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Citation for published version (APA):

Martens, P., Caselli, M., De Lombaerde, P., Figge, L., & Scholte, J. A. (2015). New Directions in Globalization Indices. *Globalizations*, 12(2), 217-228. <https://doi.org/10.1080/14747731.2014.944336>

Document status and date:

Published: 04/03/2015

DOI:

[10.1080/14747731.2014.944336](https://doi.org/10.1080/14747731.2014.944336)

Document Version:

Publisher's PDF, also known as Version of record

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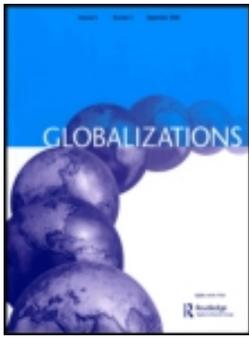
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To cite this article: Pim Martens, Marco Caselli, Philippe De Lombaerde, Lukas Figge & Jan Aart Scholte (2015) New Directions in Globalization Indices, *Globalizations*, 12:2, 217-228, DOI: [10.1080/14747731.2014.944336](https://doi.org/10.1080/14747731.2014.944336)

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New Directions in Globalization Indices

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ABSTRACT *This paper discusses the measurement of globalization with a view to advancing the construction of globalization indices. It critically analyzes the types of indices that can contribute to knowledge and policy on globalization. Three issues are particularly highlighted: (a) the focus of measurement (i.e. on activities or policies); (b) the dimensions of measurement (i.e. cultural, ecological, economic, political, and/or social); and (c) the units of measurement (i.e. local, national, regional, and/or global). This paper argues that a workable forward strategy should not seek to identify the single best composite globalization index, but rather should work in an interdisciplinary mode towards a set of complementary globalization indices. These quantitative analyses can then be productively blended with qualitative approaches in a fuller assessment of globalization's extent and impact.*

Keywords: globalization, indices, measurement

Introduction

The 'objective' assessment of the causes, contents, and consequences of globalization is a key issue for contemporary research and policy. Positive economic, social, and political analyses

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require data, and globalization indices are a promising means for providing concrete data. Existing indices of globalization are employed in various ways, including academic research, business analysis, mass and specialized media, and public policy. Given that the indices are used in these serious ways and with substantial consequences, it is all the more important to subject their ontology, epistemology, and methodologies to critical scrutiny.

This article discusses the measurement of globalization with a view to advancing the understanding and use of globalization indices.¹ Can globalization be better understood by measuring it? What are the intellectual and political implications of existing globalization indices? The article discusses the contributions and, in particular, the limitations of globalization indices. It also highlights the considerable gap between the quantitative and the qualitative analysis of globalization and argues for their greater integration.

The discussion that follows is more concerned with the underlying assumptions of composite indices rather than statistical arguments regarding these calculations. After identifying some existing globalization indices, the article explores three main issues in turn: (a) the focus of measurement (i.e. on activities or policies); (b) the dimensions of measurement (i.e. cultural, ecological, economic, political and/or social aspects of globalization); and (c) the units of measurement (i.e. local, national, regional and/or global). Different starting premises on these points can yield very different quantifications of globalization.

The Concept and Measurement of Globalization

Globalization is a prominent feature of contemporary society and discourse. To be sure, some sceptics have doubted the novelty, scale, and sustainability of globalization (Hirst & Thompson, 2002), and some have worried about the hegemonic deployment of 'globalization' as an ideology to bolster big capital and/or Western modernity (Rosenberg, 2005). However, large swaths of academe, business, governance, media, and the general public are convinced that they live in a globalizing world—and behave accordingly in their purchases, investments, travels, communications, researches, and so on.

The global orientation of much contemporary thought and action emphasizes how important it is to measure globalization. Although some might downplay the exercise (Rossi, 2008), measuring globalization can greatly help to assess the effects of globalization and how it could or should be addressed in policy. The question then is what to measure, with what indicators, against what unit(s) of analysis, and through what equations? Clearly, different answers to these questions can generate very different calculations.

