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NOTE
Measuring the global construction industry: improving the quality of data

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In the context of a truly global market for construction, an international strategy is required to ensure that national and international statistical systems are able to provide accurate and valid information. In many parts of the world the collection of reliable national information on construction activity is not an easy task, and the measurement of comparable, cross-national data can be problematic. This paper considers possible strategies for the improvement of data collection systems in the context of user needs.

Keywords: Construction activity, international comparability, statistical systems

The importance of measuring construction activity

An essential issue in consideration of the state of the construction sector and its relationship with the macro-economy is measurement of the activity of the sector. The fact that data on construction activity are poor and erratic has been acknowledged for a long time: see, for e.g. Bon (1990) and Cannon (1994), who considers the usability aspects of existing public and private data and the failure of such data to meet the needs of its users, and Ruddock (2000). Meikle and Grilli (1999), in their study of the measurement of construction output in European countries, point out that construction output data are not consistent in content and there is no generally accepted standard international definition.

Economists dealing with the construction sector are no different from those in any other area and need to be reassured that data are both valid and representative. The following rhyme (Chambers, 1997) succinctly presents this sentiment:

Economists have come to feel
What can't be measured, isn't real
The truth is always an amount
Count numbers, only numbers count.

International comparability

What is the purpose of making international comparisons of construction activity levels in different countries? A significant aim of any economist concerned with the international construction sector is to foster the collection of comparable data across nations, with two main objectives: (1) to allow comparability between countries (this makes for a greater understanding of an individual country's construction sector in the context of its own economic development, and also permits benchmarking); and (2) to provide aggregation of data across countries (this enables a global picture to be formed, perhaps with a view to enabling international policy decisions to be made).

Collecting comparable data is fraught with difficulties but the measurement problems encountered are not a sufficient reason for abandoning cross-national research, with its growing importance in the context of globalization.

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Limitations of existing data sources

To make possible international comparisons of the construction sector or to obtain an overview of the global picture, *reliable* detailed data are required. There are two major problems with the compilation of such data: (1) the use of a variety of statistical definitions and accounting procedures; and (2) the problem of coverage. A fundamental principle of sources of data on construction activity produced by national statistical offices is that official statistics are essential for obtaining a transparent picture of economies. The United Nations, in its *Annual Yearbook of National Accounts*, draws concepts and definitions from the *International Recommendations for Construction Statistics* (United Nations, 1998). Unfortunately, there are still many differences in underlying concepts and definitions for different countries. As far as the problem of coverage is concerned, a recent survey (see next section) took local knowledge to assess the 'grey' construction sector in specific countries, and the results showed that even in developed countries this is a significant issue.

The quality of statistical data

To improve the quality of international (and national) data provision generally, Lievesley (2001) indicated that, although the term 'quality', when applied to official statistics, is difficult to define, the following components should apply: (1) validity, (2) reliability, (3) currency, (4) clarity and transparency with respect to known limitations, and (5) comparability through adherence to internationally agreed standards. The appropriateness of these criteria in the context of construction data is apparent. In order to assess the current state of available data on the sector, the Council of the CIB, in 1998, ratified the setting-up of a Task Group (TG31) to look at the development of macroeconomic information on the construction sector worldwide. This Task Group (Macroeconomic Data for the Construction Industry) has, as one of its operational objectives: '. . . investigation of the availability and use of macroeconomic data sources on the construction sector within the context of an overview of global economic trends in construction activity to include consideration of sector policy and state support issues, viewing construction industry development in the context of the national economy of the country'.

In pursuance of this objective, a questionnaire survey of experts was carried out by the Task Group in 1999 to gauge the current state of the availability and usefulness of published statistical information available to the construction macroeconomist at an international level. This involved canvassing the views of national experts, who have an understanding of individual data sets and their context and valid interpretation. Responses from experts in 43 countries were obtained, covering a wide spectrum of economic development. A detailed analysis of the results of the survey has been published by the CIB (Ruddock, 2000). Some of the findings of the survey (hereinafter referred to as the TG31 Survey) are briefly presented in this note.

