

## REVIEWS

## RETROVIEW: SCHUMPETER'S CENTURY

PHILIP E. AUERSWALD

The history of the 20th century is invariably told as a political and military narrative: first, the war to end all wars that didn't; then, the democracies' world war to defeat fascism; and finally, the successful struggle to defeat Soviet communism. Far less well appreciated, but arguably more relevant to the present, is the economic subtext of this same history: the rise and partial fall of large-scale, centralized production.

*The Theory of Economic Development*  
(1911)  
*Capitalism, Socialism, and Democracy*  
(1942)  
by Joseph Schumpeter

Understanding the life, work and legacy of the great Austrian economist Joseph Schumpeter does not equate precisely with this second story as it played out in the 20th century, but it's close. Born in 1883, Schumpeter received his doctorate only six years into the new century. He died at age 67 in 1950, only halfway through it, but the real power of Schumpeterian analysis for today's readers comes in its application to the period from Schumpeter's death to the present. Schumpeter is thus a kind of posthumous contemporary. As Peter Drucker remarked in 1983, a century after Schumpeter's birth: "It is becoming increasingly clear that it is Schumpeter who will shape the thinking and inform the questions on economic theory and economic policy for the rest of this century, if not for the next thirty or fifty years."

Schumpeter has much to teach even from beyond the grave, as a fine new biography by Thomas McCraw makes clear.<sup>1</sup> What really caused the collapse of the Soviet Empire? Not Ronald Reagan. How does the threat of Islamic fundamentalism today compare with the threat of fascism in the 1930s or communism in the 1950s? From the standpoint of economic fundamentals, it doesn't. What is the key to China's sustained economic growth? Not cheap labor. If a proper understanding of the lessons of the 20th century is a prerequisite for framing sensible policies for the century we are in now, then Schumpeter is still essential reading.

## CHAMPION OF INNOVATION

For a man who became the world's leading authority on societal disruption, Joseph Alois Schumpeter could not have had a more stable ancestral history: For over four centuries the Schumpeters resided in and dominated the small Czech town of Triesch. For Joseph Schumpeter, however, this stability came to a sudden end in 1887 at the age of four, when his father's death prompted his mother to move with him to the Austrian city of Graz. With his mother as his tireless promoter, Schumpeter ultimately received his education in the best schools of the Austro-Hungarian Empire—at that time, among the best in the world.

From there, Schumpeter's ascent was more uncertain and halting than one might have expected, given the eminence he ultimately achieved. Sequential teaching appointments

following completion of his doctoral studies at the University of Vienna led ultimately to an appointment at Harvard, fortuitously timed to extract Schumpeter from Germany immediately prior to the rise of the Third Reich. It was at Harvard that Schumpeter built his reputation as one of the most expansive and incisive thinkers of his era, and where he wrote (from 1941 to 1942) what is regarded as his greatest work, *Capitalism, Socialism, and Democracy*.

Schumpeter's career as an economist coincided with the birth of modern corporate capitalism. He observed directly the emergence of the world's first large-scale companies and the corresponding ascendance of the first great captains of industry: Carnegie, Thyssen, Ford and other legends-to-be. The advent of capitalism-at-scale induced major social and economic dislocations, but it also drove a tremendous increase in the availability of low-cost consumer products, substantially enhancing workers' quality of life.

To describe the process by which new and innovative firms and industries displaced old and outmoded ones, Schumpeter coined the now famous phrase "creative destruction." This phrase has become so closely associated with Schumpeter that it is generally taken to signify his most important intellectual contribution. This is unfortunate: To sum up Schumpeter with this one phrase is like remembering Shakespeare as the guy who merely puzzled over whether it was better "to be or not to be." Schumpeter can no more accurately be described as an early business strategist than the Bard can be called a pioneering existentialist.