Since 2000 a number of projects have sought to measure globalization with a composite index. The first initiative of this kind, the A.T. Kearney/Foreign Policy Globalization Index, was launched in 2001 and continued its calculations until 2006 (A.T. Kearney/Foreign Policy, 2001). In 2002 a KOF Index of Globalization appeared as a second major measurement exercise, which continues to this day (Dreher, 2006; Dreher, Gaston, & Martens, 2008). The Centre for the Study of Globalisation and Regionalisation (CSGR) at the University of Warwick produced a globalization index covering the years 2002–2004 (Lockwood & Redoano, 2005). A Cultural Globalization Index was suggested in 2004 (Kluver & Fu, 2004). The Maastricht Globalisation Index (MGI) emerged in 2008 (Figge & Martens, 2014; Martens & Raza, 2009; Martens & Zywiets, 2006), and a New Globalization Index was proposed two years later (Vujakovic, 2010). More recently, Caselli has suggested a Person-Based Globalization Index (PBGI) (2012, pp. 132–135). Other globalization indices are described in e.g. Randolph (2001), Heshmati (2003) (covering 62 countries with 13 indicators over the period 1995–2000),

Andersen and Herbertsson (2003) (covering 23 OECD countries with 9 indicators (all economic) over the period 1979–2000). Lately new indices focusing on connectedness rather than globalization have come up but are not addressed here (e.g. UNIDO Connectedness Index and DHL Global Connectedness Index).

These measurement exercises are important not only in themselves, but also for the explanatory claims that may flow from them. For example, the KOF Index of Globalization has been applied to a multitude of issues in over a 100 empirical studies (Potrafke, 2014). The first generation of these studies was mostly limited to reporting correlation, whereas a second generation has employed more sophisticated econometric procedures, such as extreme bounds analysis for robustness and granger causality tests. The results have suggested *inter alia* that contemporary globalization has exerted positive effects on economic growth and human rights, but negative effects on in-country inequality (Potrafke, 2014; also Dreher, 2006; Martens & Amelung, 2010). Meanwhile several studies with the MGI have suggested that more globalized countries are also more sustainable, and in general also healthier (Martens & Raza, 2009; Martens & Amelung, 2010); however, the methodological approach in this latter work only establishes correlation and does not allow assertions of causal links.

Globalization indices may also have evaluative and policy consequences. High ranking on a globalization measure might be taken as a meritorious quality, on the assumption that ‘globalization is a good thing’. Governments, companies, and other actors might advertise a high globalization ranking in attempts to attract investment, gain policy approval, assert prestige, and so on.

Given the considerable stakes involved in such use (and potential misuse) of globalization indices, it becomes vital to place these measurements under careful critical examination. Invariably, all of these initiatives face contentious methodological questions and choices. Some rather positivist authors claim objective measurement (e.g. Dreher et al., 2008; Dreher, Gaston, Martens, & Van Boxem, 2010), while others acknowledge the constructivist nature of composing an index. Figge and Martens (2014), for example, point out that the construction process involves many ‘subjective’ choices of the researcher who puts them together. It is important to keep in mind that composite indicators are estimates of complex concepts or phenomenon rather than exact measurement.

Nevertheless, core issues include the concept of globalization adopted, the selection of domains and phenomena to be captured, and the units (countries or other entities) whose globalization is assessed. These three crucial matters in measuring globalization are now scrutinized in turn.

Concepts to be Measured

What is the ‘globalization’ that is being measured in a globalization index? The term has attracted multiple divergent definitions, including internationalization, liberalization, universalization, Westernization and deterritorialization (Scholte, 2008). Clearly the adoption of different definitional starting points results in different—potentially radically different—measurements of ‘globalization’.

Internationalization

Most existing globalization indices measure internationalization. That is, their indicators relate to levels of transactions across country borders. Such data show the ‘openness’ of a country to contacts with other countries and its degree of integration into an overall international system. In

this vein, for example, Chase-Dunn and Jorgenson have calculated average openness indicators for countries in terms of their cross-border trade and investment flows (2008; also Chase-Dunn, Kawano & Brewer, 2000).

A particular problem with calculations of globalization-as-internationalization is their usual neglect of the geographical distribution of linkages. Thus a country might record a high ‘globalization’ score when its international transactions are in fact heavily concentrated with neighbouring countries. For example, 88.8% of Mexico’s exports go to the USA (Ebenthal, 2007). To address this issue, Vujakovic (2010) suggests that globalization indicators which refer to international exchanges should be weighted in relation to the distance between the countries concerned. However, Vujakovic’s New Globalisation Index 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 other measures.

Certainly it is important to distinguish between a country’s internationalization on a regional as opposed to a global/world/planetary scale. Such a differentiation of regional and global measurements is technically possible, although it is not free of problems either (De Lombaerde & Lapadre, 2008a, pp. 170–171). It is further interesting to contrast work on globalization indicators with work on regionalization indicators. Whereas globalization indicators usually measure the level of globalization of a country, regionalization indicators usually measure the level of integration of the region itself (i.e. not the level of integration of a country within a region) (cf. De Lombaerde, Flôres, Iapadre, & Schulz, 2011).

