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Innovation lessons from the 1930s

History suggests that even the deepest downturns can create huge opportunities for companies with money and ideas.

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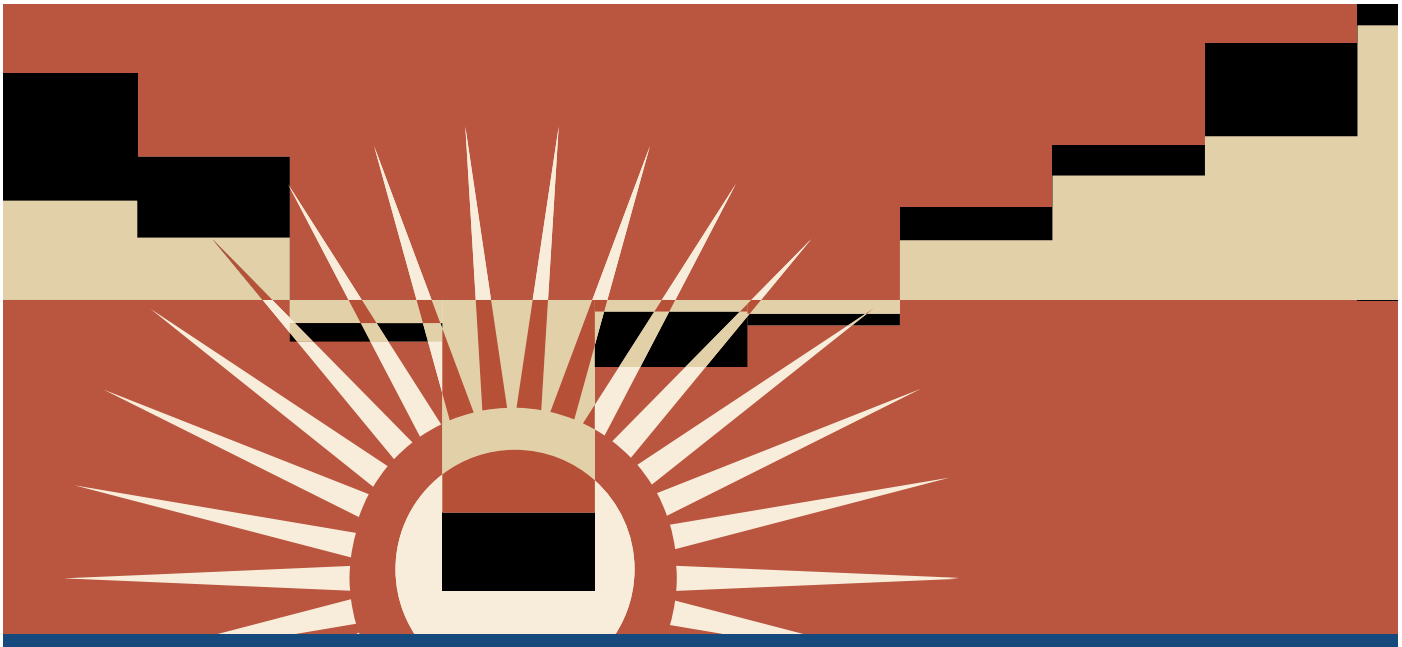

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Recent turmoil in global financial markets and its spillover into the real economy have generated considerable interest in the Great Depression. There's much to be fascinated with, both in the parallels (banking failures, a large spike in real-estate foreclosures, and global uncertainty, for example) and the points of contrast (such as the speed and coordination of the response of central banks and finance ministries in 2008).