Indeed, the scope of Schumpeter's work was almost absurdly broad compared with the highly specialized norm that dominates academia today. From the outset he sought no less than an integrated, scientifically based set of principles to explain the full scope of modern economic history. The localized phenomenon of creative destruction was, for Schumpeter, only one element of a research program that aimed at a formal understanding of the microeconomic drivers of business cycles and global historical trends. Schumpeter's insights extend well beyond what can be grasped by one or even a dozen company case studies. His most ambitious work, though not his most successful one, is revealingly titled *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process* (1939). That he is rightly regarded as one of the great social scientists of the 20th century despite having apparently failed in the core project of his career is testament to the magnitude of his aspirations. To understand Schumpeter's contribution we would do well to follow the example of his newest biographer, accepting no less a challenge than the rethinking of a century of human history.

## A CENTURY IN A NUTSHELL

At the start of the 20th century, the world's economic landscape was being transformed by the emergence of an entirely new form of business entity that was larger and more complex than any that had existed previously. The growth of these private-sector leviathans was due primarily to what economists refer to as "economies of scale": the ability to reduce costs per unit by increasing the quantity of output or integrating within a single business entity the different stages of production, from the acquisition of raw materials to the assembly of a finished product. Economies of scale proved so powerful at the turn of the last century that the individuals and companies able to exploit them succeeded in revolutionizing existing industries and building new ones in a matter of years.

The automobile is a particularly remarkable instance of the phenomenon. A consumer good that did not exist at the time of Schumpeter's birth was the dominant industry in the world's most rapidly growing economy by the time he reached forty. Ford's Rouge factory in Dearborn, Michigan, built in the mid-1920s, is the epitome of the process of centralization and integration characteristic of the first part of the 20th century. At one end of the facility, occupying more than a square mile and employing more than 100,000 people, barges unloaded iron ore, coal and limestone. At the other end exited nearly all the components that made up the Model T. Only the final assembly took place at another plant.

The Rouge was quintessential Middle America for its era, yet in photographs taken from the air it resembles nothing more than the highest form of Socialist Realism: at once impersonal and heroic, gritty and majestic. The resemblance is no coincidence. The harnessing of the power of scale and scope was a global phenomenon. It found its most dramatic expression not in Standard Oil, Ford Motor Company, Thyssen Steel or any other company, but rather in an entire country—the Soviet Union. Absolute political control allowed Soviet leaders to undertake an unprecedented experiment, placing the entire productive apparatus of a huge nation under the control of what was, at least in theory, a single administrative authority. If economic power was rooted in the ability to harness economies of scale, as appeared to be the case in the 1930s, then the decentralized market economies of the West seemed to have ample reason to worry: No one would be able to match the Soviets, who had seemingly captured the essence of modernity itself.



*Ford Motor Company's Rouge plant, c. 1950 [credit: Getty Images]*

The downfall of communism, now a matter of historical fact, has been so fully integrated into today's zeitgeist that it is difficult, even upon reading McCraw's masterful narrative, to fully grasp the extent of this fear in the West. The incursion of socialism, driven in large part by dissatisfaction over inequalities of wealth naturally generated by corporate capitalist development, was a key element. But what concerned Schumpeter more deeply was the threat to the vitality of capitalism posed by the inexorable movement of large corporate entities toward managed stasis. Marx saw class-conflict bringing capitalism to an end with a bang; Schumpeter saw corporate managers unwittingly bringing about the same outcome with nary a whimper.

To be clear, however, Schumpeter harbored no antagonism toward big business. Among the economists of his time, he was singularly insistent upon the importance of appreciating the benefits of large-scale production for consumers and society in general. In his address as president of the American Economic Association in 1949, he chastised the profession for systematically failing to distinguish monopoly from big business. Where the former could harm consumers by restricting output to increase prices, the latter had in fact generated most of the dramatic cost reductions enjoyed by consumers over the prior century. That all

offending monopolies were big businesses did not imply that all big businesses were offending monopolies.

