

Benchmarking: A New and Useful Tool for Policy Learning?

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“Benchmarking” is a hot issue these days. Why? One way to look at it is that it is just another of those fancy concepts from the management literature that from time to time succeeds in finding its way from the business schools to the policy discourse. However, this paper, taking a broad historical perspective to the subject, argues the practice nowadays identified as “benchmarking” is not at all new and, moreover, that it may be a very useful exercise.

RELEVANCE:

This paper argues that the reasons for the increasing popularity of “benchmarking” have to do with the failure of much theory in this area to address real policy issues. The theoretical rationale of “benchmarking” is considered, followed by a discussion of a recent benchmarking exercise by the European Commission (European Commission 2001).

INTRODUCTION

“Benchmarking” is a hot issue these days. Why? One way to look at it is that it is just another of those fancy concepts from the management literature that from time to time succeeds in finding its way from the business schools to the offices of the commission and related places within the member countries. Take for instance Michael Porter’s “diamond” a decade ago (Porter 1990): At the time it attracted a lot of interest but in the end the value for policy-makers was more limited. In one sense it is probably correct to say that benchmarking is a bit of the same. But as we shall see, although the concept may be new in this particular context, the practice it describes is not new at all. The reasons for this that, it is argued, have to do with the failure of much theory in this area to address real policy issues. Finally, the paper considers some recent benchmarking exercises of the Commission (European Commission 2001), to see what lessons might be drawn from these for further work in this area.

A STEAMER FROM YOKOHAMA

In December 1871 a steamer left Yokohama for the United States. On board were around fifty Japanese officials, including some very high-ranking people, and a number of students that were to be deployed in various Western universities. The officials, however, were on a mission to seek recognition for the new Japanese regime and to examine those aspects of Western civilization that could be most profitably borrowed by Japan. The mission spent seven months in the US before it went to Europe, where it paid visits to Britain, France, Germany and several other countries. It inspected governmental departments, the judiciary system, the military, banks, schools, factories etc. Their impressions and assessments were laid down in a report that was published in five volumes in 1878, and which was, according to historian William Beasley, “a guide to Western-style modernizations in all its aspects” (Beasley 1990, p. 87).

The economist Michio Morishima describes the impact as follows:

“These men brought back with them a wealth of new knowledge and information concerning the modern state. The Meiji government compared and examined all this information to judge which country was the most outstanding and advanced in each sphere, for example which country was best in terms of its education system, which country for the navy and which for the army. In each country they investigated the conditions of such things as the police, industry and finance. On the basis of the information (...) the government made its decision as to which sphere should be patterned on which country. For example, the education system (...) was patterned on the French system of school districts. The Imperial Japanese Navy was a copy of the Royal Navy, (...). The telegraph and railways followed the British example, universities the American. The Meiji Constitution and the Civil Code were of German origin, but the Criminal Code was of French origin. In this way the Meiji state was a hotchpotch of Britain, the United States, France and Germany.” (Morishima 1982, p. 88-9)

In the present context “benchmarking” may be defined as a comparative analysis of country performance that attempts to identify best practice in different (policy) areas (a tool for policy learning). Arguably, the Japanese case involves all the characteristic elements of benchmarking; use of detailed comparative analysis, identification of best practice and application of what is learnt in the domestic context. The latter, it must be noted, was by no means an easy process, since the conditions in Japan at that time obviously differed a lot from those of the leading countries in the West. Hence, successful application of what was learnt required a good deal of local adaptation, including an understanding of the wider effects of changing one central part of the system. Morishima makes a valid point, therefore, when he concludes that *“it was quite impossible for Japan to carry out an industrial revolution and become a powerful country by the same historical process as Britain had done. Japan was fated to follow a different path from the very beginning.”* (ibid.)

THE RATIONALE FOR BENCHMARKING

Hence, benchmarking is by no means a new technique in policy learning, it has been going on for a long time (and not in Japan only). The reasons for this, we shall argue, have to do with the failure of much theory in this area to address real policy issues. Much formal theorising in the social sciences, and in economics in particular, is based on deduction from set of basic postulates of human behaviour (that are normally not tested or even testable), and hence tends to come up with rather general messages on what politicians should do (and – in particular – not do) that are at best only vaguely related to the specific context in which these policies are to be applied. This lack of appreciation of the role of context (and context-specific knowledge) in policy-advice may lead to quite disappointing results, as witnessed for instance by the role of the IMF and World Bank (and academics linked to these organisations) in the early years of the transition process in the former Soviet Union. Many bureaucrats and policy-makers have of course known this all along, and hence invented practices that, like present benchmarking exercises, attempt to improve policies by learning from systematic comparative work. The knowledge that comes out of these exercises may be seen as a kind of “theory” although of a different nature than the formal type mentioned above. Rather it is an example of what the economists Richard Nelson and Sidney Winter have labeled “appreciative theory” (Nelson and Winter 1982), i.e., theorising that stays close to the empirical nitty-gritty, attempts to outline and interpret “stylised facts” and find out what the implications for policy may be.

