

Chapter 1

What Is Downsizing? An Overview

DURING THE late 1980s and, especially, the early 1990s, a wave of what was called “downsizing” swept—or allegedly swept—corporate America. Top managers of many large U.S. corporations announced both major restructurings of their businesses and sizable reductions in their workforces. Some did so repeatedly, and with gusto. Often the announcements of these two actions were linked, thereby blurring the distinction between industrial change (restructuring) and reductions in force (downsizing)—a distinction that, as we will see, is crucial.

Wall Street analysts typically greeted downsizing announcements with cheers. Such proclamations apparently were interpreted as evidence that top corporate management “got it”: they understood the tough, new industrial climate in which they were working and were prepared to make their companies leaner and meaner. But investors may not have agreed with the analysts. While the evidence is not entirely one-sided, most of the studies to date have concluded that companies’ announcements of downsizings (or plant closings) caused their share prices to *decrease* (on average) rather than to increase.¹ Research reported later in this book also finds little if any econometric support for the popular notion that downsizing boosted share values.

News of downsizing was naturally greeted with considerably less equanimity by workers. For them, downsizing was cause for consternation—or worse. Many lost their jobs; many more feared they would be next to get the ax. Labor turnover, which has always been high in the United States, did increase somewhat, especially for white-collar workers.² But the media attention lavished on downsizing may have left people believing that job insecurity had increased more than it actually had. There were stories of workers being replaced by machines, or by foreign workers, or by temporary and contingent

workers with few fringe benefits and little or no attachment to the firm, and so on. In general, many corporations that had traditionally prided themselves on being at least somewhat paternalistic toward their workers seemed to become more hard-nosed. Indeed, one highly critical book (Gordon 1996) characterized U.S. corporations (in its title) as “fat and mean.” In sum, these were generally tough years for American workers.

Downsizing—though not *announcements* of downsizings—retreated to the back burner during the boom years of the late 1990s, when the national unemployment rate touched a thirty-year low and labor *shortages* emerged as one of management’s top problems. But as the economy began to slow in the second half of 2000, and then actually to contract in 2001, the frequency of downsizing increased and public and media attention to it resurfaced. Concern with job security reclaimed its place near the top of the list of national problems. It remained there as the early stages of the economic recovery in 2002 and 2003 proved to be “jobless.”

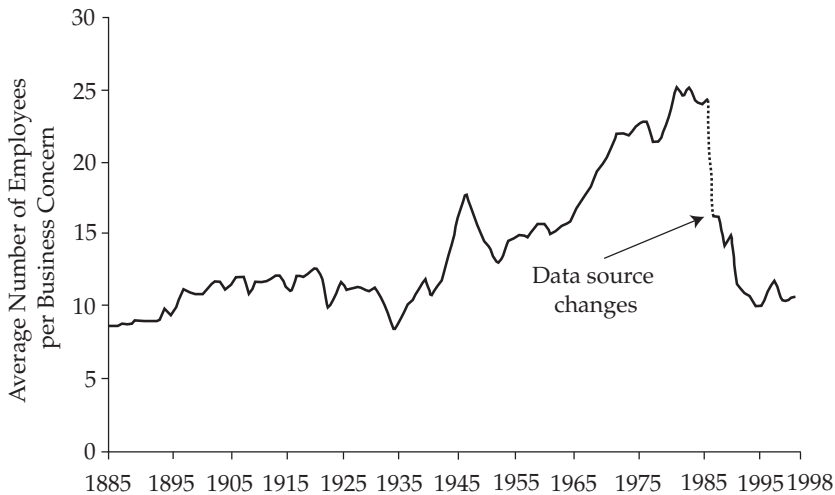
With a decade of hindsight, this seems an appropriate time to look back at and appraise the downsizing episode of the 1980s and early 1990s. If the downsizing phenomenon was real, why did it happen? Economists do not normally expect business leaders suddenly to wake up one morning believing that their previous decisions—in this case, those having to do with employment levels—are preponderantly wrong. If thousands of managers decided to downsize at more or less the same time, there must have been reasons. What, then, changed in the U.S. or world economy to foment all this industrial restructuring, labor market turmoil, and downsizing? And should we view these changes, whatever they were, as permanent features of the industrial landscape? Or were they merely transitory influences that, while requiring some painful adjustments at the time, are now largely behind us?

