



Retrospectives

Schumpeter, David Wells, and Creative Destruction

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This feature addresses the history of economic words and ideas. The hope is to deepen the workday dialogue of economists, while perhaps casting light on ongoing questions. If you have suggestions for future topics or authors, please write to Joseph Persky, *c/o Journal of Economic Perspectives*, Department of Economics (M/C 144), The University of Illinois at Chicago, 601 S. Morgan St., Room 2103, Chicago, Illinois 60607-7121.

Schumpeter and Wells

Some economists consider Joseph A. Schumpeter the greatest economist of the twentieth century. His analysis of business cycles is a masterpiece. He brought the idea of the entrepreneur to the center stage of economic analysis. His work on the history of economics is encyclopedic. An international society works to perpetuate his tradition. But perhaps most of all, modern economists remember Schumpeter for his *Capitalism, Socialism and Democracy*, where he rejected the vision of perfect competition in favor of a world characterized by “creative destruction,” in which competition between giant oligopolies pushes the world toward ever greater technological mastery. However, Schumpeter’s argument had at least one predecessor: David A. Wells. Although Wells did not use the precise term “creative destruction,” he treated Schumpeter’s subject in the same way in his 1889 book, *Recent Economic Changes*.

To the modern eye, it might seem a strange enterprise to link Schumpeter and Wells. Schumpeter had a colorful life and exciting career. His life led to

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exotic lands, the Ministry of Finance in Austria, and finally a tenured chair at Harvard University. In contrast, David A. Wells is all but forgotten. When modern economists recognize his name, it is often only because Harvard students still vie for the coveted David A. Wells prize.

But Wells was a major figure of his time. Despite his seemingly unimportant title as Special Commissioner of Revenue, he was by far the most important economist within the U.S. government. He was responsible for bringing eminent economists, such as Francis A. Walker, into government service. For most of the second half of the nineteenth century, presidents and other high officials prized his ability to further their preferred economic policies. His biographer, Herbert Ferleger (1977, p. 219), wrote, "Some of the most trustworthy contemporary observers insisted that no one man contributed as much to the election of Grant as Special Commissioner Wells."

Wells's *Recent Economic Changes* (1889) was "probably the most cited book of the period 1890–1910" (Livingston, 1987, p. 75). Hans Thorelli (1955, p. 111) called it "by far the most popular work along somewhat heterodox lines." Four decades after its appearance, Herbert Hoover, then Secretary of Commerce, created and chaired a Commission on Recent Economic Changes. The commission clearly connected its own work with Wells's heritage, noting in the second paragraph of its report (Committee on Recent Economic Changes, 1929, p. ix): "Forty years ago David A. Wells wrote his *Recent Economic Changes*, showing that the quarter century that ended in 1889 was a period of 'profound economic changes.'"

Wells's career extended beyond economics, ranging from developing improvements in textile technologies to writing scientific books and working in the publishing industry, but his primary career was as an economist. Besides his influential role in shaping economic policy, Wells produced a veritable stream of books and articles that were effective in molding public opinion on economic matters.

David Wells and Destructive Market Forces

Wells began as a protectionist, but he abandoned that faith after becoming convinced that manufacturing in the United States had become so powerful that it had little to fear from international competition. Indeed, he believed that the strength of modern manufacturing in the United States had reached such proportions that internal competitive forces threatened the very existence of the domestic manufacturing system. Wells believed that a combination of violent competition and rapid technological advance was pushing the economy into chaos. After all, 14 of the 25 years between 1873 and 1897 were years of depression or recession. The general price index fell from a high of 129 in 1864 to a low of 71 in 1894, where it remained until 1896. The wholesale price of pig iron fell by about two-thirds, and refined petroleum by over 90 percent

(Kirkland, 1964, p. 7). As Schumpeter (1939, vol. 1, p. 337) described that time period: “[S]ome aspects . . . of the depression were quite as dark in 1873 and in 1877 as they were in 1929 to 1933 [I]f we . . . believe in the figure of three millions of ‘tramps’ (in the Winter of 1873 to 1874) then this . . . would indicate that relative unemployment was actually worse than it was during the recent world crisis.”