A strand of “appreciative theorising” that may be relevant for benchmarking is that associated with the study of the policies pursued by countries attempting to catch up with the technologically and economically more advanced ones. The economic historian Alexander Gerschenkron is often recognized as a pioneer in the study of such processes. His favorite example was Germany’s attempt to catch up with Britain a century ago. While, when Britain industrialized technology was small scale and hence institutionally not very demanding, these conditions were according to Gerschenkron radically altered in the nineteenth century when Germany started to catch up. What he particularly had in mind was the seemingly inbuilt tendency of modern technology to require ever larger and more complex plants, with similarly changing requirements with respect to the physical, financial and institutional infrastructure. Hence, to succeed in catching up in such dynamic, scale-intensive industries, catching-up countries had in Gerschenkron’s view to create new “*institutional instruments for which there was little or no counterpart in the established industrial country*” (Gerschenkron 1962., p. 7). The purpose of these would be to mobilize resources to undertake the necessary investments (structural changes) at the new and radically enlarged scale that modern technology required. Thus, following this view, emulation of institutions and policies at work in countries with superior technological and economic performance is by no means a guarantee for successful catch-up.

More recently the economic historian Moses Abramovitz, has applied the concepts “technological congruence” and “social capability” to the discussion of the “absorptive capacity” of late-comers (Abramovitz 1994). The first concept refers to the degree to which leader and follower country characteristics are congruent in areas such as market

size, factor supply etc. The second points to the various efforts and capabilities that backward countries have to develop in order to catch up, such as improving education, infrastructure and, more generally, technological capabilities (R&D facilities etc.). He explains the successful catch up of Western Europe in relation to the USA in the post-war period as the result of both increasing technological congruence and improved social capabilities. As an example of the former he mentions how European economic integration led to the creation of larger and more homogenous markets in Europe, facilitating the transfer of scale-intensive technologies initially developed for US conditions. Regarding the latter, he points among other things to such factors as the general increases in educational levels, the rise in the share of resources devoted to public and private sector R&D and how good the financial system is in mobilizing resources for change.

Arguably, the concepts suggested in this literature may be of interest for the design benchmarking exercises. For instance the concept “technological congruence” points to the fact that technological progress is not “neutral” with respect to national characteristics. Hence one has to be specific in trying to sort out what the potential and requirements of the progressive technologies of the day really are (since these change over time), and how these requirements can be fulfilled in different settings and under different conditions. “Social capability”, on the other hand, points to the fact that there factors at the economy-wide (national, regional) level that matter a lot for the ability of firms to create, use and benefit from new technologies, and which in many cases go beyond what is often regarded as directly relevant for RTD policies. Thus, to be really helpful as in input to policy learning in that area, benchmarking exercises may need to cast the net rather widely and include for instance factors of relevance for the spread of new technologies (and not just their creation).

However, the most important lesson from this literature is that institutions and policies cannot be uncritically copied and transferred from a frontier country to a country trying to mobilize resources to catch up. It might of course be objected that the lessons the literature on “catching up” may be more relevant for developing than for developed countries. But in the dynamic world that we live the frontier is continually on the move, and at different speeds in different areas, so that most countries or regions will be behind the frontier most of the time. Although there may be a lot to learn from what is done elsewhere, policy makers must take into account specific context in their own country when engaging in policy learning. In fact, as argued by Gerschenkron, they may in the end have to implement institutions and policies that never existed in countries with superior technological and economic performance (i.e., countries that tend to be associated with “best practice”).

BENCHMARKING NATIONAL RESEARCH POLICIES IN EUROPE

Under this heading the European Commission has circulated a set of indicators assumed to be of relevance for benchmarking (European Commission 2001). The indicators, which cover the period 1995-2000, range from scientific activities, R&D and innovation, structural factors to economic performance (growth, exports). The important question to address in this context is of course what can be learnt from such an exercise. We will do this by summarizing the main trends in the data and point to some important issues/questions that arise. Unfortunately, space does not allow us to document these trends in an extensive manner, so readers interested in a more detailed account will have to consult the original source.

First, what these indicators clearly show is that there are important differences in the distribution of scientific activities, R&D and innovation in Europe, with a group of smaller, developed Northern countries in the lead, the larger European countries in the middle and the less-developed countries lagging. The group of small-country technology leaders includes Finland, Sweden, Denmark and Netherlands. The two former, in particular, excel on nearly every indicator of scientific or technological performance. For instance, R&D as a share of GDP in these two countries in 2000 was in the 3-4 % range, well above global leaders such as the USA or Japan, and far ahead of other European countries. The larger countries (Germany, France, the UK and Italy) cluster towards the middle of the list on most of these indicators, usually with Germany in the lead and Italy lagging (the German performance is especially good on patenting in which it rivals the frontier countries). Finally, the less developed countries in Europe (Ireland, Spain, Portugal and Greece) clearly also have less-developed scientific and technological capabilities, with Ireland well ahead of the others.

