

Peter Howitt, awardee in the Economics, Finance and Management category (12th edition)

It is a great pleasure to thank the BBVA Foundation for this generous award. Nothing could make me more grateful than to be selected by a committee of such distinguished peers.

I am delighted to share the award with Philippe Aghion. I still remember how exciting it was when we began working together 34 years ago, tossing ideas back and forth and working them out at the blackboard. I had no idea at the time that we were embarking on the journey of a lifetime.

I would also like to take this occasion to thank my wife Pat Howitt for supporting and encouraging my collaboration with Philippe in countless ways. I can honestly say that I would not be receiving this award if it had not been for her help.

The growth theory for which we are being recognized was inspired by the work of the great Austrian-American economist Joseph Schumpeter, who wrote in the first half of the 20th century. Schumpeter stressed the importance of technological innovation in industrial competition, and the disruptive effects of innovation on the dynamic evolution of an economy. His ideas were compelling but somewhat difficult to capture in a coherent mathematical model, partly because of their complexity and also partly because economists have traditionally thought of competition as taking place through prices rather than through innovation. However, by the time Philippe and I began our collaboration a body of literature had emerged in industrial organization theory that had managed to formalize Schumpeter's notion of competition through innovation, and we were able to extend this theory into a macroeconomic framework to develop a Schumpeterian model of economic growth.

The most important idea of Schumpeter's that we embodied in our model is what he called "creative destruction." That is, while the innovations that drive economic growth create new and improved products and techniques, they also at the same time typically reduce or even destroy the economic value of earlier products or techniques by rendering them obsolete.

Putting creative destruction at the core of growth theory has allowed economic theorists to deal with something that economic historians have long realized, namely that economic growth creates losses as well as gains. The new technologies that drive growth enrich many people but

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at the same time they impoverish those whose livelihoods are tied to now obsolete technologies, such as the handloom weavers who were replaced by new textile machinery in the first industrial revolution, or the assembly line workers whose jobs have recently been taken by robots.

Creative destruction has important implications for appropriate government policies. Most obviously, policies promoting technological development are more likely to enhance social welfare the stronger is the social safety net supporting those whose incomes are threatened. To minimize the losses it also helps to have educational policies that promote flexible forms of human capital formation, and to have industrial policies and labor market policies that push technical change in directions that complement existing forms of human capital. And this just scratches the surface. Schumpeterian growth theory has led to a major reconsideration of policies with respect to international trade, anti-trust, taxation, intellectual property, financial regulation, and many other domains.

Creative destruction has important political as well as economic implications. Politicians who support measures that promote innovation are often opposed by workers whose human capital is at risk of obsolescence. A more nefarious form of opposition comes from incumbent business firms whose profits are threatened by competition from upstart firms that create and deploy the new technologies. In many cases these incumbents were once themselves disruptive upstarts, but their very success in innovation has given them the size and financial means to block the next generation of innovators, through lobbying, regulatory capture, and public relations campaigns in favor of protectionist policies. These activities create a political bias in favor of the status quo, a bias that is always threatening to cause stagnation instead of progress. I am happy to see that a great deal of recent empirical work that has arisen out of Schumpeterian growth theory has helped to expose the extent of this status quo bias and to suggest measures for counteracting it.

Certainly the most important potential destructive effect of economic growth is its effect on climate change. To many analysts the only way to avert disaster is to implement measures that would drastically reduce economic growth. But the alternative strategy supported by Schumpeterian growth theory is to try harnessing the innovative market forces underlying growth and steering them in the direction of discovering new cleaner technologies that will ultimately reduce the greenhouse gases in our atmosphere. Some evidence that such a strategy might be feasible is provided by the fact that innovations spurred by government policies in leading industrial countries have already made electricity less expensive to produce in most cases by using wind turbines and solar photovoltaic cells than by burning fossil fuels. However, we still have a long way to go to achieve sustainable growth, with not much time left. And our success in bringing new clean technologies online will depend critically on overcoming the inevitable opposition from entrenched incumbents whose immediate profits are threatened by creative destruction.