Vanuatu
102					St. Vincent and the Gr.	Vanuatu	St. Vincent and the Gr.
103							Samoa

procedure for construction of the index was not modified, while some minor changes were made to the indicators used. In what follows, the instrument is described in its 2010 version, whose data refers to 2007.

The *KOF Index of Globalization*, like the *CSGR Globalisation Index*, takes the *A.T. Kearney/Foreign Policy Magazine Globalization Index* as its template but introduces some correctives which, at least partly, resemble those proposed by the authors of the *CSGR Globalisation Index*. First, also the *KOF Index of Globalization* considers three dimensions of the phenomenon: economic, political, and social. The *economic dimension* is divided into two sub-dimensions: the first relative to economic flows, and the second to the restrictions imposed on those same flows by states. The *social dimension* is divided into three sub-dimensions: the first relates to interpersonal contacts, the second to information flows, and the third to cultural aspects of globalization. Last, the *political dimension* has no sub-dimensions. A total of 24 indicators are used (there were 23 in the version published in 2002, and 25 in the one published in 2008). Each indicator is normalized on a scale from 0 to 100, where 100 denotes the maximum level of globalization. In particular, the value 100 corresponds to the maximum value recorded by the indicator in the period 1970–2007, while the value 0 corresponds to the minimum value recorded in the same period.[16] To be noted is that the normalization—which in the first version of the index was performed with the usual formula *normalized value = (observed value – minimum value)/(maximum value – minimum value) * 100*—since 2008 has been performed on the basis of the percentile values of the distribution of the indicator considered. It was decided to normalize the data collected by referring to percentile values in order to reduce the impact of possible outliers on the value of the overall index and of the sub-indices. We might observe that, after the change made to the method for calculating the index, the relative positions of some countries in the classification based on that index changed significantly. In particular, the United States, which was the most globalized country in the version of the index published in 2002 and in 2005 (in the latter case, ranking 28th as regards economic globalization, but first not only in relation to the overall index but also as regards social and political globalization), in 2010 ranked only 27th (57th for economic globalization; 25th for social globalization, and 14th for political globalization). Moreover, this marked shift in the classification of the countries is linked with changes in the set of indicators used. In the first versions of the index, the indicators which made particular reference to cultural aspects of globalization were selected on the (highly debatable) assumption that cultural globalization corresponds to "the domination of American cultural products" (Dreher 2005; p. 5).[17] In the most recent versions of the index, this reading of globalization as

[16] In the first version of the index, the normalization was performed by considering the minimum and maximum values recorded in the reference year.

[17] It certainly comes as no surprise to find that, when globalization is interpreted in terms of the world's Americanization, the United States is the most globalized country on the planet.

Americanization is decidedly more nuanced, making the theoretical frame on which the instrument is based more acceptable.[18]

Turning to the crucial issue of the attribution of weights to the indicators, the solution proposed is the same as that used by the *CSGR Globalisation Index*: a statistical procedure based on principal components analysis.[19] The considerations made in the previous section again apply to the validity and the presumed 'objectivity' of this procedure. The weights are calculated on the basis of the data recorded, for all the countries considered, within the time-span from 1970 to the most recent year for which data are available.[20] The calculation is conducted first with reference to the indicators of each single dimension, the purpose being to determine the weights necessary for construction of the sub-indices, and then with reference to the sub-indices in order to determine the overall index. Because the weights are determined using the complete databases (data for all countries in each year considered), they must be recalculated whenever the database is updated with the addition of a new reference year or new countries—which seems to have been done when the data were updated in 2010.

Table 3.8 sets out the dimensions of the *KOF Index of Globalization*, the indicators used to determine them, and the corresponding weights according to the updated index published in 2010. Two main features should be noted in regard to the table. The first is that changes, even if minor, in the list of indicators, as well as the re-determination of the weights made necessary by updating the database, may have given rise to very significant variations in the relative importance attributed to the various indicators making up the index. For example, the indicator "international tourism" accounts for 26% of the sub-index "social globalization" in the most updated version of the index, yet in the first edition of the index it had a weight, within the same sub-index, of just 1%. The second feature to be noted is that two of the indicators comprised in the *KOF Index of Globalization* are based wholly (in the case of "hidden import barriers") or partly (in the case of "capital account restrictions") on reputational data: that is, data consisting in the subjective assessments—collected by means of a survey—of experts. These data are treated by Gwartney and Lawson (2009), who draw them in turn from Schwab (2009).

In the version of the *KOF Index of Globalization* published in 2010, this latter was calculated for fully 181 countries. This very large number is explained by

[18] In particular, the version of the index published in 2005 included among its indicators "telephone average cost of call to US", an indicator no longer present in the 2008 and 2010 versions. Moreover, the cultural sub-dimension of globalization was entirely represented by the "number of McDonald's restaurants (per capita)". This last indicator remains in the 2010 version of the index, but it is flanked by two further indicators: "the number of IKEA shops (per capita)" and the "trade in books (percent of GDP)".

[19] Unlike the *CSGR Globalisation Index*, the *KOF Index of Globalization* does not publish technical details on the procedure followed.

[20] In the first version of the index, the weights were calculated solely with reference to the data for the most recent year.

Table 3.8 Dimensions, indicators and weights in the *KOF Index of Globalization* (http://globalization.kof.ethz.ch)

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators inside sub-dimensions (%)	Weight of the dimensions
Economic globalisation	Actual flows	Trade	The sum of exports and imports of goods and services measured as a share of gross domestic product. Percent of GDP	19	37% (50% for Actual flows; 50% for restrictions)
		Foreign Direct Investment, flows	The net inflows plus net outflows of investment to acquire a lasting management interest. Percent of GDP	20	
		Foreign Direct Investment, stocks	Sum of inward and outward FDI stock. Percent of GDP	24	
		Portfolio Investment	The sum of portfolio investment assets stocks and portfolio investment liabilities stocks. Percent of GDP	17	
		Income Payments to Foreign Nationals	They refer to employee compensation paid to nonresident workers and investment income (payments on direct investment, portfolio investment, other investment). Income derived from the use of intangible assets is excluded. Percent of GDP	20	
	Restrictions	Hidden Import Barriers	The variable is based on the Global Competitiveness Report's survey question: "In your country, tariff and non-tariff barriers significantly reduce the ability of imported goods to compete in the domestic market"	22	
		Mean Tariff Trade	As the mean tariff increases, countries are assigned lower ratings. The rating declines toward zero as the mean tariff rate approaches 50%	28	

(continued)

Table 3.8 (continued)

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators inside sub-dimensions (%)	Weight of the dimensions
		Taxes on International Trade	Taxes on international trade include import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes. Current revenue includes all revenue from taxes and nonrepayable receipts (other than grants) from the sale of land, intangible assets, government stocks, or fixed capital assets, or from capital transfers from nongovernmental sources. It also includes fines, fees, recoveries, inheritance taxes, and nonrecurrent levies on capital. Data are for central government and in percent of all current revenue	27	
		Capital Account Restrictions	Index based on two components. (i) The first one is based on the question: "Foreign ownership of companies in your country is (1) rare, limited to minority stakes, and often prohibited in key sectors or (2) prevalent and encouraged". (ii) Index based on the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions, including 13 different types of capital controls: it is constructed by subtracting the number of restrictions from 13 and multiplying the result by 10	22	

(continued)

Table 3.8 (continued)

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators inside sub-dimensions (%)	Weight of the dimensions
Social globalisation	Personal Contact	Telephone Traffic	Sum of international incoming and outgoing telephone traffic (in minutes per person)	26	39% (33% for personal contact; 36% for information flows; 31% for cultural proximity)
		Transfers	Sum of gross inflows and gross outflows of goods, services, income, or financial items without a quid pro quo. Percent of GDP	3	
		International Tourism	Sum of arrivals and departures of international tourists as a share of population	26	
		Foreign Population	Number of foreign or foreign-born residents in a country. Percent of total population	20	
		International Letters	Number of international letters sent and received per capita	25	
	Information Flows	Internet Users	People with access to the worldwide internet network (per 1,000 people)	36	
		Television	Share of households with a television set (per 1,000 people)	36	
		Trade in Newspapers	Sum of exports and imports in newspapers and periodicals. Percent of GDP	28	
	Cultural Proximity	Number of McDonald's Restaurants	Number of McDonald's restaurants. Per capita	43	
		Number of Ikea	Number of Ikea. Per capita	44	
		Trade in books	The sum of exports and imports in books and pamphlets. Percent of GDP	12	

(continued)

Table 3.8 (continued)

Dimensions	Sub-dimensions	Indicators	Variables	Weight of the indicators inside sub-dimensions (%)	Weight of the dimensions
Political globalisation		Embassies in Country	Absolute number of embassies in a country	25	25%
		Membership in International Organizations	Absolute number of international inter-governmental organizations	28	
		Participation in U.N. Security Council Missions	Personnel contributed to U.N. Security Council Missions per capita	22	
		International Treaties	Any document signed between two or more states and ratified by the highest legislative body of each country since 1945. Treaties signed and ratified must be deposited in the Office of Secretary General of the United Nations to be included	25	

the fact that the index is calculated even if the data necessary for only two of its three sub-indices are available. Table 3.9 shows, with reference to the most recent year for which the values have been calculated, namely 2007, the classification of countries based on the *KOF Index of Globalization* and its three sub-indices.

3.5 The Maastricht Globalisation Index (MGI)

Initially called the *Modified Globalization Index*, the *Maastricht Globalisation Index* (MGI) has been developed by Pim Martens with the assistance of first Daniel Zywietz and then of Mohsin Raza. Since a preliminary study by Zywietz (2003), the aim has been to design an instrument for the measurement of globalization which improves on the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, particularly by selecting different indicators and variables: which accounts for the first name given to the instrument.

Presented in numerous publications after Zywietz's paper of 2003, the *Maastricht Globalisation Index* has undergone several changes, especially in regard to the method by which the values of the various indicators used are normalized. Described below is the instrument as it appears in its most recent version (Martens et al. 2010; Martens and Raza 2010).[21]

The *Maastricht Globalisation Index* is calculated by aggregating eleven indicators referring to five dimensions of globalization: political, economic, sociocultural, technological, and ecological. In particular, the most distinctive features of this instrument are its consideration of globalization's ecological dimension, and its inclusion of an indicator relative to the arms trade in the political dimension.

Each indicator is normalized on a scale from 0 to100, where 100 corresponds to the maximum level of globalization, by means of the usual formula *normalized value = (observed value – minimum value)/(maximum value – minimum value) * 100*. The maximum and minimum values inserted in the formula correspond, for each indicator, to the maximum and minimum value recorded for that same indicator in 2000. This means that, considering that the index has been calculated for the year 2000 and for the year 2008, in relation to 2008 some countries may record values greater than 100 on the individual indicators and on the overall index. To be noted in this regard that in the previous versions of the *Maastricht Globalisation Index*, the procedure followed in normalizing the values was more

[21] Other works, besides those already cited, describing the *Maastricht Globalisation Index* and the method progressively defined to calculate it, are Martens and Zywietz (2006), Dreher et al. (2008, 2009), Martens and Raza (2008). To be noted is that, although Pim Martens has collaborated in analysis of the measurement of globalization with Axel Dreher, author of the *KOF Index of Globalization* described in the previous section, the instruments proposed by the two authors are nevertheless different.

Table 3.9 Classification of countries based on the overall *KOF Index of Globalization* and its three sub-indices—Reference year: 2007 (http://globalization.kof.ethz.ch)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
1	Belgium	Singapore	Switzerland	France	19	Australia	Portugal	Hungary	Brazil
2	Austria	Ireland	Austria	Italy	20	Norway	Bulgaria	Liechtenstein	India
3	Netherlands	Luxembourg	Canada	Belgium	21	Cyprus	Latvia	Singapore	Romania
4	Switzerland	Netherlands	Belgium	Austria	22	Italy	Switzerland	Cyprus	Hungary
5	Sweden	Malta	Netherlands	Sweden	23	Poland	N. Zealand	Ireland	Australia
6	Denmark	Belgium	Denmark	Spain	24	U.K.	Slovenia	Italy	Finland
7	Canada	Estonia	U.K.	Netherlands	25	N. Zealand	Spain	USA	Norway
8	Portugal	Hungary	Germany	Switzerland	26	Estonia	Iceland	Poland	Nigeria
9	Finland	Sweden	Sweden	Poland	27	USA	Lithuania	Malta	Morocco
10	Hungary	Austria	France	Canada	28	Slovenia	Canada	N. Zealand	Czech Republic
11	Ireland	Bahrain	Portugal	Portugal	29	Croatia	Panama	San Marino	Japan
12	Czech Republic	Denmark	Norway	Germany	30	Malta	Georgia	Puerto Rico	Ireland
13	France	Czech Republic	Finland	Denmark	31	Greece	Australia	Slovenia	Pakistan
14	Luxembourg	Cyprus	Slovak Republic	USA	32	Bulgaria	U.K.	Estonia	Chile
15	Spain	Finland	Czech Republic	Egypt	33	Lithuania	Jamaica	Aruba	Korea, Republic
16	Slovak Republic	Slovak Republic	Australia	Argentina	34	Chile	France	N. Caledonia	Bulgaria
17	Singapore	Chile	Spain	Greece	35	Malaysia	Croatia	Fr. Polynesia	Tunisia
18	Germany	Israel	Luxembourg	Turkey	36	Jordan	Malaysia	Croatia	South Africa

(continued)

Table 3.9 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
37	Latvia	Poland	Iceland	Senegal	55	Jamaica	Kazakhstan	Samoa	Slovenia
38	Israel	Norway	Latvia	China	56	Turkey	Serbia	Israel	N. Zealand
39	Romania	Trinidad & T.	Russian Fed.	Jordan	57	Korea Republic	USA	Barbados	Colombia
40	Iceland	Italy	U.A. Emirates	Indonesia	58	Bosnia & Er.	Peru	Malaysia	Thailand
41	Bahrain	Germany	Lebanon	Ukraine	59	Thailand	Thailand	Costa Rica	Cyprus
42	Russian Fed	Costa Rica	Kuwait	Russian Fed.	60	Moldova	Papua N.G.	Jordan	Bolivia
43	Qatar	Greece	Bahamas	Peru	61	Peru	Armenia	Grenada	El Salvador
44	Mauritius	Romania	Brunei D.	Kenya	62	Honduras	Macedonia	Belarus	Paraguay
45	Japan	Oman	Lithuania	Uruguay	63	China	Nigeria	Saudi Arabia	Lithuania
46	Ukraine	Moldova	Japan	Philippines	64	U.A. Emirates	Guyana	Ukraine	Bangladesh
47	Kuwait	Honduras	Antigua & B.	Malaysia	65	Macedonia	Mongolia	Guyana	Sri Lanka
48	Panama	Mauritius	Macao	Ghana	66	Tunisia	Cambodia	Panama	Mali
49	Costa Rica	Bosnia & H.	Mauritius	Croatia	67	Dominican R.	Uruguay	Bulgaria	Guinea
50	El Salvador	Jordan	Qatar	Slovak Republic	68	Egypt	Indonesia	Serbia	Zambia
51	Serbia	Kuwait	Virgin I.	Ethiopia	69	Georgia	Vanuatu	Moldova	Bosnia & H.
52	Lebanon	El Salvador	Macedonia	Guatemala	70	Argentina	Ukraine	Seychelles	Benin
53	Uruguay	South Africa	Greece	Ecuador	71	Mexico	Nicaragua	Bermuda	Niger
54	South Africa	Zambia	Bahrain	Luxembourg	72	Morocco	Angola	S. Vincent & the Grenad.	Dominican Republic

(continued)

Table 3.9 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
73	Kazakhstan	Turkey	Cayman I.	Qatar	91	Nicaragua	Brazil	Chile	Nepal
74	Saudi Arabia	Tunisia	Suriname	Togo	92	Zambia	Russian Fed.	Azerbaijan	Mongolia
75	Brazil	Namibia	Oman	Burkina Faso	93	Nigeria	Bolivia	Kyrgyz Republic	Madagascar
76	Oman	Guatemala	S. Kitts & N.	Cote d'Ivoire	94	Albania	Yemen	Georgia	Venezuela
77	Guatemala	Korea Republic	Romania	Singapore	95	Azerbaijan	Colombia	Net. Antilles	Kazakhstan
78	Colombia	Mozambique	Faroe I.	Cameroon	96	Armenia	Paraguay	Bosnia & H.	Fiji
79	Guyana	Botswana	El Salvador	Gabon	97	Antigua & B.	China	Morocco	Kyrgyz Republic
80	Grenada	Dominican R.	Domninican R.	Mexico	98	Ghana	Egypt	Argentina	Namibia
81	Fiji	Mexico	Mexico	Zimbabwe	99	Venezuela	Mauritania	Venezuela	Mozambique
82	Kyrgyz Republic	Kyrgyz Republic	China	Serbia	100	Bolivia	Swaziland	Colombia	Gambia
83	Trinidad & T.	Barbados	Fiji	Honduras	101	Brunei D.	Lesotho	Thailand	Djibouti
84	Philippines	Fiji	Uruguay	Uganda	102	Gabon	Japan	Nicaragua	Malawi
85	Samoa	Vietnam	Dominica	U.K.	103	Belize	Togo	Jamaica	Rwanda
86	Indonesia	Philippines	West Bank & Gaza	Estonia	104	Pakistan	Mali	Ecuador	Congo
87	Barbados	Belize	S. Lucia	Albania	105	Sri Lanka	Cote d'Iv.	Kazakhstan	Israel
88	Paraguay	Albania	Maldives	Jamaica	106	Botswana	Morocco	Turkey	Chad
89	Ecuador	Azerbaijan	Belize	Iran	107	Bahamas	Argentina	South Africa	Mauritius
90	Namibia	Ghana	Korea Republic	Algeria	108	Mongolia	Ecuador	Trinidad & T.	Yemen

(continued)

Table 3.9 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
109	Belarus	Venezuela	Montenegro	Cuba	127	Zimbabwe	Haiti	Cape Verde	Vietnam
110	Cote d'Ivoire	Gabon	Egyot	Lebanon	128	Libya	Burkina F.	Libya	Azerbaijan
111	India	Congo	Honduras	Kuwait	129	Djibouti	Senegal	Turkmenistan	Grenada
112	Cuba	Syrian A.R.	Swaziland	Central African Republic	130	S. Vincent & the Granad.	Bahamas	Botswana	Iraq
113	Seychelles	Uganda	Gabon	Cambodia	131	Papua N.G.	Cameroon	Gambia	Iceland
114	Senegal	Sri Lanka	Armenia	Sierra Leone	132	Mali	Benin	Uzbekistan	Malta
115	Mozambique	Algeria	Tunisia	Panama	133	Aruba	Bangladesh	Cote d'Ivoire	U.A. Emirates
116	Cambodia	Pakistan	Paraguay	Botswana	134	Yemen	Guinea	Senegal	Angola
117	Suriname	Belarus	Namibia	Costa Rica	135	Dominica	Nepal	Algeria	Armenia
118	Gambia	Malawi	Peru	Saudi Arabia	136	N. Caledonia	Burundi	Pakistan	Trinidad & T.
119	Kenya	Chad	Cuba	Burundi	137	Fr Polynesia	Central African Republic	Djibouti	Vanuatu
120	Algeria	Sierra Leone	Guatemala	Libya	138	Uganda	Ethiopia	Tonga	Georgia
121	Vanuatu	Zimbabwe	Albania	Syrian A.R.	139	S. Kitts & N.	Rwanda	Micronesia	Samoa
122	Syrian A.R.	India	Greenland	Nicaragua	140	Malawi	Niger	Bolivia	Mauritania
123	Togo	Kenya	Sri Lanka	Latvia	141	Angola	Iran	Zimbabwe	Macedonia
124	Vietnam	Madagascar	Brazil	Tanzania	142	Macao		Indonesia	Guyana
125	St. Lucia	Guinea B.	Syrian A.R.	Moldova	143	Cameroon		Bhutan	Haiti
126	Swaziland	Tanzania	Philippines	Sudan	144	Burkina F.		Ghana	Bahrain

