

# **The Neglect of Creative Destruction in Micro-principles Texts**

Short running title: Micro Texts

Arthur M. Diamond, Jr.

Department of Economics

University of Nebraska at Omaha

Omaha, NE 68182-0048

Phone: (402) 554-3657

Fax: (402) 554-2853

email: [adiamond@mail.unomaha.edu](mailto:adiamond@mail.unomaha.edu)

Academic Web Site: <http://cba.unomaha.edu/faculty/adiamond/web/diahompg.htm>

Personal web log with occasional discussions of Schumpeter:  
<http://www.artdiamondblog.com/>

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## **Abstract**

Dynamic competition through the process of creative destruction encourages the innovation in product and process that lengthens and improves lives. Although an increasing number of academics and business practitioners are recognizing the importance of creative destruction, most principles of microeconomics texts give little or no attention to the process. I examine a sample of 27 recent United States microeconomic principles textbooks. Of these, 16 do not mention Schumpeter in any way. Of the 11 that do mention Schumpeter, only six provide any description of the process of creative destruction.

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## Introduction

Capitalism is by nature a form of economic change and not only never is but never can be stationary. The process of Creative Destruction is the essential fact about capitalism. . . . To ignore this central fact is like *Hamlet* without the Danish prince. **Schumpeter** as quoted in p. 2 of Max Page, *The Creative Destruction of Manhattan, 1900-1940*, p. 2.

But in capitalist reality, as distinguished from its textbook picture, it is not (price) competition which counts but the competition from the new commodity, the new technology, the source of supply, the new type of organization . . . competition which . . . strikes not at the margins . . . of the existing firms but at their foundations and their very lives. **Schumpeter** as quoted in Andy Grove, *Only the Paranoid Survive*, p. iii.

Schumpeter in *Capitalism, Socialism and Democracy*, argued that capitalism had vastly improved the goods available to the ordinary person, and that the process of creative destruction was much more important in explaining that improvement, than was the standard textbook model of static price competition (see Diamond 2006a). Elsewhere (e.g., Diamond 2006b), I present evidence that a growing number of economists and business practitioners are finding the process of creative destruction to be useful in understanding how capitalism works.

If, in fact, creative destruction is the essential fact about capitalism, then that

fact would have implications for optimal government policies related to antitrust, labor and finance markets, tax law, and economic growth in less-developed countries. One way in which economists can positively influence policy debates on such issues, is to do what we can to improve the economic literacy of voters. Many college students never take a single economics course. And of those who do take economics, a large majority take nothing more than the basic micro and macro principles. To optimally influence policy debates, the profession should be sure that what is taught in principles is the best we have to offer. In particular, if the process of creative destruction is indeed the essential fact about capitalism, then creative destruction should at least be presented as an alternative to the standard textbook model.

The goal here will be to audit the current generation of micro-principles texts in the United States to see how good a job the profession is doing at presenting the best we have to offer to undergraduates in what is often our only opportunity to teach them.<sup>1</sup>

## **What Economists Believe**

The period from about 1820-70 is sometimes viewed as one in which the stagnating steady-state prospects for the future economy, derived most notably from Ricardo's corn model, became increasingly dissonant with the actual long-term growth in productivity and living standards. Perhaps today, we similarly face a growing dissonance between the static models of price competition, emphasized in our textbooks, and the importance of new product innovation emphasized in Schumpeter's process of creative destruction? Increasingly, distinguished mainstream economists are

acknowledging the limitations of the static, equilibrium-based model of competition, and are suggesting that more attention needs to be given to entrepreneurship and the process of creative destruction.

For example, in his last advice to the profession, Zvi Griliches suggested that the profession has given too much attention to equilibrium models, when the real problems of innovation cannot be well understood with such models (see Diamond, 2004; and Griliches, 2000). A similar view was expressed in one of the last papers by Sherwin Rosen (1997).