Yet for Schumpeter the leading men (and very occasionally ladies) of the capitalist system were not industrialists as such, but entrepreneurs. Schumpeter's description of the entrepreneurial process found its first expression in *The Theory of Economic Development*. That 1911 book is to the study of entrepreneurial economics and innovation what the Socratic dialogues are to philosophy. Among its many conceptual contributions is the first clear expression of the vital distinction between invention and innovation—the latter being, to Schumpeter, far more important than the former. Schumpeter stressed that an invention is of no economic significance until it is brought into use. Had Thomas Edison only invented the light bulb, and not innovated the organizational and technical apparatus for large-scale electrification, incandescent light would have been an historical curiosity, not unlike the technical sketches of Leonardo DaVinci.

However, as Schumpeter shows in *The Theory of Economic Development*, the personal capabilities required of an economic innovator—the creator of “new combinations” of economic activity—are entirely different from those required of an inventor. Very few people can do both. As a consequence, the process of converting an invention into an economically meaningful innovation almost always involves a potentially difficult conversation between someone with expertise in technology and someone with expertise in markets. Schumpeter was keenly aware of this divide, and consequently of why it was such a remarkable achievement of capitalist economies to have developed mechanisms for the provision of finance to entrepreneurs. Such “venture capital”, as Schumpeter was among the first to call it, played an absolutely central role in the development of capitalist economies.

This insight enabled Schumpeter to see, as early as the mid-1920s, a fundamental contradiction in capitalism. The very power of economies of scale that allowed large firms to grow, and that motivated the process of creative destruction, could also allow some successful firms to render the process of innovation routine, thereby displacing entrepreneurs. From Schumpeter's standpoint, the advent of the first corporate research and development operations—precursors to the major corporate laboratories such as Bell Laboratories and Xerox PARC—represented a major threat to the vitality of capitalist economies. In a 1928 paper entitled “The Instability of Capitalism” published in the prestigious *Economic Journal*, Schumpeter concludes:

*Capitalism, whilst economically stable, and even gaining in stability, creates, by rationalizing the human mind, a mentality and a style of life incompatible with its own fundamental conditions, motives, and social institutions, and will be changed, although not by economic necessity and probably even at some sacrifice of economic welfare, into an order of things which it will be merely a matter of taste and terminology to call it Socialism or not.*

Over a decade later, Schumpeter revisited this theme in *Capitalism, Socialism, and Democracy*:

*Since capitalist enterprise, by its very achievements, tends to automatize progress, we conclude that it tends to make itself superfluous—to break to pieces under the pressure of its*

*own success. The perfectly bureaucratized giant industrial unit not only ousts the small or medium-sized firm and ‘expropriates’ its owners, but in the end it also ousts the entrepreneur.*

Given Schumpeter’s finely tuned appreciation for the beneficial role played by entrepreneurs and his antipathy to planned economies, these two paragraphs represent an indisputably bleak vision of the future.<sup>2</sup>

## PREDICTING THE SOVIET FALL

As it turned out, Schumpeter underestimated the adaptability of capitalism and overestimated the adaptability of socialism. For this reason, the core concern of his most widely read work turns out to have been misplaced.

To be sure, the Soviet Union did prove a formidable ally in World War II and just as formidable a foe for the first twenty years or so of the Cold War. In the 1950s, Soviet economic growth was dramatic. The launching of Sputnik in October 1957 substantiated profound fears in the West that the Soviet system was ascendant.

It was not Schumpeter but another Harvard economist, Martin Weitzman, who documented early in his career the structural flaws in the Soviet economy that were already undermining its development, even as the United States successfully raced to match its space-age achievements. In a 1970 paper Weitzman applied the techniques of aggregate production function estimation developed by Robert Solow in his seminal papers on technical change in the U.S. economy to identify sources of growth in the Soviet economy.<sup>3</sup> The results were striking. Solow had found in 1957 that 87 percent of the growth in the U.S. economy over the first half of the 20th century was a “residual”, not accounted for by accumulation of the traditional factors of production: capital and labor. Solow attributed this growth residual to technological and organizational innovation. Studying the Soviet economy during the interval 1950–69, Weitzman found that only 15–25 percent of growth could be attributed to technical change and organizational innovation.

