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Gadgets of Growth

New inventions propel us toward the future. But what drives people to make them? Marc Levinson reviews 'Fifty Inventions That Shaped the Modern Economy' by Tim Harford.

By Marc Levinson

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There's only one definitive statement to make about economic growth: We understand very little about why it occurs. To be sure, we don't lack for theories. More than a few ideologues would have us believe that government can create dynamism at will, if only it would lower tax rates/raise tax rates/build more public works/cut social programs/return to the gold standard/increase spending on research. In truth, though, the forces that accelerate growth and raise incomes are not so easily managed. Growth arises largely from higher productivity, which comes mainly from putting innovations to use. This occurs largely in the private sector; while the government can help by supporting research and education, when and how those investments bear fruit is impossible to predict or control.

One of the joys of Tim Harford's "Fifty Inventions That Shaped the Modern Economy" is that it presents this perspective on economic growth so that the most casual reader can grasp it. Mr. Harford, who writes for the Financial Times and broadcasts for BBC Radio, offers a series of vignettes, each discussing a single invention in five or six pages. The book could easily have degenerated into a list of the 50 biggest hits in economic history. Mr. Harford wisely goes in a different direction, using each chapter to describe some of the ways in which each invention changed society and then knitting the chapters together to reveal the connection between innovation and prosperity.

Mr. Harford has selected an eclectic mix of inventions, from the gramophone to the index fund. (Full disclosure: Although I've never met the author, the book includes a chapter on the shipping container, drawing heavily on a book of mine, and mentions me in the acknowledgments.) He offers a few breezy paragraphs about the inventors and the development of each invention, but his main focus is the consequences.

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I recall, on my first trip to Europe many years ago, remarking that people in rural areas invariably lived in villages rather than on isolated farms. Mr. Harford has an explanation: Pulling the

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FIFTY INVENTIONS THAT SHAPED THE
MODERN ECONOMY

By Tim Harford

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heavy moldboard plows introduced into Northern Europe in the Middle Ages required larger teams of horses or oxen than any but the wealthiest farmer was likely to have, providing an incentive to create

communes where such resources could be shared. When we read about Leo Baekeland, the inventor in 1907 of the plastic he called Bakelite, we also learn about plastic billiard balls and nylon stockings, the prodigious quantities of plastic in the oceans, the high rate of plastic recycling in Taiwan, and new research seeking to turn old plastic bottles into airplane wings.

Each of these chapters stands on its own—and, indeed, many have

appeared individually in Mr. Harford's columns and radio programs. Putting them together in a book enables him to draw broader conclusions. One is that innovation is erratic, with the effects of inventions playing out over decades or centuries. Another is that inventions may change the balance of economic power: Barbed wire allowed people who staked out claims to land ownership in the Wild West to gain the upper hand over Indian tribes and cattle herders who claimed rights of use. A third is that there are always unintended consequences. "We shouldn't fall into the trap of assuming that inventions are nothing but solutions," Mr. Harford writes. "Inventions shape our lives in unpredictable ways—and while they're solving a problem for someone, they're often creating a problem for someone else."

Mr. Harford goes easy on the economics, showing more than telling. Much of his explicit treatment of economic ideas comes in the introduction and in a seven-page conclusion. Even here, his sense of humor shines through. The introduction, starting with a musing on mongongo nut oil—which is produced without plowing—is cleverly inserted after the opening chapter on the plow.

The finale, on the light bulb, discusses how the means of producing indoor lighting have evolved from wood fires, requiring hours of chopping to fuel a brief and flickering blaze, through sesame-oil lamps, tallow candles and whale-oil lamps to incandescent and then LED bulbs. Here Mr. Harford draws on work by the economists William Nordhaus and Robert Gordon, who have emphasized that inexpensive, long-lasting illumination has contributed enormously to living standards in ways uncounted in statistics. Until recent times, after all, the availability of daylight dictated the patterns of life; now, with rare exceptions, it hardly matters. "Switch off a lightbulb for an hour and you're saving illumination that would have cost our ancestors all week to create," Mr. Harford writes.

It's great fun to dip into individual chapters of "Fifty Inventions." Mr. Harford succeeds in teaching about productivity, economic growth, monopoly, regulation and other essential topics without resorting to technical terminology and intimidating charts and tables. Such a feat requires a kind of inventiveness in itself.

—*Mr. Levinson's most recent book is "An Extraordinary Time: The End of the Postwar Boom and the Return of the Ordinary Economy."*