

Narrowing the Gap

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Innovation offers a way to narrow the development gap. While innovativeness chiefly manifests itself on the company level, successful innovation requires both conducive measures in many socioeconomic domains and a change of attitudes among entrepreneurs, investors, and public administration

The latest European Commission research highlights the close link between a country's integrated innovation index and its level of development. The general conclusion that emerges from this study is pessimistic, indicating that closing the innovation gap is a process that necessarily takes many decades. Does that mean that in this world of information, rapidly advancing IT technologies, and modern electronic markets, Poland in fact faces an unavoidable determinism that stems from historical circumstances? There are many signs that is indeed the case.

At the same time, research carried out by the Institute of Economics, Polish Academy of Sciences, indicates that there is a growing group of small enterprises in Poland, such as the companies Psiloc and LFC, that are not only doing business on a global scale but also investing significantly in R&D. Also worthy of note are micro-firms who know how to incorporate numerous researchers into their activities and to establish ties to many R&D centers - human capital and networks of connections are factors that determine the success of such companies to a greater degree than in the case of large firms.

The research findings obtained by the Institute of Economics evidence the high potential inherent in small and medium-sized enterprises. If such small and medium-sized firms are looked at separately within the group of most innovative companies, they turn out to employ some 2% of the total workforce of innovative firms, a figure that has remained stable in 2003-2005, while their R&D outlays in 2003-2005 accounted for 15%, 7%, and 7% of the total, respectively, i.e. meaning that their R&D spending share was 7.5, 3.5, and 3.5 times higher than their overall share of employed staff, respectively. Small and medium-sized enterprises showed even higher figures in terms of

employment of R&D staff: in 2003-2005, their R&D staff accounted for 23%, 18%, and 17% of all R&D staff employment within the group of most innovative firms, respectively, i.e. on average 8 times greater than their share of employed staff overall (2%).