Another problem with measures of globalization-as-internationalization is that they omit all transactions within a country. Thus, to take an extreme example, on international measures Vatican City would be highly globalized as its residents take a bus to surrounding Rome, while telephone calls across 11 time zones between Kaliningrad and Vladivostok would be counted as ‘domestic’ and non-global. A Miami resident’s bank account in the Bahamas less than 200 km away would be counted as ‘global’ for having crossed a border, while an investment from Guangzhou more than 3000 km to Urumqi would be excluded from the equation for being intra-national. Such illustrations point to the unit-of-analysis problem which is discussed in more detail later.

Liberalization

It is important also to distinguish between calculations of de facto globalization (e.g. as found in the measures of international transactions just discussed) and *policies* of globalization. Many in commercial and governmental circles have understood ‘globalization’ as a policy programme of economic liberalization. From this perspective a globalization index would measure the prevalence of official policies of privatization, deregulation, tight money, and fiscal constraint.

In this vein the World Economic Forum’s Global Competitiveness Index does not measure transactions between countries, but the degree to which national governments adopt policies that facilitate ‘productivity’ and ‘growth’ (WEF, 2013). Similarly, the Economic Freedom of the World index emanating from think tanks such as the Cato Institute and the Fraser Institute measures adherence to neoliberal policies rather than actual transactions (EFW, 2013). Some such policy indicators have also been reintroduced into the KOF Index of Globalization (Dreher, 2006).

Confusion between de facto globalization and policies of globalization can be problematic, particularly when both measures are incorporated in the same index. Arguably a sharp distinction needs to be made in measuring globalization between inputs (including certain policies),

content (i.e. relevant activities and transactions), and outputs (i.e. the consequences of those activities) (De Lombaerde & Lapadre, 2008a, pp. 164–166).

Universalization and Westernization

Next to internationalization and liberalization, many have conceived of globalization as the spread to all humanity across the planet of certain objects and experiences. Usually those universalized conditions are understood to be culturally ‘Western’. Thus, for example, formal colonialism of the late nineteenth and early twentieth century is seen as an earlier instance of globalization-as-Westernization. Today the focus is more on ‘Americanization’ and ‘McDonaldization’ (Ritzer & Stillman, 2003).

Such a conception of globalization is reflected in the KOF Index of Globalization, which *inter alia* includes indicators such as the worldwide spread of McDonald’s restaurants and IKEA stores (rather than, say, outlets serving Chinese or Indian food). Indeed, early editions of the KOF Index were explicitly based on the assumption that cultural globalization corresponded to ‘the domination of American cultural products’ (Dreher, 2006). This assumption was later drastically revised, with the consequent selection of indicators better able to grasp a wider range of globalization processes.

Nevertheless, existing globalization indices remain culturally biased towards Western modernity. They measure globalization mainly as enacted and experienced by well-resourced circles in urban centres of OECD countries. Thus the indices tend to measure international tourism more than undocumented migration, Hollywood more than Nollywood, transnational professional networks more than transnational spiritualist networks, and so on. Inevitably, an index cannot equally incorporate all standpoints on globalization, and data related to ‘Western’ aspects of globalization are usually more numerous, more precise, and more readily available. Still, it is well to consider that all of the major existing globalization indices reflect a limited range of cultural perspective.

Deterritorialization

Some analysts have suggested that the distinctive character of contemporary globalization lies in its pronounced ‘supraterritorial’ qualities (Scholte, 2005). In this conception social relations are especially global when they operate with significant autonomy from territorial places, territorial distances, and territorial borders. Examples of substantially deterritorialized global connections include the cyberspace of the Internet, climate changes, mobile phone networks, commodity prices, nonterritorial solidarities (e.g. based on caste, faith, and sexuality), and a host of health challenges.

Although some commentators have called for truly supraterritorial indicators (Caselli, 2012) such data remain in short supply. For the most part statistics continue to reflect their etymological origins as ‘state-istics’ i.e. measures related to territorial-country circumstances. ‘Globalistics’ remain comparatively scarce. This once again raises issues concerning the unit of analysis in globalization indices, to which we return in a later section. Figge and Martens (2014) take another approach by stating that globalization is a multi-scalar process, encompassing processes of increasing connectedness at the local, national, regional, and global levels. Caselli (2012) on the one hand supports the conceptual claim, yet calls for truly supraterritorial indicators. Diverging perspectives, whether globalization is truly only about the global or whether it encompasses

processes at lower scale levels seem to persist. More consensus exists, however, that globalization is a multi-dimensional concept, which raises issues that need to be addressed.