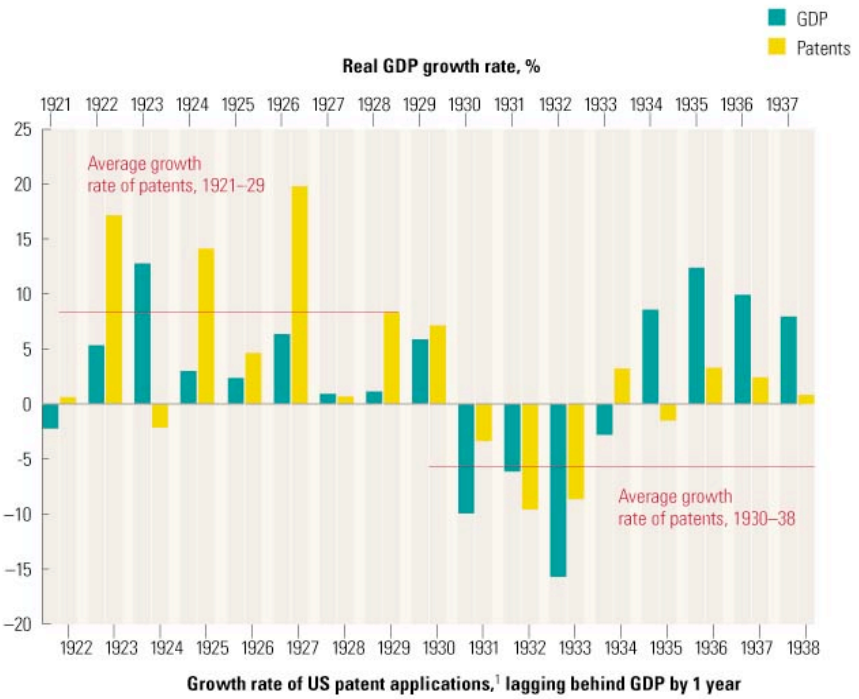
Can the business practices of the 1930s yield useful lessons for executives setting priorities in today's uncertain and evolving environment? For investments to promote innovation, the answer may be yes. Executives are often told to maintain investment during downturns. It's easy to question this countercyclical advice, however, in times like the Depression or the present, when the volatility of financial markets (an indicator of uncertainty) reaches historic highs. Is the typical behavior of executives—act cautiously and delay investment projects until confidence returns—the wiser course?

Many companies hesitated to innovate during the 1930s. Consider, for example, patent applications as a proxy for resources devoted to innovation. The growth rate of US patent applications by companies with R&D laboratories was considerably lower during the 1930s than in the preceding decade. On the whole, corporate executives considering plans for research investments preferred to wait and see.

Furthermore, patent applications were far more synchronized with the business cycle during the Depression, when the cycle was extremely volatile, than they had been during the '20s, when economic conditions were buoyant (exhibit). From 1929 to 1937, for example, there were five years of GDP growth and four years of GDP contraction. Patent applications generally followed the same pattern, lagging behind by one year: the number of patent applications increased during years following GDP growth and decreased during years following GDP contraction, with two exceptions: 1934 and 1935. As the economy whipsawed companies during the 1930s, they appear to have regularly adjusted their views about the payoff from innovation.

EXHIBIT

Synchronized



[1] By companies with R&D laboratories.

Source: Malhar Nabar and Tom Nicholas, *Uncertainty and Innovation at the Time of the Great Depression*, Harvard Business School Working Paper, October 2008; Patent application data from the European Patent Office's PATSTAT database matched against corporate research and development facilities as listed in editions of *Industrial Research and Development Laboratories of the United States* (National Research Council, 1921, 1927, 1931, 1933, 1938); GDP data from *Historical Statistics of the United States* (Cambridge University Press, 2006).

Yet several successful companies did not delay such investments. One was DuPont. In April 1930, a noted DuPont research scientist, Wallace Carothers, recorded the initial discovery of neoprene (synthetic rubber). Although the company's price levels and sales fell by roughly 10 and 15 percent, respectively, that year, DuPont boosted R&D spending to develop the new technology commercially. A buyer's market for research scientists and low raw-material prices helped the company to keep the cost of its research investments manageable. Neoprene, which DuPont publicly announced in November 1931 and introduced commercially in 1937, became one of the 20th century's major innovations. By 1939, every automobile and airplane manufactured in the United States had neoprene components. Similarly, DuPont discovered nylon in 1934 and introduced it in 1938 after intensive R&D and product development.

DuPont isn't the only such example. Many new technology companies—for instance, Hewlett-Packard and Polaroid—that became leading innovators later

in the century were established as entrepreneurial start-ups during the 1930s. Radio Corporation of America, the high-tech company whose stock was bludgeoned during the Great Crash, returned to profitability in 1934 as it shifted its innovation efforts from radio to the nascent television market. In total, US companies founded at least 73 in-house R&D labs each year from 1929 to 1936.

Of course, these examples don't mean that aggressive investments for innovation would have been wise for every company during the 1930s or are universally wise today. But taken together, the patent research and the experience of successful innovators in those years suggest that although delay is the natural response to uncertainty, some companies should continue innovating even in an extraordinarily deep economic downturn—especially with technologies that take a long time to commercialize after discovery. Companies that delay these investments may forego significant growth opportunities when uncertainty subsides and the economy recovers.

The experience of the 1930s also illustrates a broader point. Although deep downturns are destructive, they can also have an upside. The Depression-era economist Joseph Schumpeter emphasized the positive consequences of downturns: the destruction of underperforming companies, the release of capital from dying sectors to new industries, and the movement of high-quality, skilled workers toward stronger employers. For companies with cash and ideas, history shows that downturns can provide enormous strategic opportunities.

About the Author
Tom Nicholas is an associate professor at the Harvard Business School, where he teaches business history and entrepreneurial management.

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