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

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. We 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 2006). Elsewhere (Diamond 2005), 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.[1]

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 markets, 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.[2]

Theories of Textbook Content

Baumol (2000) has documented the advances in microeconomics that have occurred within the profession in the more than 100 years since Marshall. And yet, almost all of the theory that is taught to the micro-principles student, can be found in Marshall. The homogeneity of the content of micro-principles textbooks seems to be greater than the homogeneity of the beliefs of economists about micro-economics. Why this is so, is a puzzle. Hotelling's famous model of firm location (1929), implied that geographically, firms will locate right next to each other. Most notably, the model has been applied to explain the observation that the two major political parties in the United States often adopt similar positions. The model might be applied to explain why most micro-principles texts are so similar[3]. But the unrealism of key assumptions of the model (e.g., that firms are located along a straight line), may limit the model's usefulness.

More recently (2003), Christensen and Raynor, have criticized modern marketing techniques for a tendency toward homogeneity of products in many markets. Using the PDA product category as a main example, they suggest that competitors often compete by imitating the features of each others' products. The result is often a Swiss-army-knife product that does many things badly, and nothing well. They suggest as an alternative, that the marketers focus on a thoughtful analysis of the jobs that various groups of consumers want to get done.

In casual conversation with the author of one micro-principles textbook, I complained that the uniqueness of the first edition of his book, seemed to me to have been watered down in subsequent editions. He agreed with this observation, and said that he had been pressured by editors to respond to the comments of critics, in the hope of increasing the sales of subsequent editions.[4]

Apart from theorizing about the general homogeneity of micro-principles textbooks, some economists more specifically have offered explanations for the relative neglect of entrepreneurs in economics. Baumol (2006) suggests two reasons. 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.

In his last advice to the profession, Zvi Griliches also 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).

What Economists Believe

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 theories 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 texts; they present the core, comparative-statics 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: Previous Studies

Kent and Rushing (1999) update the Kent (1989) study, by examining 14 principles of economics texts (including both micro and macro) to learn the extent and nature of attention given to entrepreneurship. They find 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 (2000) examined intermediate microeconomics textbooks over time, and found that they 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.

What Economists Teach: New Results

Twenty-seven recent introductory principles of microeconomics texts, 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 texts published recently by major United States publishers. Included among the 27 are the 6 bestselling texts as of 2003 (see Table 1).

We examined the indices of each text, recording all entries of the names of "economists" and on how many pages the economists were mentioned in the text. Table 2 presents the top 30 economists, ordered first by the number of texts that referred to them, and then within groups of equal number of texts, 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 economics.

Only nine economists are mentioned in more textbooks than Schumpeter. Still, the more important fact is that less than half (41%) of the texts have any reference to Schumpeter. The 16 texts that do **not** mention[5] Schumpeter, are listed in Table 3. The 11 texts that **do** mention Schumpeter are listed in Table 4. Of the best-selling textbooks listed in Table 1, three mention Schumpeter and three do not. Tables 5 and 6 provide brief sketches of the nature of the Schumpeter references in the 11 textbooks that do mention Schumpeter. Table 5 sketches the Schumpeter references in the six textbooks that discuss, or come close to discussing, the process of creative destruction. Table 6 sketches the Schumpeter references in the five textbooks that do not 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."[6] 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)[7]

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 2005).

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. In the end, without mentioning the phrase "creative destruction,"[8] 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.[9]

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.'[10] (I have reproduced this graph as Graph 1 in the appendix.)

Such graphs may help represent the case where creative destruction substantially reduces costs for a product that in some sense already exists. But they arguably may not capture the benefits from the radically new product.