Dimensions of Measurement

Along with the starting definition adopted, measurements of globalization can vary immensely as a result of the dimensions included and the relative weight assigned to those dimensions. In other words, different indices combine cultural, economic, ecological, political, and social elements of globalization in different ways. For example, a country may become more globalized if its ecological footprint is included in the index (Martens & Zywiets, 2006).

Having been largely developed by and for economists, globalization indices have often given most attention to indicators such as trade and investment. Data availability has also tended to favour this economic emphasis. Figures relating to other aspects of globalization—in particular cultural and ecological dimensions—have generally been harder to assemble. Nevertheless, the measurement of globalization should try to include all major features of contemporary globalization.

Many authors examining the measurement of globalization concur with the view that ‘culture is the most visible manifestation of globalization’ (Kluver & Fu, 2004, 2008). However, despite culture’s importance to globalization, no index has yet provided an adequate solution to its measurement. Martens and Zywiets (2006) sidestep the issue by stating that the concepts of culture and communication are inherently difficult to quantify. Yet one then risks dismissing the importance of culture. Clearly, it would be useful if indices would include some element of cultural globalization.

To this end, Kluver and Fu (2004) have constructed a Cultural Globalization Index. They argue that it is impossible directly to measure the diffusion of cultural values and ideas across national borders. So they use cultural proxies in terms of ‘the conduits by which ideas, beliefs, and values are transmitted’. Although cultural globalization is adequately conceptualized, the available empirical measures once again fall short. Kluver and Fu use the imports and exports of books, brochures, newspapers, and periodicals, because other possible indicators lack systematic data sources. Countries at the top of their cultural globalization rankings are therefore generally affluent and English-speaking.

Several other globalization indices have measured ‘cultural’ or ‘social’ globalization in relation to the use of a particular transmission or communication technology such as cellular phones. Yet such indicators are also problematic, especially when substitutes exist. What really matters is the net increase in (global) communication or transmission (based on ‘old’ and ‘new’ technologies), if that could be measured. The mix of technologies that are used and the processes of substitution (from old to new technologies) might also differ from one country (or other unit of analysis) to another. Moreover, in certain circumstances people might leapfrog technological stages: for example, from not having a telephone at all to having a cellular phone. (This latter point has been acknowledged by Figge and Martens (2014) in their latest update of the MGI.)

The problem with focusing on a particular technology in order to capture the intensity and scope of global communication can further be illustrated with reference to data on postal services (Ansón & Helble, 2013). Statistics from the Universal Postal Union (UPU) are based on data from national postal services. The privatization of postal services is therefore likely to underestimate the exchanges. In addition, as the average weight of parcels is rising, one might think that postal services are increasingly about trade (goods), instead of about communication (messages).

Also difficult to measure along socio-cultural axes of globalization is global consciousness. As many analysts with a constructivist bent have emphasized, *awareness* of a global existence is central to that global existence (Robertson, 1992). Yet what sorts of indicators could be used to measure global consciousness? Some experimental research has broached this question by exploring the degree to which people in different countries across the world are prepared to contribute resources to finance global public goods (Buchan et al., 2009). However, on the whole quantitative research in this area lags far behind that on other economic and cultural measures of globalization.

Finally, alongside culture and consciousness it is also difficult to measure the ecological dimension of globalization, all the more so on territorial bases (Dreher et al., 2008, p. 38). Global ecological developments such as land-use, climate change, and natural resource depletion do not occur as cross-border transactions between territorial units. Ecological globalization needs to be measured in terms of changes at locations rather than as movements between locations. Moreover, global ecology arguably needs to be measured on a planetary scale: thus as *global* demography, *global* warming, and so on. The only composite indicator that includes the ecological domain is the MGI. Figge and Martens (2014) employ the Ecological Footprint of a country's trade as a share of its biocapacity to indicate the level of globalization of ecological systems.

In sum, after more than a decade of work globalization indices remain underdeveloped on several crucial dimensions. Once one accepts—as most academic and lay observers would now do—that globalization is more than a narrowly economic phenomenon, then measurement becomes vastly more complicated. If the current economistic basis of measuring globalization is so theoretically unsatisfactory, we need to question why we should pursue the construction and maintenance of indices which may be too limited to understand globalization.

Unit of Measurement

A third key methodological issue in measuring globalization is the unit of analysis. Whose globalization is being calculated? Most existing indices seek to quantify (and often also to rank) the globalization of *countries*. The unit of analysis underpinning this work is the country–nation–state–society. From this perspective the question becomes how globalized is Bolivia, or Germany, or Nigeria, or Singapore—and which country is more globalized than the others?