For the Soviet economy, output growth through the 1950s and 1960s had been driven almost entirely by the absorption of “surplus labor.” In general, the mechanism for this type of economic growth is a simple one: Give underemployed workers the tools they need to be productive. But such a growth strategy is inherently limited, as a simple example can show. Imagine an economy comprised entirely of lawn-mowing services. At its starting point, there is one lawn mower for 100,000 people, and for each new lawn mower produced, another worker is brought into the economy. Through a process of capital accumulation, workers are paired up with equipment that dramatically raises their productivity. However, in this simple example, growth comes to a sudden halt once the last idle worker is paired with a lawn mower. At that point further improvements can only come with technical change and professional innovation—either the machine has to be improved, or the worker’s skills have to advance even while bound to the same capital equipment. In the Soviet model, these changes were not forthcoming.

Like Schumpeter in *Capitalism, Socialism, and Democracy*, Weitzman was kind enough to

allow that Soviet planners grasped the fact that continued innovation was required for growth. He was too kind: Disruptions caused by technical change and innovation were as toxic to Soviet planning as they had been to medieval guilds four centuries earlier. The evidence of stagnation can be readily seen in the Trabant and other artifacts of Soviet production that, once in the market, changed little or not at all during a span of decades. The ability of Soviet scientists to generate world-class inventions in selected fields was juxtaposed against the inability of the Soviet economy to permit and then harness disruptive innovation. As a direct consequence, the Soviet system headed slowly but inevitably toward collapse.

Just as Schumpeter overestimated Soviet economic prowess and stability, the postwar development of capitalist economies was more successful than he had anticipated. In the United States, in particular, corporate centralization reached its high-water mark in the 1950s and 1960s. In the 1970s, investors penalized “conglomerates.” Breakups followed, and the business school cliché “stick to your knitting” gained currency. In the 1990s, these dual processes (strategic focus and productive fragmentation) continued as even the most tightly focused companies were compelled to respond to a revolution in networked production and outsourcing. Schumpeter could not have been expected to anticipate that technological innovation itself would transform the very parameters of business organization and operations, penalizing instead of rewarding “economies of scale” as it was understood in the early decades of the 20th century.



*Joseph Schumpeter [credit: Bettman/Corbis]*

Alongside these processes, most relevant to large firms was a dramatic growth in the business of private equity finance, including venture capital, allowing entrepreneurship in the United States, in particular, to thrive as well as survive. Where new ventures had for centuries been fueled by investments from wealthy individuals who perceived the potential for large gains, the provision of venture capital and its impact on the economy reached a qualitatively different level with the explosion of technological possibilities following World War II—much of it fueled by substantial military R&D spending. By the peak of the technology boom in 2000, venture capital firms disbursed a remarkable \$100 billion a year in funds.

Granted, only a small fraction of that sum went to support high-risk, technology-based new firms of the type that Schumpeter might have considered most critical to long-term growth. But even the less risky resources given to mergers and acquisitions fueled creative destruction of a sort, as investors often compelled non-adaptive firms either to change their practices or to have assets redeployed to other uses. Corporate behemoths continued to dominate the economic landscape, but they now faced an ever growing threat of dislocation from new start-

ups.

## IT'S INNOVATION, STUPID

An understanding of the economic fundamentals of the 20th century is valuable today in many contexts. As already suggested, Schumpeterian analysis is helpful in correcting the widespread belief that the demise of the Soviet Union was driven by Reagan-era military spending. The Soviet Empire came to an end primarily because its economy was structured in a manner hostile to innovation and was thus unable to sustain economic growth. Pressure to keep pace with U.S. military spending may have accelerated the Soviet collapse, but to exaggerate the U.S. role in the Soviet demise is to employ the same myopic reasoning that in 1949 brought us the inane question “Who lost China?”