For Wells, overproduction was inevitable, given the combination of the extraordinary rate of investment in modern technologies together with an inadequate rate of exit by inefficient producers. Wells (1889, p. 73) cited Wilhelm Lexis at length in this regard:

It was formerly a general assumption that, when price no longer equaled the cost of production and a fair profit on capital, production would be restricted or suspended; and that the less favored producers would be crowded out, and by the relief thus afforded to the market normal prices would be restored. But this doctrine is no longer applicable to modern methods of production. Those engaged in great industrial enterprises, whether they form joint-stock companies or are simply wealthy individuals, are invested with such economic powers that none of them can be easily pushed to the wall, inasmuch as they can continue to work under conditions that would not permit a small producer to exist. Examples are familiar of joint-stock companies that have made no profit and paid no dividends for years, and yet continue active operation. The shareholders are content if the plant is kept up and the working capital preserved intact, and even when this is not done, they prefer to submit to assessments, or issue preference shares and take them up themselves rather than go into liquidation, with the chance of losing their whole capital.

Like many other major economists of the time, Wells (1889, p. 74) concluded:

[T]here appears to be no other means of avoiding such results [as chronic overproduction] than that the great producers come to some understanding as to the prices they will ask; which in turn naturally implies agreements as to the extent to which they will produce Society has practically abandoned—and from the very necessity of the case has got to abandon, unless it proposes to war against progress and civilization—the prohibition of industrial concentrations and combinations.

In short, Wells realized that competitive forces would not allow producers to recover their investments in fixed capital, causing the market to self-destruct. He recommended that industry be allowed to organize itself into trusts, monopolies and cartels.

David Wells's Theory of Creative Destruction

Wells lacked the rhetorical genius to coin a term as paradoxical as the "theory of creative destruction." Instead, Wells (1889, p. 369) wrote: "It seems to be in the nature of a natural law that no advanced stage of civilization can be attained, except at the expense of destroying in a greater or less degree the value of the instrumentalities by which all previous attainments have been affected."

In particular, Wells (1889, pp. 30–1) emphasized that the success of an invention is measured by the extent to which it can destroy the value of older capital: "[N]othing marks more clearly the rate of material progress than the rapidity with which that which is old and has been considered wealth is destroyed by the results of new inventions and discoveries." He offered as an example "[t]he notable destruction or great impairment in the value of ships consequent upon the opening of the [Suez] Canal." He asserted that each generation of ships becomes obsolete in a decade. Wells (1885, p. 146; see also p. 238; Atkinson, 1889) claimed no originality for his work, describing:

... an economic law, which Mr. [Edward] Atkinson, of Boston, more than others, has recognized and formulated, all material progress is affected through the destruction of capital by invention and discovery, and the rapidity of such destruction is the best indicator of the rapidity of progress.

Wells's analysis influenced a generation of economists who were most actively confronting the nature of the economics of railroads, as I discussed in a previous article in this journal (Perelman, 1994).

Schumpeter and Wells on Monopolistic Competition

Immediately following his chapter on creative destruction, Schumpeter turned to the question of monopolistic practices. In fact, Schumpeter's theory of creative destruction can be fairly interpreted as an introduction to his defense of monopolistic practices.

Schumpeter (1950, p. 88) noted, "Practically any investment entails, as a necessary complement of entrepreneurial action, certain safeguarding activities such as insuring or hedging." In pressing this point, Schumpeter (pp. 87–8) defended methods of protecting investments that most modern economists would rule out, safeguards that seem to serve no other end but to keep prices high:

We must now recognize the further fact that restrictive practices... as far as they are effective, acquire a new significance in the perennial game of creative destruction, a significance which they would not have in a station-

ary state or in a state of slow and balanced growth . . . [I]n the process of creative destruction, restrictive practices may do much to steady the ship and alleviate temporary difficulties. . . . [R]estrictions . . . are . . . often unavoidable incidents, of a long-run process of expansion which they protect rather than impede. There is no more of a paradox in this than there is in saying that motorcars are travelling faster than they otherwise would because they are provided with brakes.

The enterprising entrepreneur cannot generally dislodge existing competitors, even with the most modern technology, without some assurance about future economic conditions. So, Schumpeter (p. 89) insisted that the “largest-scale plans could in many cases not materialize at all if it were not known from the outset that competition will be discouraged by heavy capital requirements or lack of experience, or that means are available to discourage or checkmate it.” Consequently, monopolistic practices provide “greater expansion of total output than could be secured by an entirely uncontrolled onward rush that cannot fail to be studded with catastrophes” (p. 91).