Baumol (2006) has suggested two reasons for the relative neglect of entrepreneurs in economics. The first is:

. . . that entrepreneurial activities do not incorporate the homogeneous elements that lend themselves to formal mathematical description, let alone the formal optimization analysis that is the foundation of the bulk of micro theory. (p. 134)

The second is:

. . . that in mainstream economics the theory is generally composed of equilibrium models in which structurally nothing is changing. (p. 134)

Baumol notes that Schumpeter's entrepreneur is a person whose search for profit opportunities creates disequilibria that result in structural change.

An articulate critique of the economics profession suggests that economics has more and more become a discipline of applied mathematical puzzle-solving (Rosenberg 1992; Diamond 1996). Among the economists who still believe that relevance to policy is a core policy objective of economics, there is a frequent use of Schumpeter's theory

of creative destruction. In different decades, and at different levels, distinguished neo-classical economists Becker (1971), Stigler (1987) and Krugman (Krugman and Wells, 2005) have all written microeconomics textbooks. None of them mention Schumpeter, or creative destruction, in their micro textbooks; they present the core, comparative-static analysis, that assumes the products exist, and asks how many should be produced, and at what price. And yet when they grapple with real-world policy issues, such as antitrust policy in general (Stigler 1988); or the antitrust case against Microsoft in particular (Becker 1998), or the bursting of the dot.com stock bubble (Krugman 2003), they acknowledge that the creation of new products matters. That is when they refer to Schumpeter and creative destruction.

## **What Economists Teach**

No previous publications have examined how well the process of creative destruction is discussed in the textbook literature. But a few papers have examined the textbook treatment of issues, such as entrepreneurship, that are relevant to the process of creative destruction.

For example, Kent and Rushing (1999) updated the Kent (1989) study, by examining 14 principles of economics textbooks (including both micro and macro) to learn the extent and nature of attention given to entrepreneurship. They found a small, but slightly increased level of attention, when compared to the Kent (1989) study. Johansson (2004) examined texts used in Swedish PhD programs in economics and also found few references to entrepreneurship. Pashigian and Self (2007) examined

intermediate microeconomics textbooks over time, and found that the textbooks have persisted in giving very substantial attention to imperfectly competitive markets, in spite of the substantial and growing evidence that such markets are relatively uncommon.

The new results reported in this paper, provide evidence of the extent to which Schumpeter in general, and creative destruction in particular, are adequately covered by recent textbooks. Twenty-seven recent introductory principles of microeconomics textbooks, with publication dates ranging from 2003 through 2007, were examined to see how often, and in what context, they made reference to Schumpeter. As far as I am aware, these 27 represent nearly all of the principles of microeconomics textbooks published recently by major United States publishers. Included among the 27 are the 9 bestselling textbooks for the year of 2005.<sup>2</sup>

We examined the indices of each textbook, recording all entries of the names of “economists” and recording the number of pages on which the economists were mentioned in the text. Table 1 presents the top 30 economists, ordered first by the number of texts that referred to them, and then within groups of equal number of textbooks, ordered by the total number of pages referring to them. We count a person as being an “economist” if the person either held an academic position as an economist, or is commonly identified as an economist in texts in the history of economic thought.

The good news is that only nine economists are mentioned in more textbooks than Schumpeter. But the good news is not good enough. If creative destruction is indeed the essential fact about capitalism, then all textbooks should be mentioning Schumpeter.<sup>3</sup> But in fact, less than half (41%) of the textbooks have any reference to

Schumpeter. And when one examines the substance of the references to Schumpeter, the news becomes even worse: of the 11 textbooks that mention Schumpeter, only six discuss, or come close to discussing, creative destruction.

The 16 texts that do **not** mention Schumpeter, are listed in Table 2. The 11 texts that **do** mention Schumpeter are listed in Table 3. Tables 4 and 5 provide more details on the 11 textbooks in Table 2, in the form of brief sketches of the nature of the Schumpeter references in each of those 11 textbooks. Table 4 sketches the Schumpeter references in the six textbooks that discuss, or come close to discussing, the process of creative destruction, while Table 5 does the same for the five textbooks that do not come close to discussing the process of creative destruction. The key result of this paper is that **only six out of 27 texts** discuss, or come close to discussing, the process of creative destruction.