Table 1: 2003 United States Market Share of Some Leading Principles Textbooks

Authors	Market Share
McConnell and Brue	17%
Mankiw	11.5%
Parkin	3.6%
McEachern	3.5%
Baumol and Blinder	3.0%
Schiller	3.0%
Total	**24.6%**

The source of the data is MIR (Monument Information Resources) which collects the data from college and university book stores. The data includes both new and used books, and includes all versions of the texts (i.e., full hardbound, paperback micro split, and paperback macro split). The percentages listed here are effected by differences in where different texts are in the revision cycle. For example, ceteris paribus, a book that has just been revised, will have a higher percentage than one that is due to be revised soon. One **cannot** infer from the table that texts not listed have a lower market share than 3%. [two emails from Lucille Sutton, 5/28/04]

Table 2: References to Schumpeter in U.S. Microeconomic Principles Textbooks

Rank	Economist	# of Texts	Sum of Pages
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
10	**Schumpeter, Joseph A.**	**11**	**23**
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 3: The 16 U.S. Microeconomic Principles Textbooks that

Do Not Mention Schumpeter

Author(s)	**Editions**	**Years**	**Publisher**
Arnold	5; 7	2001; 2005	Thomson South-Western
Ayers and Collinge	Enhanced	2005	Pearson Addison-Wesley
Bade and Parkin	2	2004	Pearson Addison-Wesley
Baumol and Blinder	9; 10	2003; 2006	Thomson South-Western
Boyes and Melvin	6	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 *Activebook*	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 4: The 11 U.S. Microeconomic Principles Textbooks that

<u>Do</u> Mention Schumpeter

Author(s)	**Editions**	**Years**	**Publisher**
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	16	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 5: Brief Content Analysis of the Six U.S. Microeconomic Principles Textbooks that Discuss, or Come Close to Discussing, Creative Destruction

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

Table 6: Brief Content Analysis of the Five U.S. Microeconomic Principles Textbooks that Do Not Come Close to Discussing Creative Destruction

1. Schiller mentions only that Schumpeter thought "animal spirits" of entrepreneurs were unleashed under free markets to result in innovation.
2. Case and Fair quote Schumpeter as believing that big firms are more likely to produce technological innovation. Seems to be implying as "source" but brief and fuzzy.
3. Gottheil focuses on lower prices through process innovation. Co-mingles this with claim that monopolies are the source of innovation. No mention of "creative destruction."
4. Colander 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: ". . . predicted that as firms in capitalist societies grew in size they would innovate less." (p. 82)
5. Tucker mentions only that Schumpeter thought monopoly was good because monopolies would have the financial resources to invest in R&D. So this is mainly a monopoly as source of innovation argument.