(continued)

Table 3.9 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
145	Maldives		Zambia	Bahamas	163	Guinea B.		Eritrea	Swaziland
146	Mauritania		S. Tome & P.	Uzbekistan	164	Haiti		Burkina F.	Suriname
147	Benin		India	Papua N.G.	165	Niger		Guinea B.	Lesotho
148	Lesotho		Vanuatu	Guinea B.	166	Sudan		Benin	Korea Republic
149	Chad		Lesotho	Belarus	167	Tajikistan		Togo	Lao PDR
150	Guinea		Vietnam	Oman	168	R.D. Congo		Solomon I.	San Marino
151	Madagascar		Kiribati	Afghanistan	169	Burundi		Mauritania	Dominica
152	Uzbekistan		Kenya	Liberia	170	Central African Republic		Papua N.G.	Antigua & B.
153	Bangladesh		Tajikistan	Belize	171	Net. Antilles		Uganda	Monaco
154	Cape Verde		Malawi	Tajikistan	172	S.Tome & P.		Haiti	S.Tome & P.
155	Sierra Leone		Iran	Congo	173	Tonga		Cambodia	Comoros
156	Turkmenistan		Rwanda	Barbados	174	Comoros		Yemen	Myanmar
157	Ethiopia		Comoros	Timor-Leste	175	Bhutan		Lao PDR	Eritrea
158	Congo		Cameroon	S. Lucia	176	Eritrea		Eq. Guinea	Eq. Guinea
159	Rwanda		Mozambique	Cape Verde	177	Lao PDR		Nigeria	Somalia
160	Tanzania		Guinea	Seychelles	178	Eq. Guinea		Nepal	S. Vincent & the Grenad.
161	Nepal		Mongolia	Palau	179	Solomon I.		Burundi	Brunei D.
162	Iran		Congo	Turkmenistan	180	Kiribati		Somalia	Liechtenstein

(continued)

Table 3.9 (continued)

	Overall index	Economic globalization	Social globalization	Political globalization		Overall index	Economic globalization	Social globalization	Political globalization
181	Myanmar		Chad	Solomon I.	195				Bermuda
182			Tanzania	S. Kitts & N.	196				Cayman I.
183			Madagascar	Maldives	197				Faeroe I.
184			Sudan	Tonga	198				N. Caledonia
185			Mali	Bhutan	199				Fr. Polynesia
186			Sierra Leone	Andorra	200				Am. Samoa
187			Bangladesh	Marshall I.	201				Greenland
188			Angola	Kiribati	202				Guam
189			Ethiopia	Micronesia	203				N. Mariana I.
190			Central African Republic	West Bank & Gaza	204				Virgin I.
191			Niger	Net. Antilles	205				I. of Man
192			Congo R.D.	Macao	206				Mayotte
193			Myanmar	Aruba	207				Channel I.
194				Puerto Rico					

complex. In fact, the values of the indicators underwent a logarithmic transformation and were subsequently modified using, as in the case of the *CSGR Globalisation Index*, a correction factor based on the size of the population and whether or not the country was landlocked[22] (Martens and Raza 2009).

Once the values of the indicators have been normalized, they are aggregated within each dimension by means of simple summation: that is, the same weight is attributed to each of them.[23] The authors state that the five dimensions thus determined are then aggregated into the overall index, once again attributing the same weight to each of them. If this were so, it would be a variation on the previous versions of the instrument, in which the indicators were summed to yield the value of the overall index directly, without passing through aggregation in the various dimensions. In this way, greater weight was given to the dimensions represented by a larger number of indicators.[24] However, it is stated in the text that also the aggregation of the dimensions comes about by simple summation. Hence, the declaration concerning the attribution of equal weights is contradicted, because the procedure would still involve, as in the previous version of the instrument, the attribution of greater weight to the dimensions constituted by the largest number of indicators.

Unfortunately, the failure of the authors to provide an example of how the values of the index are calculated is an obstacle against full understanding of the instrument's construction. Whatever the case may be, Table 3.10 gives the complete list of the indicators used and the respective weights.

Table 3.11 instead shows the classification of the 117 countries for which it has been possible to calculate the *Maastricht Globalisation Index* with reference to the years 2000 and 2008. Unfortunately, in regard to the latest version of the index, the classification of the countries has not been published in relation to the various dimensions and indicators of which the index consists.

3.6 Other Globalization Indices

This section describes, more briefly than the previous ones, other indexes proposed for the measurement of globalization. It has been decided to devote less space to

[22] Instead not considered is the surface area of the country, which is included in the correction factor used for the *CSGR Globalisation Index*, on the grounds that statistical comparisons show that it has negligible influence on the normalized values of the indicators (Martens and Raza 2009).

[23] The attribution of equal weights to both the indicators and the dimensions of the overall index is just as stipulative as the techniques used to construct the instruments described in the previous sections.

[24] Moreover, this difference with respect to the previous versions is not expressly mentioned by the authors and, therefore, not explained. The doubt therefore persists as to whether or not changes have been effectively made in this phase of constructing the index.

Table 3.10 Dimensions, indicators and weights in the *Maastricht Globalisation Index* (www.globalisationindex.info)

Dimensions	Indicators	Variables	Weight of the indicators	Weight of the dimensions
Political domain	Embassies	Absolute number of in-country embassies and high commissions	1	1
	Organizations	Absolute number of memberships in international organizations	1	
	Military	Trade in conventional arms as a share of military spending	1	
Economic domain	Trade	Imports + exports of goods and services as a share of GDP	1	1
	FDI	Gross foreign direct stocks as a share of GDP	1	
	Capital	Gross private capital flows as a share of GDP	1	
Social and cultural domain	Migrants	Those who changes their country of usual residence per 100 inhabitants	1	1
	Tourism	International arrivals + departures per 100 inhabitants	1	
Technological domain	Phone	Incoming + outgoing international telephone traffic in minutes per capita	1	1
	Internet	Internet users as a share of population	1	
Ecological domain	Eco footprint	Ecological deficit in global ha	1	1

these instruments because—as said at the beginning of the chapter—they are slightly modified versions of those already presented in the previous sections, or because they are little more than sporadic attempts, which have not been subsequently developed as regards either their refinement or collection of the data necessary to update them.

The section is divided into two subsections. The first considers some indices which, consistently with the interpretation of the concept of globalization developed in the previous chapters, recognize and seek to grasp the multidimensionality of globalization, which constitutes one of its essential features. The second subsection briefly reviews some other instruments which—according to the perspective adopted here—cannot survey the phenomenon thoroughly because they consider only one of its dimensions, usually the economic one. It has been decided to describe them for the sake of completeness, and because they may be useful for partial analysis of the phenomenon, perhaps in combination with other studies with a view to devising more composite instruments better able to grasp the real complexity of globalization processes.

Table 3.11 Classification of countries based on the *Maastricht Globalisation Index* with reference to the years 2000 and 2008 (www.globalisationindex.info)

	2008	2000		2008	2000
1	Ireland	Switzerland	45	Azerbaijan	Chile
2	Belgium	Ireland	46	Syria	Nigeria
3	Switzerland	United Kingdom	47	Lithuania	Moldova
4	Netherlands	Norway	48	Belarus	China
5	France	Belgium	49	Canada	Belarus
6	Austria	Austria	50	Latvia	Canada
7	Kuwait	Netherlands	51	Thailand	Mauritius
8	United Kingdom	Sweden	52	United States	Latvia
9	Germany	Denmark	53	South Africa	Philippines
10	Denmark	Germany	54	Costa Rica	Uruguay
11	Spain	Israel	55	Mexico	Thailand
12	Israel	France	56	Chile	United States
13	Italy	Kuwait	57	Panama	Kazakhstan
14	Sweden	Portugal	58	Macedonia	Macedonia
15	Estonia	Estonia	59	Mauritius	Iran
16	Saudi Arabia	Italy	60	Kazakhstan	Pakistan
17	Czech Republic	Saudi Arabia	61	Dominican Republic	Lesotho
18	Jordan	Spain	62	Moldova	Morocco
19	Korea Republic	Czech Republic	63	Nigeria	Sri Lanka
20	Norway	Finland	64	El Salvador	Lithuania
21	Greece	Greece	65	India	India
22	Portugal	Hungary	66	Pakistan	Turkmenistan
23	Japan	Jordan	67	Venezuela	Azerbaijan
24	Croatia	Korea Republic	68	Philippines	Kyrgystan
25	Malaysia	Malaysia	69	Gambia	Gambia
26	Slovenia	Australia	70	Albania	Costa Rica
27	Hungary	Poland	71	Vietnam	Ghana
28	New Zealand	Croatia	72	Yemen	Panama
29	Bulgaria	Japan	73	Armenia	Armenia
30	Poland	Trinidad & Tobago	74	Ecuador	Yemen
31	Slovak Republic	Slovenia	75	Sri Lanka	Dominican Republic
32	Finland	Ukraine	76	Senegal	Senegal
33	Australia	New Zealand	77	Brazil	Venezuela
34	Ukraine	South Africa	78	Kyrgystan	Kenya
35	Romania	Slovak Republic	79	Ghana	Indonesia
36	Russian Fed.	Russian Fed.	80	Indonesia	Vietnam
37	Egypt	Belarus	81	Georgia	El Salvador
38	Iran	Jamaica	82	Sudan	Togo
39	Trinidad & Tobago	Turkey	83	Kenya	Cote d'Ivoire
40	Turkey	Egypt	84	Lesotho	Guatemala
41	Jamaica	Tunisia	85	Cote d'Ivoire	Bangladesh
42	Tunisia	Romania	86	Colombia	Colombia
43	Morocco	Mexico	87	Argentina	Tanzania
44	China	Syria	88	Togo	Ecuador

(continued)

Table 3.11 (continued)

	2008	2000		2008	2000
89	Cambodia	Honduras	104	Benin	Guinea
90	Guatemala	Cambodia	105	Turkmenistan	Sudan
91	Angola	Georgia	106	Mozambique	Namibia
92	Namibia	Uganda	107	Nicaragua	Haiti
93	Burundi	Nicaragua	108	Rwanda	Mozambique
94	Honduras	Mauritania	109	Uruguay	Madagascar
95	Papua New Guinea	Albania	110	Gabon	Angola
96	Tanzania	Benin	111	Mauritania	Brazil
97	Uganda	Botswana	112	Guinea	Papua New Guinea
98	Mongolia	Mali	113	Haiti	Mongolia
99	Bangladesh	Burundi	114	Bolivia	Gabon
100	Peru	Bolivia	115	Laos	Peru
101	Nepal	Nepal	116	Paraguay	Laos
102	Botswana	Rwanda	117	Madagascar	Paraguay
103	Mali	Argentina			

3.6.1 Multidimensional Indices

With reference, therefore, to the instruments—besides those already presented—which seek to grasp globalization processes from a multidimensional perspective, to be mentioned first is the *GlobalIndex* proposed by Marcel Raab, Michael Ruland, Benno Schönberger, Hans-Peter Blossfeld, Dirk Hofäcker, Sandra Buchholz, and Paul Schmelzer (Raab et al. 2008).

The *GlobalIndex*, according to its authors, draws inspiration from the collections of globalization indicators proposed by the Organisation for Economic Co-operation and Development (OECD 2005a), the *A.T. Kearney/Foreign Policy Globalization Index*, the *CSGR Globalisation Index*, and the *KOF Index of Globalization*.

The aim is to improve these instruments by incorporating into them indicators that take greater account of the more properly sociological aspects of globalization. In fact, in both its overall design and construction, the *GlobalIndex* substantially replicates the *KOF Index of Globalization*, with the addition of indicators relative to the dimensions of socio-technical interconnectedness, on the one hand, and cultural globalization on the other. In particular, the need to implement indicators of the latter dimension—substantially neglected by both the *A.T. Kearney/Foreign Policy Globalization Index* and the *CSGR Globalisation Index*—derives from the contention that the *KOF Index of Globalization* "only grasps the culture of everyday life and therefore to some extent the western logic of expansion, but still neglects the cross-national convergence of norms and values (e.g. human rights)" (Raab et al. 2008; p. 606). The 31 indicators considered are normalized on a scale from 0 to 10 with the usual formula *normalized value = (observed value – minimum value)/(maximum value – minimum value) **

10, where the maximum and minimum values inserted in the formula correspond to those observed for each variable throughout the period of time considered by the study.[25] The normalized values are finally aggregated using weights determined by principal component analysis—the method also used to construct the *CSGR Globalisation Index* and the *KOF Index of Globalization*. The *GlobalIndex* has been calculated for 97 countries over the period 1970–2002.[26] Table 3.12 lists the indicators that make up the *GlobalIndex* and their respective weights. Table 3.13 instead reports—with reference to the most recent year for which it is available, i.e. 2002—the classification of countries according to the level of globalization measured by this instrument.

The *New Globalisation Index* (*NGI*) proposed by Vujakovic (2010) also adopts a multidimensional perspective. It draws on all the instrument described hitherto and introduces some interesting correctives to them. The *NGI* has been constructed on the basis of 21 indicators, set out in Table 3.14, divided among three dimensions defined a priori: economic, political, and social. Some of these indicators—for example "outbound student mobility"—are novel for a globalization index. Nevertheless, the most innovative features of the NGI are of another kind. First, as will be highlighted in the next chapter, a problem with the measures presented here is that they are unable to distinguish clearly between globalization and regionalization.[27] As a solution, Vujakovic proposes that globalization indicators—which usually refer to inflows and outflows to/from the country considered—should be weighted by multiplying their values by the distance separating the countries between which those flows take place. However, owing to problems of data availability, in the *NGI* this strategy is applied only to the variable "trade in goods". The normalization of the values recorded—an operation necessary for aggregation of the indicators—is performed by means of the usual formula *normalized value = (observed value – minimum value)/(maximum value – minimum value)*. Nevertheless, and this is another innovative feature of the instrument, before the formula is applied, the observed values are restricted to 2.5 and 97.5 percentile values, so as to limit the impact of possible outliers. Following the example of the *CSGR Globalisation Index*, also the *NGI* introduces a correction factor—based on a regression—which takes account of certain physical and demographic characteristics of the country considered.

For each variable, this correction factor is applied either to the country's number of inhabitants or to its surface area, depending on which of the two

[25] In cases where the maximum value of an indicator corresponds to a minimum level of globalization, the formula becomes: *normalized value = (maximum value – observed value)/(maximum value – minimum value) * 10*.

[26] Further information on the *GlobalIndex* and its database is available at www.transeurope-project.org/globalindex.

[27] For example, commercial flows between two neighboring countries, perhaps both belonging to the European Union, are probably an indicator of regionalization rather than globalization. As said, we shall return to this topic in the next chapter.

Table 3.12 Dimensions, indicators and weights in the *GlobalIndex*

Dimensions	Sub-dimensions	Indicators	Weight of the indicators (overall) (%)	Weight of the indicators (inside sub-dimensions) (%)	Weight of the Sub-dimensions (inside dimensions) (%)	Weight of the dimensions (%)
Economic globalization	Data on financial flows	Trade (Percent of GDP)	4	24	50	31
		Foreign direct investment (Percent of GDP)	4	29		
		Portfolio investment (Percent of GDP)	2	16		
		Income payments to foreign Nationals	5	31		
	Data on restrictions	Hidden import barriers	4	23	50	
		Mean tariff rate	4	28		
		Taxes on international trade (Percent of current revenue)	4	26		
		Capital account restrictions	4	23		
Socio-technical interconnectedness	Data on personal contact	Outgoing telephone traffic	3	22	50	31
		Transfers (Percent of GDP)	4	29		
		International tourism	5	33		
		Foreign population (Percent of total population)	2	16		
	Data on information flows	Internet hosts (per capita)	2	12	50	
		Internet users (per capita)	2	12		
		Cable television (per 1000 people)	1	7		
		Daily newspapers (per 1000 people)	1	9		

(continued)

Table 3.12 (continued)

Dimensions	Sub-dimensions	Indicators	Weight of the indicators (overall) (%)	Weight of the indicators (inside sub-dimensions) (%)	Weight of the Sub-dimensions (inside dimensions) (%)	Weight of the dimensions (%)
		Radios (per 1000 people)	2	13		
		International trade in books and pamphlets ($ per capita)	3	18		
		International trade in newspapers and periodicals ($ per capita)	3	18		
		Fixed line and mobile phone subscribers (per 1000 people).	2	11		
Cultural globalization	Logic of expansion	Urban population (Percent of total population)	6	37	50	31
		High-technology exports (Percent of manufactured exports)	4	27		
		Total gross domestic expenditure on R&D (GERD) (Percent of GDP)	6	36		
	Values and standards	Freedom House index (civil liberties/political rights)	2	11	50	
		School enrolment, primary (% net)	4	28		
		School enrolment, primary, female (% net)	4	28		

(continued)

Table 3.12 (continued)

Dimensions	Sub-dimensions	Indicators	Weight of the indicators (overall) (%)	Weight of the indicators (inside sub-dimensions) (%)	Weight of the Sub-dimensions (inside dimensions) (%)	Weight of the dimensions (%)
		Public spending on education, total (Percent of GDP)	2	16		
		Number of McDonald's restaurants (per 100,000 people)	3	17		
Political globalization		Embassies in country	3	36		7
		Membership in international organizations	3	36		
		Participation in UN security Council missions	2	29		

Table 3.13 Classification of countries based on the overall *GlobalIndex* and its four sub-indices—Reference year: 2002 (www.transeurope-project.org/globalindex)

