

SELECTED READINGS

Focus on: Measuring globalisation

December 2007



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INTRODUCTION

Globalization is one of the most contested topics; in fact even the definition of globalization is hotly debated, and often contested, it has not been reached precise, widely-agreed definition. In fact the concept of globalization is wide and little defined in its boundaries and encompasses a range of disciplines and different perspectives. Some disciplines including anthropology or sociology focus on cultural changes of growing interconnectedness, such as the expansion of brands like Nike and McDonalds, and the increasing ease of travel. Other disciplines such as economics track the exchange of finances, goods and services through expanding global markets. Still other disciplines such as political science examine the role of international political institutions like the United Nations and the increasing power of transnational corporations.

Indeed consensus has not even been reached of the existence of globalization.

However, although no consensus exists on the precise definition of globalization, there seems to be a consensus that it is real and is affecting the world in numerous ways; indeed, globalization touches every aspect of economic and social life. This cause and effect relationship is often articulated without empirical evidence leaving the correlation between globalization and its effect without any measure. A widely accepted measure (or measures) of globalization could prove to be very useful when discussing its effects.

The multidimensional phenomenon of globalization is not cataloged in any database and instead of referencing the measure of globalization, a large of number variables represent the globalization. In general, statistical measuring is complex process subject to a variety of issues ranging from theoretical conceptualization to the selection of appropriate data and in this case, due to the wideness of the phenomenon, it is particularly difficult to find a statistical measure.

In fact, concerning the degree and extent of economic globalization, the use of statistical measures, as statistics or indicators, is fairly complex first because the phenomenon itself is barely defined as a concept and then because most immediate definitions refer to what globalizations entails and not to observable facts. In fact, in correspondence to the

different definitions, a large range of variables tend to serve as “indications of globalization.”

Information on globalization is enormous and the most widely : as an hint on the massive information available on this issue, for the hit “globalization” Google reports 34.900.000 references and for “measures of globalization” the references are still 1.960.000. When searching “statistics + globalization” the number of references reduces only at 1.400.000.

Indeed, in the framework of the Euroindicators/PEEIs project, we restrict the area of investigation: we focus on the statistical measures of globalization, we define the measures as statistics and as composite indicators, then we complement the information on statistics with institutional aspects and on composite indicators with methodological works. Finally, within economic statistics we propose a number of works refining the use of statistics in the description of the phenomenon of globalization.

The following list is a non-exhaustive, subjective selection of publications on the Measures of Globalization. This list is divided in five parts:

- Statistical Indicators
- Institutional Issues
- Composite Indexes
- Methodological Issues
- Sector Statistics

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1 STATISTICAL INDICATORS

1.1 OECD Globalization Indicators

With over 240 figures, OECD Economic Globalization Indicators helps identify the economic activities of member countries that are under foreign control, and more particularly the contribution of multinational enterprises to growth, employment, productivity, labour compensation, research and development, technology diffusion and international trade. These indicators shed new light on financial, technological and trade interdependencies within OECD countries.

1.2 OECD, 2005, Handbook on Economic Globalisation Indicators

OECD Handbook on Economic Globalization Indicators, the objective of which is to gauge the intensity and magnitude of the globalization process. The areas covered by the Handbook and this publication include capital movements and foreign direct investment, the economic activity of multinational enterprises, the internationalization of technology, and international trade.

Introduction and table of contents free available at

<http://www.oecd.org/dataoecd/37/25/34964971.pdf>

1.3 World Bank Globalization Indicators

The World Bank (WB) publishes the annual World Development Indicators (WDI). The WDI affords readers more than 900 indicators organized in six sections: World View, People, Environment, Economy, States and Markets, and Global Links. In each section a plethora of information is presented. Surely many indicators of globalization are contained within the more than 900 indicators cataloged by the WDI. In particular,

within the different chapter there is a section “Data and statistics” where different data sources are supplied for facilitating the analysis of globalization, including the Global Development Finance Database, the Database on Foreign Direct Investment and the World Investment Report (UNCTAD). The World Bank (WB, 2003) assesses a country's integration with the world economy on the basis of the indicators of the international commodity exchange, private capital flows and foreign direct investment (FDI) flows. As synthetic information, indicators can be found on the World Development Indicators (2003 is the last available version) and in particular a synthetic table on “Integration with the global economy” (Table 6.1).

<http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:21298138~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>

<http://www1.worldbank.org/economicpolicy/globalization>

<http://devdata.worldbank.org/wdi2005/TOC.htm>

1.4 UNCTAD Development and Globalization: Facts and Figures

This publication covers subjects tackled by UNCTAD such as trade, investment, external finance, commodities and manufactures, together with relevant facts about population.

