

## A Stroll Through Patent History

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Published: September 29, 2003

**C**AN a theoretical stroll through the Crystal Palace exhibition of 1851 in London — at which thousands of inventions from countries around the world were on display — tell us something about the nature of innovation today?

Petra Moser, now an assistant professor at the Massachusetts Institute of Technology's Sloan School of Management, took exactly such a stroll — in the form of a Ph.D. thesis — and has come up with some surprising conclusions that are attracting the attention of fellow scholars. This month the Economic History Association awarded her a dissertation prize at its annual meeting.

On Friday she will be giving a seminar on her research at the University of Maryland in College Park.

One of Professor Moser's conclusions is that developing countries like India, which is scheduled to come into full compliance with an international patent treaty in 2005, may be better off without strong patent laws.

The conventional wisdom among economists has been that a robust patent system helped transform the United States into an economic powerhouse. And this may be true. But, Professor Moser concludes, what was good for America and Britain in the 19th century is not necessarily good for emerging, largely rural economies in countries like Denmark, the Netherlands and Switzerland.

"In economics, we are taught that patent laws are what create incentives for innovation," she said. "But many of the best innovators in what was the high technology of the day came from some of the smallest countries in Europe, and these nations did not have patent laws."

Professor Moser found, for example, that Swiss inventors tended to concentrate their efforts in watch making and specialized steel making for scientific and optical instruments. Their innovations were exceedingly difficult to reverse-engineer and thus were successfully guarded as trade secrets.

"There were competitions in England to reproduce some Swiss innovations in steel," Professor Moser said. "But the English just couldn't figure out how to do it. The Swiss would have been silly to patent these innovations."

That is because the purpose of patents is twofold: to protect the inventor and to speed technological progress. Thus, patent laws require that an inventor, in a quid pro quo exchange for the limited monopoly that a patent provides, disclose his methods to others. "Countries without patent laws have much larger shares of their innovations where patenting would have been a bad idea," Professor Moser said.

Meanwhile, inventors from countries not governed by patent laws were free to appropriate ideas patented by innovators in other countries.

The French inventor Hippolyte Mège-Mouriez, who invented margarine in 1870, blithely showed his invention to two Dutch entrepreneurs. Mr. Mège-Mouriez, having received a patent, felt confident that his idea was protected. The Dutch entrepreneurs took the Frenchman's ideas, improved on them (keeping their improvements secret) and established a thriving margarine business that in the 20th century merged into the multinational conglomerate [Unilever](#). Mr. Mège-Mouriez died a pauper.

Professor Moser's work builds on work of Jacob Schmookler and Kenneth Sokoloff, both of whom have used 19th-century patent records to correlate rates of invention with market demand.

But her source material was not patents, since many of the inventions she studied were not patented. Rather, she combed through exhibition catalogs from the Crystal Palace exhibition and the 1876 Centennial exhibition in Philadelphia.

"The idea of using the exhibition data to empirically examine this idea was exceptionally creative, and the analysis was well executed," said Professor Sokoloff, a professor of economics at the University of California at Los Angeles. "Petra deserves enormous credit."

For about two hours every day during the four years she pursued her doctorate in economics at the University of California at Berkeley, Professor Moser entered data from 33,000 19th-century exhibition inventions into a spreadsheet.

The Crystal Palace exhibition was the first in a series of world fairs at which countries showed off their newest technologies. More than 6 million people visited the Crystal Palace, and almost 10 million people attended the Centennial Exhibition.

"Exhibition data are particularly useful for studying the effects of patent laws on innovation because they measure economically useful innovation in a way that is independent of changes in patent laws," Professor Moser said. "Countries without patent laws were really doing quite well."

So what is the lesson for Brazil, China, India and other countries that are being pressed by industrialized nations to create strong patent systems?

"We try to force patent laws on developing countries and say, This is best for you," she said. "Then we are surprised when they say they don't want patent laws. But they have a point. Such laws could actually hinder innovation in those countries."