	Overall Index	Economic integration	Socio-technical interconnectedness	Cultural globalization	Political globalization
1	Ireland	Ireland	Singapore	Israel	France
2	Singapore	Hong Kong	Switzerland	Sweden	United States
3	Hong Kong	Belgium	Hong Kong	United States	United Kingdom
4	Sweden	Singapore	Sweden	Japan	Russian Federation
5	Belgium	Netherlands	Ireland	Denmark	Sweden
6	Switzerland	Switzerland	Austria	Canada	Canada
7	Denmark	United Kingdom	Finland	Finland	Austria
8	Netherlands	Finland	Netherlands	United Kingdom	Italy
9	Finland	Denmark	Cyprus	New Zealand	Belgium
10	United Kingdom	Malta	Hungary	Australia	China
11	Israel	Estonia	Denmark	Netherlands	Egypt
12	Austria	Austria	Belgium	Malta	Germany
13	United States	Sweden	Norway	France	India
14	Canada	Germany	Malta	Singapore	Argentina
15	Malta	New Zealand	United States	Belgium	Denmark
16	New Zealand	Israel	New Zealand	Norway	Malaysia
17	France	Hungary	United Kingdom	Switzerland	Poland
18	Germany	France	Israel	Korea, Republic	Spain
19	Hungary	Czech Republic	Iceland	Germany	Pakistan
20	Norway	Botswana	Czech Republic	Hungary	Nigeria
21	Australia	Portugal	Canada	Austria	Turkey
22	Estonia	Canada	Estonia	Ireland	Japan
23	Czech Republic	Spain	Australia	Hong Kong	Kenya
24	Japan	Chile	Germany	Malaysia	Norway
25	Italy	Malaysia	Slovenia	Philippines	Ireland
26	Spain	Italy	France	Spain	Ukraine
27	Cyprus	Lithuania	Oman	Italy	Jordan
28	Iceland	Slovak Republic	Kuwait	Portugal	Uruguay
29	Portugal	Iceland	Japan	Jamaica	Bangladesh
30	Malaysia	Latvia	Italy	Brazil	Indonesia
31	Slovenia	Greece	Jordan	Argentina	Greece
32	Greece	Costa Rica	Jamaica	Cyprus	Ghana
33	Jamaica	Norway	Spain	Mexico	Switzerland
34	Korea, Republic	Australia	Latvia	Estonia	Korea, Republic

(continued)

Table 3.13 (continued)

	Overall Index	Economic integration	Socio-technical interconnectedness	Cultural globalization	Political globalization
35	Chile	Trinidad & Tobago	Greece	Iceland	Czech Republic
36	Jordan	United States	Croatia	Czech Republic	Portugal
37	Lithuania	Jamaica	Portugal	Costa Rica	Brazil
38	Latvia	Slovenia	Poland	Slovenia	Finland
39	Poland	El Salvador	Honduras	Russian Federation	Hungary
40	Costa Rica	Jordan	Lithuania	Venezuela	Australia
41	Argentina	Cyprus	Bulgaria	Uruguay	Senegal
42	Slovak Republic	Nicaragua	Slovak Republic	Lithuania	Netherlands
43	Uruguay	Uruguay	Botswana	Chile	Nepal
44	Botswana	South Africa	Malaysia	Poland	Chile
45	Kuwait	Oman	Namibia	Greece	South Africa
46	Croatia	Peru	Korea, Republic	Honduras	Thailand
47	Oman	Zambia	Mauritius	Bolivia	Romania
48	Brazil	Bolivia	Chile	Croatia	Slovak Republic
49	Honduras	Honduras	Costa Rica	Bulgaria	Algeria
50	Mexico	Japan	Ukraine	Peru	New Zealand
51	Trinidad & Tobago	Turkey	Trinidad & Tobago	Tunisia	Bulgaria
52	Bulgaria	Brazil	El Salvador	Indonesia	Philippines
53	Russian Federation	Poland	Uruguay	South Africa	Tunisia
54	South Africa	Paraguay	Albania	Ecuador	Singapore
55	Philippines	Korea, Republic	Dominica	Jordan	Morocco
56	Turkey	Argentina	Romania	Kuwait	Venezuela
57	El Salvador	Guatemala	Malawi	Latvia	Zambia
58	Bolivia	Mexico	Argentina	Trinidad & Tobago	Bolivia
59	Ukraine	Croatia	Fiji	Turkey	Mexico
60	Peru	Kuwait	Mexico	Fiji	Croatia
61	Tunisia	Bulgaria	Ghana	Slovak Republic	Ivory Coast
62	Indonesia	Malawi	Tunisia	Colombia	Peru
63	Venezuela	Thailand	Morocco	Ukraine	Sri Lanka
64	Romania	Ecuador	Turkey	China	Fiji
65	Ecuador	Indonesia	Zimbabwe	Romania	Slovenia
66	Nicaragua	Romania	Russian Federation	Mauritius	Israel
67	Fiji	Dominica	Senegal	Botswana	Cameroon
68	China	Namibia	Ivory Coast	Algeria	Kuwait
69	Mauritius	Ukraine	Thailand	Oman	Namibia

(continued)

Table 3.13 (continued)

	Overall Index	Economic integration	Socio-technical interconnectedness	Cultural globalization	Political globalization
70	Thailand	Philippines	Rwanda	El Salvador	Colombia
71	Dominica	Sri Lanka	South Africa	Nicaragua	Syrian Arab Republic
72	Paraguay	Pakistan	Guatemala	Paraguay	Zimbabwe
73	Colombia	Colombia	Ecuador	Morocco	Estonia
74	Namibia	Mauritius	Nepal	Dominica	El Salvador
75	Malawi	Fiji	Bolivia	Albania	Ecuador
76	Guatemala	Tunisia	Venezuela	Thailand	Albania
77	Morocco	Russian Federation	Nicaragua	Zimbabwe	Paraguay
78	Egypt	China	Mali	Syrian Arab Republic	Mali
79	Albania	Nigeria	Paraguay	Egypt	Nicaragua
80	Algeria	Venezuela	Syrian Arab Republic	Guatemala	Guatemala
81	Syrian Arab. Republic	Ghana	Brazil	India	Costa Rica
82	Ghana	Mali	Colombia	Malawi	Honduras
83	Nigeria	Egypt	Peru	Namibia	Iceland
84	Zimbabwe	Kenya	China	Nigeria	Oman
85	Zambia	Algeria	Sri Lanka	Kenya	Lithuania
86	Kenya	Siryan Arab Republic	Philippines	Sri Lanka	Dominica
87	India	Morocco	Zambia	Cameroon	Malawi
88	Sri Lanka	Albania	Egypt	Ghana	Cyprus
89	Senegal	Senegal	Pakistan	Senegal	Jamaica
90	Cameroon	Madagascar	Cameroon	Bangladesh	Latvia
91	Nepal	Cameroon	Kenya	Zambia	Trinidad & Tobago
92	Bangladesh	Nepal	Algeria	Madagascar	Madagascar
93	Mali	India	Madagascar	Ivory Coast	Botswana
94	Pakistan	Rwanda	Bangladesh	Nepal	Rwanda
95	Ivory Cost	Zimbabwe	Indonesia	Rwanda	Mauritius
96	Madagascar	Ivory Coast	Nigeria	Mali	Malta
97	Rwanda	Bangladesh	India	Pakistan	Hong Kong

features has greatest impact on the value of the variable.[28] Unlike in the case of the *CSGR Globalisation Index*, the correction factor is applied to all the indicators that make up the NGI, and not just to economic ones. The weights applied to each indicator are established by principal component analysis; a method which allows,

[28] Unlike in the case of the *CSGR Globalisation Index*, therefore, these two variables are used alternatively and not simultaneously to determine the correction factor. Moreover, not considered is whether or not the country is landlocked, contrary to what happens in the *CSGR Globalisation Index*.

Table 3.14 Theoretical dimensions and indicators in the *New Globalisation Index* (Vujakovic 2010)

Theoretical dimensions	Indicators	Variables
Economic	Trade in goods (weighted with geographical distances)	Bilateral imports and exports of goods. Percent of GDP. Weighted with geographical distances between countries in km, using city-level data to assess the geographic distribution of population inside each country
	Trade in services	Sum of services exports and imports. Percent of GDP
	FDI Stock	Sum of inward and outward foreign direct investment stock. Percent of GDP
	FDI Flow	Sum of inflows and outflows of foreign direct investment recorded in the balance of payments financial account. Percent of GDP
	Portfolio investment stock	Sum of portfolio investment stock assets and liabilities from the international investment position records. Percent of GDP
	Portfolio investment flow	Sum of inflows and outflows of portfolio investment recorded in the balance of payments. Percent of GDP
	Income payments to foreign nationals	Sum of receipts and payments of employee compensation for non-resident workers, and investment income. Percent of GDP
	Trademark application by non-resident	Share of applications by non-residents to register a trademark with a national or regional trademark office. Data provided by the WIPO
	Patent applications by non-resident	Share of patent applications filed by non-residents with a national patent office. Data provided by the WIPO
Political	Environmental agreements	Absolute number of international environmental agreements ratified
	International organization membership	Absolute number of memberships in international organizations
	Embassies in country	Absolute number of embassies in a country
	Participation in UN peacekeeping missions	Peacekeeping personnel contributions to UN peacekeeping missions
Social	Migration stock	Number of people born in a country other than that in which they live. It includes refugees. Percent of total population
	International tourism	Sum of arrivals and departures of international tourists as a share of population
	Outbound student mobility	The number of students from a given country studying abroad as a percentage of the total tertiary enrolment in that country
	International phone calls	Sum of international incoming and outgoing telephone traffic (in minutes) divided by total population
	International internet bandwidth	Contracted capacity of international connections between countries for transmitting internet traffic. Data in bits per person
	International trade in newspapers	Sum of exports and imports in newspapers and periodicals. Percent of GDP
	International trade in books	Sum of exports and imports in books and pamphlets, code. Percent of GDP
	Transfers	Sum of current transfers recorded in the balance of payments whenever an economy provides or receives goods, services, income, or financial items without a quid pro quo. Percent of GDP

Table 3.15 *Ex post* dimensions, indicators and weights in the *New Globalisation Index* (Vujakovic 2010)

Ex post dimensions	Weight of the dimensions (%)	Indicators	Weight of the indicators (%, inside dimensions)
Finance	37	FDI Stock	19
		FDI Flow	13
		Portfolio investment stock	20
		Portfolio investment flow	14
		Income payments to foreign nationals	19
		International internet bandwidth	15
Trade and politics	32	Trade in goods	11
		Trademark application by non-resident	14
		Patent applications by non-resident	14
		Transfers	10
		Environmental agreements	16
		International organization membership	18
		Embassies in country	16
Social	31	Trade in services	14
		Migration stock	9
		International tourism	15
		International phone calls	15
		International trade in books	11
		International trade in newspapers	14
		Outbound student mobility	12
		Participation in UN peacekeeping missions	11

amongst other things, a posteriori division of the indicators among homogeneous groups which define three globalization sub-indices identified, not on the basis of theoretical considerations—as in the initial division among the economic, political and social dimensions—but instead on the basis of merely statistical regularities. However, this a posteriori division generates significant overlaps with the division made a priori. Table 3.15 reports the indicators that compose the *NGI* grouped in the three new sub-indices, and the respective weights. Table 3.16 shows the classification of countries according to their level of globalization, as measured by the *NGI* with reference to the year 2005.[29]

[29] The *NGI* has been calculated for 70 countries over the period 1995–2005.

Table 3.16 Classification of countries based on the *New Globalisation Index*—Reference year: 2005 (Vujakovic 2010)

1	Ireland	36	Bulgaria
2	Switzerland	37	Tunisia
3	Netherlands	38	Poland
4	Belgium	39	Morocco
5	Malta	40	Slovenia
6	Cyprus	41	Greece
7	Iceland	42	China
8	United Kingdom	43	Argentina
9	Austria	44	Philippines
10	Sweden	45	Bolivia
11	Denmark	46	Russian Federation
12	Canada	47	Latvia
13	Norway	48	El Salvador
14	Estonia	49	Azerbaijan
15	France	50	Venezuela
16	Slovak Republic	51	Peru
17	Germany	52	India
18	Finland	53	Ukraine
19	Panama	54	Mexico
20	Malaysia	55	Moldova
21	New Zealand	56	Colombia
22	Spain	57	Indonesia
23	Australia	58	Korea, Republic
24	Croatia	59	Japan
25	Israel	60	Lithuania
26	Portugal	61	Burundi
27	Italy	62	Kazakhstan
28	Czech Republic	63	Brazil
29	Hungary	64	Romania
30	Chile	65	Kyrgyz Republic
31	Mauritius	66	Bangladesh
32	United States	67	Turkey
33	Honduras	68	Georgia
34	Uruguay	69	Armenia
35	South Africa	70	Belarus

A globalization index based on a multidimensional approach has also been developed by the Economist Intelligence Unit (EIU) in cooperation with Ernst and Young group (2010). Its multidimensional approach, however, is largely centered on the economic aspect of globalization, given that the twenty indicators of the index have been selected from among those "most relevant to business" (Ibid., p. 28). These twenty indicators are divided into five dimensions: movement of goods and services, movement of capital and finance, exchange of technology and ideas, movement of labor, and cultural integration. A distinctive feature of the *Ernst & Young/EIU Globalization Index* is that the weight attributed to each indicator and

Table 3.17 Dimensions, indicators and weights in the *Ernst & Young/EIU Globalization Index* (Ernst and Young 2010)

Dimensions	Weight of dimensions (%)	Indicators
Movement of goods and services	22	Total trade (exports + imports). Percent of GDP Trade openess (EIU analysts' evaluation) Tariff and non-tariff barriers (EIU analysts' evaluation) Ease of trading cross-border (EIU analysts' evaluation) Current-account restrictions (EIU analysts' evaluation)
Movement of capital and finance	21	FDI flows (in and out, percent of GDP) Portfolio capital flows (in and out, percent of GDP) Government policy toward foreign investment (EIU analysts' evaluation) Expropriation risk (EIU analysts' evaluation) Investment protection schemes (EIU analysts' evaluation) Domestic favoritism (EIU analysts' evaluation)
Exchange of technology and ideas	21	R&D trade (in and out, percent of GDP) Broadband subscriptions (per 100 people) Internet subscribers (per 100 people)
Movement of labor	19	Net migration (percent of total population) Current transfers (in and out, percent of GDP) Hiring of foreign nationals
Cultural integration	17	Tourism (in and out, per 1000 population) International communication Openness of national culture to foreign influence

dimension has been determined on the basis of judgements expressed by a panel of 520 "senior company executives doing international business" (Ibid., p. 19). A further peculiarity is that the values of fully 9 of the 20 indicators considered are not based on objective information but on evaluations expressed by the EIU analysts.

Table 3.17 gives the list of the indicators of which the *Ernst & Young/EIU Globalization Index* is comprised, and the weights attributed to its five dimensions. Unfortunately, information is not given about the weights attributed to the individual indicators, nor about the procedure with which these indicators are normalized for the purpose of their aggregation in the general index. Table 3.18 shows, with reference to 2009, the classification of the most globalized countries[30] according to the *Ernst & Young/EIU Globalization Index*.

[30] The Ernst & Young/EIU Globalization Index considers 60 countries, particularly those characterized by the highest GDP values.

Table 3.18 Classification of countries based on the *Ernst & Young/EIU Globalization Index*—Year of reference: 2009 (Ernst and Young 2010)

1	Singapore	21	Spain	41	Ukraine
2	Hong Kong (SAR)	22	New Zealand	42	Sri Lanka
3	Ireland	23	Slovakia	43	Egypt
4	Belgium	24	United States	44	Colombia
5	Sweden	25	South Korea	45	Peru
6	Denmark	26	Portugal	46	India
7	Switzerland	27	Chile	47	Brazil
8	The Netherlands	28	Bulgaria	48	Argentina
9	Israel	29	Poland	49	Turkey
10	Finland	30	Romania	50	South Africa
11	Taiwan	31	Italy	51	Pakistan
12	Austria	32	Greece	52	Kazakhstan
13	Hungary	33	Malaysia	53	Azerbaijan
14	Canada	34	Saudi Arabia	54	Ecuador
15	United Kingdom	35	Philippines	55	Russia
16	Germany	36	Vietnam	56	Indonesia
17	Norway	37	Japan	57	Nigeria
18	Czech Republic	38	Thailand	58	Algeria
19	France	39	Mexico	59	Venezuela
20	Australia	40	China	60	Iran

The topic of measuring globalization in multidimensional terms has also been addressed by Amit K. Bhandari and Almas Heshmati.[31] These authors, however, do not create an original instrument but instead propose a re-elaboration of the *A.T. Kearney/Foreign Policy Magazine Globalization Index*. The latter, in fact, is considered in its original version, but it is recalculated first by attributing the same weights to its four dimensions, and then by assigning weights based on the already-mentioned principal components analysis. This re-elaboration enables the authors to compare three different globalization measures, reaching the conclusion that "the application of different weights does not change the rank of the countries much" (Bhandari and Heshmati 2005, p. 19).

Proposed by the Latin Business Chronicle online information website since 2006, the *LGI—Latin Globalization Index*[32] (www.latinbusinesschronicle.com) annually measures the degree of globalization of 18 countries in Latin America. The structure of the instrument is extremely simple in that it is based on the following six indicators, to each of which the same weight is attributed: exports of goods and services as a percent of GDP; imports of goods and services as a percent of GDP; foreign direct investment as a percent of GDP; tourism receipts as a percent of GDP; remittances as a percent of GDP; and internet penetration. Since

[31] In a paper which draws on a previous work by Heshmati (2003).

[32] In its first editions, this instrument took the name of the *LAGI—Latin America Globalization Index*.

these are magnitudes whose values are all expressed in percentages, a normalization procedure is not necessary: in fact, the overall value of the index can be obtained directly from the average (or sum) of the six indicators.

Finally, mention should also be made of a study by Schlamberger (2004), who, although does not construct a specific instrument, conducts interesting analysis of the ways in which globalization can be measured in multidimensional terms. In particular, Schlamberger proposes the following as the domains which a general globalization index should consider: labor, energy, finance, culture, education, industry, sport, population, health, and defence.[33]

3.6.2 One-dimensional Indices

As said earlier, although multidimensionality is one of the most distinctive features of globalization, for the sake of completeness there follows a survey of instruments that seek to measure the phenomenon by considering only one of its dimensions—usually the economic one. The fact that some measurement instruments focus exclusively on this dimension is not surprising, given that, as pointed out in the first chapter, globalization is widely regarded as a phenomenon which is primarily if not exclusively economic in nature. Added to this is the availability of a huge quantity of statistical information—as testified by the hundreds of indicators included in the OECD's database under the heading "measuring globalisation"[34]—on which researchers can draw to produce overall measures of the various aspects of globalization's economic dimension.

The survey of these one-dimensional instrument begins with the *G-Index* proposed by the WMRC—World Markets Research Centre (Randolph 2001) and calculated, in its one and only issue, for fully 185 countries. It is an instrument whose importance derives from the fact that, because it was one of the first attempts to measure globalization, it is almost always cited or indeed taken as a reference model by large part of the researchers concerned with these matters. The *G-Index* considers only the economic aspects of globalization, so that it is, as its authors declare, "a measure of economic interdependence" (Ibid., p. 6). In detail, the *G-Index* is calculated on the basis of six indicators. Three of these indicators concern what is termed the "old economy", a dimension to which a 70% weight is given in the overall index; while the other three instead concern the

[33] A further study to be mentioned is that by Al-Rodhan et al. (2006), which proposes a survey scheme—consisting of a series of questions to be submitted to experts—intended to obtain, not a measurement of the level of globalization, but rather an accurate description of the impact on a local, regional and global scale of the reactions by countries to certain specific challenges. The description develops along the political, economic, societal, military, and environmental dimensions.

[34] The database can be consulted, upon subscription, at www.oecd.org. See also the books on the topic published by OECD (2005a, b, 2010a, b).