The parallels with Wells are striking. Both Schumpeter and Wells held, in effect, that potential entry could keep monopolistic prices in check (Wells, 1889, p. 76). Both asserted that seemingly uncompetitive arrangements were necessary to promote the rapid adoption of new technologies. But although Schumpeter eloquently defended monopolistic practices, he neglected to tell his readers what these practices would entail. He seemed to imply that the combined force of the entrepreneur (or the large corporation) together with the advantages of modern technology would naturally drive the economy forward.

Schumpeter was not consistent in this regard. He also warned that the large corporation is an ineffective vehicle for progress. For example, Schumpeter (1950, p. 156) wrote that the modern corporation “relentlessly narrows the scope of capitalist motivation . . . it will eventually kill its roots.” The inevitable outcome of capitalist growth is the destruction of the capitalist system and its replacement by socialism. Its gravediggers are not the “intellectuals or agitators but the Vanderbilts, Carnegies and Rockefellers” (p. 134).

Although Wells was less flamboyant than Schumpeter in discussing the problem of monopolistic practices, he was certainly more specific; in fact, this aspect of his work was central to his analysis. Wells understood that economies of scale combined with price-taking behavior is not a stable industrial configuration, since marginal costs fall below average costs. Perhaps because he was not a theoretical economist, Wells did not distinguish between this micro behavior and the macro effects. Common sense probably indicated that cutthroat competition, combined with stagnating investment, among the industrial giants should have significant repercussions for the economy as a whole.

Wells (1889, p. 74) argued in a straightforward manner that when overproduction occurs, “the great producers should come to some understanding among themselves as to the prices they will ask; which in turn naturally implies

agreements as to the extent to which they will produce.” In addition, Wells (p. 220) took account of the financial aspect of the process, observing that falling prices will create dangerous levels of real debt.

Balancing Destruction and Faith in Markets

Now we come to the major point of divergence between Schumpeter and Wells: Schumpeter had more faith in markets. Wells was certain that market forces, left to themselves, would tend to create overcapacity. In the long run, prolonged periods of stagnation might eliminate excess capacity, but the resulting decades of overcapacity would take an enormous toll on the economy.

In an economic environment with long periods of overcapacity, cutthroat competition, and low or negative profits, Wells believed that investment in new technology would be unprofitable. The only possible exception, as he saw it, would be if the new technology reduced total costs far enough below the marginal cost of the competition that the firm could earn enough profit to amortize its capital while underselling its competition, before a new round of technological change would reduce the value of this new capital. Wells was convinced that such enormous savings from new technology would be the exception rather than the rule.

Wells insisted that monopoly power would not just be used to introduce additional technology, but to eliminate existing capacity. Otherwise, the economy would be plagued by overproduction, leading to a perpetual recession or even depression, such as Wells had witnessed over the decades prior to the publication of *Recent Economic Changes*. For Wells, industrial rationalization through monopolies, cartels and trusts was the only route open to foster new investment.

Schumpeter, on the other hand, downplayed the problem of excess capacity by assuming that these new industries create additional sources of demand, which can absorb the energies released by declining industries. Railroads replaced canals. Trucks eliminated much of the demand for railroads. Schumpeter maintained that cross-product competition would make large corporate entities behave competitively. As Best (1990, p. 11) noted, “for Schumpeter, it is not the market but the firm that demands center stage, and not price competition but the ‘competition from the new commodity, the new technology, the new source of supply, the new type of organization.’”

In taking this position, Schumpeter’s theory of the business cycle was essential. In fact, he worked on *Business Cycles* (1939) at the same time as *Capitalism, Socialism and Democracy* (1950).¹ He viewed business cycles as the product of natural rhythms, although he proposed two conflicting explanations

¹Oakley (1990, pp. 36, 208, and 211) argues that the two works are unrelated insofar as competition is concerned. As the discussion in the text makes clear, I disagree.