Through succinct explanations and key data presented in easy-to-read tables and charts, this publication surveys major developments in the world economy over the past 40 years. Aimed at a broad audience, including readers with little or no background in economics, it describes in a straightforward manner the evolution of developing countries, particularly in the context of globalization. Development and Globalization: Facts and Figures is a quick-reference tool for evaluating the growth prospects of developing countries. It gives an overview of UNCTAD's work to identify the best policies and practices for developing countries to adopt in their quest for efficient economic and social progress and well-being.

<http://globstat.unctad.org/html/index.html>

1.5 GlobStat, the Internet site of Development and Globalization: Facts and Figures

This database complements the book by providing access to the resources and reference material used in the preparation of the publication. Above all, users interested in detailed information or willing to compute data by themselves will appreciate the availability of country statistics and full time series.

<http://globstat.unctad.org/html/index.html>

1.6 Global Policy Forum (GPF) Tables and Charts

The GPF gathers a large number of tables and graphs providing the main features of globalization, asking what is new, what drives the process, how it changes politics, and how it affects global institutions like the UN. In addition to indicators of social and economic policy, trade and capital flows, tables and charts include global poverty and development, debt relief and transnational corporations, among others.

<http://www.globalpolicy.org/socecon/resources/indextables.htm>

2 INSTITUTIONAL ISSUES

2.1 ECB Speech by González-Páramo J. M., Statistical challenges raised by globalization, 24 June 2006

Globalization clearly raises tremendous challenges for statisticians. Balance of payments statistics show a very large increase in cross-border financial transactions. It is becoming more and more difficult for external statistics to comprehensively and accurately reflect all these transactions and positions, particularly those between subsidiaries of the same multinational corporation. Financial innovation further exacerbates the complexity of compiling statistics on cross-border activity.

Free available at: <http://www.ecb.int/press/key/date/2006/html/sp061024.en.html>

2.2 Lynch R., ONS, UK, Globalization and Official Statistics, prepared by Joint EFTA/UNECE/SSCU Seminar “Economic Globalization: A Challenge For Official Statistics” Kiev, 3-6 July 2007

Globalization is the shrinking of distance and the reduction of trade boundaries in the world economy. Companies operate across national boundaries and consumers purchase from suppliers half-way across the world. Sometimes the purchaser will have no clear idea of the supplying country if the product is supplied via the internet. Statistical measurement systems are national in arrangement. Their purpose is to serve national governments, by measuring the national economy and interactions between it and the rest of the world. Economic unions of countries such as the European Union and the Eurozone at present compile statistical pictures of their economies by aggregating member state pictures. This means that seeing the whole picture through these fragmented measurement systems can be difficult. This paper sets out some of the issues involved, and describes some recent initiatives of national statistical offices to work together to establish the extent and nature of the statistical issues. The paper concludes by making some observations on the implications for future collection and recording systems.

Free available at: <http://www.unece.org/stats/documents/2007/07/global/wp.10.e.pdf>

2.3 Statistics Canada, Globalizing the Economic Statistics System, 1995

This paper introduces a few ideas on the systematic description of the implications of globalization for the system of economic statistics. This paper starts out by identifying a few of the relevant questions for which the current system does not provide answers. It examines, albeit in stylized form, the requirements of an extended statistical system capable of answering such questions. Finally, it speculates on the kinds of changes it is deemed desirable to introduce in the short and medium terms.

Free available at: <http://www.unece.org/stats/documents/ces/1995/r.12.add.1.e.html>

2.4 Cook L., ONS, UK, Globalization and some measurement issues for economic statistics, 2005

In the current globalize world, users' needs go beyond the borders and possibilities of national statistical systems, the significance of international cooperation to develop integrated methodologies increase, and investment in statistics becomes more needed. Main incentives for the changes include new expectations of users and changes in the current reality, indicators and administrative data sources. New models and processes are more and more used. One of the key matters under these changing conditions is to maintain confidence in official statistics, also while using a number of principles and rules recognized internationally.

Free available at: <http://panda.hyperlink.cz/cestapdf/pdf05c4/cook.pdf>

2.5 Malaguerra C., Official Statistics, Globalization and World Democracy—A Challenge?, International Statistical Review No. 73, 2005

Official statistics is facing new challenges, both quantitatively and qualitatively. This requires, among other things, further input of statistical methods. The interaction with statistical research becomes crucial. Due to globalization, international organisations have

to play a major role in the development of official statistics. The ISI should also play an important role in seeking to achieve a comprehensive approach to statistical science.