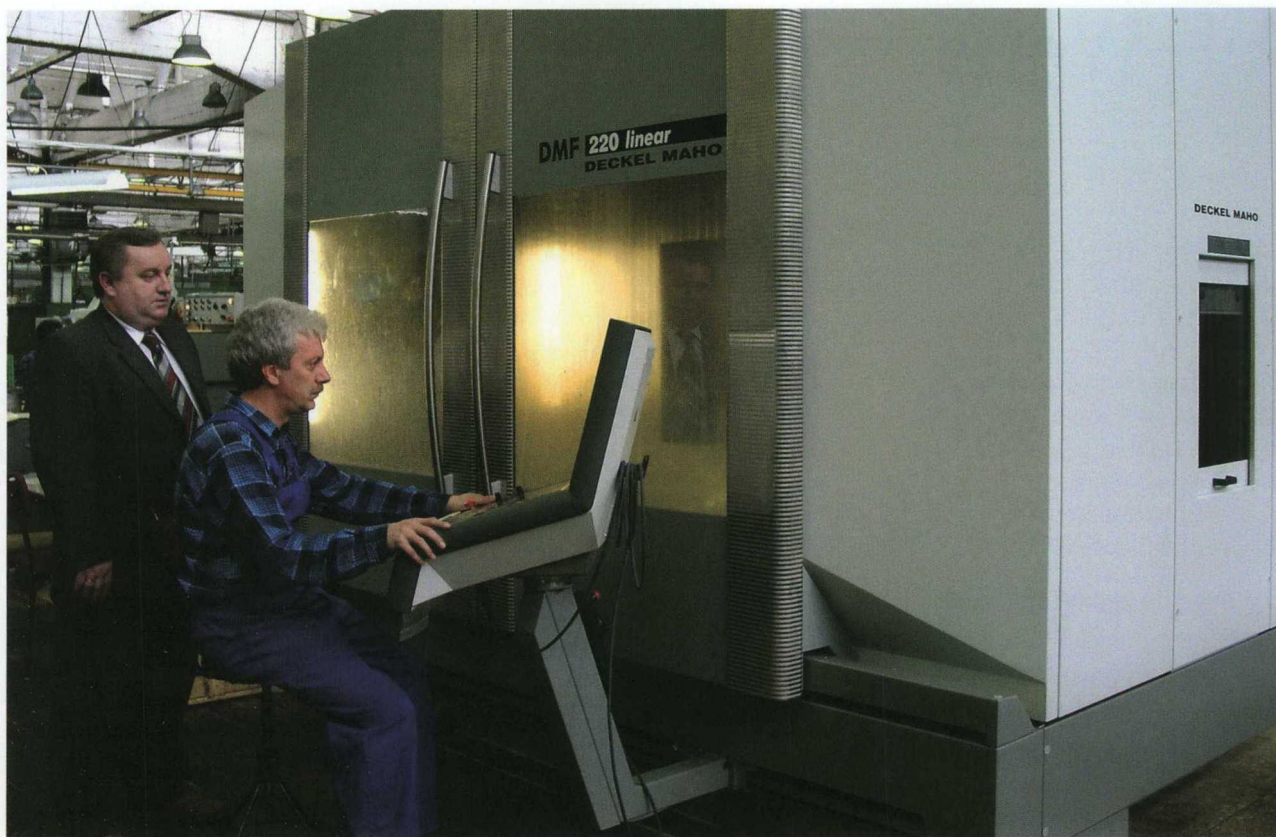
Gauging Innovativeness

In 2005, the Institute of Economics, Polish Academy of Sciences, developed a system for evaluating the innovativeness of companies based on integrated microeconomic indicators. Market innovativeness is assessed by looking at the dynamics of a company's sales, exports, and employment figures. It can be expressed in relation to average data or with respect to the median for the population studied; the basis for the equations may be drawn from public statistics for the given country, region, or sector. Sales, export, and employment data from the period studied were compared to the previous period. The assessment of each of the elements of the integrated indicator is based on a logical dependency, involving the comparison of figures for specific companies against comparative indexes. Importantly, the evaluation made on the basis of quantitative data is supplemented by a qualitative evaluation made by experts.

This methodology yields an analysis that ranks the position of individual innovative companies and singles out the most important characteristics of the innovative process. That makes it possible to identify types of innovative behavior, reference models, and characteristics of market innovativeness, process innovativeness, innovation outlays, patents obtained, and contracts under the 6th EU Framework Programme.

Research by the Institute of Economics, Polish Academy of Sciences, indicates that there is a growing group of businesses in Poland that are not only doing business on a global scale but also investing significantly in R&D

The methodology does turn out to pinpoint companies exhibiting a high degree of innovation. All the companies topping the list have made significant investments into R&D, ranging from PLN 273,000 to more than 31 million PLN. Also varied is the ratio of R&D expenditure to sales revenue (ranging from 0.2% to 66%). Poland's leading innovative companies are also characterized by having received patents and signed contracts under the 6th EU FP. These



The list of Poland's most innovative firms include both small and medium-sized enterprises and large state-owned companies like the aircraft maker PZL-Świdnik S.A.

two latter traits do not hold for all companies, but they do indicate that there are Polish companies which pay great attention to intellectual property issues. An example can be found in a firm at the very top of the innovation list: CMG KOMAG, which secured as many as 8 patents in 2005.

Also noteworthy is the variation in size among the firms on the list, which includes small and medium-sized enterprises such as CMG KOMAG, Hydromega, and Polatom, large state-owned companies like PZL-Świdnik S.A., and large privately-owned enterprises like ALSTOM Power Sp. z o.o., International Tobacco Machinery Poland Ltd., AVIO Polska Sp. z o.o. and SIPMA S.A. One characteristic trait of innovative Polish companies is their location, as they are frequently situated in less-developed regions.

Our research on innovation continued in 2007, based on a group of 26,000 companies. We analyzed the responses received to a questionnaire sent out by the Institute of Economics, Polish Academy of Sciences, from a joint project of the Institute of Economics and the European University Viadrina Frankfurt (Oder), and a balance-sheet analysis carried out by Dun&Bradstreet drawing upon data from the National Court Register. The research was supported by BRE Bank.

Another important input came from external experts from the National Foresight Program "Poland 2020," who

evaluated companies and their products in terms of their future potential.

The research project carried out by the Institute of Economics and the International Research Network "Evaluation of the Impact of R&D Activity and Innovation on Socioeconomic Development" has demonstrated that it is possible for innovativeness evaluation criteria to be constructed on the microeconomic level, for such indicators to be put to use by representatives of companies, financial institutions, research centers, and public administration, for the degree of innovativeness of large, medium-size, small, and micro enterprises to be evaluated, and for models of innovation to be identified on the microeconomic level. All this contributes to initiating a process of boosting companies' R&D spending, bringing about a gradual change in the structure of R&D outlays in Poland, and reducing the developmental gap on the regional and national level. ■

Further reading:

- Baczkowski T. (Ed.). (2005). *Raport o innowacyjności gospodarki Polski w 2005 r.* [Report on the Innovativeness of the Polish Economy in 2005]. Warsaw: INE PAN.
- Baczkowski T. (Ed.). (2006). *Raport o innowacyjności gospodarki Polski w 2006 r.* [Report on the Innovativeness of the Polish Economy in 2006]. Warsaw: INE PAN.