This framing of the measurement of globalization reflects the widespread methodological territorialism (Scholte, 2005), methodological nationalism (Beck, 2004), and embedded statism (Sassen, 2000) of modern social science. Thus reigning postulates affirm that social geography equates to bounded countries, that social solidarity equates to nationhood, and that social governance equates to the state. Society is assumed to take form as a country–nation–state unit, where geography, community, and governance converge in the same ‘natural’ container of economic, cultural, and political processes.

These methodological suppositions have also informed the construction of databases. The majority of indicators—and therefore most of the statistical data available and usable for the construction of a globalization index—take the country–nation–state as their unit of analysis (De Lombaerde & Lapadre, 2008b, p. 10; Scholte, 2005, pp. 86–87). Indeed, ‘stat-istics’—as testified by the etymology of the word—came into being as an instrument of ‘state’ administration (Parra Saiani, 2009, pp. 9–10). To this extent the choice of the country–nation–state unit of analysis in existing globalization indices has been influenced—even dictated—by the practical question of the availability of data required to construct the tool. In this situation

data availability has tended to guide the research questions, rather than (as ought to be) the other way around.

Certainly there are some good reasons to measure globalization in relation to country–nation–states. These units continue to be key reference points in the everyday lives of the vast majority of humanity today (Ray, 2007). Indeed, the state contributes substantially to shaping globalization processes, furnishing much of the infrastructures, particularly for transport and communications, which make possible transnational global flows (Axford, 2007, pp. 322–323). More generally, too, states continue to be prominent policy actors across all issue-areas in today’s more global world. Also, for all that contemporary history may have witnessed significant deterritorialization, country contexts continue to shape social life in highly important ways, and global dynamics have differential effects depending on country locations. Globalization can furthermore involve reterritorialization processes that give new life to country borders, national identities, and state power (Scholte, 2008, p. 1492).

Yet while there may be good grounds for measuring globalization in relation to country–nation–states, it cannot be justified to measure globalization *only* in these terms. After all, countries are not the only relevant social spaces in the contemporary world, where cities, regions, and planetary realms are also often key geographical contexts. Moreover, not all relationships among people are mediated by their shared national–territorial belonging (Sen, 2002, p. 66). Similarly, much regulation in contemporary world politics involves trans-state, supra-state, and non-state institutions (Scholte, 2010). Thus while social relations in a global world continue to be shaped by countries, nations, and states, it is quite a misrepresentation to reduce society to country–nation–state units, as the main existing globalization indices have done.

The lack of fit between global relations and country–nation–state–society units is especially pronounced in respect of ‘deterritorialized’ or ‘supra-territorial’ flows (Giaccardi & Magatti, 2003; Sassen, 2000; Scholte, 2000, pp. 48–49). For example, as noted earlier, one cannot effectively measure key global ecological developments in terms of territorial units. Climate change, biodiversity loss, stratospheric ozone levels, and the like are not territorially bounded, have no particular intersection with national sentiments, and cannot be regulated by states alone. Likewise, it is not particularly meaningful to divide such items as digital communications, electronic financial transactions, global discourses, transborder nongovernmental regulation, transnational corporations, and transplanetary diseases amongst country–nation–state units. Any index of globalization that omits such ‘supra-territorial’ items can hardly claim to measure the phenomenon. Indeed, it is precisely the deterritorialized dynamics that differentiate globalization from internationalization. Hence a purely territorial approach to measuring globalization is arguably highly distorting, yielding data that ‘in the best of cases are irrelevant and in the worse misleading, or even false’ (Beck-Gernsheim, 2004, cited in Caselli, 2006, p. 20).

Hence there is an urgent need to diversify measures of globalization away from their current bias towards methodological territorialism, nationalism, and statism. Already, for instance, various authors have proposed the city as an alternative focus for globalization research (Sassen, 2008; Taylor, 2004; Taylor, Catalano, & Walker, 2002). A.T. Kearney has in fact reoriented the unit of analysis in its recent globalization measures away from the country to the city (Hales & Pena, 2012). Thus far this alternative formula has been applied to only 66 cities, which does not allow for a truly ‘global’ assessment (Figge & Martens, 2014). However, the initiative illustrates the possibility of measuring globalization in relation to non-country units.

Other scholars have suggested measuring globalization in relation to the person (Caselli, 2012), transnational practices (Sklair, 1991), and global social relations (Shaw, 1994). Similarly one could imagine globalization measures for regional units or the planet as a unit of analysis in its own right (Alamuti, 2011). So far these suggestions have not been followed by the development of a concrete measure of globalization, and work on these new lines is a clear priority for future research.