One of the best treatments of Schumpeter, though brief, occurs in the McConnell and Brue text. They provide a good discussion of the process of creative destruction, in a separate (non-core) chapter on “Technology, R&D, and Efficiency.”<sup>4</sup> One may hope that their treatment of Schumpeter helps explain why McConnell and Brue is “the nation’s best-selling economics textbook.” (2002, p. ix)<sup>5</sup>

Although my primary goal is to present cross-sectional results, for 14 of the texts in the sample, we have also tabulated results for an edition earlier than that reported so far. These texts are: Arnold; Bade and Parkin; Baumol and Blinder; Boyes and Melvin; Colander; Frank and Bernanke; McConnell and Brue; McEachern; O’Sullivan and Sheffrin; Parkin; Samuelson and Nordhaus; Schiller; Stiglitz and

Walsh; and Taylor. (For Taylor, we have tabulated results for two earlier editions.) In **none** of the 14 texts was there any change between editions, in the number of references to Schumpeter; this despite Schumpeter's standing in the profession as a whole having grown substantially in the past decade (see Diamond 2006b).

Two of the micro-principles textbooks were co-authored by economists whose own work is openly complementary to the Schumpeterian process of creative destruction: Baumol and Nordhaus. Baumol and Blinder's textbook is a surprise because it includes no references to Schumpeter, and although there is a chapter on technology, there is no summary account of the process of creative destruction.

It is harder to know what to expect from Samuelson and Nordhaus's textbook, since some early Samuelson writings on Schumpeter were somewhat critical. More recently (2003) Samuelson, has acknowledged Schumpeter's important contribution. My original hypothesis had been that the addition of Nordhaus as a co-author in 1985, of the 12<sup>th</sup> edition<sup>6</sup>, would explain the substantial discussions of Schumpeter. But after examining the first 11 editions<sup>7</sup>, I discovered that Schumpeter has been discussed since the first edition, and the version of the Schumpeter discussion in the most recent edition of the text is mainly similar to the expanded discussion of the Schumpeter that first appeared in the second edition. Without mentioning the phrase "creative destruction,"<sup>8</sup> the Samuelson and Nordhaus textbook does a good job of summarizing some of the main issues in Schumpeter's account.

In his retrospective article (1978) on the economics literature subsequent to his refutation (1947) of the kinky demand curve theory, George Stigler reached the cynical

conclusion that the economics literature does not progress, because refuted error continues to be referenced and used. If we were to cast an equally jaundiced eye toward the textbook literature, we might mention that in the treatment of creative destruction, no current textbook surpasses the treatment given in 1954 by Van Sickle and Rogge.

## **What Economists Should Teach**

Sometimes, in teaching physics, false, simplifying assumptions are made, that are later qualified with more complete versions of what is believed. The student studies motion in a vacuum; even though the teacher does not believe we usually live in a vacuum. Or the student learns Newtonian mechanics, even though the teacher believes that Einsteinian relativistic mechanics is more generally true. In each case, one might argue that what is being taught is not completely true, but captures the essential truth for many practical situations. And soon, the student who continues to study the subject is provided a sketch of the fuller account.

Is this what we are doing in economics, when we assume the products already exist? The answer is “no” in a couple of respects. One of these is that we do not generally provide a fuller account if the student continues. An examination of several intermediate-level and graduate-level micro texts supports the hypothesis that at higher levels, the mathematical sophistication increases, but the fundamental assumptions and techniques remain the same: products are taken as given.<sup>9</sup>

A second respect in which the answer is “no” is that in economics we do not

simplify to create an account that usually captures what is essential about the world.

Here we assume away the essential fact: the creation of new products.

How then, could the economics profession do better? The vast majority of students who take principles of economics, never take economics beyond the principles level.