of these rhythms. Sometimes Schumpeter suggested that these rhythms follow a predetermined cycle. For example, he attributed the Great Depression to the synchronization of the troughs of the Kitchen, Juglar and Kondratieff cycles of 40 months, 10 years and 60 years, respectively. Of more interest to our discussion here, Schumpeter also explained business cycles in terms of the patterns of entrepreneurial activity. In effect, booms occur because major innovations, such as the railroad, set off an avalanche of subsequent innovations in response. This wave of innovations will continue until the economy is reconfigured to the new technology. Recessions then follow while innovations subside. Perhaps this clustering of innovations prefigures real business cycle theory. In either case, Schumpeter (1939, vol. 1, p. v) wrote with one of his more memorable analogies that business cycles are not “like tonsils, separable things that might be treated by themselves, but are, like the beat of the heart, of the essence of the organism that displays them.”²

Schumpeter held that business cycles are not usually traumatic. He (1961, pp. 245–6) contended that “the physical volume of total transactions typically falls only insignificantly” during a recession. He even predicted that research would prove how “exaggerated the popular conceptions of the ravages of depression are.” For Schumpeter, these relatively painless downturns can easily wipe out excess capacity, freeing up the economy for a renewed bout of growth.

However, Schumpeter (1934, p. 155) was ready to concede that a “depression, unlike recession, is a pathological process to which no organic functions can be attributed.” The line between a gentle recession and destructive depression wasn’t always easy to see. In 1934, Schumpeter (1939, vol. 1, p. v) confidently proclaimed:

[Depressions] are but temporary. They are the means to reconstruct each time the economic system on a more efficient plan. But they inflict economic losses while they last, drive firms into the bankruptcy court, throw people out of employment, before ground is clear and the way is paved for new achievement of the kind which has created modern civilization and made the greatness of this country.

A few years later, however, Schumpeter (1941, p. 352) would refer to the Great Depression as “catastrophic,” because it disrupted the organization of the economy.

Schumpeter on Wells

We have no evidence on what Schumpeter owed directly to Wells, if anything. Schumpeter did teach at Harvard, home of the David A. Wells prize.

²Schumpeter (1928, p. 385) did once suggest that trusts “tend to soften” the cycle, but for the most part his analysis suggests that cartelization could not eliminate business cycles.

Schumpeter referred to Wells on a few occasions in his massive *History of Economic Analysis* (1954). At one point, Schumpeter (pp. 523–4) described Wells as a geologist and chemist who published *Our Burden and Our Strength* and *Reports of the Special Commissioner of the Revenue* (1866–9), and reported that Simon Kuznets told him Wells's estimates of national income were deserving of respect.

Later, Schumpeter (1954, p. 867) acknowledged Wells's ability to handle factual data in his "famous *Recent Economic Changes* (1889), which every modern student of economics should study," but he never hinted why the book might be famous or why this book merited further study except to illustrate the importance of "the factual component . . . in the makings of American general economics." In a personal reference to Wells, Schumpeter (1954, p. 524) added that:

[O]ur analytic apparatus owes nothing to him. Yet he was a significant economist whose works repay study even today. He was a master of the art of making the most of imperfect material. Moreover, his sound and conscientious mind enabled him to represent the elements of a situation to their right perspective without precisely knowing why: his was that sound and practical judgement in which many of the best theorists are woefully deficient and which was to show up to his still greater effect in some of his later publications.

Whatever Schumpeter's reason for not giving greater weight to David Wells's views on economic progress and destruction, the end result was to obscure Wells's contributions and to elevate Schumpeter's.

On the Contemporary Relevance of Wells

The problems that troubled Wells and his school are coming to the fore once again, since overhead costs are making up a larger fraction of total costs than ever before. The ratio of direct labor costs to total costs in the U.S. is about half as large as it was in the middle of the nineteenth century (Miller and Vollman, 1985, p. 143). The essence of many modern manufacturing techniques has been to shrink marginal cost to a very small fraction of total price. For example, the direct cost of the new IBM PS/2 computers was reported to be only around \$100, about 20 percent of their market price (Gibson, 1987, p. 30). For software or pharmaceuticals, the disappearance of marginal costs is even more extreme, but there patents and copyrights provide insulation against the rigors of competition.

This tendency for a rising share of overhead costs has important ramifications for the strategies of modern management. In the words of one senior manager, described in Miller and Volman (1985, p. 142): "We've been brought

up to manage in a world where burden ratios [the ratio of overhead costs to direct labor costs] are 100% to 200% or so. But now some of our plants are running with burden ratios over 1000%. We don't even know what that means." For economic theory, the adjustment will be even more extreme.

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