Also important to measure, if it could be done, is globalization in respect of non-geographical categories. Within the same spatial context—no matter how circumscribed—globalization can vary across individuals and social groups (Holton, 2005; Kennedy, 2010). For example, Bauman (1998) suggests a new class division between the globalized upper classes and the localized lower classes. It would therefore be useful to have a tool that enables comparison, within a specific territorial context or in general terms, of the level of globalization among members of different classes, ethnic groups, genders, professions, age categories, etc. Whence derives the proposal of Caselli (2012, pp. 132–135) for a Person-Based Globalization Index (PBGI), although this idea encounters the practical difficulty, in terms of costs and organizational complexity, of collecting the data necessary for its construction.

Thus multiple territorial, supraterritorial, and nonspatial dimensions can be rightly used, along with the country–nation–state, as a unit of analysis for measuring globalization processes. The larger challenge in the long run is perhaps to develop a multi-scalar approach to this question. Thus globalization measures based on individual, city, country, regional, and planetary units—as well as different social categories such as class and gender—would be available concurrently, to give a fuller appreciation of the multi-scalarity and multi-sectorality of globalization (Sassen, 2007, 2008). This diversity suggests that designing globalization indices with different units of analysis makes sense. In addition, one should not forget that interactions between micro- and macro-levels can also be considered as essential aspects of globalization (Rosenau, 2008), and this circumstance should also be reflected in the measurement tools.

It is important to stress that the endeavour to develop alternative units of analysis for the measurement of globalization is not necessarily in conflict with the most common approach based on the country–nation–state. Globalization is an extraordinarily complex process which can be analysed and interpreted from numerous standpoints which are not in competition but complementary. As Beck puts it, the logic that guides us when analyzing globalization should not be that of ‘either-or’ but rather ‘both-and’ (Beck, 2004). Making combined use of measurement tools that employ different units of analysis would make it possible to grasp diverse aspects of globalization and would yield a more thorough understanding of the phenomenon.

As remarked repeatedly in this discussion, however, the construction of globalization measures in respect of other units of analysis is premised on the availability of relevant data. Without sufficient data for individual, municipal, regional, class, and other engagements of global relations, alternative globalization indices cannot be more than propositions. Efforts to achieve better capacities for measuring globalization therefore must be devoted not only to the development of tools suited for the purpose, but also to the collection and production of new types of primary data on which such tools depend.

The Measurement of Globalization: A Way Forward

The measurement of globalization contains so many pitfalls that it is tempting to retreat to purely qualitative analyses. However, this surrender would burn the fragile bridge between qualitative

and quantitative analysis of globalization. The qualitative side of research generally focuses on constructing frameworks and concepts through which to understand globalization. This approach provides some tools, but theory without measurement runs the risk of unsubstantiated and unscientific speculation. The quantitative side of research assesses globalization using data, statistics, and indices. While this approach runs the risk of oversimplification and may take on an overly enthusiastic air of ‘objective truth’, it lends important descriptive precision to understandings of globalization.

The gap between theory and measurement in globalization studies can be bridged. Instead of rejecting the possibility of quantifying globalization adequately, the measurement of globalization needs to be, and can be, improved. A new mode of thinking, such as supra-territoriality, can trigger new ideas on both the analysis and quantification of globalization. A continuous interaction between theoretical and empirical work can yield more ontological clarity.

This process of broadening and deepening knowledge of globalization needs to be an interdisciplinary co-operation. Academics from the quantitative side (modelling, conclusive statements, certainty, and proofs) can collaborate with those on the qualitative side (analysis, discussion, conceptual revision, background, and textual form). For all of their differences the methodologies can be complementary.

Anthropologists, economists, historians, jurists, political scientists, sociologists, and others can jointly address different dimensions of the same globalization questions. Rather than handing over responsibility for measuring globalization from one discipline to the next—where for example anthropologists create a cultural index and economists create an economic index—what is required is a single collective effort, where the whole is greater than the sum of the individual parts.

Composite indices of globalization can provide the meeting place or forum for different approaches. Composite indices need matters to be conceptually analysed and continually reformulated. Composite indicators also have interesting technical features that enable them to be used in more sophisticated statistical work. But while recognizing the potential of designing ‘better’ composite globalization indicators, one must also guard against excessive optimism with respect to their use. By adding more and more sub-indices, composite indices risk to become more abstract and more difficult to interpret.

For purposes of empirical research, a better strategy might well be to work towards a set of complementary globalization indices. Rather than focus on finding ‘the best’ composite globalization index, indices of cultural globalization of cities could co-exist with indices of economic globalization of countries, and so on. The way forward might be to differentiate globalization indices in terms of the level of analysis (without losing sight of interplays between scales), in terms of the dimensions (without losing sight of interrelations of the political, the social, the economic, and the cultural), and in terms of the distinction between *de facto* globalization and globalization policies.