This is our one chance to teach them the best that we have to offer; to help them understand the world in which they run their businesses, manage their careers, and vote for policies that permit or restrain economic growth and prosperity.

Even if we do not have a worked-out, graphical account of the process of creative destruction, we should be sure that all principles of micro-economics students are aware of Schumpeter's alternative account of what is most essential about capitalism. Ideally, this should appear in one of the core chapters on competition that are always covered in the principles course: either the chapter on perfect competition, or the chapter on monopoly.

In the longer run, we should work to construct a full chapter-length account of the process of creative destruction, if creative destruction is indeed the "essential fact" about capitalism. Perhaps useful in this project, will be early efforts to represent aspects of the process of creative destruction in graphs that might be accessible at the principles level. One such graph might be McCloskey's graph (1985, p. 368) showing that a monopoly railroad might have lower prices than a competitive pack-mule 'industry.'<sup>10</sup>

The graph represents the case where creative destruction substantially reduces prices for a product that in some sense already exists. But Schumpeter argued that the

main benefits from creative destruction arose, not from lower prices, but from increases in consumer well-being from new kinds of products. A main goal for the future is to find better ways to measure and represent the most important benefits.

**Table 1: References to Schumpeter in U.S. Microeconomic Principles Textbooks**

<b>Rank</b>	<b>Economist</b>	<b># of Texts</b>	<b>Sum of Pages</b>
1	Smith, Adam	27	169
2	Coase, Ronald	21	36
3	Ricardo, David	19	50
4	Marx, Karl	17	31
5	Keynes, John Maynard	16	29
6	Friedman, Milton	16	28
7	Marshall, Alfred	13	29
8	Nash, John	13	17
9	Krueger, Alan B.	12	14
<b>10</b>	<b>Schumpeter, Joseph A.</b>	<b>11</b>	<b>23</b>
11	Bentham, Jeremy	11	15
12	Stigler, George	11	14
13	Malthus, Thomas Robert	10	16
14	Buchanan, James	10	13
15	Pigou, Arthur Cecil	9	11
16	Chamberlin, Edward	9	10
17	Becker, Gary	8	19
18	George, Henry	8	11
19	Pareto, Vilfredo	8	10
20	Card, David	8	9
21	Arrow, Kenneth J.	7	10
22	Robinson, Joan	7	10
23	Houthakker, H. S.	7	9
24	Simon, Herbert	7	9
25	Akerlof, George	7	8
26	Simon, Julian	7	8
27	Hamermesh, Daniel	7	7
28	Hayek, Friedrich	6	12
29	Kahneman, Daniel	6	10
30	Mill, John Stuart	6	9

**Table 2: The 16 U.S. Microeconomic Principles Textbooks that  
Do Not Mention Schumpeter**

<b>Author(s)</b>	<b>Editions<sup>11</sup></b>	<b>Years</b>	<b>Publisher</b>
Arnold	5; 7	2001; 2005	Thomson South-Western
Ayers and Collinge	Enhanced	2005	Pearson Addison-Wesley
Bade and Parkin	1; 2	2002; 2004	Pearson Addison-Wesley
Baumol and Blinder	9; 10	2003; 2006	Thomson South-Western
Boyes and Melvin	5; 6	2002; 2005	Houghton Mifflin
Frank and Bernanke	2; 3	2004; 2007	McGraw-Hill/Irwin
Goodwin, Nelson, et al	1	2005	Houghton Mifflin
Hall and Lieberman	3	2005	Thomson South-Western
Krugman and Wells	1	2005	Worth
Mankiw	3	2004	Thomson South-Western
Miller	12	2004	Pearson Addison-Wesley
O'Sullivan and Sheffrin	3; 4	2003; 2005	Pearson Addison-Wesley
O'Sullivan and Sheffrin <i>Activebook</i>	1	2003	Pearson Addison-Wesley
Parkin	3; 7	1996; 2005	Pearson Addison-Wesley
Sexton	3	2005	Thomson South-Western
Taylor	3; 4; 5	2001; 2004; 2007	Houghton Mifflin