Table of contents available at:

<http://projecteuclid.org/DPubS?service=UI&version=1.0&verb=Display&handle=euclid.isr/1123164851>

2.6 Triplett J. E., BEA, Globalization, standards, and statistical innovation: Must there be a trade-off?

The U.S. system is a decentralized statistical system, rather than a centralized one. I actually don't have managerial responsibility for any part of it. But even more than that, since it's a decentralized system, it's difficult to speak to the topic on the agenda because it's very hard to speak for the U.S. system. You can speak about the U.S. statistical system. You can even talk at it. But no one can really speak for it. So, what I say this afternoon are my personal views, and are not positions of my agency nor are they necessarily endorsed by my agency.

Free available at: <http://www.statcan.ca/english/freepub/61-532-XIE/06-tripl.html>

3 COMPOSITE INDEXES

3.1 The A. T Kearney/FOREIGN POLICY Globalization Index

The most well-known global indicator of globalization is the one produced by A.T. Kearney and published by Foreign Policy: the “Globalization Index report” ranking 62 countries, accounting for 85 percent of the world’s population, according to their degree of globalization as measured by 12 variables.

The A.T. Kearney/FOREIGN POLICY Globalization Index tracks and assesses changes in four key components of global integration, incorporating measures such as trade and investment flows, movement of people across borders, volume of international telephone calls, Internet usage, and participation in international organizations.

The variables fall in the four categories of economic integration, personal contact, technological connectivity, and political engagement.

<http://www.atkearney.com/main.taf?p=5,4,1,127,2>

3.2 CSGR Globalisation Index

The CSGR Globalisation Index measures the economic, social and political dimensions of globalization for countries on an annual basis over the period 1982 to 2004, and combines these into an overall globalization index, or score.

CSGR index and the economic, social, and political sub-indices, are constructed to be consistent both over time and across countries. The same variables are used to calculate the index in every year and for every country, and the variables are normalized so as to be comparable across time and countries.

<http://www2.warwick.ac.uk/fac/soc/csg/index/>

3.3 Konjunkturforschungsstelle (KOF) Swiss Economic Institute Index of Globalization

The KOF Index of Globalization measures the three main dimensions of globalization: economic, social and political.

In addition to three indices measuring these dimensions, the KOF calculates an overall index of globalization and sub-indices referring to

- actual economic flows
- economic restrictions
- data on information flows
- data on personal contact and
- data on cultural proximity.

Data are available on a yearly basis for 122 countries over the period 1970 - 2004 at:

<http://globalization.kof.ethz.ch/>

3.4 Randolph J., G-Index: Globalization Measured, 2001

In 2001, the WMRC calculated the “G-Index” for 185 countries as a composite measure of globalization.³³ The G-index attempted to measure “the depth, breath and richness of the broadest range of economic links binding an economy to the rest of the world.” Even though the G-index claimed to measure “globalization”, it focused almost exclusively (90%) on measuring economics, with 5 percent of the index attributed to telephone traffic, and 5 percent contributed to internet hosts. In determining the G-Index, the economic portion of the calculation leaned heavily toward exports.

Available at: http://www.worldmarketsanalysis.com/pdf/g_indexreport.pdf

4 METHODOLOGICAL ISSUES

4.1 Heshmati, A., Measurement of a Multidimensional Index of Globalization, Global Economy Journal, Volume 6 , Issue 2, Article 1, 2006

In this article two composite indices of globalization are presented. The first is based on the Kearney/Foreign Policy magazine and the second is obtained from principal component analysis. They indicate which countries have become most global and show how globalization has developed over time. The indices are composed of four components: economic integration, personal contact, technology and political engagement, each generated from a number of variables. A breakdown of the index into major components provides possibilities to identify sources of globalization and associate it with economic policy measures. The empirical results show that a low rank in the globalization process is due to political and personal factors with limited possibility for the developing countries to affect. The high ranked developed countries share similar patterns in distribution of various components

Abstract available at: <http://www.bepress.com/gej/vol6/iss2/1>

4.2 Dreher A., Gaston N., Martens P., Contents and Introduction of: Measuring Globalization and its consequences, GDC Working papers, 2007

Undertaking a comprehensive review of the literature on globalization and using data from the MGI and KOF indices, the authors build a framework for defining globalization and analyzing the relationships among economic, political, and social variables. In particular, they apply the methodology to analyze the effects of globalization on tax policy, government spending, economic growth, inequality, union power, and the natural environment and consider additional avenues for research, analysis, and decision making. In the process, they hope that by introducing objective measures to enhance our insight into the functioning of the complex global system.