Then and Now: A Long Historical View

To address such questions, we begin by taking a long historical view of the U.S. economy over the last century. In subsequent analysis we will, of course, dig down deeper into the behavior of average firm size (and other measures) in individual industries, and we will focus on a much shorter time period. But since downsizing in the 1980s and early 1990s was portrayed as something new and different, it is worth starting with a simple question: In terms of the economy as a whole, was this period really different?

Figure 1.1 offers a bird’s-eye view of changes in the size of the average U.S. business over the course of more than a century. It suggests that the answer may be yes—that downsizing is not just a continuation of past trends.

Figure 1.1 Average Number of Employees per U.S. Business Concern, 1885 to 1998



Source: Adapted from Jovanovic and Rousseau (2001), who cite *Historical Statistics of the United States, Colonial Times to 1970* (1975) and *Statistical Abstract of the United States* (various years).

Note: Beginning in 1985, the data source counts the number of business establishments instead of business firm names, resulting in a sudden drop from 24.42 to 16.29 employees per concern.

The primary data underlying this diagram unfortunately switched in 1985 from being based on the number of business *firm names* to being based on the number of business *establishments*. Since many business firms conduct their operations at more than one establishment, this switch produced a sharp break in the series between 1984 and 1985. But if we ignore that break (as we must, for it is simply a figment of the data) and ignore the sharp gyrations caused by the Great Depression (which reduced firm size for pretty obvious reasons) and World War II (which raised firm size for equally obvious reasons), a reasonably clear pattern emerges. Specifically, the size of the average American business fluctuated mostly in the range of eleven to twelve employees for roughly the first four decades of the twentieth century, then climbed steadily and markedly to a peak of about twenty-five employees over the next four decades. It then fell sharply from the early 1980s through the early 1990s before leveling off after about 1993.

In brief, what we see in figure 1.1 is a picture of increasing business size from about 1935 until about 1980, and then decreasing size

from about 1980 to about 1993. In subsequent chapters, we document the fact that changes in *firm* size and changes in *establishment* size follow similar (though not quite identical) patterns. So the reversal of the historical trend that appears to have taken place in the early 1980s was probably genuine, despite the break in the data. Figure 1.1 thus suggests that the trend toward downsizing from 1980 to 1993 may indeed have been “something new”—a hypothesis that we investigate in greater detail in the coming chapters.

Figure 1.1 also suggests a second hypothesis. As we have observed, average firm size dipped sharply during the Great Contraction (1929 to 1933) and soared during the Second World War, only to fall back again thereafter. These episodes constitute what are by far the two most dramatic cyclical fluctuations of the period. But if we look closer, we can also see noticeable reductions of average firm size during the deep recessions of 1973 to 1975 and 1981 to 1983. There thus appears to be a cyclical pattern, with average firm size rising in booms and falling in recessions or depressions. This hypothesis also receives extensive attention—and strong confirmation—in this book.

Table 1.1 uses an entirely different data source and focuses on the more recent period. The American Management Association (AMA) surveys job creation, job elimination, and downsizing among its members (mainly large firms) annually. We will encounter these data again in chapter 2, where we will explain their source and nature in greater detail. Here, table 1.1 provides a quick overview of the waxing and waning of downsizing since 1988. According to the AMA survey, the year ending June 1991, which included a recession, was the worst period for downsizing in the survey’s history, which began with the year ending June 1987. The data for 1990 to 1991 show that over 55 percent of the AMA’s membership reported eliminating some jobs that year and that fully 79 percent of such cases were actual downsizings—that is, the number of jobs eliminated exceeded the number of new jobs created. By the 1997 survey (covering the twelve-month period ending June 1997), the macroeconomic environment had improved greatly, but 41 percent of member firms still reported some job elimination. However, in only 46 percent of these cases did total employment in the firm actually decline. In a word, job creation and destruction—the churning and restructuring of the workforce—are with us all the time. But the net balance of the two is highly cyclical.³

We can also see in table 1.1 that, after dissipating considerably after the mid-1990s, downsizing made a strong comeback in the most recent published survey, covering July 2000 through June 2001. The percentage of firms reporting actual downsizing (column 2), which had been at a low 21.2 percent in the year ending June 2000—roughly

Table 1.1 Downsizing Among American Management Association Surveyed Members, 1988–1989 Through 2000–2001