**Table 3: The 11 U.S. Microeconomic Principles Textbooks that  
Do Mention Schumpeter**

<b>Author(s)</b>	<b>Editions</b>	<b>Years</b>	<b>Publisher</b>
Case and Fair	7	2004	Pearson Addison-Wesley
Colander	5; 6	2004; 2006	McGraw-Hill/Irwin
Gottheil	4	2005	Thomson South-Western
Gwartney, Stroup, et al	10	2003	Thomson South-Western
Hubbard and O'Brien	1	2006	Prentice Hall
McConnell and Brue	15; 16	2002; 2005	McGraw-Hill/Irwin
McEachern	6; 7	2003; 2006	Thomson South-Western
Samuelson and Nordhaus	17; 18	2001; 2005	McGraw-Hill/Irwin
Schiller	9; 10	2003; 2006	McGraw-Hill/Irwin
Stiglitz and Walsh	3; 4	2002; 2006	W.W. Norton
Tucker	3	2003	Thomson South-Western

**Table 4: Brief Content Analysis of the Six U.S. Microeconomic Principles Textbooks that Discuss, or Come Close to Discussing, Creative Destruction**

<p><b>1. Stiglitz and Walsh</b> have a good account of "Schumpeterian competition." They describe "creative destruction," and point out it can result in new products, or lower costs. They also note that the dominant position would eventually be destroyed by a new competitor.</p>
<p><b>2. Gwartney, Stroup, et al</b> discuss "creative destruction" and mention both the new products and new processes. They also call the process "dynamic competition."</p>
<p><b>3. McConnell and Brue</b> discuss "creative destruction," emphasizing the new product aspect. They point out that the process can destroy old monopolies, but they also suggest that old monopolies can build "storm shelters."</p>
<p><b>4. McEachern</b> mentions "creative destruction." He mentions "dynamic" competition, and new product innovation (but not new processes that lower costs).</p>
<p><b>5. Hubbard and O'Brien</b> discuss "creative destruction" in terms just of new products. They say that higher prices will result, but these higher prices are less important than the value of innovations.</p>
<p><b>6. Samuelson and Nordhaus</b> have a variety of references to Schumpeter, but never actually use the phrase "creative destruction." They do talk about dynamic competition and about innovation. They also mention the big is better hypothesis, his prediction of the decline of capitalism, his views about entrepreneurship, his view of the importance of fiscal policy, and his importance as an historian of economic thought.</p>

**Table 5: Brief Content Analysis of the Five U.S. Microeconomic Principles Textbooks that Do Not Come Close to Discussing Creative Destruction**

<p><b>1. Schiller</b> mentions only that Schumpeter thought "animal spirits" of entrepreneurs were unleashed under free markets to result in innovation.</p>
<p><b>2. Case and Fair</b> quote Schumpeter as believing that big firms are more likely to produce technological innovation. They seem to be implying that big firms are the "source" of innovation, but they are brief and fuzzy.</p>
<p><b>3. Gottheil</b> focuses on lower prices through process innovation. He co-mingles this with the claim that monopolies are the source of innovation. He makes no mention of "creative destruction."</p>
<p><b>4. Colander</b> only has an obscure reference in a couple of "Problems and Exercises" questions. The reference is to the "size" issue, but Colander suggests that Schumpeter believed the opposite of what is usually claimed, saying he: ". . . predicted that as firms in capitalist societies grew in size they would innovate less." (p. 82)</p>
<p><b>5. Tucker</b> mentions only that Schumpeter thought monopoly was good because monopolies would have the financial resources to invest in R&amp;D. So this is mainly a monopoly as source of innovation argument.</p>