Appendix: Attempts to Graph Creative Destruction

Graph 1: McCloskey's Graph Comparing Monopoly Railroad to Competitive Pack Mules

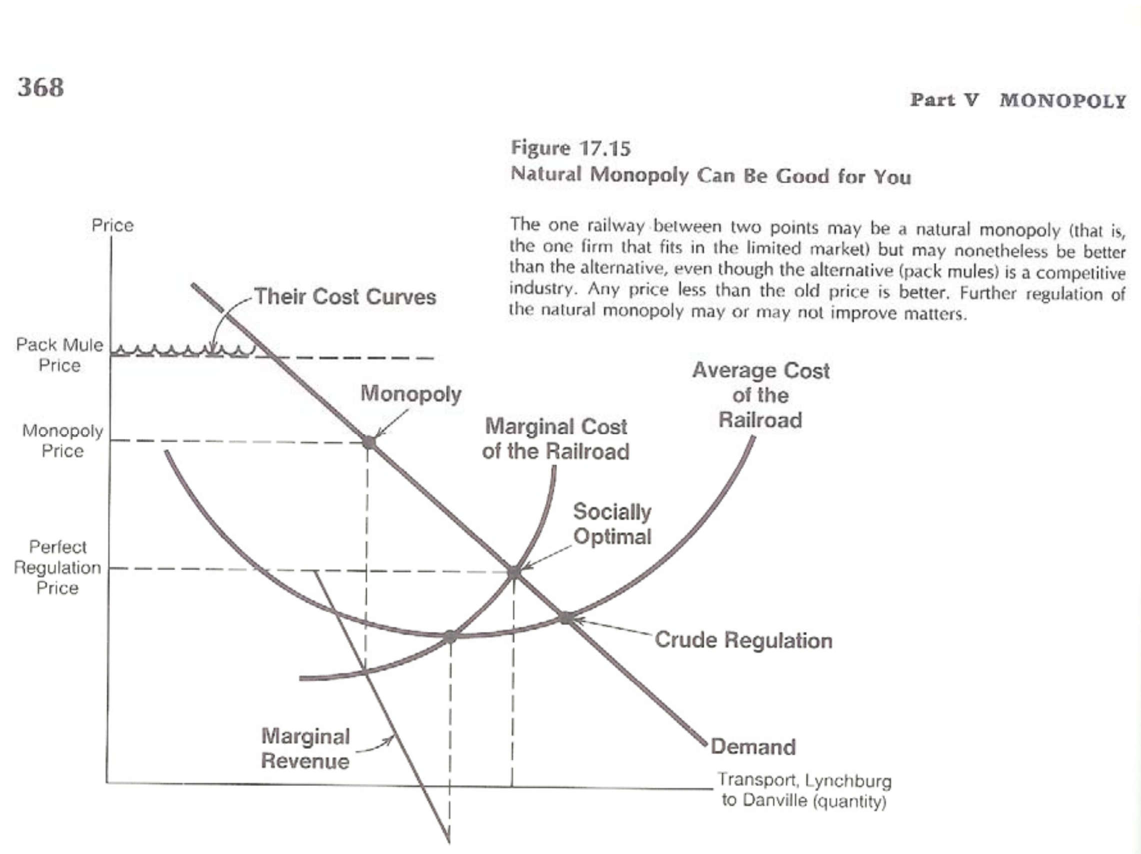

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Figure 17.15
Natural Monopoly Can Be Good for You

The one railway between two points may be a natural monopoly (that is, the one firm that fits in the limited market) but may nonetheless be better than the alternative, even though the alternative (pack mules) is a competitive industry. Any price less than the old price is better. Further regulation of the natural monopoly may or may not improve matters.

Source: McCloskey 1985, p. 368**.**

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. 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. An earlier version of the current paper was presented at the biennial meetings of the International Schumpeter Society in Milan, Italy on June 12, 2004.

[1] Here are three illustrative examples of mainstream economists attesting to the growing number of economists who view Schumpeter's work as important for understanding the capitalist process:

> As respect for and understanding of the importance of innovation have grown, so too have the number of economists who think of themselves as Schumpeterians. **Stiglitz and Walsh**, p. 411.

> . . . , if we call the economy of the last two centuries primarily "Smithian," the economy of the future is likely to be primarily "Schumpeterian". **DeLong and Summers**, p. 33.

> Now, at the turn of the millennia, when total-factor-productivity has remarkably soared in America and abroad, both fools and sages sing Schumpeter's praise.

> That would have amused and pleased this worldly scholar who in some dark hours of the night used to despair in his German-shorthand diaries of justly deserved praises passing him by. So Keynes was wrong: in the long run not all of us are dead. **Paul Samuelson**, 2003, p. 467.

[2] Nordhaus has described the importance of textbooks in these terms:

> The historian Barbara Tuchman said about books what seems particularly true of textbooks: "Books are the carriers of civilization. Without books, science is crippled, thought is at a standstill, and history is silent. They are engines of change, windows on the world, lighthouses erected in a sea of time."
> **Nordhaus**, p. 358.

[3] I believe that McCloskey, somewhere, suggests that the Hotelling model might be applicable to understanding why economics textbooks are so homogeneous.

[4] In lecture, Ben Rogge used to claim that this phenomenon applied more broadly, to most books that were issued in multiple editions. In particular, he claimed that the first edition of Malthus's *An Essay on the Principle of Population*, was considerably briefer, clearer, and stronger, than the second, and subsequent, editions.

[5] 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.

[6] 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.

[7] 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).

[8] 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."

[9] 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 in growth.

[10] 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.

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