Note

- 1 This article builds on Dreher et al. (2010) and previous work of the authors. It has benefited from discussions at the ‘Measuring Globalisation’ workshop held at the University of Maastricht on 22–23 November 2012, with the support of the Scientific Research Group (WOG) on ‘Globalization, Regionalization and Socio-Economic Inequality’ (GRESI), funded by the Flemish Fund for Scientific Research (FWO). Scholte’s contribution was partly supported by a Senior Fellowship at the Käte Hamburger Kolleg/Centre for Global Cooperation Research, University of Duisburg-Essen, Germany.

References

- Alamuti, M. M. (2011). *Critical rationalism and macrosociology of globalisation* (PhD thesis). University of Newcastle, Newcastle-upon-Tyne, UK.
- Andersen, T. M., & Herbertsson, T. T. (2003, July). *Measuring globalization* (IZA Discussion Paper no. 2003/817). Berlin: IZA.
- Ansón, J., & Helble, M. (2013). A gravity model of international postal exchanges. In M. A. Crew & P. R. Kleindorfer (Eds.), *Reforming the postal sector in the face of electronic competition* (pp. 36–47). Cheltenham: Edward Elgar.
- A.T. Kearney/Foreign Policy. (2001, January–February). Measuring globalization. *Foreign Policy*, (122), 56–65.
- Axford, B. (2007). Editorial. *Globalizations*, 4(3), 321–326.
- Bauman, Z. (1998). *Globalization: The human consequences*. Cambridge: Polity.
- Beck, U. (2004). *Der kosmopolitische Blick order: Krieg ist Frieden*. Frankfurt am Main: Suhrkamp Verlag.
- Beck-Gernsheim, E. (2004). *Wir und die Anderen*. Frankfurt am Main: Suhrkamp Verlag.
- Buchan, N. R., Grimalda, G., Wilson, R., Brewer, M., Fatas, E., & Foddy, M. (2009). Globalization and human cooperation. *Proceedings of the National Academy of Sciences United States of America*, 106(11), 4138–4142.
- Caselli, M. (2006). On the nature of globalization and its measurement. Some notes on the A.T. Kearney/Foreign Policy Magazine Globalization Index and the CSGR Globalisation Index. *UNU-CRIS Occasional Papers*, (3).
- Caselli, M. (2012). *Trying to measure globalization. Experiences, critical issues and perspectives*. Dordrecht: Springer.
- Chase-Dunn, C., & Jorgenson, A. (2008). Trajectories of trade and investment globalization. In I. Rossi (Ed.), *Frontiers of globalization research* (pp. 165–184). New York: Springer.
- Chase-Dunn, C., Kawano, Y., & Brewer, B. (2000). Trade globalization since 1795: waves of integration in the world-system. *American Sociological Review*, 65, 77–95.
- De Lombaerde, P., Flóres, Jr., R. G., Iapadre, P. L., & Schulz, M. (Eds.). (2011). *The regional integration manual. Quantitative and qualitative methods*. London: Routledge.
- De Lombaerde, P., & Lapadre, L. (2008a). The world is not flat. Implications for the construction of globalisation indicators. *World Economics*, 9(4), 159–180.
- De Lombaerde, P., & Lapadre, P. L. (2008b). International integration and societal progress: A critical review of globalisation indicators. In *OECD, statistics, knowledge and policy 2007: Measuring and fostering the progress of societies* (pp. 1–16). Paris: OECD, chapter 21.
- Dreher, A. (2006). Does globalization affect growth? Evidence from a new index of globalization. *Applied Economics*, 38(10), 1091–1110.
- Dreher, A., Gaston, N., & Martens, P. (2008). *Measuring globalization: Gauging its consequences*. New York: Springer.
- Dreher, A., Gaston, N., Martens, P., & Van Boxem, L. (2010). Measuring globalisation – opening the black box. A critical analysis of globalisation indices. *Journal of Globalization Studies*, 1(1), 166–185.
- Ebenthal, S. (2007, May). Messung von Globalisierung in entwicklungsändern: Zur Analyse der Globalisierung mit Globalisierungsindizes. *Berichte aus dem Weltwirtschaftlichen Colloquium der Universität Bremen*, (104), 1–36.
- EFW. (2013). *Economic freedom of the world. 2013 Annual Report*. Canada: Fraser Institute.
- Figge, L., & Martens, P. (2014). Globalisation continues: The Maastricht globalisation index revisited and updated. *Globalizations*. doi: 10.1080/14747731.2014.887389
- Giaccardi, C., & Magatti, M. (2003). *L'io globale. Dinamiche della socialità contemporanea*. Roma-Bari: Laterza.
- Hales, M., & Pena, A. M. (2012). 2012 Global cities index and emerging cities index. Retrieved from <http://www.atkearney.com/documents/10192/dfedfc4c-8a62-4162-90e5-2a3f14f0da3a>
- Heshmati, A. (2003). *Measurement of a multidimensional index of globalization and its impact on income inequality* (WIDER Discussion Paper, No. 2003/69). Helsinki: UNU-WIDER.
- Hirst, P., & Thompson, G. (2002). The future of globalization. *Cooperation and Conflict*, 37(3), 247–265.
- Holton, R. J. (2005). *Making globalization*. Basingstoke: Palgrave.
- Kennedy, P. (2010). *Local lives and global transformation. Towards world society*. Basingstoke: Palgrave Macmillan.
- Klüber, R., & Fu, W. (2004, February 10). The cultural globalization index. *Foreign Policy*, online.
- Klüber, R., & Fu, W. (2008). Measuring cultural globalization in Southeast Asia. In T. Chong (Ed.), *Globalization and its counter-forces in Southeast Asia* (pp. 335–358). Singapore: ISEAS Publishing.
- Lockwood, B., & Redoano, M. (2005). The CSGR globalisation index: An introductory guide. *CSGR Working Paper*, (155/04).
- Martens, P., & Amelung, A. (2010). On the correlation between globalization and vulnerability in times of economic crisis – a statistical analysis for Europe. *Globality Studies Journal*, 17(6), 1–15.
- Martens, P., & Raza, M. (2009). Globalization in the 21st century: Measuring regional changes in multiple domains. *The Integrated Assessment Journal*, 9(1), 1–18.