Year	(1) Percentage of Gross Job Eliminators	(2) Percentage of Net Job Eliminators (Downsizers)	(3) Column 2 as a Percentage of Column 1
1988–1989	39.0	25.7	66
1989–1990	35.7	26.4	74
1990–1991	55.5	43.8	79
1991–1992	46.1	36.0	78
1992–1993	46.6	32.6	70
1993–1994	47.3	30.6	65
1994–1995	49.6	27.3	55
1995–1996	40.9	27.9	68
1996–1997	41.1	19.0	46
1997–1998	48.9	21.9	45
1998–1999	49.6	24.1	49
1999–2000	48.2	21.2	44
2000–2001	57.5	36.4	63

Source: American Management Association (various years).

matching its average over the previous four years—surged to 36.4 percent in the period 2000 to 2001. This figure is the second highest in column 2, exceeded only by the downsizing experience during the recession of 1990 to 1991. It seems predictable that downsizing will receive heavy press and public attention whenever this figure is high.

The Plan of This Book

We are hardly the first economists to study downsizing. But to our knowledge, this book is the most comprehensive treatment of the issue to date. Furthermore, as Peter Capelli (2000, 3) noted in his recent and useful survey of research on downsizing, “There have been no prior studies of the determinants of downsizing.” Investigating those underlying causes of downsizing is the central task of this book.

We tackle the problem from several different angles. Most of the rest of this chapter presents six hypotheses that offer alternative and possibly competing explanations of what may underlie the downsizing phenomenon; *observable* implications of each hypothesis are emphasized. As we seek to learn which hypotheses are supported by the data and which are not, these six hypotheses will provide the organizational structure for the book.

Chapter 2 deals with the intense media attention that was lavished on downsizing in the 1990s. It also analyzes the experiences of a sample of mostly large firms whose downsizing announcements were reported in the newspapers. Our reason for focusing on this nonrandom newspaper sample is that very large firms tend to get lost (via top-coding, for example) in comprehensive data sets.⁴ Yet these are the very firms that command public attention.

Chapter 3 then examines what basic microeconomic theory tells us about the downsizing phenomenon, emphasizing the role of changes in technology and their implications for the most efficient size of a firm in a given industry. This analysis sets the stage for our examination of the empirical evidence in the remaining chapters.

The central statistical and econometric analyses of this book are found in chapters 4 through 8. Chapter 4 is a comprehensive look at the basic facts: Has there really been downsizing in the United States since the 1980s? If so, how much? In what sectors? We show that the picture in manufacturing is very different from the picture outside manufacturing—an important point, since the vast majority of studies to date have been limited to manufacturing. Specifically, we find that downsizing is common in many manufacturing industries but rather rare outside manufacturing. In fact, what might be called *upsizing* is much closer to the norm in the retailing and service sectors—each of which employs many more workers than does manufacturing.

Having laid out the facts in detail in chapter 4, we concentrate in chapter 5 on explaining, in an econometric sense, downsizing in manufacturing. Chapter 6 then does the same for those nonmanufacturing industries for which sufficient data are available, although here the focus is on the causes of *upsizing* rather than of downsizing.

Chapter 7 returns to the manufacturing sector, which is where most of the actual downsizing occurred, and investigates a variety of possible consequences of downsizing. What happens to firms that downsize? One of the main findings of the book is that much of what has been termed “downsizing” is really industrial restructuring—that is, job churning rather than (net) job reductions. So chapter 8 turns directly to the rise in labor market turbulence and, for the only time in the book, uses data on individuals rather than on businesses.

Finally, in chapter 9 we offer a brief summary of the study’s main findings and some tentative conclusions.

The Causes of Downsizing: Six Theoretical Hypotheses

Six possible explanations of downsizing have guided the empirical work of this book, especially chapters 4 through 6. Each one focuses on a single possible *cause* of downsizing and then traces its *consequences* for a firm’s employment and other observable variables. Al-

though the hypotheses are distinct, it is important to realize that they are not mutually exclusive; indeed, downsizing probably does have multiple causes. Still, it is essential to ask which of these explanations are consistent with the data and which are not. Only by doing so can we begin to understand the history of this important phenomenon, make tentative judgments on whether influences on downsizing are likely to be durable or transient, and think intelligently about the policy implications.

Some of these hypotheses raise the possibility that downsizing is not what it appears to be. First, many firms that claim to have downsized may not really have done so. Instead, they may have simply altered the *compositions* of their workforces more than their sizes. For example, some companies may have first reduced the number of less-educated or older workers or middle managers. Then, after a suitable interval required for retooling and reorganization, they may have replaced most of their former employees with others deemed more appropriate to the company's current needs.