Along similar lines, current comparisons of Islamic fundamentalism to fascism in the 1930s or communism in the 1950s are almost entirely empty when considered from an economic standpoint. Germany in 1930 was a country with demonstrated capacity as a global economic leader, its steady development having been halted at the start of the 20th century by a pointless war brought to a conclusion by a bankrupting peace. Even Japan, greatly underestimated in the West prior to its attack on Pearl Harbor, was a nation that had steadily built its economic foundation and technical capabilities over a century of patient investment and strategic imitation of Western techniques. In contrast, the countries potentially susceptible to the sway of Islamic fundamentalist ideologues today compare unfavorably with the Soviet Union of the 1950s from the standpoint of relative economic capability, and they do not really compare at all with 1930s Germany or Japan. In 1913, Germany’s economy was the world’s third largest. In 1973, at its relative peak, the Soviet economy was the world’s second largest. In contrast, Iran, Pakistan and Saudi Arabia are today the world’s 22nd, 28th and 30th largest economies, respectively; and for Iran and Saudi Arabia, oil revenues comprise more than 40 percent of GDP. This is not to say that such countries could never pose a real and enduring threat to the United States or other Western democracies. It *is* to say that, if such a day ever comes, it is still a very long way off.

It is true, of course, that innovation and technical change have created new modes of attack that make small groups and economically weak states potentially as threatening today as strong nations were in the past. But an historical perspective is valuable here as well. Consider that more than sixty million people lost their lives globally during World War II—a human cost equivalent to one 9/11 attack per day for 54 consecutive years. Among armed combatants, the United States could count itself lucky in having lost “only” 290,000 of its 16 million service members. Such losses are inconceivable today; yet the capacity then for democratic institutions, including decentralized markets, to adapt and respond following the war was dramatic. What reason is there to believe that capitalism and democracy are more fragile today than they were then? By what measure can any present threat posed by even the most malicious non-state adversaries compare with the combined industrial might of Germany, Japan and other Axis powers during World War II, or of the Soviet Bloc during the Cold War? Respect for the capabilities of foes must be matched with an equally realistic appreciation of our own potential for societal resilience.

If we shift focus from threats to opportunities, it becomes clear that the nations for which a correct reading of the 20th century is most critical are the ones to which Schumpeter himself

argued that his analysis pertained the least: those Mao Zedong labeled “the Third World” in 1955, belonging neither to the First World of capitalist economies nor to the Second World of the Eastern Bloc.

The spectacular growth of China, in particular, is often misunderstood as a story of cheap labor. Rags-to-riches always makes for a captivating story, but in this case it is a fictional one. After all, cheap labor relative to Western standards existed in China for more than a century before the country’s recent development surge: It was known as poverty. Chinese reservoirs of underutilized (i.e. “cheap”) labor are indeed vast, but the talent of that cheap labor to work with machines productively is limited, as it is everywhere. In rapidly growing places like Dongguan in southern China, even small-scale entrepreneurs face the same constraint as large corporations in the United States: the scarcity of talent capable of keeping up with a world of rapid growth and change.

What has changed in the last 15 years is the combination of that underutilized labor with huge infusions of capital. China’s current growth is a dividend of sorts earned as a consequence of more than a century of economic stagnation. In the early 19th century, before China fell victim to the superior technology of the British and other colonial powers in the Opium Wars, the justly-named “Middle Kingdom” comprised more than 30 percent of the world’s economy. Today, even after a decade of remarkable growth, that number stands at just over 4 percent. For China in ten or twenty years, just as for the Soviet Union in the 1970s, a point will come when matching capital to underutilized labor is no longer an adequate strategy to sustain rapid growth. But in China today, unlike the Soviet Union at any time in its history, entrepreneurship and (economic) creative destruction are flourishing. Recent embarrassments over product safety, though small scale, suggest that, if anything, the risk to Chinese capitalism is not from inadequate individual initiative, but rather from inadequate regulation.