Table of contents available at:

<http://www.bond.edu.au/about/faculties/bus/gdc/img/GDC%20wp8.pdf>

4.3 Dreher A., Does Globalization Affect Growth? , 2003

The paper presents an index of globalization covering its three main dimensions: economic integration, social integration, and political integration. Using panel data for 123 countries in 1970-2000 it is analyzed empirically whether the overall index of globalization as well as sub-indexes constructed to measure the single dimensions affect economic growth. The results show that globalization promotes growth – but not to an extent necessary to reduce poverty on a large scale. The dimensions most robustly related with growth refer to actual economic flows and restrictions in developed countries. Although less robustly, information flows also promote growth whereas political integration has no effect.

Free available at: <http://129.3.20.41/eps/dev/papers/0210/0210004.pdf>

4.4 Pim M., Zywiets D., Rethinking globalization: a modified globalization index, Journal of International Development, Volume 18, Issue 3, 2005

This paper discusses conceptual and operational issues involved in measuring globalization. We propose a modified index for measuring globalization. The suggested index is based upon the A.T. Kearney/Foreign Policy Globalization Index, but is improved both conceptually and operationally. We used data for 117 countries from a variety of resources to test the robustness of the suggested index. Furthermore, the results are compared with two recent globalization indices (the A.T. Kearney/Foreign Policy Globalization Index and the World Markets Research Centre G7-Index). The new index is used to delineate the various countries according to their level of globalization.

Abstract available at:

<http://www3.interscience.wiley.com/journal/110577672/abstract?CRETRY=1&SRETRY=0>

4.5 Bobek V., Korez Vide R., The signification and the feasibility of measuring globalization of economy, Volume 105, Issue 5 , 2005

The study introduces the systemic approach towards measuring globalization of the economy that is based on the theory of systemic framework of national competitiveness and economic growth. Construction of a composite index of global economy by the principal components analysis (PCA) on the basis of 83 individual indicators, linked into the seven spheres of national competitiveness in the period of contemporary globalization is presented. The weights of single indicators in the composite index are determined by two levels: on the first level, the weights of the indicators in the subindices are determined, whereas on the second level the weights of the sub-indices in the joint composite index of global economy are determined. Reliability of the composite indices is verified by Cronbach's α . This paper develops the concept for monitoring and benchmarking globalization of economies which is founded on the comprehensive theory and solid methodology. It offers a useful tool for national policymaking.

Abstract available at: <http://www.emeraldinsight.com/10.1108/02635570510599977>

4.6 Andersen T. M., Herbertsson T. T., Measuring Globalization, IZA Discussion Paper No. 817, 2003

This paper proposes the multivariate technique of factor analysis to combine several indicators of economic integration and international transactions into a single measure or index of globalization. The index is an alternative to the simple measure of openness based on trade, and it produces a ranking of countries over time for 23 OECD countries.

Available at: <ftp://repec.iza.org/RePEc/Discussionpaper/dp817.pdf>

4.7 Cancer V., Bobek V., Korez-Vide R., A Contribution to Measurement and Analysis of the Globalization of National Economies, 2004

This paper introduces a multi-criteria method for measuring the globalization of national economies with the intention of establishing and thoroughly studying a country's position and potential for international integration. It is based on some of the advantages of the analytic hierarchy process methodology. By utilizing the traditional theory of comparative advantages, the new theory of competitive advantages, the

theory of international production and some adequate empirical studies, we have developed a theoretical framework and set up a hierarchical model of relevant indicators for measuring and analyzing the globalization of national economies. Additionally, this paper offers solutions for restructuring the hierarchy of the model to consider data for all included indicators.

Free available at:

<http://www.cceol.com/aspx/getdocument.aspx?logid=5&id=2e8c0348-1ed5-4bdb-b6a9-400de18f16f9>

4.8 Scruggs L, Duke University, Research on Globalization and the Welfare State: Do We Know What We Think We Know?, 2004

The paper includes a section dedicated to measuring globalization, and several specific indicators commonly used in the literature are discussed in order to demonstrate where and to what degree these indicators are appropriate for evaluating the impacts of international integration on the welfare state.

Free available at: <http://www.sp.uconn.edu/~scruggs/Dukepaper.doc>

5 SECTOR STATISTICS

5.1 Brahmabhatt M., The World Bank, Measuring Global Economic Integration: A Review of the Literature and Recent Evidence, 1998

This paper proposes a working definition of globalization as the increasing freedom and ability of individuals and firms to undertake voluntary economic transactions with residents of other countries, a process entailing a growing contestability of national markets by foreign suppliers. The paper reviews a variety of techniques that have attempted to measure global integration following two main approaches, as well as some of the specific estimates they have yielded.