"Downsizing" of this sort is more accurately labeled "restructuring." That relabeling does not make the consequent churning of the labor force any less important for those who pay the costs. After all, large-scale restructurings are apt to have substantial effects on productivity and can have devastating effects on the displaced workers (on the latter, see Gordon 1996; Leana and Feldman 1992; Rudolph 1998). But it does indicate that the firm in question is doing something other than shrinking.

A second possibility is that what is popularly known as downsizing may consist of reductions in the size of the typical firm accompanied by offsetting increases in the number of enterprises—leaving total *industry* employment largely unaffected. Such a scenario, like large-scale restructuring, is consistent with a large number of job terminations—lots of labor market churning, but no decrease in overall employment. In fact, as we have indicated earlier and will show in the following chapters, the evidence does not reject either of these two scenarios, neither of which should really be called downsizing (unless there is net job loss).

We proceed now to the discussion of our six hypotheses, beginning with one that certainly relates directly to genuine downsizing—that is, reductions in firm size.

Hypothesis 1: Downsizing Occurs Because Technological Change Favors Smaller Enterprises

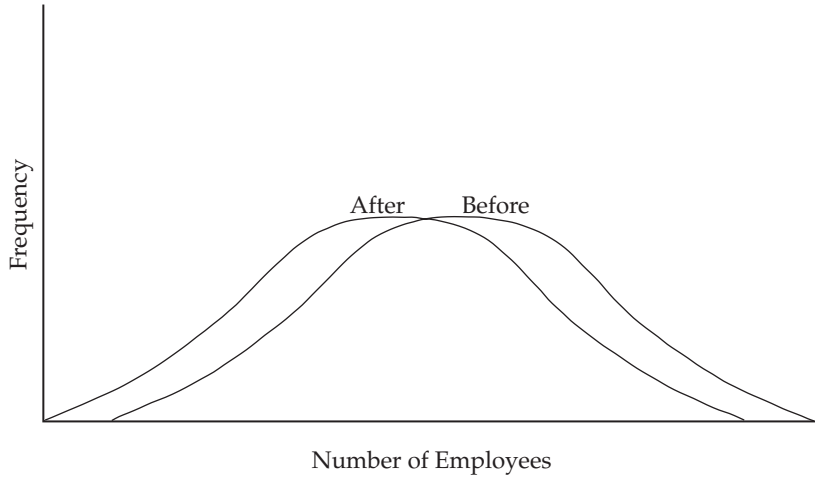
There has long been a common presumption that technological progress favors larger firms—for example, by requiring huge investments for successful entry into the industry or by extending the range of

output over which economies of scale persist. Technology of that sort certainly characterized the railroads, automobile manufacture, and earlier forms of steelmaking, for example. However, technological change can sometimes make it more efficient to operate on a *smaller* scale. Transporting freight by truck instead of by rail is one well-known example; truck transport materially decreased average firm size in the transportation industry. Mini-mills, the success story of the modern U.S. steel industry, are vastly smaller than integrated steel mills. And the recent histories of shrunken giants like GM, IBM, and AT&T indicate that mammoth size may no longer be a competitive advantage. When some people talk nowadays of the “end of mass production” in the computer age, they are emphasizing the greater relative importance of speed, flexibility, product variety, and customization.

On balance, technological change can sometimes promote larger average firm size and at other times promote smaller firms. We discuss the underlying theory in chapter 3. The influence of technology on the size of a typical enterprise presumably changes direction only gradually, but there is no reason why it should always push in the same direction. Even when the evidence shows that current technological developments predominantly favor smaller firms (at least for manufacturers), as we suggest in chapter 5, there is no clear basis on which to expect this to be a reliable portent for the future.

However, let us suppose for the moment that technological change really does favor smaller, more flexible enterprises. What should we then see in the data? One clear implication is that the distribution of firms by size should shift toward smaller firms—to the left in figure 1.2. When we look explicitly for such shifts in chapter 4, we find them in many (but certainly not all) manufacturing industries. But we do not find much evidence of shifts toward smaller firm size outside of manufacturing—in fact, the opposite shift is more common. Moreover, as we just noted, this particular version of downsizing may not imply any shrinkage in overall industry employment. Average firm size may fall, but there may be more firms.

A second empirical implication of downsizing driven by technology is that firm size should be shrinking faster in industries undergoing more rapid technological change. This implication is also testable with our industrial database. In chapters 5 and 6, we look for associations between leftward shifts of the size distribution of firms (for example, falling average firm size, as measured by employment) and various measures of technological activity, such as total factor productivity (TFP) growth, research and development (R&D) expenditures, and the employment of scientists and engineers. We find them to only a limited extent—again, chiefly in manufacturing.