However, one should not over-focus on this apparent north-south divide, because the main message that comes out of these data is that there are important changes taking place in the distribution of these activities over time. Some countries appear to be technologically much more dynamic than others. This includes, in particular, Ireland, Portugal, and Finland, which stand out by having the strongest increases in scientific and technological capabilities over the period (as measured by the indicators). The performance of Finland is especially noteworthy, since it had quite high levels to begin with. Other countries that show some dynamism, though less, include Spain and Greece in the South, and the remaining small, developed economies in Northern and Central Europe. The larger economies by contrast show clear signs of a stagnating level of scientific and technological competence.

An important issue is to what extent these changes (in the distribution of scientific and technological capabilities) go hand in hand with changes growth or trade performance as generally seems to be the case in the long run (Fagerberg 1996). However, in this case some diversity might be expected because the time span is rather short (five years) and there obviously also are other factors at play. Still, the three most “dynamic” countries in terms of technological capabilities, Ireland, Finland and Portugal, also are among the fastest growers in terms of labour productivity. Other countries that grew relatively fast include Austria, Greece and Sweden, all countries with medium technological dynamism. Most of the large countries cluster towards the middle. As for trade performance in so-

called high tech products, the EU study reports that the best performance is recorded for Ireland, Netherlands, Finland, Belgium, Greece and Sweden, i.e., countries with high or medium technological dynamism. The exception appears to be Portugal with a very dismal performance in high-tech trade.

Summing up, a first conclusion is that there is clearly much more diversity among the smaller economies than the larger ones. The larger European economies generally appear less dynamic than many of the smaller economies both with respect to upgrading science, R&D and innovation and to performance. Is this a pure aggregation effect? Is the large difference in size simply hiding the fact that there are large differences in dynamism within the larger economies? If so it raises the question of what the correct level for benchmarking really is. May be the smaller European economies should be compared with regions within the larger countries? This question is especially relevant since many of these regions, such as for instance the German “länder”, actually have a lot to say when it comes to policy.

Second, there are clear signs of a process of technological catching-up taking place within Europe, with a group of less-developed economies narrowing the gap in scientific and technological capabilities at a very high speed. However, with a partial exception for Ireland, the gaps remain very substantial. Finland or Sweden, for instance, do three to four times as much R&D (as a share of GDP) as do Spain and Portugal, with Greece at an even lower level. Other indicators of technological capability confirm this pattern. As is now commonly acknowledged, the progressive technologies today are to a much larger extent than previously based exploitation of science, organized R&D and highly skilled labour (Fagerberg et al. 1999). This raises the question of to what extent the efforts undertaken by these countries in generating such technological capabilities – or “absorptive capacity” – are sufficient for catch-up to be sustainable in the longer run. A comparison – or “benchmarking” – with other countries that have been catching up rapidly during the last decades such as, for instance, some of the so-called “newly industrializing countries” in Asia may be helpful in this regard. One fact that would have been revealed by such a comparison is that some of these Asian economies, Korea and Taiwan in particular (Lall 2000), have for several years now invested heavily technological capabilities, so that today their capabilities are far ahead of the catching-up countries in Europe.

Third, some small developed countries, notably Finland but also some others, appear to “forge ahead” of the larger economies. Clearly some of the smaller developed countries in Europe have succeeded much better than the larger ones in upgrading its scientific and technological infrastructure. This difference, it may be noted, also holds for the diffusion (use) of ICT in the economy (Fagerberg et al. 1999). Is it something peculiar with the technologically progressive industries of today that favours small economies (superior “technological congruence”)? Or is it simply so that most of the smaller, developed economies have adapted to the challenge posted by recent technological shifts in a better way? If so what were the factors (capabilities) behind this superior adaptation?

Arguably, the indicators discussed here are helpful in identifying important issues and trends. However, as indicated by some of the questions raised above, they are of little help when it comes to explain the observed differences in performance across countries and time. To answer such deeper questions, deeper studies are required.

CONCLUDING REMARKS

Benchmarking is not new, and history has shown it to be a quite useful approach. Arguably, systematic comparison is always useful, because it increases our knowledge about differences and similarities, and helps us to pose new questions. However, as illustrated by the historical approaches referred to in this paper, the role of institutions and policies must be analysed in their proper context. Although some of the challenges facing European countries today may be the same, the options for responding to these challenges may differ a lot, depending on contextual factors such as systems of governance, industrial specialization, skills, R&D infrastructure etc. Arguably, naïve attempts to transplant policies or institutions from one setting to another without considering the role of the broader context may be do more harm than good. Thus, while aggregate statistics of the sort discussed above may be very helpful in identifying issues of relevance for policy makers, it will not in itself provide a sufficient basis for formulating policy. To that end a deeper, more systemic understanding of the working on the various “national systems of innovation” (Edquist 1997) would be required.

KEYWORDS:

Benchmarking, technology, growth, Europe, Japan

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