Table 3.19 Dimensions, indicators and weights in the *G-Index* (Randolph 2001)

Dimensions	Indicators	Variables	Weight of the indicators (%, overall)	Weight of the dimensions (%)
Old Economy	International Trade	Exports + Imports, US$m per annum. Percent of GDP	50	70
	Foreign Direct Investment	Foreign direct investment, US$m per annum. Percent of GDP	10	
	Private Capital Flows	Private capital flow US$ per annum; bond, non-bond credits, portfolio investment, etc. Percent of GDP	10	
New Economy	Service Exports	Service exports, US$ per annum. Percent of GDP	20	30
	Internet Hosts	Number of internet hosts, expressed as a ratio to GDP	5	
	International Telephone Traffic	Volume of international telephone traffic undertaken by a country, measured by millions of minutes. Expressed as a ratio to GDP	5	

"new economy", the dimension which accounts for the remaining 30% weight in the overall index. To be noted is that two of these three latter indicators refer to factors which in themselves are not directly economic, but instead relate to the dimension of communications and information exchange. They are, however, indicators to which decidedly minor weights are attributed. The indicators and the variables used, with their respective weights, are set out in Table 3.19.

In this regard, it should be pointed out that the authors do not furnish information about how the weights attributed to the indicators have been determined; although it may be presumed that the process has been based on a reasoned choice by the authors themselves. Likewise, not illustrated in detail is the procedure followed for the normalization and aggregation of the indicators; nor information is given about the reference year of the data. Only for the indicator "private capital flows" it is stated that the data refer to 1998, but it is not specified whether this applies to all the other variables comprised in the index. On inspecting the classification of the globalized countries according to the *G-Index* (see Table 3.20), one notes that the first positions are occupied by a number of countries of small physical size—Liechtenstein, Singapore, the Cayman Islands, Hong Kong, Panama, and Luxembourg—while some of the more economically advanced countries, such as the United States, Japan, the United Kingdom, Germany, France, and Italy, rank in lower positions. The physical and demographic characteristics of countries seem to

Table 3.20 Classification of countries based on the *G-Index* (Randolph 2001). The reference year for the data used is not specified

1	Liechtenstein	29	Germany	57	Suriname	85	Lebanon
2	Singapore	30	Dominica	58	Belarus	86	Equatorial Guinea
3	Belgio	31	Taiwan	59	Gabon	87	Poland
4	Ireland	32	Qatar	60	Bahamas	88	Japan
5	UAE	33	Malta	61	Maldives	89	Tunisia
6	Switzerland	34	Jamaica	62	Fiji	90	Guyana
7	Netherlands	35	Lesotho	63	Oman	91	Azerbaijan
8	Cayman Is,	36	Portugal	64	Swaziland	92	Angola
9	Sweden	37	France	65	Dominican Republic	93	Yemen
10	Hong Kong (SAR)	38	Martinique	66	Latvia	94	Honduras
11	Panama	39	New Zealand	67	Australia	95	Papua New Guinea
12	Luxembourg	40	Slovenia	68	Botswana	96	Armenia
13	Denmark	41	Bermuda	69	Lithuania	97	Bolivia
14	Estonia	42	Croatia	70	Barbados	98	Ecuador
15	Malaysia	43	Kuwait	71	US	99	Bulgaria
16	Puerto Rico	44	Spain	72	Djibouti	100	Kazakhstan
17	Iceland	45	Czech Republic	73	Ivory Coast	101	Moldova
18	Finland	46	Hungary	74	Macedonia	102	Philippines
19	Austria	47	Slovakia	75	Mauritius	103	Venezuela
20	Norway	48	Andorra	76	Mexico	104	Colombia
21	Trinidad & Tobago	49	Belize	77	Paraguay	105	Lybia
22	Canada	50	South Korea	78	Cuba	106	Iraq
23	Bahrain	51	Grenada	79	Cyprus	107	Gambia
24	Brunei	52	Macau	80	Namibia	108	Uruguay
25	Antigua & Barbuda	53	Saudi Arabia	81	Greece	109	El Salvador
26	Costa Rica	54	Israel	82	Chile	110	Romania
27	UK	55	Italy	83	Thailand	111	Mongolia
28	Seychelles	56	Jordan	84	Zambia	112	Ukraina

(continued)

Table 3.20 (continued)

113	Nicaragua	132	Samoa	151	Albania	170	DR Congo
114	French Guiana	133	Bhutan	152	Togo	171	Somalia
115	Morocco	134	Cambodia	153	Sierra Leone	172	Rwanda
116	Turkey	135	Malawi	154	Mali	173	Burkina Faso
117	Guatemala	136	Nigeria	155	Georgia	174	Bangladesh
118	Kyrgyzstan	137	Syria	156	Nepal	175	Ethiopia
119	Argentina	138	South Africa	157	Palestinian NA	176	Chad
120	Turkmenistan	139	Tajikistan	158	Uganda	177	India
121	Sri Lanka	140	Uzbekistan	159	Eritrea	178	Iran
122	Senegal	141	Peru	160	Sao Tome	179	Myanmar
123	Yugoslavia	142	Mauritiana	161	China	180	Niger
124	Mozambique	143	Russia	162	Guinea	181	Liberia
125	Zimbabwe	144	Indonesia	163	Ghana	182	North Korea
126	Benin	145	Lao PD	164	Sudan	183	Somaliland
127	Tanzania	146	Guinea-Bissau	165	Haiti	184	Burundi
128	Egypt	147	Vietnam	166	Cameroon	185	Afghanistan
129	Bosnia-Herzegovina	148	Algeria	167	Pakistan		
130	Comoros	149	Madagascar	168	Central African Republic		
131	Kenya	150	Brazil	169	Congo Brazzaville		

be the principal cause of this situation: a very small country must necessarily interrelate with the outside world. Precisely for this reason, as already said, the authors of some of the instruments discussed above have decided to include in them corrective factors to do with physical and demographic features; a decision taken also on the basis of experience with the *G-Index*.

Another instrument to be considered has been proposed by Andersen and Herbertsson (2003) and whose purpose was to measure the degree of integration of goods and capital markets—to which the globalization process was reduced. To this end, the following nine indicators were considered over the period 1979–2000: (1) freedom to use alternative currencies; (2) freedom of exchange in capital and financial markets; (3) freedom to trade with foreigners; (4) private gross capital flows as a ratio of GDP; (5) export + import of goods and services as a ratio of GDP; (6) factor income received as a ratio of GDP; (7) factor income paid as a ratio of GNP; (8) changes in terms of trade; (9) inflow of direct investment as a ratio of GDP. Because such data had to be uninterruptedly available throughout the period considered, it was possible to calculate this index for only 23 of the countries belonging to the OECD, with the significant exclusion of, amongst others, Germany.[35] On the basis of the variables listed above, the globalization index was determined by means of factor analysis. In particular, the principal axis factoring method was used to extract from the database a single factor representing the globalization index sought. This index was calculated, for each country, in relation to both the entire period considered and each single year in it. With reference to the most recent year available, Table 3.21 shows the classification of globalized countries produced by the instrument. To be noted is that, in the same study, Andersen and Herbertsson also used a second factorial technique, namely the varimax rotation method. On employing this technique, they extracted two factors interpreted as measures of two different dimensions—but still economic in nature—of globalization: a country's effective participation in international markets as regards the first factor; and the possibility for a country to participate in those same international markets (understood as the absence of barriers) as regards the second factor. In this case, however, determination of the two partial indices was possible only in relation to the entire period considered, not to single years.

Also Agénor (2004) has concentrated on the economic aspects of globalization, considering in particular the dimensions of trade and financial integration, and identifying a specific indicator for each of them: the *average tariff rate* (total tariff revenue divided by the value of imports)[36] for the former; and the *ratio of foreign direct investment flows to GDP* for the latter. After these two indicators are standardized,[37] they are aggregated in an overall globalization index by means of

[35] Germany's exclusion is due to the fact that data prior to the country's unification were not comparable with those subsequent to it.

[36] The value of this indicator is subtracted from 1 so as to obtain a variable whose value increases with the level of globalization.

[37] On conclusion of this process, the variables treated have an arithmetic mean equal to 0 and a standard deviation equal to 1.

Table 3.21 Classification of countries based on the globalization index proposed by Andersen and Herbertsson (2003). Reference year: 2000

1	Ireland
2	Belgium
3	Switzerland
4	Netherlands
5	United Kingdom
6	Sweden
7	Finland
8	Denmark
9	Austria
10	Portugal
11	Spain
12	France
13	Norway
14	Italy
15	Iceland
16	New Zealand
17	Greece
18	United States
19	Australia
20	Turkey
21	Mexico
22	Japan
23	Canada

principal component analysis. However, determination of this index is not the main purpose of Agénor's study; rather, it is only instrumental in the verification of whether and to what extent globalization may hurt the poor. For this reason, Agénor does not specify the value of the globalization index disaggregated country by country but merely states that it has been calculated for just sixteen countries.

An even more sectoral and specific study is that by Sergei Maslov, who proposes an instrument designed to measure financial globalization alone; an instrument, referred to 37 countries, "based on the analysis of cross-correlations between stock market indices in different countries and regions of the world" (Maslov 2001, p. 398).

Finally with reference to instruments that consider only the economic dimension of globalization, mention can be made of the index proposed by Riezman et al. (2005). This is an instrument which, because it is based on comparison between a theoretical level of full integration at global level of national economic systems and the level of integration actually achieved by the latter, measures the degree of economic globalization of only eight countries: Australia, Germany, Italy, Japan, Korea, Mexico, the United Kingdom, and the United States.

Whilst, as said, instruments which measure globalization by examining only one dimension usually focus on the economic one, a significant exception is the *Cultural Globalization Index* proposed by Kluver and Fu (2008). This instrument

Table 3.22 Classification of countries based on the *Cultural Globalization Index* proposed by Kluver and Fu (2008), in its complete and partial versions. Reference year: 1997

CGI (partial—only print media goods)								CGI (overall—print media goods and movies)	
1	Singapore	24	Trinidad & Tobago	47	Tunisia	1	Belgium
2	Switzerland	25	Mauritius	48	Paraguay	2	Cyprus
3	Belgium	26	Israel	49	Brazil	3	Iceland
4	Ireland	27	Chile	50	Nicaragua	4	Denmark
5	Canada	28	Greece	51	Bolivia	5	Norway
6	United Kingdom	29	Panama	52	Zimbabwe	6	Finland
7	Denmark	30	Hungary	53	Peru	7	Sweden
8	Finland	31	Poland	54	Romania	8	Netherlands
9	Cyprus	32	Malaysia	55	Albania	9	Australia
10	Norway	33	Argentina	56	Morocco	10	Czech Republic
11	Sweden	34	Japan	57	Thailand	11	France
12	Netherlands	35	Macau	58	Honduras	12	Latvia
13	Greenland	36	Russian Federation	59	Turkey	13	Germany
14	Iceland	37	Mexico	60	Philippines	14	Hungary
15	Barbados	38	Colombia	61	Jamaica	15	Oman
16	St Kitts & Nevis	39	Lithuania	62	Guatemala	16	Poland
17	France	40	Latvia	63	Algeria	17	Lithuania
18	Australia	41	Croatia	64	Egypt	18	Argentina
19	Germany	42	New Zealand	65	Madagascar	19	Ecuador
20	Portugal	43	Venezuela	66	Indonesia	20	Russian Federation
21	Italy	44	Ecuador	67	China	21	Croatia
22	United States	45	Oman	68	Uruguay	22	Morocco
23	Czech Republic	46	El Salvador	69	Pakistan	23	Peru
						24	Romania
						25	Zimbabwe
						26	Indonesia
						27	Algeria
						28	Pakistan

is particularly interesting because the cultural aspects of globalization are probably those which, with reference to the multidimensional indices described above, are the most difficult to measure. The idea behind this instrument is that cultural globalization can be effectively measured by referring to the international flows of what the authors call "popular media", in that these are mainly responsible for the diffusion at planetary level of ideas and values. In particular, Kluver and Fu maintain that an optimal index of cultural globalization should refer to four of these popular media: cinematic films, television programming, print publications, and foreign satellite channels. However, a lack of data on these objects obliges the authors to fall back on an instrument which consists of only two indicators: (a) the value of the imports and exports of print media goods (books, brochures, newspapers, and periodicals) divided by the number of inhabitants of the country considered; (b) the number of imported films, this too divided by the number of

inhabitants.[38] But because the number of countries for which data on these indicators are available is very different in the two cases (69 for the print media goods and only 28 for films), Kluver and Fu decide to create two different indices of cultural globalization. The first uses only the indicator relative to print media goods; the second combines this indicator with that relative to films. In this regard, however, it should be pointed out that the method used to aggregate these indicators is rather curious. In fact, the method consists in calculation of a score given by the average of the positions recorded by the country considered in the classifications of the two indicators constituting the index.[39] Table 3.22 shows the classification of countries according to the *Cultural Globalization Index* in its two versions proposed by Kluver and Fu.

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[38] Hence, whilst in the case of print media goods both imports and exports are considered, in that of films only imports are considered. The authors justify this choice by stating that it is the exposure of people to foreign ideas and values that constitutes the essence of cultural globalization. And the level of such exposure depends on the cultural products that a country imports, not on those that it exports. However, if this principle holds, one fails to understood why also exports are considered in the case of print media goods.

[39] For example, Iceland occupies first place in the classification of countries with respect to the indicator given by the number of films imported per capita, and fourteenth place with respect to the indicator relative to prints media goods. The score that determines Iceland's position with respect to the overall Cultural Globalization Index is therefore given by $(1 + 14)/2 = 7.5$. In this case, the lower the score, the higher the level of cultural globalization.

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Chapter 4
Globalization Indices Based on States: A Comparison and Some Criticisms

4.1 Introduction

The aim of this chapter is to comment upon and to compare the globalization indices presented in previous sections. It must be recalled that these instruments use states as their units of analysis. Indices that employ different units of analysis will be considered in the next chapter. Instead, in what follows the four main instruments presented thus far (the A.T. Kearney/Foreign Policy Globalization Index, the CSGR Globalisation Index, the KOF Index of Globalization, and the Maastricht Globalisation Index) will be compared in terms of their structure—with particular reference to the variables used—and the results obtained. Subsequently, some technical criticisms will be made of these globalization indices,[1] and an exemplary case will be cited of how many of the problems connected with measuring a social complex phenomenon can be overcome. The chapter concludes with discussion of the difficulty, but also the necessity, when seeking to measure globalization, of distinguishing the indicators of this phenomenon from those of others somehow connected with it but nevertheless distinct—regionalization in particular.

4.2 The Components of Globalization Indices: (Many) Similarities and (Few) Differences

Given this background, we may begin the comparative analysis of the structure of the four globalization indices presented in the previous chapter by focusing in particular on their dimensions and on the main components on which their calculation is based. It can be immediately stated in this regard that there are

[1] Further criticisms, not technical but substantial in nature, will be made in the concluding chapter.

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Table 4.1 Dimensions of the main globalization indices: a comparison

	ATK	CSGR	KOF	MGI
Economic dimension	Yes	Yes	Yes	Yes
Political dimension	Yes	Yes	Yes	Yes
Social dimension	Yes (called "personal contact")	Yes	Yes	Yes
Technological dimension	Yes	Included in the social dimension	Included in the social dimension	Yes
Ecological dimension	No	No	No	Yes

significant similarities, or indeed overlaps, among these four instruments. They are similarities which testify—notwithstanding the different and sometimes conflicting interpretations of the concept and processes of globalization enumerated in Chap. 1—that scholars concerned with the phenomenon substantially agree as to what constitutes its essential elements and dynamics. Moreover, the fact this only considered at present are indices which use the state as their unit of analysis indicates that their authors share an underlying set of assumptions; as also does the fact that they consider globalization to be a multi-dimensional phenomenon—a condition imposed in these pages when selecting the instruments regarded as most significant. Another of these shared assumptions is that globalization is also a socially significant phenomenon, which should be studied and measured with tools and techniques devised for the purpose. But probably the key factor in explaining the similarities among the different globalization indices analyzed here—and which makes such similarities much less surprising—is that all of them draw more or less directly on the A.T. Kearney/Foreign Policy Globalization Index, and they sometimes expressly state that they are attempts to improve it without distorting it.

The first comparison to be made, therefore, concerns the main dimensions comprised in the four indices. These are set out in Table 4.1.[2] It is immediately evident that the overlap among the instruments in this regard is well-nigh perfect. All four indexes, in fact, consider the economic and political dimensions of globalization. Likewise, all four of them consider both the social dimension—though the A.T. Kearney/Foreign Policy Globalization Index gives it a different name—and the technological dimension of the phenomenon, although the CSGR Globalisation Index and the KOF Index of Globalization consider these two dimensions jointly. The only exception is the Maastricht Globalisation Index, which, unlike the other three instruments, also includes an ecological dimension.

[2] To facilitate the reading of the tables in this chapter, the names of the four globalization indices considered have been abbreviated as follows: ATK (A.T. Kearney/Foreign Policy Globalization Index); CSGR (CSGR Globalisation Index); KOF (KOF Index of Globalization); MGI (Maastricht Globalisation Index).

Because, as was said in the previous chapter, the cultural dimension of globalization is particularly difficult to measure,[3] none of the above four indices includes it among its fundamental dimensions. Nevertheless, all the instruments comprise indicators and variables that can be entirely or partly related to the cultural aspects of globalization, and which are included in either the social or the technological dimension.

Let us now compare the four globalization indices in somewhat more detail by considering the indicators included in the dimensions just discussed. These indicators are set out in Table 4.2. It has been decided to restrict the analysis to the level of the indicators, and not to descend to the even more detailed one of the specific variables, because the same indicators can be defined and operationalized in different ways. Besides the fact that such differences are in some cases minimal, considering them would excessively complicate the comparison, without a significant advantage in analytical terms. Moreover, even if we remain at the level of the indicators, we gain a sufficiently clear picture of the aspects deemed significant by the authors when constructing the globalization indices considered.

Starting with the economic dimension, we observe that the indicators of all four indices include both *trade* (understood as the sum of imports and exports of goods and services as a proportion of GDP) and *foreign direct investment*; quantities that Sutcliffe and Glyn (1999) identified as the most immediate indicators of globalization. To these are added—except in the case of the A.T. Kearney/Foreign Policy Globalization Index, which considers the economic dimension to be already adequately covered with *trade* and *foreign direct investment*—other indicators intended to quantify, albeit in different ways, the further financial flows that traverse the planet. Moreover, in the case of the KOF Index of Globalization, there is a further battery of indicators intended to quantify the constraints imposed by states on financial and commercial flows.

Moving to the political dimension, the only indicator included in all four indices is *membership in international organizations*. Three indices out of four also use *embassies in country* (all except the A.T. Kearney/Foreign Policy Globalization Index) and participation in *UN missions* (all except the Maastricht Globalisation Index). Two globalization indices include *international treaties* among their indicators, while only one index uses *governmental transfers*, and another *trade in conventional arms*. These last two indicators are at least partly comprised in some of those used to take account of the economic dimension of globalization.