Globalization

The importance of globalization, especially its potential for construction industries in poorer countries through technology transfer, is stressed by Ofori (1994). The importance of relevant data for assessing such effects is of paramount importance, and governments cannot be relied upon as the only sources of useful information. Cannon (1994) pointed out that many industry users may be unaware of the availability of some information because the originating institution may not recognize the usefulness of disseminating the data to a wider audience.

In the TG31 Survey, the experts were asked about the provision of data by non-governmental agencies. The findings showed that in the industrially developed world there is a plethora of private organizations producing data on the national construction sector. These tend to be forecasting institutions, contractors' organizations or information service providers. In some parts of the world (such as in transition economies), a comprehensive information system may not yet be fully developed; in others (such as South Africa) all the parts exist but need to be brought together to form a more integrated system; in many countries, though, a comprehensive information system on the construction sector does not exist, and the survey elicited opinion on the most feasible option for setting up such a system.

In those countries in which such a system remains undeveloped or underdeveloped, the preferred options for the financing of such a system vary, but the most favoured options indicated in the survey were: government financing through a public/private agency, a subscription applicable to users or a levy system on members of the industry.

On the necessary foundation of data collected purely on a country-by-country basis, it is easy to overemphasize national considerations. To take a global overview of construction activity, a strategy of gathering data individually by national agencies may not be the optimal approach. A radical reappraisal of the international data gathering system may be required to obtain a more comprehensive global picture. According

to Keuning (2000): 'Probably the best answer to the challenge globalization puts to statistical offices is to do what companies do. They form all kinds of worldwide alliances and redistribute tasks among the constituent partners in order to save costs and to improve productivity. We should follow suit and think much more seriously about an international network . . . of international statistical offices that collect the data where it is most appropriate, share the information with each other (with a guarantee as to their confidentiality!) and perhaps specialize in accordance with local circumstances and expertise.' The benefits from this type of cooperation are particularly relevant in the context of construction statistics.

Information users

Who are the clients who use construction activity data in guiding their activities? In addition to government interest in statistical information for policy and forecasting purposes, Snyman (1999) identified four interested groups: (1) contractors, for information relating to the workload of the industry; (2) professionals, for activity planning; (3) construction materials manufacturers; and (4) consumers. Industry's requirements are concerned with the optimization of asset use, training and manpower, performance monitoring vis-à-vis foreign competition and the development of appropriate strategies

The move towards improved quality: a slow process

Consideration of the concerns raised with respect to data availability, reliability and usage can be focused on a couple of specific issues. First and foremost, there is an overriding need to improve existing national statistical systems. In order to demonstrate clearly the relative importance of construction output between countries, it is essential that a standard international definition is established. Ensuring that all construction work is included means that care should be taken to allow for all work, whether formal or informal.

There already exists a standard definition of construction activity. The following is recommended by the United Nations (1998) in the compilation of construction statistics: 'Economic activity directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature and other such engineering constructions as roads, bridges, dams and so forth'. This is the definition used in the interpretation of construction activity in the International Standard Industry Classification (ISIC) linked to the NACE standard classification used in the national accounts of most developed countries.

The important issue is that the national accounting statistics bodies of individual countries are able to obtain the necessary data in the appropriate format. Thus change has to come through the work of national statistics agencies and it is a common feature that many countries now utilize ISIC as the basis for compilation of construction industry data.

However, it is important to any user of national data concerned with international comparisons to know how far any individual country's statistics differ from this standard. The UN Department of Economic and Social Affairs Statistics Division provides a registry of national classifications, in which deviations from the NACE standards are indicated. Reference to the registry may be essential when matters of international comparability are concerned. For instance, the National Bureau of Statistics of China (NBS China, 2002) has utilized ISIC as the basis for revising industrialization classification since 1999: 'drawing on the experience of foreign countries and with consideration of Chinese reality'. The Polish Classification of Activities (PCA) is based on NACE but detailed translations at low levels tend to be related to 'kinds of activity characteristic of the Polish economy' (United Nations, 2002). These are typical of countries with developing or transitional economies.