## Footnotes

\*I first encountered Schumpeter at Wabash College in a wonderful course on *Capitalism, Socialism and Democracy* taught by Ben Rogge. Campbell McConnell provided useful comments, and Lucille Sutton graciously provided useful information on textbook market shares. David Levy generously allowed me to examine his complete collection of the first 11 editions of Samuelson's important text. Chris Decker passed on a couple of useful references. I am grateful for excellent and substantial research assistance on this project from Angela Kuhlmann and Miaomiao Yu. I received assistance on Excel issues from Jeanette Medewitz. Earlier versions of the current paper were presented at the biennial meetings of the International Schumpeter Society in Milan, in 2004; at the annual meetings of the Association of Private Enterprise Education in Las Vegas in 2006; and at the conference on "Neo-Schumpeterian Economics: An Agenda for the 21<sup>st</sup> Century," in Trest, Czech Republic in 2006.

<sup>1</sup> For undergraduates at four-year colleges and universities, Siegfried (2000, p. 202) reports that "40 percent of the students who matriculated in fall 1998 will take at least one economics course during their college career." He further reports that for the 78.9 percent of institutions with a two-course sequence, 66.2 percent of the students who take the first course, go on to take the second course. (For my purposes here, it would also have been useful to know the percent of institutions that offer micro as the first course in the two-course sequence.)

<sup>2</sup> Lucille Sutton of McGraw Hill has kindly shared with me some 2005 MIR data on new and used principles textbook sales. The ranking of textbooks for complete books (including both micro and macro) was: McConnell/Brue, Mankiw, McEarchern, Miller and Baumol/Blinder. The ranking of textbooks for micro splits was: Mankiw, McConnell/Brue, Parkin, Case, Bade/Parkin and Colander. Combining the complete books with the micro splits, the overall best-seller, was McConnell/Brue, with Mankiw as the second best-seller.

<sup>3</sup> I accidentally noticed that one textbook, Mankiw, included (p. 368) a brief mention of creative destruction in the context of a quote from Larry Summers, though Schumpeter is not mentioned and the phrase “creative destruction” does not appear in the index. I then checked the indexes of all of the textbooks (and editions) listed in Tables 2 and 3, to see how many had a main entry (i.e., an entry under “c”; not a sub-entry under “Schumpeter”) for “creative destruction.” I found only four textbooks with such an entry: Gottheil, McConnell and Brue (both editions), and McEachern (both editions).

<sup>4</sup> By “non-core” I mean outside of those chapters that would be thought mandatory for a professor to teach by most economics departments. This is my judgment.

<sup>5</sup> After some search, and consultation with a senior reference librarian, I was unable to find published statistics on economics textbook market shares. (In the future, it may be possible to obtain some information on this issue from the sales rank among textbooks on Amazon.com).

<sup>6</sup> The addition of Nordhaus as co-author is briefly discussed in McGraw (1998, p. 356).

<sup>7</sup> David Levy invited me to examine the first 11 editions of Samuelson that he and Sandra Peart have collected for their research on changes (or lack of changes) in the editions' discussions of the growth of the Soviet socialist economy.

<sup>8</sup> By email, I asked Nordhaus why his textbook with Samuelson did not mention the phrase "creative destruction." In an email to me dated 10/31/05, he responded: "We did not include the term primarily because the emphasis in our discussion of Schumpeterian economics is slightly different, pointed more to the issue of appropriability than the rather complex phenomenon of creative destruction. There is much of interest in his writings, and we could only include a small sample."

<sup>9</sup> Schumpeter and the process of creative destruction, are sometimes given substantial attention in textbooks on growth theory. For example, see Van Den Berg (2004). Unfortunately, only relatively few students take courses on growth theory.

<sup>10</sup> A somewhat similar graph is presented in Scherer (1996, p. 13). In contrast to McCloskey's version, Scherer's version may be slightly less effective at the principles level, because it assumes a knowledge of consumer and producer surplus, and because it is not anchored in a plausible concrete example.

<sup>11</sup> In order to save space, when multiple editions of a textbook are mentioned in the paper, only the most recent edition is fully referenced in the bibliography.

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