Comparison as regards the social and technological dimensions is slightly more complicated, given the greater number of indicators used overall, as well as their more marked heterogeneity. In this case, the indicators included in all four indices are *telephone traffic*, *international tourism*, and the number of *internet users*. A further five indicators appear in two indices each: *remittances* (in a third index,

[3] To be mentioned in this regard is the Cultural Globalization Index proposed by Kluver and Fu (2008) and discussed in the previous chapter.

Table 4.2 Indicators to which the main globalization indices refer: a comparison

Dimension	Indicator	ATK	CSGR	KOF	MGI
Economic	Trade	Yes	Yes	Yes	Yes
	Foreign direct investment	Yes	Yes	Yes, but with a distinction between FDI flows and FDI stocks	Yes
	Portfolio investment	No	Yes	Yes	No
	Income payments to foreign nationals	No[a]	Yes, but with the addition of employee compensation paid to resident workers working abroad	Yes	No
	Capital flows	No	No	No	Yes
	Hidden Import Barriers	No	No	Yes	No
	Mean Tariff Trade	No	No	Yes	No
	Taxes on International Trade	No	No	Yes	No
	Capital Account Restrictions	No	No	Yes	No
Political	Memberships in international organizations	Yes	Yes	Yes	Yes
	Embassies in country	No	Yes	Yes	Yes
	UN missions	Yes	Yes	Yes	No
	International treaties	Yes, but only multilateral	No	Yes	No
	Governmental transfers	Yes	No	No	No
	Trade in conventional arms	No	No	No	Yes

(continued)

Table 4.2 (continued)

Dimension	Indicator	ATK	CSGR	KOF	MGI
Social and technological	Telephone traffic	Yes	Yes	Yes	Yes
	International tourism	Yes	Yes	Yes	Yes
	Internet users	Yes	Yes	Yes	Yes
	Remittances	Yes	Yes	No[b]	No
	International letters	No	Yes	Yes	No
	Foreign population	No	Yes	Yes	No
	Migration flows	No	Yes, inflows only	No	Yes
	Trade in books and newspaper	No	Yes	Yes, but distinguishing between books and newspapers	No
	Internet hosts	Yes	No	No	No
	Secure servers	Yes	No	No	No
	Films imported and exported	No	Yes	No	No
	Households with a television set	No	No	Yes	No
	Transfers (without a quid pro quo)	No	No	Yes	No
	Number of McDonald's restaurants	No	No	Yes	No
	Number of IKEA stores	No	No	Yes	No
Ecological	Eco footprint	No	No	No	Yes

[a] Partly included in the indicator "Remittances and personal transfers"
[b] Partly included in the indicator "Transfers"

however, these are partially included in the indicator *transfers*, which pertains to the economic dimension), *international letters*, the proportion of the *foreign population* in a country, *migration flows*, and the trade in *books and newspapers*. There are then a further seven indicators, each used by only one globalization index: the number of *internet hosts* and of *secure servers*, *films imported and exported*, *households with a television set*, *transfers (without a quid pro quo)*, the number of *McDonald's restaurants*, and the number of *IKEA stores*. Overall, used in this dimension are indicators which refer mainly to the diffusion of communication technologies, mediated long distance personal relations, global flows of ideas and people, the dissemination of particular cultural models by products.

Finally, as already pointed out, the Maastricht Globalisation Index is the only instrument that includes a further dimension: the ecological one, which is measured in terms of the *eco footprint*, defined as ecological deficit in global hectares. This indicator has no counterpart in the other three globalization indices considered.

Overall, therefore, six indicators are considered by all four of the instruments analyzed here: *trade* and *foreign direct investment* as regards the economic dimension; *membership of international organizations* as regards the political dimension; *telephone traffic*, *international tourism*, and *internet users* as regards the social and technological dimensions.

4.3 Results Compared

This section compares the results, in summary form, obtained by the four globalization indices analyzed in this chapter. The aim is twofold. First, the intention is to assess the extent to which the different ways in which the instruments have been constructed affect the results obtained. Second, the intention is to analyze the overall image of globalization yielded by the combined use of the four instruments considered. The purpose is to answer the following questions: what are the countries that can be recognized as unquestionably characterized by a high (or low) level of globalization? What instead are the countries whose position is controversial?

Pursuit of these aims, however, encounters two difficulties of an operational kind. The first one consists in the different degrees of territorial coverage of the four indices considered. With reference to the most recent data offered by each instrument, in fact, the A.T. Kearney/Foreign Policy Globalization Index has been calculated for 72 countries, the CSGR Globalisation Index for 103, the Maastricht Globalisation Index for 117, and the KOF Index of Globalization for 181.[4]

[4] The reference is to the number of countries for which it has been possible to determine the value of the overall index. In all the cases considered except for the A.T. Kearney/Foreign Policy Globalization Index, this number differs from that of the countries for which it has been possible to determine the partial indexes into which the instrument articulated.

Moreover, these different degrees of coverage do not assume the form of concentric circles, given that, for example, some of the countries—Czech Republic, Ghana, Ukraine, Saudi Arabia, Turkey, and Iran, among others—considered by the A.T. Kearney/Foreign Policy Globalization Index are not considered by the CSGR Globalisation Index, which is also calculated for a much larger number of countries. I have accordingly decided to conduct the comparison by considering only the countries—55 in total—for which it has been possible to determine all four indexes. Consequently, while the previous chapter reported, for each instrument, the general classification of countries according to their estimated levels of globalization, in what follows those classifications will be recalculated using only the 55 countries just mentioned.

The second difficulty consists in the different time-spans covered by the instruments, with particular reference to the most recent year for which the index has been calculated: this in fact varies from 2004 for the CSGR Globalisation Index to 2008 for the Maastricht Globalisation Index. Since the value of all four indices calculated according to their most recent formulation as described in the previous chapter is not available for any one year, I have decided to use the most recent reference year for each of them, even if, as said, these differ from case to case. Although this decision will give rise to a certain distortion in the conclusions, it nevertheless seems acceptable in that the positions of countries are relatively stable over time in the various indices considered.

Comparison among the results obtained by the various indices begins with reporting, for each of them, the classification of the 55 countries considered by all four instruments on the basis of their levels of globalization. The classification is shown in Table 4.3. Beginning from this synoptic picture, and consistently with the first of the aims stated at the beginning of this section, an attempt will be made to understand the extent to which the differences in construction of the four indices considered affect the image of globalization yielded by those instruments. As should be clear from the discussion thus far, these differences revolve essentially around two elements: the choice of the variables and the indicators that make up the overall indices; and the techniques used to aggregate those indicators and variables and, in particular, the method by which they are weighted.

As regards the choice of indicators and variables, the previous section pointed out that the four instruments have close similarities from this point of view. One may therefore imagine that the differences in the results produced by this factor are not particularly marked. As regards the procedure used to aggregate the indicators and variables, and in particular the system of weights adopted, various authors maintain that this does not have a particularly significant impact on the results obtained (Bhandari and Heshmati 2005, p. 19; De Lombaedre and Iapadre 2008, pp. 165–167; Martens and Raza 2008, p. 30).

One may consequently expect that the classifications of countries according to their levels of globalization obtained by the four indices will exhibit significant congruence. This expectation seems to be confirmed by the matrix of correlation of the four classifications reported in Table 4.4. The value of the coefficient of correlation among the indices is in fact always very high, ranging from a minimum of

Table 4.3 Classification of countries based on the degree of globalization estimated by the main indices. Only considered are the 55 countries for which all four indices have been calculated

Rank	ATK	CSGR	KOF	MGI	Rank	ATK	CSGR	KOF	MGI
1	Netherlands	Belgium	Belgium	Ireland	29	Romania	Hungary	Israel	Egypt
2	Switzerland	Canada	Austria	Belgium	30	Philippines	Romania	Romania	Hungary
3	Ireland	United Kingdom	Netherlands	Switzerland	31	Costa Rica	India	Russia	Tunisia
4	Denmark	United States	Switzerland	Netherlands	32	Morocco	Estonia	Japan	Morocco
5	United States	Austria	Sweden	France	33	Poland	Argentina	Panama	China
6	Canada	Sweden	Denmark	Austria	34	Chile	Chile	Costa Rica	Canada
7	Jordan	Switzerland	Canada	United Kingdom	35	Greece	Pakistan	South Africa	Thailand
8	Estonia	France	Portugal	Germany	36	Tunisia	Greece	South Korea	United States
9	Sweden	Denmark	Finland	Denmark	37	Mexico	Kenya	Thailand	South Africa
10	United Kingdom	Ireland	Hungary	Spain	38	Colombia	Bulgaria	Peru	Costa Rica
11	Australia	Germany	Ireland	Israel	39	Senegal	Nigeria	China	Mexico
12	Austria	Italy	France	Italy	40	Thailand	Brazil	Tunisia	Chile
13	Belgium	Malaysia	Spain	Sweden	41	Argentina	South Africa	Egypt	Panama
14	New Zealand	Finland	Germany	Estonia	42	Egypt	Thailand	Argentina	Nigeria
15	Norway	Australia	Australia	Jordan	43	Sri Lanka	Indonesia	Mexico	India
16	Finland	Netherlands	Norway	South Korea	44	Nigeria	Morocco	Morocco	Pakistan
17	Israel	New Zealand	Italy	Norway	45	Peru	Bangladesh	Brazil	Venezuela
18	Germany	Russia	Poland	Greece	46	South Africa	Philippines	Colombia	Philippines
19	Malaysia	South Korea	United Kingdom	Portugal	47	Kenya	Tunisia	Philippines	Sri Lanka
20	Hungary	Japan	New Zealand	Japan	48	Russia	Senegal	Indonesia	Senegal
21	France	Spain	Estonia	Malaysia	49	Pakistan	Peru	Nigeria	Brazil
22	Bulgaria	China	United States	New Zealand	50	Bangladesh	Mexico	Venezuela	Indonesia
23	Japan	Jordan	Greece	Bulgaria	51	China	Costa Rica	Pakistan	Kenya
24	Spain	Norway	Bulgaria	Poland	52	Brazil	Venezuela	Sri Lanka	Colombia
25	Panama	Poland	Chile	Finland	53	Venezuela	Sri Lanka	India	Argentina
26	Portugal	Egypt	Malaysia	Australia	54	Indonesia	Panama	Senegal	Bangladesh
27	Italy	Israel	Jordan	Romania	55	India	Colombia	Kenya	Peru
28	South Korea	Portugal	Belgium	Russia					

Year of reference ATK 2005, CSGR 2004, KOF2007, MGI 2008

Table 4.4 Spearman correlations among the four main globalization indices

ATK	CSGR	KOF	MGI	
1.000	0.700	0.835	0.769	ATK
	1.000	0.780	0.764	CSGR
		1.000	0.827	KOF
			1.000	MGI

0.700 (correlation between the A.T. Kearney/Foreign Policy Globalization Index and the CSGR Globalisation Index) and a maximum of 0.835 (correlation between the A.T. Kearney/Foreign Policy Globalization Index and the KOF Index of Globalization).

However, a more disaggregated reading of the data yields a somewhat less homogeneous picture of the results obtained using the four indices. In this regard, Table 4.5 shows for each country the position obtained in the four classifications given above, as well as the averages of these positions—on the basis of which, moreover, the countries are ordered.

Inspection of this table shows that, while some countries are ranked by the various indices in substantially similar manner—this is the case, for example, of Switzerland, Denmark, Sweden, New Zealand, Romania, Thailand, and Venezuela—there are others which the various instruments considered allocate to very different positions. This is the (striking) case of the United States, a country considered highly globalized by the A.T. Kearney/Foreign Policy Globalization Index and by the CSGR Globalisation Index (fifth and fourth position, respectively) but which occupies decidedly lower positions in the classifications drawn up on the bases of the KOF Index of Globalization and the Maastricht Globalisation Index (twenty-second and thirty-sixth position, respectively). Other countries whose positions are not determined unequivocally are, for example, Canada, China, Russia, and Panama.

The degree of consistency among the estimates made by the four indices considered can be analyzed better by inspecting Table 4.6. This shows for each country—besides, once again, the position determined by each of the four indices—also the difference between the worst and the best of these positions, as well as the standard deviation of the four estimates produced. The data are arranged in decreasing degree of consistency among the estimates (the smaller the standard deviation, the greater the consistency of the estimates). It is interesting to note that, among the six countries for which the estimates of the degree of globalization are most inconsistent, fully five of them are characterized by very extensive surface areas and, except in the case of Canada, by particularly large populations. For these reasons as well, they are highly complex countries and therefore more difficult to include within a single value, whatever the dimension on which the analysis is conducted. It is nonetheless surprising to find that the country whose position is most controversial is the United States, although it is often considered to be the epitome of globalization.

The analysis conducted thus far shows that estimates of the globalization levels of individual countries may vary even markedly according to the measurement

Table 4.5 Positions in the classification of the most globalized countries; average values and values for each index

	Average position	ATK	CSGR	KOF	MGI		Average position	ATK	CSGR	KOF	MGI
Switzerland	4	2	7	4	3	Greece	28	35	36	23	18
Belgium	4.25	13	1	1	2	Romania	28.75	29	30	29	27
Netherlands	6	1	16	3	4	Russia	31	48	18	30	28
Ireland	6.25	3	10	11	1	Chile	33.25	34	34	25	40
Austria	6.25	12	5	2	6	Egypt	34.25	42	26	40	29
Denmark	7	4	9	6	9	China	36	51	22	38	33
Sweden	8.25	9	6	5	13	Morocco	37.75	32	44	43	32
United Kingdom	9.75	10	3	19	7	Panama	38	25	54	32	41
France	11.5	21	8	12	5	Tunisia	38.25	36	47	39	31
Canada	12.25	6	2	7	34	Thailand	38.25	40	42	36	35
Germany	12.75	18	11	14	8	Costa Rica	38.25	31	51	33	38
Finland	16	16	14	9	25	South Africa	39.5	46	41	34	37
Australia	16.75	11	15	15	26	Mexico	42	37	50	42	39
United States	16.75	5	4	22	36	Philippines	42	30	46	46	46
Spain	17	24	21	13	10	Argentina	42	41	33	41	53
Italy	17	27	12	17	12	Nigeria	43.25	44	39	48	42
Jordan	18	7	23	27	15	Pakistan	44.5	49	35	50	44
Norway	18	15	24	16	17	India	45.25	55	31	52	43
New Zealand	18.25	14	17	20	22	Brazil	46.25	52	40	44	49
Estonia	18.75	8	32	21	14	Peru	46.5	45	49	37	55
Malaysia	19.75	19	13	26	21	Senegal	47	39	48	53	48
Portugal	20.25	26	28	8	19	Kenya	47.25	47	37	54	51
Israel	20.75	17	27	28	11	Colombia	47.5	38	55	45	52
Hungary	22.25	20	29	10	30	Sri Lanka	48.5	43	53	51	47
Japan	23.5	23	20	31	20	Indonesia	48.5	54	43	47	50
South Korea	24.5	28	19	35	16	Venezuela	49.75	53	52	49	45
Poland	25	33	25	18	24	Bangladesh	51	50	45	55	54
Bulgaria	26.75	22	38	24	23						

Table 4.6 Degree of consistency among the estimates produced by the four main globalization indices

	Position				Consistency among the estimates			Position				Consistency among the estimates	
	ATK	CSGR	KOF	MGI	Standard deviation	Max–min position		ATK	CSGR	KOF	MGI	Standard deviation	Max–min position
Romania	29	30	29	27	1.09	3	Tunisia	36	47	39	31	5.80	16
Switzerland	2	7	4	3	1.87	5	Netherlands	1	16	3	4	5.87	15
Denmark	4	9	6	9	2.12	5	United Kingdom	10	3	19	7	5.89	16
Thailand	40	42	36	35	2.86	7	Pakistan	49	35	50	44	5.94	15
New Zealand	14	17	20	22	3.03	8	France	21	8	12	5	6.02	16
Sweden	9	6	5	13	3.11	8	Italy	27	12	17	12	6.12	15
Venezuela	53	52	49	45	3.11	8	Kenya	47	37	54	51	6.42	17
Nigeria	44	39	48	42	3.27	9	Bulgaria	22	38	24	23	6.53	16
Norway	15	24	16	17	3.54	9	Peru	45	49	37	55	6.54	18
Austria	12	5	2	6	3.63	10	Colombia	38	55	45	52	6.58	17
Germany	18	11	14	8	3.70	10	Egypt	42	26	40	29	6.87	16
Sri Lanka	43	53	51	47	3.84	10	Philippines	30	46	46	46	6.93	16
Bangladesh	50	45	55	54	3.94	10	Israel	17	27	28	11	7.08	17
Indonesia	54	43	47	50	4.03	11	Argentina	41	33	41	53	7.14	20
Ireland	3	10	11	1	4.32	10	South Korea	28	19	35	16	7.50	19
Japan	23	20	31	20	4.50	11	Jordan	7	23	27	15	7.68	20
South Africa	46	41	34	37	4.50	12	Greece	35	36	23	18	7.71	18
Brazil	52	40	44	49	4.60	12	Costa Rica	31	51	33	38	7.79	20
Malaysia	19	13	26	21	4.66	13	Portugal	26	28	8	19	7.82	20

(continued)

Table 4.6 (continued)

	Position				Consistency among the estimates			Position				Consistency among the estimates	
	ATK	CSGR	KOF	MGI	Standard deviation	Max–min position		ATK	CSGR	KOF	MGI	Standard deviation	Max–min position
Mexico	37	50	42	39	4.95	13	Hungary	20	29	10	30	8.07	20
Senegal	39	48	53	48	5.05	14	Estonia	8	32	21	14	8.93	24
Belgium	13	1	1	2	5.07	12	India	55	31	52	43	9.34	24
Poland	33	25	18	24	5.34	15	China	51	22	38	33	10.42	29
Chile	34	34	25	40	5.36	15	Russia	48	18	30	28	10.82	30
Australia	11	15	15	26	5.58	15	Panama	25	54	32	41	10.84	29
Spain	24	21	13	10	5.70	14	Canada	6	2	7	34	12.70	32
Morocco	32	44	43	32	5.76	12	United States	5	4	22	36	13.22	32
Finland	16	14	9	25	5.79	16							

Table 4.7 Countries unequivocally identified (by at least three of the four most important indices) as characterized by high or low levels of globalization

High globalization countries	Low globalization countries
Ireland, Belgium, Switzerland, Netherlands, France, Austria, United Kingdom, Denmark, Sweden, Canada	India, Pakistan, Venezuela, Philippines, Sri Lanka, Senegal, Brazil, Indonesia, Kenya, Colombia, Bangladesh, Peru

instrument used. This means that the (always subjective) choices made when constructing the instruments—especially selection of the indicators, as well as deciding the aggregation procedure and the weights—have important repercussions on the results obtained.

Nevertheless, as well as extremely significant cases of countries which the globalization indexes are unable to classify unequivocally, the tables considered thus far also highlight other situations in which the estimates made by the four instruments are markedly consistent. In this regard, Table 4.7 shows the countries that are unequivocally identified as highly globalized or, vice versa, characterized by minimal levels of globalization. The two lists in the table show in particular those countries which at least three of the four indices include in the first quartile (the top 13 positions in the classification) or in the last quartile (the bottom 13 positions in the classification) of the countries ordered according to level of globalization.