Free available at:

<http://www1.worldbank.org/economicpolicy/globalization/documents/measuring.pdf>

5.2 OECD, Measuring Globalization: Activities of Multinationals, 2007 edition

This publication presents detailed data on the industrial activity of multinationals in OECD countries. In an era of globalisation, these data highlight the increasing importance of multinationals in the economies of host countries. Time series cover 23 countries for the period 2000-2004.

Table of contents and sample tables are free available at:

http://www.oecd.org/document/37/0,3343,en_2649_34443_38763813_1_1_1_1,00.html

5.3 Ewing I., Statistics New Zealand, Globalization, Economic Statistics and the Role of the Business Register, 1998

This paper provides background for discussing "Globalisation" and its implications for the future of business registers. In fact, business registers are considered not ends in themselves. They are devices used as part of the process of producing economic statistics. The paper rise the question of changes needed to maintain the quality of economic statistics as a consequence of globalization and further of changes to the business register.

Free available at: <http://tilastokeskus.fi/roundtable/segbnzl.doc>

5.4 OECD, National Accounts and Economic Statistics - International Trade Statistics: the OECD Globalization Indicators, 2007

This document is made available to delegates of the Joint 8th International Trade Statistics (ITS) and Trade in Services (TIS) Session for information and comments.

This paper was prepared by Andreas Lindner, OECD

Free available at:

[http://www.oilis.oecd.org/oilis/2007doc.nsf/43bb6130e5e86e5fc12569fa005d004c/2421e16b5900755bc12573590026de97/\\$FILE/JT03232093.PDF](http://www.oilis.oecd.org/oilis/2007doc.nsf/43bb6130e5e86e5fc12569fa005d004c/2421e16b5900755bc12573590026de97/$FILE/JT03232093.PDF)

5.5 Rodríguez-Tenés E., Bank of Spain, Globalization and BOP Statistics, 2004

Globalisation directly affects BoP statistics in two ways: increasing the demand for timely, updated and high quality statistics, and increasing too the difficulties in producing them. Economic and monetary unions, which can be seen as a response to and form of globalisation, are the highest point in this process: they generate new demands and change the perception of the usefulness and costs of BoP statistics. The paper states that even if the national BoP statistics of member states belonging to economic and monetary unions have lost some of their uses, they remain useful per se and also as a complement to area-wide statistics. Also, on the costs side, there are synergies to be had in the process of producing area-wide statistics. Finally, the paper reviews the main challenges to BoP Statistics as a consequence of globalisation and concludes that enhancing consistency with other statistics and international co-operation are the ways to continue providing useful information.

Abstract and full text not found on-line.

5.6 Carson C.S., International Finance: Pushing the Statistical Envelope to Meet the Challenges of Globalization, International Statistical Review,; Volume 73, Issue 2, pages 157-160, August 2005

This paper treats three key areas where statisticians are pushing the envelope to meet the challenges of providing the basis for sound analysis and thus for sound policy in pursuit of assuring prosperity and preventing financial crises. In one area, the challenge is to provide comprehensive and timely data on foreign direct investment. In another area, the challenge is similar-to provide comprehensive and timely data on public debt. Moreover, a whole new area of statistics, dealing with the health of the financial sector, is being developed in recognition that one country's financial health or sickness affects its neighbors and many others in a world of complex global ties.

Paper available under subscription at: <http://projecteuclid.org/euclid.isr/1123164855>

5.7 Maslov S., Measures of globalization based on cross-correlations of world financial indices, Brookhaven National Laboratory, 2001

The cross-correlation matrix of daily returns of stock market indices in a diverse set of 37 countries worldwide was analyzed. Comparison of the spectrum of this matrix with predictions of random matrix theory provides an empirical evidence of strong interactions between individual economies, as manifested by three largest Eigen values and the corresponding set of stable, non-random eigenvectors. The observed correlation structure is robust with respect to changes in the time horizon of returns ranging from 1 to 10 trading days, and to replacing individual returns with just their signs. This last observation confirms that it is mostly correlations in signs and not absolute values of fluctuations, which are responsible for the observed effect. Correlations between different trading days seem to persist for up to 3 days before decaying to the level of the background noise.

Free available at: http://arxiv.org/PS_cache/cond-mat/pdf/0103/0103397v2.pdf

5.8 Baumann U. and di Mauro F., Globalisation and euro area trade - Interactions and challenges, ECB Occasional Paper Series No. 55, 2007

The paper analyses how the euro area's trade specialization has changed in response to stronger international competition and the emergence of new global players, evaluating results and possible challenges ahead.

Free available at: <http://www.ecb.int/pub/pdf/scpops/ecbocp55.pdf>