Figure 1.2 The Size Distribution of Firms Under Downsizing

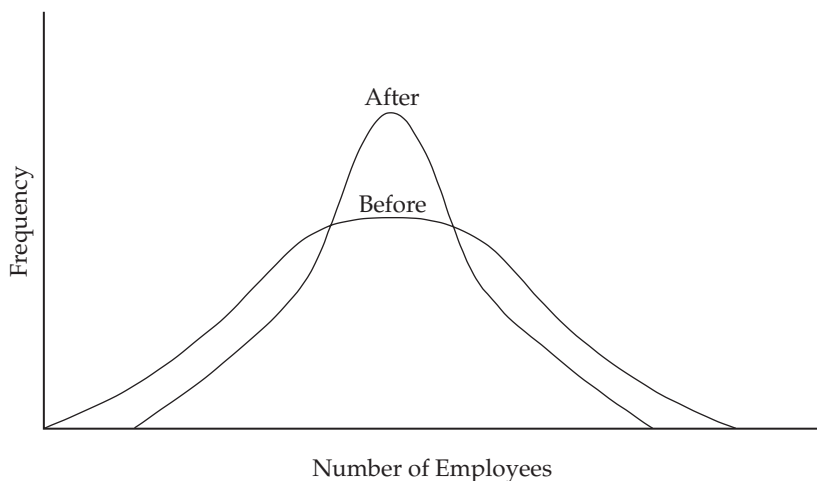
Source: Authors' configuration.

Technology can also yield more complex patterns of changes in firm size. For example, suppose new technology reduces the magnitude of sunk costs (investment costs that are required for entry) in some industries, thus decreasing the minimum efficient scale of operation in that industry, but at the same time raises sunk costs in other industries. Then we would expect to find downsizing in the one and upsizing in the other.

It is also possible that technical change in some industries makes both very small and very large firms more costly than firms of intermediate size. Computerization might have this effect, for example, by permitting greater customization and smaller production runs, on the one hand, but requiring firms to be large enough to be able to afford to buy computer technology, on the other. In that case, we would expect to find downsizing among the largest enterprises, with a countervailing trend toward upsizing among the smallest ones. In such a world, we would expect to find what is called “regression toward the mean” in the size distribution of firms, with a greater portion of firms moving toward intermediate size (as displayed in figure 1.3). Indeed, Richard E. Caves’s (1998) comprehensive survey of the literature on the size distribution of firms concluded that regression toward the mean is in fact the norm—in contrast to economists’ traditional belief in Gibrat’s Law (which predicts ever-increasing concentration).

So, is U.S. industry evolving in the manner suggested by figure

Figure 1.3 The Size Distribution of Firms Under Regression Toward the Mean



Source: Authors' configuration.

1.3? In chapters 4 and 5, we offer some evidence that regression toward the mean may indeed have happened in the manufacturing sector, but not elsewhere. Caves's (1998) conclusion turns out to have been based mostly on studies of manufacturing—which once again illustrates how hazardous it is to draw economywide conclusions by looking only at manufacturing. However, if we take a broader view, *downsizing* in the typical manufacturing industry coupled with *upsizing* in the typical retailing or service industry (which is roughly the picture we find in chapters 4 and 5) can be interpreted as a kind of economywide regression toward the mean. The reason, of course, is that average firm size is much larger in manufacturing than in either retailing or services. So if (larger) manufacturing companies downsize while (smaller) nonmanufacturing companies upsize, the entire industrial structure displays regression toward the mean.

Hypothesis 2: Faster Innovation Leads to More Labor Market Churning

Our second hypothesis about downsizing also attributes this phenomenon to technical change. But here the effect stems not from changes in the cost-minimizing size of a firm, but rather from the pace of technological improvement itself. The essential idea is that