Firstly, on considering the list of the ten countries unequivocally recognized as highly globalized, one immediately notes that fully nine of them are European countries, of which eight belong to the European Union.[5] Moreover, six of them—also classified as highly globalized countries by the CSGR Globalisation Index, which in this regard introduces, as shown in the previous chapter, a correction factor—are rather small countries with populations of fewer than ten million inhabitants. These findings prompt the question of the extent to which the instruments effectively measure the degree of globalization of countries and the extent to which, instead, they measure regionalization dynamics. We shall return to this issue in the final section of this chapter.

Considering instead the twelve countries unequivocally recognized as of low globalization, one observes that they are all so-called 'developing' countries: in particular, six Asian countries, four Latin American ones, and two sub-Saharan African ones. However, this does not mean that Africa is characterized on average by high levels of globalization. Instead, the small number of African countries in the list can be explained by the fact that poverty, as well as the weakness of

[5] The only non-European country is Canada, identified as highly globalized by all the indices except for the Maastricht Globalisation Index, which indeed ranks it in thirty-second position. For this reason, the data relative to the range of variation of the estimate, as well as of the standard deviation, have led to the North-American country being placed in the preceding tables among those for which there is a high degree of inconsistency in the information furnished by the indices considered.

institutional systems, often translate into the scant availability of statistical information. Put more simply: this list comprises only two countries in sub-Saharan Africa because for all the others, with the exception of Nigeria, it has not been possible to determine the values of all four of the indices analyzed.

4.4 Some Criticisms of the Globalization Indices

This section presents some criticisms, mainly technical, which can be brought against the globalization indices discussed in the previous chapter. Some of these criticisms concern all the instruments; others are directed at one rather than the others.[6]

In my view, from a technical standpoint, the principal defect of all the globalization indices discussed thus far is that they use an excessively large number of variables and indicators. The presence of so many indicators in these 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 indicators by the 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 may be 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 72 countries—although the authors stress that these are the most important ones in demographic and economic terms—and the *CSGR Globalisation Index* for 103. Larger, instead, is the number of countries for which it has been possible to determine the *Maastricht Globalisation Index* (117), and especially the *KOF Index of Globalization* (181), although these too are constituted by a very large number of indicators. However, we might observe that in the case of the *KOF Index of Globalization*, the wide coverage ensured by the instrument is also due to the fact that the availability of data relative to two of its three dimensions was deemed sufficient for calculation of the overall index. This is a highly questionable procedure, however, given that it is doubtful that the level of globalization of two different countries can be compared when this level is estimated by means of an index whose information base is so different between the two cases. Moreover, the coverage of the *KOF Index of Globalization* would be high even if it required the availability of data for all three of its dimensions, in that this condition is fulfiled by fully 141 countries.

[6] This section resumes and updates arguments already developed in Caselli (2006, 2008).

Secondly, the excessive use of indicators 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 indicators reduces the influence exerted by errors in one of the indicators on the overall value of the index. Whatever the case may be, liable to criticism is the attempt to improve the globalization indices by covering some dimensions, even though important, of the process using indicators whose quality and availability appear problematic. For example, one may ask whether the introduction into the *Maastricht Globalisation Index* of an ecological dimension measured through the indicator "ecological deficit in global hectares" improves the accuracy of the instrument by covering a certainly crucial dimension of globalization or whether, vice versa, it deteriorates its quality, because determination of this indicator is based on estimates whose reliability appears difficult to verify. The problem of data availability and quality is especially important in the case of the underdeveloped and developing countries, which often do not produce credible statistic data. However, in regard to the developing countries there is a very serious problem which adds to the lack of data or their poor quality: the heterogeneity—from the point of view of both the initial definitions and the survey techniques used—in their collection and production; heterogeneity which may make them in fact non-comparable from one country to another (United Nations 1989, p. 22). Again in this regard, it has also been pointed out that, since the effects of globalization differ according to the region considered, it may be the case that indicators suited to measuring the phenomenon in the most developed countries are not suited to measuring it in the developing ones, and vice versa (Ebenthal 2007). This is therefore an observation which further highlights the need for careful analysis of the characteristics of indicators before they are used to construct indices. In sum, it seems contradictory to seek to improve the accuracy of an overall globalization index by adding new indicators whose quality is at least doubtful.[7]

Thirdly, the need to acquire a large amount of disparate information from diverse sources reduces the timeliness of such information. To be noted in this regard is that all four of the principal globalization indices proposed, which use a quite large number of indicators, furnish information relative, in the best of hypotheses, to the situation two years previously. This delay, however, may also extend to four years, as happened on the occasion of the first issue of the data relative to the *CSGR Globalisation Index*. 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. But the increased workload for researchers entailed by the high number of indicators may not only cause delay in publication of the data produced; it may also discourage those researchers to the point that they abandon collection of the data necessary for

[7] This is the case described in the previous chapter of the GlobalIndex proposed by Raab et al. (2008), with which the authors have sought to improve existing globalization indices by increasing the number of indicators that jointly determine a country's level of globalization.

calculation of the index proposed. It is perhaps for this reason that more than three years have passed since the last updating of the data relative to the *A.T. Kearney/ Foreign Policy Magazine Globalization Index* and to the *CSGR Globalisation Index*, whose estimates still refer, as the more recent year, respectively to 2005 and 2004.

Moreover, the use of a large number of indicators, though justified by the need to cover all the most important dimensions of globalization, may lead to excessive coverage of some of those dimensions. These may therefore be recorded more than once, thereby introducing a significant amount of distortion into the results (De Lombardae and Iapadre 2008, pp. 161–162). This, for example, is the case of the *Maastricht Globalisation Index* as regards the indicators "Trade in conventional arms" and "Imports and exports of good and services". The first of these is entirely included in the second, so that it contributes twice to determining the definitive scores of the index.

Lastly, the excessive use of indicators restricts the instrument's comprehensibility—especially outside the strictly academic or scientific community—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 indicators in the index. In fact, the statistical procedure used entails the attribution of practically negligible weights to some indicators (see Table 3.5). For example, *Phone calls* are 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 indicator 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 all the other indices considered, and especially 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 indicators can be easily discarded, with only minimum impact on the overall value of the index. The same applies to the *KOF Index of Globalization* and the *GlobalIndex* developed by Raab et al., in which the weights are again attributed by means of a statistical procedure. In the former case, particularly dubious is the usefulness of maintaining, within the social dimension of globalization, the indicator labeled *transfers*, in that it accounts for less than 1% of the value of the overall index (on this see Table 3.8). In the latter case, negligible weight is assumed by the indicators *Cable television* and *Daily newspapers* (see Table 3.12).

In light of these considerations, therefore, my thesis is that the road to be followed in the search for instruments better suited to measurement of globalization is not that of increasing the number of the variables and indicators used by the already-existing indices.[8] On the contrary, I maintain that researchers should

[8] The road instead followed by Raab et al. in developing their *GlobalIndex*.

concentrate on simplifying the instruments proposed; and they should do so by drastically reducing the variables and indicators used. Necessary for this purpose, however, is further efforts both theoretical and methodological to identify, also by drawing on the experience accumulated to date, what indicators are most representative of the processes studied.

Of all the globalization indices discussed in the previous chapter, the only one that appears in harmony with this last recommendation—in that it does not suffer from the problems due to an excessive number of indicators—is the *LGI—Latin Globalization Index*, which uses only six of them. At present, however, the *LGI—Latin Globalization Index* is still a relatively circumscribed experiment, little known outside the regional context for which it has been designed.

But the excessive number of variables and indicators used is not the only defect in the globalization indices described in the previous chapter. Considering the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, for example, one can question the decision to attribute marginal importance to the political dimension of globalization, which in fact assumes a weight equal to only one-tenth of the overall value of the index. Greater importance is instead attributed to this dimension by the other instruments considered here: it assumes a weight equal to one-fifth in the case of the *Maastricht Globalisation Index*, to one-quarter in the case of the *KOF Index of Globalization*, and to one-third in the case of the *CSGR Globalisation Index*. This last choice seems decidedly more consistent with a truly multidimensional reading of globalization.

A further shortcoming shared by all the instruments discussed here is that they do not take satisfactory account of the cultural dimension of globalization, although its importance is recognized by large part of the literature on the topic. This dimension, in fact, is entirely ignored by the *A.T. Kearney/Foreign Policy Magazine Globalization Index* and the *Maastricht Globalisation Index*, although the latter attaches the label "social and cultural" to one of its dimensions. In the case of the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, the authors justify this omission by citing the difficulty of finding suitable indicators with which to measure this dimension. Some indicators intended for this purpose are instead included in the *CSGR Globalisation Index* (*Films imported and exported* and *Trade in books and newspapers*) and in the *KOF Index of Globalization* (*Trade in books, Trade in newspapers, Number of McDonald's restaurants*, and *Number of IKEA stores*), albeit with results still far from being fully satisfactory.

By contrast, it is precisely the cultural dimension of globalization which is the focus of the *Cultural Globalization Index* proposed by Kluver and Fu and mentioned in the previous chapter. However, aside from considerations concerning the choice of the two indicators used to measure the phenomenon, this instrument is somewhat puzzling in regard to the technique used to aggregate those two indicators into a single index. As said in the previous chapter, this aggregation is performed by attributing to each country a score equal to the average of the positions occupied by that same country in the classifications relative to the two

indicators considered.[9] However, given that the number of countries for which these indicators are available is not the same in the two cases, the instrument attributes—without any explicit theoretical justification—a decidedly greater weight to the indicator available for the largest number of countries: that is, *print media goods*. In fact, a country occupying first place in the classification of countries relative to *print media goods*, and last place in the one relative to *movies*, would receive a score much lower[10] [(1 + 28)/2 = 14.5] than that given to a country which, vice versa, occupies first place in the classification on *movies* and the last one in that on *print medium goods* [(1 + 69)/2 = 35].

These, rather modest, attempts to measure the cultural dimension of globalization therefore do no more than consider and record certain flows of information, ideas, and cultural products across the borders of states. Moreover, it is an approach which corresponds to sociological theories that relate cultural globalization specifically to the existence of such flows (Crane 2002). Perhaps more significant is the position taken by those who maintain that this dimension of globalization also includes the creation of hybrid cultural forms (Nederveen Pieterse 1995, 2004). However, we could suggest that the degree of cultural globalization is not given solely by the flow of information, ideas, values, and models of behavior, but also—and perhaps especially—by the extent to which such elements are accepted and adopted by the people exposed to them. This is an aspect which perhaps cannot be included in instruments that use the nation-state as their unit of analysis. This topic will therefore be resumed in the concluding chapter, which considers instruments that use different units of analysis.

Again with reference to the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, to be reiterated is what was observed in the previous chapter: 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.

To some extent convincing is the operation performed within the *CSGR Globalisation Index* to correct the economic indicators on the basis of certain geodemographic characteristics of the country considered. As said in the previous chapter, this correction is deemed necessary because the smallest and/or least populous countries are, so to speak, compelled to establish a large number of relations with other countries. Nevertheless, the effectiveness of this correction appears limited: on looking at Table 4.3, in fact, one sees that fully five of the ten most globalized countries according to the *CSGR Globalisation Index* have fewer than ten million inhabitants. This situation is not very different from that recorded by the other instruments, which instead do not apply the correction factor: among the ten most globalized countries, those with fewer than ten million inhabitants amount to six in the case of both the *A.T. Kearney/Foreign Policy Magazine*

[9] Overall, therefore, the smaller the score, the higher the level of globalization.

[10] Which therefore indicates a much higher level of globalization.

Globalization Index and the *KOF Index of Globalization*, and indeed to only four in the case of the *Maastricht Globalisation Index*. We might observe that the latter instrument, in its first versions, used a correction factor analogous to that proposed by the *CSGR Globalisation Index*; a procedure, however, abandoned in the most recent version of the instrument. This latter seems an appropriate decision, given that introduction of the correction factor significantly increases the operations necessary to determine the index without substantially improving the quality of the instruments and the results. Again in regard to the correction factor, it is difficult to understand the decision to apply it only to economic variables, given that its use would seem appropriate for other indicators as well—for instance, *Tourists, Phone calls, Films, Books and newspapers, Mail*. It is important to note that the *New Globalisation Index* proposed by Vujakovic (2010), this too described in the previous chapter, applies a correction factor similar to the one used by the CSGR Globalisation Index to all the indicators which combine to determine the index.[11]

A further criticism, which mainly concerns the *A.T. Kearney/Foreign Policy Magazine Globalization Index* and the *Maastricht Globalisation Index* in its most recent formulation, is the insufficient clarity of the methodological notes published, and the incomplete accessibility of the database used. This is a particularly important shortcoming, given that, as already emphasized in Chap. 2, the construction of an index is always a procedure characterized by a significant level of subjectivity. It is therefore essential that the authors furnish all the information necessary, on the one hand, for the users to understand the real meaning of the results published, and on the other, for the scientific community to critically appraise the instrument proposed.

Finally, again with reference to the *A.T. Kearney/Foreign Policy Magazine Globalization Index*, also to be criticized 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 flaw—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.

As said at the outset, this section has brought a number of mainly technical criticisms against the globalization indices described earlier. The concluding chapter will make further criticisms, but in this case of a more substantial nature. In particular, the chapter will seek to show that all the globalization indices proposed are at risk of distorting the essential nature of globalization processes.

[11] Moreover, one may also question the theoretical grounds for introducing this correction factor. It might be objected, in fact, that of essential importance in regard to globalization is the degree of interdependence among countries, regardless of the factors which stimulate that interdependence or indeed make it inevitable.

4.5 Some Lessons from a Success Story

Finding an instrument to measure a phenomenon of such complexity and such significance for humanity as globalization is a challenge both fascinating and demanding.[12] 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.[13] However, it was then subject to numerous criticisms,[14] 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. Its substantial failure was due 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.[15]

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[12] This section draws, with some adaptations, on Caselli (2006, 2008).

[13] The definitions of GDP and GNP are not reported here, on the assumption 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.

[14] See for example: Scidà (2004), Morris (1979), Drewnowski (1972), Horn (1993), Seers (1972), Streeten (1995), Parfit (1993), Gallino (2000), Sen (1999).

[15] For a detailed examination of the history of development measures and a description of all the instruments mentioned in this section, see Caselli (2001).

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 edition of the Human Development Report published by the UNDP in 2009, the HDI value is available for fully 182 countries and refers to 2007. The HDI, too, is obviously susceptible to criticisms (not set out here), but to be emphasized 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.[16]

What lessons can those endeavoring 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. 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.

4.6 Globalization and Regionalization

By way of conclusion to my critical analysis of the instruments for the measurement of globalization today available, a point which requires at least brief discussion concerns the validity of such instruments. As already noticed in Chap. 2, validity is one of the characteristics that any measure of globalization—or any other social phenomenon—should possess. It is present when two conditions are fulfiled: (a) the instrument adopted effectively measures the property of interest, and (b) this measurement is accurate. Concentrating in particular on the first of these conditions, the question to ask is therefore the following: do the instruments described in the previous chapter effectively and specifically measure

[16] In the most recent edition of the Human Development Report, published in 2010, some alterations have been made to the structure of the HDI, with changes in both the indicators used—whose number remains the same, however—and in the method used to aggregate them, which is now slightly more sophisticated. It is still too early to determine whether such changes, which have reduced to 169 the number of countries for which it is possible to calculate the index, will have a truly significant impact—and if so, of what type—on the extent of the instrument's acceptance and recognition by the international scientific community.

globalization; or, instead, do they measure concepts close to it yet nevertheless distinct like economic integration, westernization, or openness (De Lombaerde and Iapadre 2007, p. 5)? If such concepts can be considered particular aspects of globalization, the problem becomes that of devising measurement instruments which include elements also able to grasp the specific and distinctive aspects of globalization. This applies in particular to the distinction between the concept of globalization and that of internationalization, given that the former indubitably includes the latter but also possesses features radically different from it. This is a theme already touched on in the first chapter and which will be resumed in the concluding one.

In this section, the aim in particular is to consider the possible confusions which may arise in surveying and measurement procedures between, on the one hand, the processes of globalization and internationalization and, on the other, the dynamics of regionalization. At the basis of this discussion is the increasing awareness that, in the measurement first of internationalization and then of globalization, it is not sufficient merely to quantify the number and volume of exchanges—of any kind—and therefore the relations that tie a given country to the outside world. It is in fact also necessary to consider the direction and the variety of such exchanges. For example, the fact that a given country records a very high value for its ratio between the volume of imports and exports, on the one hand, and gross domestic product on the other, is not sufficient for one to be able to say that it is strongly globalized. If a country records high trade volumes, but these are primarily directed toward only one other country, this does not mean that it is strongly globalized; on the contrary, it means that it is strongly dependent (Kluver and Fu 2008, p. 341). This is the case reported by Ebenthal (2007) of Mexico—88.8% of whose exports go to the United States.

It is therefore advisable to consider not only the volume of exchanges but also the number of partners with which such exchanges takes place. Yet this expedient may not be enough: consideration should also be made of the geographical locations of such partners (De Lombaerde and Iapadre 2007, p. 8). In fact, as Petra Vujakovic (2010, p. 9) writes, "Austria's trade with China says more about that country's globalisation level than trade with its neighbouring countries does". Put otherwise, if trade takes place mainly with neighbouring countries, this may be more an indicator of regionalization than of globalisation. According to Martens and Raza (2008, pp. 18 and 27), the fact that the top ten positions in all current globalization indices are occupied mainly by countries belonging to the European Union is probably due more to the regionalization dynamics ongoing in the old continent than to the fact that Europe is being affected in specific manner by globalization. In this regard, Meyer (2007, p. 262) wonders whether it is legitimate to liken trade within the European Union to other international trade.

While the diagnosis of the problem—possible overlaps among measurements of globalization and regionalization—is clear, finding the solution still appears difficult. In this regard, we may recall the proposal of Vujakovic (2010) mentioned in the previous chapter. Vujakovic suggests that the indicators of globalization which refer to international exchanges should be weighted by multiplying their value by

the distance among the countries that engage in such trade. However, in his *New Globalisation Index*, Vujakovic applies this weighting to only one variable—*trade in goods*—owing to the impossibility of obtaining the data necessary to effect the same weighting on all the variables employed. And it is precisely the problem of data availability that—perhaps more than any theoretical consideration—very often constrains the construction of new globalization indices, as well as attempts to improve the ones that already exist.

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Chapter 5
Alternative Approaches and Conclusions

5.1 Introduction

It was said in Chap. 2 that, although the state has had its powers partly reorganized and sometimes substantially modified by globalization processes, it still performs a crucial role in regard to many of the dynamics which characterize those processes. For this reason, the attempts—illustrated in Chap. 3—to measure globalization using the state as the unit of analysis seem reasonable and broadly justified. Added to this the fact—this too is already-mentioned in the second chapter—that the choice of centering globalization indices on the state is made also for convenience, as well as sometimes being obligatory, because it is precisely at state level that usable data are generally available in this area of inquiry (De Lombaerde and Iapadre 2007, p. 10). In other words, instruments for the measurement of globalization are characterized by state-centrism because such are the data on which they are based. In this regard, there are those who point out that the lack of data relative to units of analysis other than the state is both a consequence and a signal of the limitations of current theoretical reflection on globalization and on the processes referable or at any rate akin to it (Taylor 2004, p. 30).