Furthermore, a profound difference exists between today’s Chinese Communists and yesterday’s Soviet Communists. Chinese leaders grasp the Schumpeterian insight that while political stability requires sustained growth, sustained growth actually requires a significant degree of economic *instability*. What they’re not sure about is whether the necessary degree of economic instability, in turn, ends up being associated with more social and political instability than they care to handle. For this, Schumpeter can be beneficially supplemented by reading Michael Polanyi and Mancur Olson.

## WAKING A SLEEPING GIANT

While crafting public policies to support innovation is a paramount public priority in China as in many other parts of the world, in the United States the topic tends to draw a yawn.

The relative lack of interest in innovation policy among U.S. political leaders is unsurprising but worrisome. The very success of the United States in technology-based innovation over the past century has resulted in a systematic discounting of the substantial role played by public policy in driving the innovation process. Even those who acknowledge the importance of innovation tend to believe that government should help spur invention by funding basic research, but otherwise not interfere with market incentives to translate inventions into market-ready innovations.



To the extent that the topic of innovation policy has recently received attention, the focal point has been concern over the erosion of U.S. dominance in science and technology and the attendant growth of R&D outsourcing. Skeptics of an active Federal role in this domain correctly point out that recently observed decreases in U.S. scientific and technological leadership are primarily due to a general, and natural, movement toward greater global balance in innovation capabilities. They argue that whatever the unique characteristics of America, and of Americans, with respect to entrepreneurship and innovation, the greatest single factor contributing to U.S. global economic dominance for the past sixty years is that roughly six of out of seven of the world's major centers of production were destroyed during World War II. That disruption was of epic proportions; recovery has taken more than half a century and is still in progress. Recent trends are a natural extension of the process.

Awareness of a significant historical trend should not translate into neglect of a vital national resource, however. In the 20th century, the economic fortunes of any nation rested with its great corporations. "What's good for General Motors is good for America", went the saying. In today's world of networked production and distributed innovation, that saying no longer holds. If anything, the underlying relationship has been reversed: Where large corporations once attracted top talent, now top talent attracts corporations. For this reason the economic vitality of nations depends primarily on the vibrancy of its most innovative regions, large and small. A start to developing and sustaining healthy "innovation ecosystems" in the United States in the coming century will be the development and implementation of public policies to address seemingly esoteric topics such as the developing crisis in the patent system, the gradually diminishing fraction of venture capital directed to start-up firms, and the excessive and poorly considered restrictions on the flow of talent into the United States from abroad.

But such initiatives, though welcome, will ultimately be half-measures unless the public will exists at the same time to attack systematically two generations' worth of policies accommodating the real obstacle to forward movement in a capitalist system: industrial inertia. The recent history of the U.S. automobile industry's relative decline is an illustrative, cautionary tale in which domestic resistance to change has arguably played as big a part as foreign ingenuity. Let the nation take note.

One can only hope, then, that a growing interest in Schumpeter, exemplified by Thomas McCraw's fine biography, will contribute to a renewed interest in the topic of innovation in general and its relationship to public policy in particular. Although the 20th century is behind us, Schumpeter's century is still to come.

---

1. McCraw, *Prophet of Innovation: Joseph Schumpeter and Creative Destruction* (Harvard Business School Press, 2007).

2. McCraw's book inadequately develops this important, if not core, theme in Schumpeter's work, relegating to a footnote the one most pertinent textual reference.

3. Weitzman, "Soviet Postwar Economic Growth and Capital Labor Substitution", *American Economic Review* (September 1970).

© The American Interest LLC, 2006