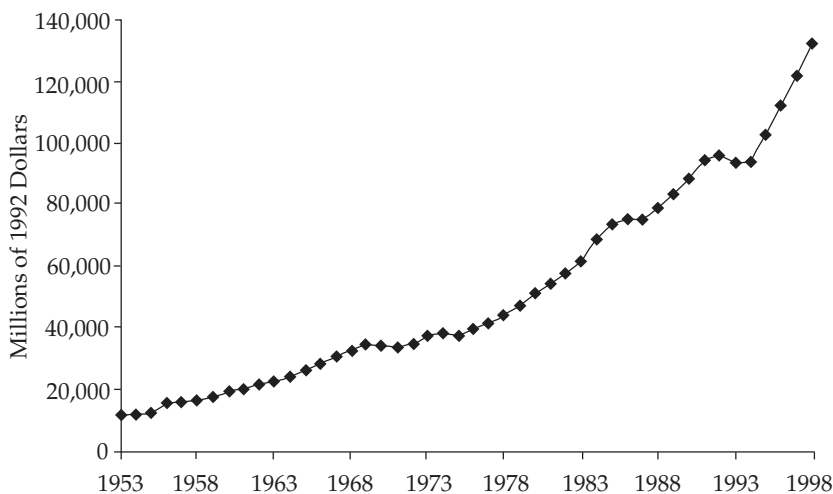
any product or process innovation requires alterations in the nature of the tasks that workers must perform. A speedup in the *rate* of innovation therefore implies that such changes come faster and are more dramatic. Such changes, in turn, almost certainly require more extensive reallocations of labor both within and across firms.

One important feature of this phenomenon is the unevenness with which the costs and benefits of such labor market churning are spread across the workforce. Employees who are better educated or better trained can adapt more easily to new technology and changing circumstances, while less-skilled workers are presumably less adaptable. At least, that is the usual assumption. The presumptive consequence is that highly skilled workers may actually benefit from innovation, while less-skilled workers are more likely to suffer both unemployment and wage declines when they are “downsized.”

Surprisingly, the empirical literature on this issue is not entirely one-sided, perhaps because “skill” is so difficult to measure. Studies by Ann Bartel and Frank Lichtenberg (1987) and Timothy Dunne and James Schmitz (1995) offered evidence supporting the conventional wisdom that the advance of technology raises the relative demand for skilled labor. But Daniel Aaronson and Kenneth Housinger (1999) found no support for the popular notion that technology disproportionately displaces low-skilled or older workers. They did, however, find that these workers, once displaced, have a harder time finding new jobs. So, on balance, they do lose ground to higher-skilled or younger workers.

The hypothesized role of innovation as the driver of downsizing may seem at first to rest on a fortuitous relationship: technical change just happens to play a key role. But we believe otherwise. We maintain that continuing innovation is no accident and can be expected to persist in the future. Since the details of our hypothesis are somewhat novel, we will describe them step by step.

Our analysis starts with the hypothesis that the free-market mechanism creates remorseless pressures for innovation, and that these pressures are what most clearly distinguish the capitalist economy from all alternative economic systems. One major source of this pressure for continued and increasing innovative effort is the fact that the adoption of new technology, especially in the form of new products and new industrial processes, has emerged as a prime competitive weapon for firms in the major oligopolistic sectors. The result is a kind of innovation “arms race” that can literally be a matter of life or death for the participants. And like other arms races, it becomes what has been called a “Red-Queen game” because, in terms of market position, the participants find themselves forced to keep running in

Figure 1.4 Real U.S. Private R&D Expenditures, 1953 to 1998

Source: National Science Board (2000).

order to stand still (see Khalil 1997, 411–15; Baumol 2002). In such a situation, no player dares to fall behind, and many may seek ways to pull ahead of their rivals.

This sort of rivalry is clearly a recipe for increasing investment in R&D and for innovative activities more generally. And the evidence is that real private outlays on R&D have indeed risen substantially and fairly persistently over the postwar period—although the period of sharpest rise has not always coincided with peaks in downsizing. Figure 1.4 shows that the increase in private industry R&D expenditures from 1953 to 1998 was dramatic. In dollars of constant purchasing power, industry funding nearly quadrupled between 1970 and 1998, increasing from about \$34 billion to nearly \$133 billion. The latter sum amounted to about 70 percent of the nation’s R&D expenditures in 1998. As a percentage of real GDP, real R&D expenditures rose from about 1.5 percent in 1953 to almost 3 percent in 1964, and these expenditures have been mostly in the 2.5 to 3.0 percent range ever since.

Several features of the innovation process bear directly on our second hypothesis about downsizing. First, while innovation has contributed spectacularly to the growth of labor productivity, historical evidence decisively rejects the popular view that rising productivity leads to long-term growth in unemployment. Luddites (both nineteenth-century and modern) notwithstanding, the evidence shows

that, while innovation does indeed destroy certain jobs, it also stimulates demand for new products—which creates new jobs. And history teaches us that the the creation of new jobs always overwhelms the destruction of old jobs by a huge margin. For example, productivity in the United States has increased more than elevenfold since 1870, meaning that employment could have been reduced by more than 90 percent without any loss in per-capita output (see Maddison 2001). Yet the unemployment rate in this country shows no long-term upward trend. The same point applies to foreign competition (which we discuss in the context of the next hypothesis about downsizing). In the long run, any loss of jobs to foreign competitors may well be offset by increased purchases by foreigners.

