Innovation



Barriers to innovation in Brazil

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ECONOMIC PROGRESS has over the centuries always gone hand in hand with innovation. What is different today is that with globalization, understanding innovation means reaching out beyond the boundaries of universities, companies, and countries. The nature of the innovative process has become much more collaborative and global. Countries are seeking ways to differentiate themselves by means of heavy investments in research and development (R&D) in order to raise their productivity.

Brazil and China are no exception, and despite having somewhat similar levels of investment in R&D as a share of GDP—Brazil invests up to 1.2% and China 1.7%—they differ significantly in terms of effective use of research by the market. While China has invested to assimilate technology produced internationally so as to enhance and create its own technological base and innovate, Brazil pays more attention to scientific research and is more protectionist, even though most experts agree that innovation grows out of exchange rather than isolation.

"Innovation policy should not be restrained by other public policies," said Maurício Canêdo, IBRE researcher, pointing out that Brazilian industrial policy has a strong protectionist bias. "One of the biggest levers to encourage innovation is pressure from competitors. That is why isolating the Brazilian economy from the rest of the world is not a good idea if the intention is to encourage domestic firms to invest in innovation."

Protection

Claudio Frischtak, president of Inter B Consulting, agreed. "Brazil remains a very much closed economy; there is little exchange with the world. As a consequence, the innovation process is also protected, and this is a way to shoot yourself in the foot," he warned. Frischtak pointed out that currently any country's economic growth is associated with its integration into global value chains, which calls for innovation without boundaries: "Industry and innovation will only become more weighty when they are effectively integrated into their own global value chains."

Brazil's history of innovation—with occasional exceptions such as the Brazilian Aerospace Company (Embraer), the Brazilian Agricultural Research Corporation (Embrapa), newer programs like Criatec Fund and advances in biotechnology and nanotechnology—has not been linear or constant; and compared to similar economies, its progress has been negligible. In general, the generation of knowledge by research universities and institutes has not usually been transformed into innovation by companies. UNESCO data show that, while Brazilian companies invest as little as 0.5% of GDP in innovation, Chinese companies invest 1.2%. "In Brazil, private business investments in innovation are not effective in terms of generating patents," said Canêdo. The Chinese, however, promote a constant exchange of knowledge between companies and research universities. In

2010, the Chinese private sector was responsible for 73% of R&D investment compared to 17% by government institutes and 9% by universities.

"In Brazil, South Africa, Russia, and India, the public sector is doing the innovating. In China, the private sector invests a lot in patents and innovation. But we cannot explain how this is encouraged," said Ana Saggioro Garcia, a researcher at the BRICS Policy Center, adding that little is known about the Chinese policy for attracting investments. "We do not know whether innovation is promoted by multinationals operating there or by Chinese companies."

Obstacles

Data from the 2008 Technological Innovation Survey of the Brazilian Institute of Geography and Statistics (IBGE) show that the share of Brazilian companies that are innovative—companies that are able to turn an idea or invention into a good or service that creates value—grew from 32% in 2000 to 38% in 2008. Nevertheless, the number is relatively low compared to China or smaller economies like South Korea. "We have been running, but we are still in the same place relative to the rest of the world. Our investment in R&D is done half by companies and half by the government. Investment carried out by companies, despite having grown, grew more slowly than in the rest of the world," said Fernanda De Negri, director of studies of production and innovation of the Institute of Applied Economic Research (IPEA). "Since 2008, the situation has been even more worrying," she warned, "because during crises investment R&D declines."

In China, the situation is quite different. Over the past 50 years the country has adopted a policy of importing technologies, assimilating and improving knowledge, and investing in R&D centers and training researchers. Li Guangsi, associate professor at the Nanjing University of Finance and Economics, believes that "copied innovation can promote innovation capacity in basic research, resulting in rapid growth in the number of inventions and innovations." The result of this policy is reflected in the numbers: Between 2000 and 2010 China's ranking for obtaining international patents rose from 13th to 4th place and for obtaining domestic patents from 8th to 3rd. "In Brazil there is an effort by the National Institute of Industrial Patents (INPI) to speed up the patent process, but the problem is that other countries make twice the effort . . . and as a result we are falling behind," Frischtak commented.

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Fernanda De Negri

Frischtak advocates a revision of legislation and standards in order to reduce the red tape and encourage innovation in Brazil. IPEA's De Negri agrees. She believes the key is simplification: "We need to simplify procedures. The interaction between research universities and industry is severely constrained by bureaucratic procedures. Innovation does not work well with bureaucracy. There is an institutional and regulatory bottleneck that needs to be reconsidered."