The ability to provide full conformity with the ISIC is still lacking to varying degrees in different countries, but at least the process is progressing. This leads on to the second issue, i.e. the work of national data collection agencies and the movement towards a single agency responsible for construction data in developing countries. This is a problem that has been visited before. Lopes (1998) referred to the inadequacy and rudimentary nature of data on the construction industry in developing countries and pointed out the lack of input–output data in such construction sectors. The uncoordinated collection of data via several agencies leads to unnecessary processing problems, which could be eradicated by the setting-up of a central national agency. Ofori (2000) proposed the notion of a 'central data bank for construction' and took this notion further, advocating the development of regional construction databases for groups of countries. He noted that, globally, the UN Centre for Human Settlements (Habitat) wishes to develop a computerized information base for the sector. The merits of a central agency for managing construction industry development in developing countries can be seen in the relatively recent establishment of the Construction Industry Development Boards of Malaysia and South Africa. These are organizations dedicated to the improvement of performance of the construction industry in their respective countries.

Dealing with the informal sector is a major concern in many countries, and the CIB Working Commission on Construction in Developing Countries has an agenda on the role of that sector, as discussed in its first Progress Report (Ofori, 2001). To understand how the sector operates, a notion of its scope is required.

The lobbying power of the CIB Groups together with the political power of Habitat may have some success in affecting the pace of improvement, but undoubtedly the main factor in enhancing data availability and quality will be the development of inexpensive, manageable IT systems for the collection, analysis and dissemination of data. Data on national accounts should be constructed in a manner capable of integrating and accessing micro-databases derived from administrative sources and large samples. If the national system cannot provide efficient access to such detailed data, both business and governments will come to depend increasingly on private proprietary databases, and the advantages of an overall integrated system will be lost.

References

Bon, R. (1990) The World Building Market 1970–85, in *Building Economics and Construction Management*, CIB W65.

Cannon, J. (1994) Lies and construction statistics. *Construction Management and Economics*, **12**(4), 307–13.

Chambers, R. (1997) *Whose Reality Counts?* Intermediate Technology Publications, London.

Keuning, S. (2000) Some thoughts on the impact of globalisation on statistics, in *Official Statistics in the 20th Century: Landmarks and Challenges*, Directors General of National Statistics Conference, European Commission.

Lievesley, D. (2001) Making a difference: a role for the responsible international statistician? *Journal of the Royal Statistical Society*, **50**(4) 6–32.

Lopes, J. (1998) The construction industry and macroeconomy in Sub-Saharan Africa post-1970. *Construction Management and Economics*, **16**(6) 637–49.

Meikle, J.L. and Grilli, M.T. (1999) *Measuring European Construction Output: Problems and Possible Solutions*, CIB TG29.

NBS China (2002) available at http//www.stats.gov.ch

Ofori, G. (1994) Construction industry development: role of technology transfer. *Construction Management and Economics*, **12**(5) 379–92.

Ofori, G. (2000) *Construction Data in Developing Countries: Current Issues and Proposals for the Future*, CIB TG31.

Ofori, G. (2001) *Progress Report 1997–2000 of CIB TG29 Construction in Developing Countries*, National University of Singapore.

Ruddock, L. (2000) An international survey of macroeconomic and market information on the construction sector: issues of availability and reliability. Research Paper Series, Vol. 3, No. 11, Royal Institution of Chartered Surveyors, London.

Snyman, G. J. J. (1999) Macroeconomic data for the South African construction industry: historical development and new directions for research, in Ruddock, L. (ed.), *Macroeconomic Issues, Models and Methodologies for the Construction Sector*, CIB Publication No. 240, 92–9.

United Nations (1998) *International Recommendations for Construction Statistics*, Department of Economic and Social Affairs, Statistical Papers Series M-47, United Nations, New York.

United Nations (2002) *Classifications Registry*, Department of Economic and Social Affairs, UN Statistics Division, New York.