A second feature of the innovation process is that faster technological change increases the frequency with which plant and equipment needs to be replaced. By accelerating the replacement of capital, it presumably also adds to the amount of labor-market churning and hence to the rate of frictional unemployment. This process manifests itself in a transitory link between the rate of innovation and the length of unemployment spells—a link that is apparent in the data (see Baumol and Wolff 1999).

Third, as already suggested, moving labor from obsolete plants to state-of-the-art facilities typically entails more than mere geographic relocation. More often than not, it requires either retraining existing workers or replacing them with others who are better able to use the new technology. Such changes are therefore disadvantageous to those whom it is particularly difficult or costly to retrain (for example, the poorly educated) or who offer bleak prospects for recovery of the firm's investments in retraining (for example, older workers). In this way, innovation may leave a permanent—or at least a very long-lasting—imprint on relative wages and the distribution of income, depressing the wages of unskilled and less-educated workers relative to those with more skill and education. But such phenomena, socially troubling as they may be, should not be called downsizing.

Fourth, technologically driven restructurings, with their consequent churning of the workforce, should be expected to continue indefinitely. The mechanism that forces firms to focus on innovation as the primary instrument of competition leads us to expect no slowdown in the stream of innovations. Indeed, as we have noted, the arms-race attribute of competition in innovation may even force investment in R&D to accelerate. Of course, both the rate of successful innovation and its impact on the economy will display fluctuations. But we would surely not want to repeat the misdiagnosis of Charles H. Duell, commissioner of U.S. patents, who in 1899 said, "Everything

that can be invented has been invented," and, in his shortsightedness, recommended that the patent office be shut down (Federal Reserve Bank of Dallas 1996b, 5).

A critical question about the future therefore arises: Will the technologically based handicap now apparently besetting less-skilled workers last forever? Perhaps not, for history suggests that new technology typically follows an evolutionary pattern: it tends to be complicated and relatively difficult to use at first, but becomes simpler and more "user-friendly" later on (see, for example, Rosenberg 1982, 6–8, 62–70). Early innovations are apt to require the specialized skills of educated workers, who are needed both to improve and to operate the new product or process. This enhanced demand for skills clearly hurts unskilled, and presumably inflexible, labor. The later stages of the innovation process, however, may work in favor of such workers, who find the new technology becoming easier to use as it matures.

While that is a hopeful thought, at least two influences push in the opposite direction. First, more technically advanced products that are simpler to use are ordinarily more complex beneath the surface. An automobile without a crank is easier to drive, but it has a starter mechanism that needs to be maintained by trained mechanics. A modern personal computer is more user-friendly than its predecessors, but only the most able specialists can penetrate the complex software that makes it run. If this pattern is typical, even the later stages of innovation may favor skilled labor. Second, suppose industrial processes really do become simpler as technology matures. In that case, formerly skilled jobs may metamorphose into unskilled ones and migrate to less developed countries, where wages are much lower. For example, much of the less complex work involving computer programming and code writing is now conducted in countries such as India, and the resulting products are brought quickly and cheaply back to the United States.

These two economic mechanisms suggest that the term "downsizing" may be a misnomer for the phenomenon explained by our second hypothesis (the rate of innovation affects the reallocation of labor). What is really taking place in these cases is a systematic *change in the composition* of the typical firm's labor force rather than a *cut in its size*. This phenomenon is better labeled "churning" or "restructuring" than downsizing.

Finally, let us ask whether the evidence is consistent with a hypothesis that attributes downsizing to the workforce adjustments necessitated by rapid technological change. Since total factor productivity growth (a commonly used measure of technological progress) during the prime downsizing period (the late 1980s and the early 1990s) was rising faster in manufacturing than outside of manufacturing, the hy-

pothesis clearly suggests that downsizing should be found mainly in the manufacturing sector and in those nonmanufacturing industries that were experiencing rapid technological change (such as computer software, telecommunications, and finance). As we demonstrate in chapters 4 and 5, this prediction seems to be borne out in the data: downsizing is found mainly in manufacturing industries, and within the manufacturing sector, industries with the most rapid gains in total factor productivity appear to have downsized the most. But the evidence for the latter finding is weak, as we shall see.