Nevertheless—although, for the reasons given above, it appears acceptable to measure globalization on the basis of states—the paradox remains that studied at this level is a phenomenon among whose essential features is that, in certain significant domains, it annuls states, their role, and their boundaries. This latter consideration prompts the question as to whether instruments can be devised which measure globalization using other units of analysis. It should nevertheless be immediately pointed out that attempts in this direction should not be regarded as antithetical to, or in conflict with, the most common approach based on the state. In fact, as repeatedly emphasized, globalization is an extraordinarily complex process which can be analyzed and interpreted from numerous standpoints which are not alternative to each other but, on the contrary, complementary. As Beck (2004) puts it, the logic that guides us when analyzing globalization should not be that of "either… or…" but rather "both… and…".

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In the same vein, Sassen (2007) explains—as already recalled in both the first and the second chapter—that a distinctive feature of globalization is also its multi-scalar nature. That is to say, globalization exerts its effects differently according to the territorial level considered—from the neighborhood to the planet as a whole. But there is something more. The effects of globalization differ not only according to territorial level but also according to social level. For example, it was said in Chap. 1 that globalization, by virtue of the so-called 'mobiletic revolution', transforms distances and therefore the configuration of physical space. Some distances shorten until they almost disappear and are no longer obstacles against human action, while others diminish much less markedly. The extent of this contraction of distance depends primarily on the characteristics of the places involved, and especially on the infrastructures with which they are endowed: ease of transport connections make the main cities of Europe or North America much closer to each other than are villages in many African countries. But it also depends on the characteristics of the people involved: to recall the example already cited in the first chapter, the distance between the European Union and Kenya is much shorter for the average citizen of the former than it is for the average citizen of the latter.

Against this background, the following sections consider two possible approaches different from the state-based one and seek to devise instruments suited to the measurement of globalization processes. The first of these alternative approaches is based on cities. It has already been applied, with results that will be critically discussed. The second alternative approach is instead based on people. Given that it has not yet been systematically applied, suggestions will be made in regard to its possible definition and implementation.

5.2 The City-Based Approach

5.2.1 The Studies by Peter J. Taylor

Drawing mainly, at theoretical level, on the "world city hypothesis" of Friedmann (1986), the "global cities" of Sassen (1991), and the "space of flows" of Castells (1996), Peter J. Taylor has developed various instruments for the measurement of globalization based on "a city-centric view of the world" expressly opposed to the "state-centric view of the world that emanates from most macro-level social science" (2004, p. 27).

The first and principal of these instruments aims in particular to quantify the *Global Network Connectivity* of 315 cities around the planet[1]—that is, it measures

[1] This section refers to the methodological indications and the results set out in Taylor (2004). These same methodological indications, however, were previously published in Taylor et al. (2002), which considered 316 cities rather than 315.

their degree of interconnection. To this end, Taylor starts by identifying a set of "global service firms" for which it is possible to identify the location of their commercial offices by referring to information available on their websites. He assumes, on the basis of previous research, that a firm can be called 'global' if it has offices in at least fifteen different cities, of which one or more is situated in one of the "prime globalization arenas" (Northern America, Western Europe, and Pacific Asia). The firms are therefore selected on the basis of the availability of the information required, according to a technique which Taylor (2004, p. 65) calls "scavenging".

Moreover, to enable decomposition of the index according to the sectors in which firms operate, and thereby compare their degrees of connectivity, Taylor considers only those sectors for which it is possible to obtain the information required for at least ten firms. Finally, on the basis of these criteria, Taylor selects 100 firms, the complete list of which is given in Table 5.1, with regard to six different sectors of activity: accountancy, advertising, banking & finance, insurance, law, and management consultancy.

Overall, the firms selected have offices in thousands of cities. However, for theoretical reasons, and in order to handle the data, Taylor considers only 315 cities, as said. This selection is made—also on the basis of previous empirical studies—by referring mainly to two criteria: the first is territorial representativeness; the second is economic importance.

Once the presence or otherwise of each of the 100 firms considered in all the 315 cities has been determined, the next step is to attribute a weight to this presence. For this purpose, Taylor constructs a scale that varies from 0 to 5, where 0 denotes that a city has no office of the firm considered, and 5 is assigned when the city hosts the firm's headquarters. The intermediate scores are attributed according to the following criteria: presence of a regional headquarters, 4 points; offices of large size, 3 points; offices of conventional size, 2 points; offices of small size or connected with other offices, 1 point.

On completion of this step, however, the value of a city's *Global Network Connectivity* value is not simply given by the sum of the scores attributed to the offices of the firms present in that city.[2] Measuring the intensity of the networks, in fact, requires investigation of the connections among the 315 cities considered. The procedure followed to identify and quantify the connections between two cities A and B consists in multiplying the score relative to the presence of a certain firm in city A by the score relative to the presence of the same firm in city B. Thus obtained is the score relative to the intensity of a single connection which—as far as one deduces from Taylor's treatment—may vary from 0 (when the firm is not present in one of the two cities, so that there is no connection) to 20 (when the firm's global headquarters are in one of the two cities, and the regional headquarters are in the other). The score for a city's Global Network Connectivity is then obtained by summing the intensities of the links of all the firms present in that

[2] This sum instead gives what Taylor (2004, p. 68) calls the "total service value" of a city.

Table 5.1 Global service firms considered in the construction of the Global Network Connectivity of cities. Reference year: 2000 (Taylor 2004, pp. 215–217)

Accountancy		*Banking/finance*		*Law*	
1	Ernst & Young	34	WestLB (Westdeutsche Landesbank Gironzentrale)	68	Latham & Watkins
2	Arthur Andersen	35	Dresdner Bank	69	Morgan Lewis
3	MacIntyre Strater International (MSI)	36	Commerzbank	70	Baker & McKenzie
4	IGAF	37	Deutsche Bank	71	Clifford Chance
5	AGN Network	38	Chase	72	Jones Day
6	BDO	39	BNP Paribas	73	Freshfields Bruickhaus Deringer
7	Grant Thornton International	40	ABN-AMRO	74	Allen & Overy
8	Horwath International	41	Rabobank International	75	Dorsey & Whitney
9	KPMG	42	UBS	76	Linklaters—Alliance
10	Summit International + Baker Tilly	43	ING	77	White & Case
11	RSMi	44	Barclays	78	Cameron McKenna
12	Moores Rowland International	45	Fuji Bank	79	Morrison & Foerster
13	HLB International	46	Bayerische Hypo Vereinsbank	80	Lovells
14	Moores Stephens International Network	47	Bayerische Landesbank Girozentral	81	Skadden, Arps, Slate, Measher, & Flom
15	Nexia International	48	Sakura Bank	82	Sidley & Austin
16	PKF International Association	49	Sumitomo Bank	83	Coudert Brothers
17	Fiducial International	50	Sanwa	*Management consultancy*	
18	PricewaterhouseCoopers	51	J.P. Morgan	84	Towers Perrin
Advertising		52	BTM (Bank of Tokyo-Mitsubishi)	85	Logica Consulting
19	Impiric	53	DKB (Dai-Ichi Kangyo Bank)	86	Watson Wyatt
20	TMP	54	HSBC	87	Sema Group
21	Hakuhodo	55	Citibank	88	CSC
22	Draft Worldwide	56	Credit Suisse/First Boston	89	Hewitt Associates
23	Densu Young and Rubicam + Young and Rubicam	*Insurance*		90	IBM Worldwide
24	D'Arcy	57	Allianz Group	91	Mercer Management Consulting
25	FCB	58	Skandia Group	92	Boston Consulting Group
26	Saatchi and Saatchi	59	Chubb Group	93	Deloitte Touche Tohmatsu
27	Ogilvy	60	Prudential	94	Booz Allen & Hamilton
28	BBDO Network	61	Reliance Group Holdings	95	A.T. Kearney
29	McCann-Erickson WorldGroup	62	Winterthur	96	McKinsey
30	J. Walter Thompson	63	Fortis	97	Bain & Company
31	Euro RSC6	64	CGNU	98	Compass
32	CMG (Carlson Marketing Group)	65	Liberty Mutual	99	Andersen Consulting
33	Asatsu DK	66	Royal & Sun Alliance	100	Gemini Consulting/Cap Gemini (Ernst & Young)
		67	Lloyd's		

city with all the other 314 cities considered by the study.[3] The first column of Table 5.2 contains the classification of the first 25 cities ordered according to *Global Network Connectivity*.

In developing his rich and composite analysis of the relations and interconnections among the world's main cities, Taylor (2004, pp. 96–99) has then isolated the information in his database relative to firms operating in the banking & finance sector, the purpose being to create—using the same aggregation procedure as before—a measure of Bank Network Connectivity able to identify the world's main financial centers. The classification of the first 25 cities according to this index is reported in the second column of Table 5.2.

By means of an analogous technique,[4] but this time using *The UN Yearbook of International Organizations* as his database, Taylor has also developed an index of NGO Network Connectivity determined for fully 600 cities (Taylor 2004, pp. 95–96). The first 25 cities according to this index are shown in the third column of Table 5.2.

Finally, to complete his analysis, Taylor (2004, p. 94) also reports an index devised, with the same technique as already described, by Kratke (2002). The purpose of this instrument is to measure *Media Network Connectivity* through analysis of the presence of thirty-three "leading global media companies" in 196 cities. Also the first 25 cities according to this index are shown by Table 5.2, in the fourth column.

By way of brief comment on the results—relative to the first 25 positions—of the four indices reported in Table 5.2, first to be noted is a substantial degree of overlap among the classifications of *Global Network Connectivity*, *Bank Network Connectivity* (though the overlap between these two is unsurprising, given that the latter is a partial version of the former), and *Media Network Connectivity*. In fact, there are fully 14 cities which appear among the first 25 positions in all three classifications—classifications, moreover, which always rank the cities of London and New York in the first two places. Predominant among these 14 cities—which occupy the first 16 positions in regard to *Global Network Connectivity*—are ones located in the most advanced countries (London, New York, Paris, Tokyo, Chicago, Milan, Los Angeles, Madrid, Amsterdam, Sydney, and Brussels), added to which are the two Asian 'tigers', Hong Kong and Singapore, and the city of São Paulo.

However, the picture changes radically when one considers *NGO Network Connectivity*, which denotes the existence of "a quite different world city network"

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[3] Taylor (2004, p. 69) reports that the score obtained by each city can be expressed in absolute form or, more conveniently, as a proportion of the overall value of all the connections identified (4,078,256), or again as a proportion of the largest individual connectivity value (in this case, the city at the top of the classification, London, assumes value 1). It is evident that, whatever solution is adopted, this does not alter either the relative order or the proportional relations among the cities in terms of Global Network Connectivity.

[4] In this case, however, the scores relative to the presence of each NGO in the various cities have been attributed using a scale from 0 to 4 rather than 0 to 5.

Table 5.2 Rankings of cities on Global Network Connectivity, Bank Network Connectivity, NGO Network Connectivity, and Media Network Connectivity (Taylor 2004, p. 99)

Rank	Global Network Connectivity	Bank Network Connectivity	NGO Network Connectivity	Media Network Connectivity
1	London	London	Nairobi	London
2	New York	New York	Brussels	New York
3	Hong Kong	Tokyo	Bangkok	Paris
4	Paris	Hong Kong	London	Los Angeles
5	Tokyo	Singapore	New Delhi	Milan
6	Singapore	Paris	Manila	Madrid
7	Chicago	Frankfurt	Washington DC	Amsterdam
8	Milan	Madrid	Harare	Toronto
9	Los Angeles	Jakarta	Geneva	Stockholm
10	Toronto	Chicago	Moscow	Copenhagen
11	Madrid	Milan	New York	Sydney
12	Amsterdam	Sydney	Mexico City	Singapore
13	Sydney	Los Angeles	Jakarta	Barcelona
14	Frankfurt	Mumbai	Tokyo	Zurich
15	Brussels	San Francisco	Accra	Vienna
16	São Paulo	São Paulo	Cairo	Oslo
17	San Francisco	Taipei	Dhaka	Prague
18	Mexico City	Shangai	Rome	Tokyo
19	Zurich	Brussels	Dakar	Brussels
20	Taipei	Seoul	Santiago	Hong Kong
21	Mumbai	Istanbul	Abidjan	Budapest
22	Jakarta	Beijing	Buenos Aires	Warsaw
23	Buenos Aires	Bangkok	Dar er Salaam	Lisbon
24	Melbourne	Amsterdam	Copenhagen	Chicago
25	Miami	Warsaw	Beijing	São Paulo

(Taylor 2004, p. 100). Ranking among the first 25 cities in this classification, in fact, are only 4 of the 14 listed above (Brussels, London, New York, and Tokyo), while there are fully 15 cities that appear among the first 25 only in this classification. The majority of them are located in the developing countries (Nairobi, New Delhi, Manila, Harare, Accra, Cairo, Dhaka, Dakar, Santiago, Abidjan, and Dar es Salaam, added to which are Washington, Geneva, Moscow, and Rome). To be noted is the significant presence in this classification of African cities which are entirely absent from the first 25 places of the three other classifications.

5.2.2 The A.T. Kearney/Foreign Policy Global Cities Index

The global management consulting firm A.T. Kearney and the journal *Foreign Policy* have already been devised a widely appreciated index to measure the globalization of states. This index has been closely discussed in the previous two

chapters. In 2008, in collaboration with the Chicago Council on Global Affairs, A.T. Kearney and *Foreign Policy* also developed a *Global Cities Index*. The purpose of this instrument, as evident from its name, is to measure the level of globalization not of states but, on the contrary, the main cities in the world. However, the decision to concentrate on cities—which is obviously an attempt to overcome the methodological nationalism repeatedly mentioned in this book—does not mean that the authors of this new instrument want to deny the importance of states in globalization processes. Indeed, the authors maintain that states, and particularly their governments, still perform a key role in shaping "the broad outlines of globalization". Yet the most tangible effects of the latter seem most intensely manifest in certain specific places, namely the global cities. Moreover, these cities are—because of the interconnections linking them in a network of planetary extension—the engines of many of the processes characteristic of globalization (*Foreign Policy* 2008, p. 69). In short, the idea behind the creation of the *Global Cities Index* is that "countries [are] of course important, but even more interesting [are] their cities" (A.T. Kearney 2010, p. 2).

In its first edition, issued as said in 2008, the *Global Cities Index* was calculated for 60 cities, which became 65 in the 2010 second edition following the addition of Barcelona, Montreal, Geneva, Houston, and Nairobi. It does not seem that the selection of the cities has been made according to a rigorously defined criterion. Instead, one gains the impression that it has been made according to subjective judgements based on a general principle which the authors describe as follows (*Foreign Policy* 2008, p. 71):

> The cities we highlight are world leaders in important areas such as finance, policymaking, and culture. A few are megacities in the developing world whose demand for resources means they must nurture close ties with their neighbours and provide services to large numbers of immigrants. Some are gateways to their region. Others host important international institutions. In other words, they represent a broad cross section of the world's centers of commerce, culture, and communication.

Of the 65 cities considered by the instrument in 2010, 11 were located in North America (of which 9 in the USA), 6 in Latin America, 17 in Western Europe, 1 in Eastern Europe, 4 in Africa, 4 in the Near and Middle East, 6 in the Indian subcontinent, 15 in the Far East, and 1 in Australia.

The *Global Cities Index* comprises five dimensions, to which different weights are attributed on the basis of theoretical considerations developed by the authors. These dimensions are *business activity* (which accounts for 30% of the overall value of the index), *human capital* (30%), *information exchange* (15%), *cultural experience* (15%), and *political engagement* (10%). Then identified for each dimension are three to five indicators which combine to determine the value of the sub-index relative to each dimension, for a total of 21 indicators overall. Table 5.3 gives the complete list of indicators, as well as their distribution among the various dimensions. However, we might observe that, compared with the list given here, the publications reporting the results of the 2010 *Global Cities Index* refer to the use of 25 indicators (A.T. Kearney 2010, p. 5). This discrepancy is probable due to

Table 5.3 Dimensions, indicators and weights in the A.T. Kearney/Foreign Policy Global Cities Index 2010 (A.T. Kearney 2010, p. 5)

Dimensions	Indicators	Weight of the dimensions (%)
Business activity	Value of capital markets	30
	Number of Fortune Global 500 firms headquartered there	
	Number of international conferences held	
	Flow of goods (via airports and ports)	
	Volume of the goods that pass through the city	
Human capital	Size of foreign-born population	30
	Quality of universities	
	Number of international schools	
	International student population	
	Percentage of residents with university degree	
Information exchange	Number of international news bureaus	15
	Level of censorship[a]	
	Amount of international news in the leading local papers	
	Broadband subscriber rate	
Cultural experience	Number of major sporting events hosted	15
	Number of museums, performing arts venues and diverse culinary establishments	
	Sister city relationships	
Political Engagement	Number of embassies and consulates	10
	Number of major think tanks	
	International organizations and local institutions with international reach that reside in the city	
	Number of political conferences	

[a] This variable was not present in the 2008 version of the instrument

a disaggregated count of some of the indicators in the table. Again with reference to the indicators used, to be noted is that, compared with the first edition of the instrument of 2008, that of 2010 includes a further one: *level of censorship*.

Unfortunately, and surprisingly, the methodological information made public by the authors relative to how they construct their instrument consists solely in a list of the dimensions (and their weights) and of the indicators used. No information is given about the criteria whereby those indicators have been normalized and subsequently aggregated, nor about the sources of the data used, nor about the year to which they refer.[5]

[5] One of the reports publishing the results of the 2010 Global Cities Index provides the respective values of the index for each city. These values range from a minimum of 0.25 for Chongqing to a maximum of 6.22 for New York (A.T. Kearney 2010, p. 3). However, it is not explained how these scores have been calculated.

Turning to the results obtained by means of the *Global Cities Index*, as set out in Table 5.4, to be noted first is the substantial stability, at least as regards the top positions, between the 2008 classification and that of 2010. Nine of the ten most globalized cities according to the 2008 classification still appear—though in some cases in different positions—in the top 10 for 2010: the only 'exit' is by Toronto (relegated from 10 to 14th position), replaced by Sydney, which rises from 16 to 9th position. Overall, to focus on the classification published in 2010, one notes that the most globalized cities belong to the most advanced countries (North America, Western Europe, Japan, and Australia) and to the so-called 'Asian tigers' (Hong Kong, Singapore, and South Korea).

In slightly lower positions are China, with Beijing in 15th position[6] and Shanghai in twenty-first. Significantly lower levels of globalization are recorded by cities located in the other developing countries: the first Latin American city in the classification (Buenos Aires), in fact, ranks 22nd, the first in the Near and Middle East (Dubai) 27th, the first African one (Cairo) 43rd; and the first in the Indian subcontinent (New Delhi) only 45th. These data testify that the geography of the globalized world still exhibits significant asymmetries manifest at different territorial levels ranging from the local to the continental.

