

## Book Review

### Measuring Construction: Prices, Output and Productivity

Best, R. and Meikle, J. (eds), 2015. *Measuring Construction: Prices, Output and Productivity*. Routledge, London. 262 pp. ISBN (hbk): 978-0-415-65937-6, ISBN (ebk): 978-1-315-88292-5. Hardback: US\$155.00, GBP 95.00.

Although Big Mac might not be your favourite hamburger, readers of *The Economist* usually enjoy its Bic Mac Index, which tends to mirror Purchasing Power Parities (PPPs) for a range of countries. International price comparisons based on PPPs rather than on currency exchange rates are better in many ways. How PPPs can be used for comparing construction prices is a recurrent theme in this anthology, but not the only one. What the anthology does omit is building measurement as practised by quantity surveyors and estimators. Thirteen authors have contributed to the volume, which is the outcome of a workshop at Bond University in 2012, organized by the Centre for Comparative Construction Research. The two editors have provided each chapter with a helpful one-page editorial comment as an introduction to what follows. As a whole, this volume manages to convey to a broader readership the important issues without getting lost in technical detail.

After a lucid, not-too-complicated introduction to the theory of PPPs by G. Runeson, the two editors, R. Best and J. Meikle, are responsible for two chapters on international comparisons of construction prices. This includes detailed tables of construction materials that make up baskets of goods.

Ever since Bishop Fleetwood published his *Chronicon Preciosum* in 1707, British cost indices have led the way. According to M. Yu and G. Ive, UK construction indices have, however, fallen on hard times. They depend on bills of quantities as a basis, but these are in decline; prefabrication increases, untraditional procurement routes complicate matters. Repair and maintenance as well as road projects create difficulties. The growing use of hedonic techniques, which have been relied on more for tackling heterogeneity than quality change in construction, is discussed in this chapter. The hedonic approach is that goods are seen as bundles of measurable attributes, each with an implicit price. These attributes are treated as explanatory variables, and the dependent variable is the price that a client pays for construction of a building. This approach would be good for an index of mechanical and electrical services, capturing costly building components unmeasured by the current method. Furthermore, Yu and Ive emphasize that construction cost indices are not intended to reflect reduction in cost due to productivity growth. Another perhaps surprising warning is that the skill level of labour is assumed to be constant over time.

What happens to construction when economies grow? Turin in 1969 thought that the construction proportion in national output would level out, while Bon in 1992 pessimistically assumed that there would be ultimate decline. J. Meikle and S. Gruneberg now show that neither hypothesis can be confirmed, using the best data available.

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**Citation:** Bröchner, J. 2015. Book Review – Measuring construction: prices, output and productivity, *Construction Economics and Building*, 15(3), 98-99. DOI: <http://dx.doi.org/10.5130/AJCEB.v15i3.4613>

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**Publisher:** University of Technology Sydney (UTS) ePress

Analysing data from the ENR top 225 international contractors, W. Lu, H. Yang and C. Langston relate their revenue to nine construction sectors and six regional markets. Relying on an interpretation of niche theory, they identify three clusters of contractors. Most contractors in the first cluster belong to advanced industrial countries, are generalists and much of their revenue is from transportation projects. Chinese and Turkish contractors dominate Cluster 2 and often are specialists in peripheral markets, while the third cluster is again more into general building and subject to strong competition.

Construction performance at the project level is discussed in two chapters by Langston. The citiBLOC approach, which can be seen as a construction-based PPP index, is used and explained here. For each city, a citiBLOC basket with ten common construction items plus an indicator of market conditions can be estimated. A country average can be based on data for the five largest cities, as when comparing a decade of skyscraper projects: 86 in Australia and 251 in the US. Perth and Houston emerge as more efficient. The relation between citiBLOC average prices in the two countries is nearly identical to that of Big Mac. Real construction efficiency may have risen at about 1% p.a. faster in the US than in Australia, though the reasons for this are unclear.

The notorious problem of understanding why the development of construction industry productivity, conventionally measured, appears unimpressive when compared to manufacturing, is the topic treated by G. de Valence and M. Abbott. They provide a detailed review of earlier attempts to explain the difference. If project management is the culprit, advances in recent decades should have led to official statistics revealing higher productivity, but this is not the case. It is a dubious comfort that the working population in today's developed economies is mostly found in the service sector, which shares its dismal productivity growth rates with construction.

How Data Envelopment Analysis (DEA), a linear programming technique, has been developed for comparing the performance of companies within an industry is described by Abbott. The DEA Malmquist approach has been used at construction industry level and allows identifying the effects of improvements in technical and scale efficiency and also of technological change. The consequences of changing input and output qualities are not captured, nevertheless, and what is intangible remains particularly difficult to measure. DEA is also relied on for benchmarking construction firm performance.

In their endnote, the editors assert that "much that is written about construction prices, output, productivity and the rest is unreliable or plainly wrong". Their book is a helpful antidote. While offering more than a typical textbook for undergraduate courses, it should appeal to more than researchers in the field and deserves a broader readership.

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