- Martens, P., & Zywiets, D. (2006). Rethinking globalisation. A modified globalisation index. *Journal of International Development*, 18(3), 331–350.
- Parra Saiani, P. (2009). *Gli indicatori sociali*. Milano: FrancoAngeli.
- Potrafke, N. (2014). The evidence on globalization. *World Economy*. Advance online publication. doi: 10.1111/twec.12174.
- Randolph, J. (2001). *G-index: Globalisation measured*. London: World Markets Research Center.
- Ray, L. (2007). *Globalization and everyday life*. Abingdon: Routledge.
- Ritzer, G., & Stillman, T. (2003). Assessing Mcdonaldization, americanization and globalization. *Global America*, 30–48.
- Robertson, R. (1992). *Globalization: Social theory and global culture*. London: Sage.
- Rosenau, J. (2008). Three steps toward a viable theory of globalization. In I. Rossi (Ed.), *Frontiers of globalization research* (pp. 307–315). New York: Springer.
- Rosenberg, J. (2005). Globalization theory: A post mortem. *International Politics*, 42, 2–74.
- Rossi, I. (Ed.). (2008). *Frontiers of globalization research. Theoretical and methodological approaches*. New York: Springer.
- Sassen, S. (2000). New frontiers facing urban sociology at the Millennium. *British Journal of Sociology*, 51(1), 143–159.
- Sassen, S. (2007). *A sociology of globalization*. New York: Norton.
- Sassen, S. (2008). Theoretical and empirical elements in the study of globalization. In I. Rossi (Ed.), *Frontiers of globalization research* (pp. 287–305). New York: Springer.
- Scholte, J. A. (2000). *Globalisation. A critical introduction*. Basingstoke: Palgrave.
- Scholte, J. A. (2005). *Globalization. A critical introduction* (2nd ed.). Basingstoke: Palgrave.
- Scholte, J. A. (2008). Defining globalization. *The World Economy*, 31(11), 1471–1502.
- Scholte, J. A. (2010). Governing a more global world. *Corporate Governance*, 10(4), 459–474.
- Sen, A. (2002). *Globalizzazione e libertà*. Milano: Mondadori.
- Shaw, M. (1994). *Global society and international relations: Sociological concepts and political perspectives*. Cambridge: Polity.
- Sklair, L. (1991). *Sociology of the global system*. Hemel Hempstead: Harvester Wheatsheaf.
- Taylor, P. J. (2004). *World city network. A global urban analysis*. London: Routledge.
- Taylor, P. J., Catalano, G., & Walker, D. R. F. (2002). Measurement of the world city network. *Urban Studies*, 39(13), 2367–2376.
- Vujakovic, P. (2010). How to measure globalisation? A New Globalisation Index (NGI). *FIW Working Paper*, (46).
- World Economic Forum. (2013). *The global competitiveness report 2013–2014*. Geneva: WEF.

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