5.2.3 An Assessment

A first assessment of the indices proposed by Taylor—for the sake of simplicity, here I shall refer only to the one relative to *Global Network Connectivity*—and of the *Global Cities Index* may start with comparison of the results obtained by means of these instruments. The comparison can only be indicative, however, given that even if the first version of the *Global Cities Index* is chosen, there are around 6 years of difference between the times to which the two indices refer.[7] Notwithstanding this limitation, one cannot but be impressed by the almost perfect overlap, at least as regards the highest positions, between the classifications yielded by the two instruments. As highlighted by Table 5.5, in fact, fully 9 cities appear in the top ten positions in both the *Global Network Connectivity* and the *Global Cities Index*. In both cases, moreover, the top two positions are occupied, albeit in reverse, by the same cities: London and New York. These overlaps are all the more significant in light of the notable differences in the structure and construction

[6] Beijing was 12th in 2008. It seems likely that the Chinese capital has been partly penalized by the introduction of the variable relative to *level of censorship*. However, this variable has limited weight on the overall value of the index.

[7] As said, the reference year for the data used by the *Global Cities Index* has not been stated by its authors. In light of analogous experiences, one can only hypothesise that there is a two-year delay between the moment of publication of the index and the year to which the data refer, which, for the first version of the instrument, can therefore be identified as 2006.

Table 5.4 Classification of cities based on the A.T. Kearney/Foreign Policy Global Cities Index, 2008 and 2010 versions[a] (A.T. Kearney 2010, p. 5)

	2008	2010		2008	2010
1	New York	New York	34	Taipei	Miami
2	London	London	35	Munich	São Paulo
3	Paris	Tokyo	36	Copenhagen	Bangkok
4	Tokyo	Paris	37	Atlanta	Copenhagen
5	Hong Kong	Hong Kong	38	Cairo	Houston
6	Los Angeles	Chicago	39	Milan	Taipei
7	Singapore	Los Angeles	40	Kuala Lumpur	Atlanta
8	Chicago	Singapore	41	New Delhi	Istanbul
9	Seoul	Sydney	42	Tel Aviv	Milan
10	Toronto	Seoul	43	Bogota	Cairo
11	Washington	Brussels	44	Dublin	Dublin
12	Beijing	San Francisco	45	Osaka	New Dehli
13	Brussels	Washington	46	Manila	Mumbai
14	Madrid	Toronto	47	Rio de Janeiro	Osaka
15	San Francisco	Beijing	48	Jakarta	Kuala Lumpur
16	Sydney	Berlin	49	Mumbai	Rio de Janeiro
17	Berlin	Madrid	50	Johannesburg	Tel Aviv
18	Vienna	Vienna	51	Caracas	Manila
19	Moscow	Boston	52	Guangzhou	Johannesburg
20	Shangai	Frankfurt	53	Lagos	Jakarta
21	Frankfurt	Shangai	54	Shenzhen	Bogota
22	Bagkok	Buenos Aires	55	Ho Chi Min City	Caracas
23	Amsterdam	Stockholm	56	Dhaka	Nairobi
24	Stockholm	Zurich	57	Karachi	Guangzhou
25	Mexico City	Moscow	58	Bangalore	Bangalore
26	Zurich	Barcelona	59	Chongqin	Lagos
27	Dubai	Dubai	60	Kolkata	Karachi
28	Istanbul	Rome	61		Ho Chi Minh City
29	Boston	Amsterdam	62		Shenzen
30	Rome	Mexico City	63		Kolkata
31	São Paulo	Montreal	64		Dhaka
32	Miami	Geneva	65		Chongqing
33	Buenos Aires	Munich			

[a] Strictly speaking, the classifications relative to 2008 and 2010 are not perfectly comparable, because they are based on a set of not entirely homogeneous indicators

procedure of the two instruments, and they testify that these cities unequivocally assume a specific and strategic role in today's global society.

A further finding that emerges from both the *Global Cities Index* and—more markedly, given the larger number of units considered—the *Global Network Connectivity* measure is the significant difference among the positions of cities belonging to the same state. This feature demonstrates that the degree of a state's overall globalization is not enough to show the situations of all its regions,

Table 5.5 Comparison among the top 10 cities in relation to the *Global Network Connectivity* index (reference year: 2000) and the *Global Cities Index* (year of publication: 2008)

Rank	Global Network Connectivity	Global Cities Index
1	London	New York
2	New York	London
3	Hong Kong	Paris
4	Paris	Tokyo
5	Tokyo	Hong Kong
6	Singapore	Los Angeles
7	Chicago	Singapore
8	Milan	Chicago
9	Los Angeles	Seoul
10	Toronto	Toronto

territories, and cities. It also demonstrates the fruitfulness of using instruments which measure the degree of globalization in terms of units other than the state.

By way of brief critical comment on the characteristics of the two instruments presented in this section, I begin by considering the *Global Network Connectivity* measure proposed by Taylor. The first aspect to be emphasized in regard to this index is the great effort required to collect all the information contained in the large database necessary for its construction. As will be recalled, this information concerns one hundred different firms in 315 cities worldwide, so that it requires a demanding data-collection effort which is difficult to repeat over time. Furthermore, as Taylor himself acknowledges (2004, p. 67), one of the main shortcomings of this construction procedure is that the data included in the database (as well as the selection of the firms to be considered) are determined by the information available on the Internet—information which is expressed in formats which vary from one firm to another. Taylor (2004, p. 67) has also the intellectual honesty to recognize the subjective nature of the scores attributed to the presence of the firms in the cities surveyed. To be stressed, however, is a problem more serious than that of (inevitable) subjectivity in the attribution of the scores: such scores also depend on the quality of the information available on the Web about the nature of those firms. Overall, the construction procedure proposed by Taylor is particularly refined; but for this reason, too, it is not easily repeatable. Taylor also has the merit of illustrating the technical aspects of the instrument's construction in detail, while also stressing its problematic aspects. This testifies once again to Taylor's intellectual honesty and methodological meticulousness.

Conversely, immediately to be observed in regard to the *Global Cities Index* is its already-mentioned lack of methodological information, which consists solely in a list of the indicators used and the weights attributed to the dimensions of the index. This raises serious concerns about the scientific rigour with which the instrument has been constructed. It is consequently not possible to offer even a minimally accurate assessment of it. One can only criticize—once again—the use of a perhaps excessive number of indicators, and raise doubts about the reliability of some of the data used; doubts heightened by the lack of information about the

sources of those data. Moreover, the operation would be decidedly more credible if, for some indicators, information was also provided about their definition: this concerns in particular the indicators *quality of universities*, *level of censorship*, and *number of major think tanks*.

We may conclude the analysis of instruments which use a city-based approach to measure globalization by emphasizing that the choice of the city as unit of analysis is not the only element that distinguishes the Global Network Connectivity measure proposed by Taylor from the other instruments considered in this book. The other distinctive feature of the Global Network Connectivity measure is its use of relational rather than attributional data (Lloyd et al. 2009, p. 57): that is, data which do not primarily concern the characteristics of the individual units of analysis as such, but rather the relations among those same units.

5.3 The Person-Based Approach

There are authors who point out that, with some exceptions, the human person is largely neglected by theories of globalization (Ray 2007, p. 39; Ley 2004). If this is so, it is not surprising that the instruments devised to measure the phenomenon have to date used units of analysis different from the person. Nevertheless, I argue that an approach to the measurement of globalization which focuses on the single individual is broadly justifiable and, indeed, potentially very fertile for understanding the complex and multiform dynamics with which globalization manifests itself. This contention is borne out by the fact that, within a particular state, but also in a particular city, globalization can and has very different effects and meanings for different people. Added to this is the fact that the world is not just a set of states; it is also a set of people, whose relationships are not always mediated by their membership of a state or nation (Sen 2002, p. 66).

Yet the aim of this section is not to devise an instrument for the measurement of globalization whose unit of analysis is the persons. Instead, its more modest intention is to put forward suggestions on how such an instrument could be constructed.

Broadly speaking, I believe that a Person-Based Globalization Index (PBGI) should consider the following six main dimensions: (a) possession of the resources and the abilities necessary to move and act in the global scenario; (b) effective mobility and activity in supranational and tendentially global domains; (c) belonging and a sense of belonging to global, or at any rate non-territorial, entities; (d) exposure to global flows of mass communication; (e) participation in global, or at any rate supranational, communication flows; (f) degree of global consciousness.

Possession of the resources and the abilities necessary to move and act in the global scenario. The ability to act in a context more extensive than the local and national one, and the ability to live, so to speak, globalization and not just undergo its consequences derives from possession of certain specific capacities and material resources. Indicators of this dimension could be, for instance, knowledge of an international *lingua franca* (primarily English), possession of a passport,

possession of a credit card, access to the Internet and the ability to use it, and the amount of personal income. In regard to the first of these indicators—relative to language—it might be objected that this would benefit a priori the citizens of English-speaking countries. I would respond to this objection by pointing out that a knowledge of English (but also other languages, perhaps with the attribution of diversified weights) is anyway an objective and important factor in the ability to move in the global scenario. It should therefore be considered.

Effective mobility and activity in supranational and tendentially global domains. Endowment with the above-mentioned resources and capacities may give rise to different forms—and especially intensities—of action in the global sphere. An element certainly to be considered is the international physical mobility of the subjects studied. In particular, one indicator could be the number of times in which, in a given period of time, a national border has been crossed. However, this indicator should be combined with information relative to the number of borders crossed, as well as to the locations of the countries visited, the purpose being to distinguish (or at any rate evaluate differently) globalization from regionalization—or from commuting dynamics, as in the case of transfrontier workers. Consideration could also be made of information concerning the range of action of people's jobs and investments. Further indicators could be the frequency with which subjects find themselves in what Augé (1992) calls "non-places": that is, spaces devoid of local features and therefore able to minimize the cultural attrition due to travel and action in foreign countries, such as airports or hotels belonging to the great international chains. Again, this dimension could comprise the *deliberate* use and consumption of foreign products.[8]

Belonging and a sense of belonging to global, or at any rate non-territorial, entities. As rightly emphasized by Sen (2002, p. 63), people increasingly identify with groups, or they have a sense of belonging, which are genuinely global in that they exist not through but despite national boundaries. This is a dimension which cannot be immediately translated into empirical terms, and whose detailed definition would be beyond the scope of the present discussion. However, I suggest that its principal indicator might be membership of, and activity in, groups of supranational extension. Tied to the sense of global belonging is also the spread of cosmopolitan lifestyles, attitudes, and relations (Hannerz 1990). However, this is a key dimension of that cultural globalization which, as emphasized in the previous chapter, is almost impossible to grasp by using territorial indicators. A PBGI instead appears decidedly more promising, although identification of the specific indicators to use would require reflection falling outside the scope of this book. A proposal might be to use statements reflecting a more or less cosmopolitan vision of the world, and with which the subjects studied would express their degree of agreement or disagreement. The dimension of the sense of global belonging

[8] I have emphasized 'deliberate' because consumers very often do not know the real origins of the products that they use: in the absence of such awareness, it is difficult to collect information useful for construction of the index.

would thus also include, ultimately, the sharing of planetary-level values and principles, such as those expressed by the Universal Declaration of Human Rights. However, the inclusion of references to values in an instrument intended to be applicable on a global scale appears problematic. In fact, the risk of ethnocentrism is very high—and consequently so too is the risk that the instrument will not gain wide recognition.

Exposure to global flows of mass communication. A particularly important aspect of globalization is the existence of communication flows that traverse the planet in asymmetric and fundamentally unidirectional manner. There are consequently news stories—but also images, values, and patterns of consumption—which may be known to all or almost all of the planet's inhabitants, and which all or almost all of the planet's inhabitants can form an opinion about or discuss. An indicator of this dimension could be, for instance, the frequency with which people watch or listen to international television or radio news broadcasts, the frequency with which they visit international information websites, or their knowledge about certain global events (for example, the venue of the last Olympic Games or the last World Football Championships).

Participation in global, or at any rate supranational, communication flows. The inhabitants of the Earth are not just passive recipients of the information and communication flows which traverse the planet. Very often, they themselves generate such flows, especially in the form of interpersonal communications at a distance. Indeed, thanks to the development of communication media and abatement of their costs, our planet is swathed by an extremely dense network of communications; a network whose existence is a further distinctive feature of globalization, and whose nodes are single individuals (or small groups). Indicators of this dimension could be the international contacts—telephone calls, SMS, email exchanges, and other contacts via the Web, as well as those through social networks like Facebook—made in a particular interval of time. In this case, too, as suggested above in regard to physical mobility, consideration should be made of the number and the locations of the countries involved in such exchanges, so that it is possible to distinguish genuinely global factors and situations from others which also come about on a supranational scale.

Degree of global consciousness. 'Global consciousness' is probably the aspect of globalization which is most difficult to study, and which, therefore, is least studied (Holton 2005, p. 39). This is so despite the fact that—as stressed in the first chapter and emphasized since the first studies on the phenomenon (Giddens 1991; Robertson 1992)—it is one of the constitutive dimensions of globalization itself. And also despite the fact that the manner in which people interpret globalization processes, as well as their emotional reactions to them, play a crucial role in determining the strategies and the courses of action enacted individually and collectively in response to globalization. For example, the difficulty of implementing joint supranational policies to address issues of global importance, such as protection of the natural environment or the management of economic and financial crises, is probably due to the fact that, as some authors suspect, there is still insufficient awareness of the global reach of such issues (Kennedy 2010, p. 5).

Measurement of global consciousness is precluded to instruments which use territorial units of analysis; but it becomes possible when the unit of analysis is the person—which further testifies to the potential of this approach. Nevertheless, it cannot be denied that the concept of global consciousness is very difficult to operationalize: that is, convert into empirically measurable terms. In this case, too, I suggest as possible indicators various stimuli with which to record the degree of agreement or disagreement of informants with statements concerning interdependence relations among different parts of the planet.

Beside theoretical considerations which may modify, enrich, or even reverse my suggestions concerning the possible dimensions and indicators with which to construct a PBGI, when creating such an instrument a practical problem of particular importance would arise. Unlike the indices based on states or cities, in fact, a PBGI cannot be calculated on the basis of secondary data—that is, data collected from already-existing statistical sources. Nor, as in the case of the instrument proposed by Taylor, can it be calculated on the basis of information obtainable with 'desk work'—for example, the exploration and analysis of websites. It will be instead necessary to go into the field and directly question a sample of informants; an operation which obviously entails difficulties in terms of organization and costs. In this regard, whilst a survey conducted on a planetary scale is unthinkable, ones of lesser extent, but nevertheless multi-local in scale, are feasible. However, the degree of territorial coverage will be less than that obtained by using many of the instruments described in this and previous chapters.

Given this difficulty and this consequent limitation, the construction of a PBGI should move through a first experimental phase, during which the largest possible number of indicators are tested for each of the above-suggested dimensions, as well as possible others. Subsequently, the results of this first phase should serve to select the indicators, among all those tested, to be included in the definitive PBGI. These indicators, consistently with the above recommendation—which in this case becomes even more stringent—should be as few in number as possible. A particularly 'slender' instrument, in fact, would not require the conduct of an *ad hoc* survey; on the contrary, it could be easily inserted into the numerous surveys periodically carried out in almost every part of the world, thus making the datum of the PBGI available on a potentially global scale.

Having stated the difficulties involved in the construction of a PBGI, also to be emphasized is what instead is one of its main strengths. This consists in the fact that, because the person is an elementary unit, the data collected in this way can then be combined in multiple different forms. The person-based approach, therefore, is not incompatible with those based on states or cities. For the information collected and organized by means of a PBGI would also be able, for example, to show the percentage of globalized subjects resident in a state or a city, and also in a sub- or supra-national region. The data of a PBGI would be characterized, that is to say, by high malleability, and they could therefore be adapted to diverse needs of research and analysis.

5.4 Conclusions: On the Nature of Globalization and the Possibility of Measuring It

As said in the previous chapters, the instruments developed to quantify globalization are not generally able to measure the phenomenon directly; rather, they measure dynamics that more properly pertain to internationalization. It is consequently with indicators of internationalization that it is generally attempted to deduce levels of globalization (Scholte 2005, p. 55). This situation, moreover, derives from the fact, already recalled in Chap. 1, that in the debate on this issue it is frequently not possible to draw a clear distinction between the concept of globalization and that of internationalization (Sklair 1999, p. 144).

For this reason—but also for others, as we shall shortly see—globalization is a phenomenon which evades complete and exhaustive measurement. The tools proposed to date, in fact, are able to grasp and quantify only some of its aspects. More specifically, it is not so much globalization per se that is usually measured but rather the degree of involvement in some of its characteristic dynamics of specific units of analysis—for example, as we have seen, states, cities, and people.

It has been repeatedly emphasized in this chapter that the various approaches developed to quantify globalization processes are not mutually incompatible. Indeed, if they were combined, they would yield a more multi-level, and therefore more complete, account of a phenomenon whose characteristic features are complexity and multidimensionality, as well as a significant degree of ambivalence. The multiple processes into which globalization articulates are in fact sometimes of opposite sign: in the cultural sphere, for example, globalization translates into dynamics of either homogenization or heterogenization (Cowen 2002, p. 129). It is unlikely that a single instrument could give adequate account of such ambivalence. Nevertheless, even if the various approaches described in this book were combined, there would still persist some particularly important and distinctive aspects of globalization likely to be excluded from the measurement, and consequently from the analysis. In this regard, to refer again the concept of methodological nationalism already presented in Chap. 2, instruments to measure the phenomenon which use territorial units of analysis—the state but also the city—are unable to grasp the crucial aspect of globalization represented by deterritorialization (Sassen 2000; Scholte 2000; Giaccardi and Magatti 2003; Beck 2000). By ‘deterritorialization’ is meant the dynamic that generates and spreads social phenomena unrelated to any physical space of action and interaction. For that matter, however, it is unlikely that even a person-based approach would be able to grasp this aspect in an entirely satisfactory manner.

Another and very important point to be stressed[9] is that globalization is distinguished not only by factors that diversify spaces and individual experiences but also—and this is the feature which most sharply differentiates globalization from

[9] The following part of the section includes some passages from Caselli (2008).

internationalization—by 'indivisible' factors which involve all the inhabitants of the Earth, regardless of their spatial locations 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 all life on the planet in just a few seconds—in the event of a large-scale nuclear war—is a phenomenon that marks a radical break with the past, and it transcends any cleavage that may traverse the planet. To be noted in this regard is that, not coincidentally, a major stimulus for reflection on globalization has been the Chernobyl disaster, which proved incontrovertibly that nuclear fears are 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 giving rise to unity and rupture, there are those who argue—the main reference cannot but be 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 personal nor territorial bases: accordingly, the only conceivable unit of analysis is the planet (or humanity) in its entirety. However, it should be emphasized that, although a PBGI cannot directly measure risk as such, it is nevertheless able to record and quantify the different levels of perception of global risks among people or groups of people. Whilst the interdependence among the different areas of the planet is a globally unifying and undiversified element, vice versa the awareness of such interdependence may vary significantly from person to person.

Finally, a further element that evades the instruments hitherto developed to measure globalization, but which nonetheless very markedly characterizes the phenomenon, 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; 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 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, it is less clear what can take its place. One possibility has been suggested by the analysis conducted in this book: it could be superseded by a multiscalar approach able to conjugate different levels of analysis of a territorial type but not only.

One may conclude by saying that all or almost all of the instruments discussed in this book 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.

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