However, as noted earlier, what appears to have happened in manufacturing is not universal downsizing, but rather something closer to regression toward the mean: many of the largest manufacturing firms reduced the number of their employees and many of the smaller firms expanded their labor forces. Thus, the evidence may well be compatible with the technological story of our second hypothesis: that there is both downsizing (in some places) and general restructuring and churning.

Another basic premise of hypothesis 2 is that more-educated labor can be reallocated more easily than less-educated labor. If so, both the length of unemployment spells and the wage loss after job displacement should be smaller for more-educated workers, as appears to be true. For example, Steven Hipple (1999, 20) examined data for the years 1981 to 1996 from the U.S. Department of Labor's Displaced Workers Surveys (DWS). He found that "job losers with more schooling spent considerably less time without work than their counterparts with less education," and that more-educated displaced workers experienced much smaller earnings losses. Similarly, Henry Farber (2001, 14, 21), who looked at the DWS data for 1981 to 1999, reported that more-educated job losers suffered smaller earnings declines, on average, than workers with less education, and had higher post-displacement employment probabilities.

Our second hypothesis about downsizing focuses attention on the overall extent of job restructuring within industries. Did such restructurings accelerate during the 1980s? Is the degree of job restructuring greater in industries with more rapid rates of technological activity—or with more exposure to imports (a factor we consider in discussing the third hypothesis)? In chapter 7, we make use of the raw occupational data for each industry to construct measures of changes in job composition over time and relate such changes to technology and to changes in firm size. We find only modest statistical associations.

Most obviously, the theory predicts widening skill differentials in wages, which have certainly occurred. This fact has been extensively documented elsewhere, so we do not attempt to expand the evidence in this book.⁵

Hypothesis 3: Foreign Competition Compels Domestic Industry to Downsize by Trimming “Fat”

Our third hypothesis attributes downsizing to the intensification of foreign competition, whether actual or threatened. It comes in two versions, one of which is actually a variant of our second hypothesis. In this version, increased competition from abroad—or perhaps simply greater cross-border economic activity—changes relative demands and supplies in the U.S. market; those changes, in turn, require some firms and industries to contract while others expand. From there, the story is almost the same as in the second hypothesis. The basic story may be more one of churning than of literal downsizing.

In fact, the availability of cheaper foreign products can be viewed as analogous to technological progress: both increase the value of the outputs that the U.S. economy can obtain from a given quantity of inputs, and both are likely to require significant industrial change. Furthermore, increased globalization is fundamentally rooted in technological advance: reduced transportation costs, faster telecommunications, and the like are among the primary drivers of increased trade.

According to this third hypothesis, the United States and other industrial economies have grown increasingly vulnerable to import competition as trade barriers have fallen, as new technology has been adopted by other countries, and, perhaps, as educational standards have risen in a number of former Third World countries. The growth of international trade is truly impressive. Angus Maddison (1995, 38) estimates that since 1820 world exports as a percentage of world GDP have grown thirteenfold; the percentage in the United States alone has tripled since 1950. And this growth accelerated markedly after 1973, when the Bretton Woods system of fixed exchange rates ended.

All this foreign competition, the story goes, has forced American firms to reduce what economists call “X-inefficiency”—in plain English, to trim the “fat” from their operations (see Leibenstein 1966). And they have often accomplished this slimming down by cutting the dispensable portions of their labor forces. The argument is that certain, presumably large, firms used to have (or perhaps still have) more labor than they need to produce the desired level of output—excess that they subsequently shed (or are shedding) under pressure from foreign competitors. The prototypical case may be the U.S. auto industry in the 1960s and early 1970s, which was widely viewed as “fat and lazy” before the one-two punch of Japanese competition and the OPEC oil embargo.⁶ The industry is now both leaner and meaner, and Japanese competition is probably a major reason why.

The second version of the foreign competition argument—the one more frequently found in the academic literature—emphasizes the pressure that low-wage labor abroad puts on U.S. labor markets, especially on markets for unskilled labor. Like the story of skill-biased technical progress that underpins our second hypothesis (that faster innovation leads to more reallocation of labor), the notion that workers in poor countries (the “South”) pose a threat to low-skilled workers in rich countries (the “North”) has been widely offered as an explanation for rising wage inequality in the industrial countries. But it may also lead firms to rid themselves of excess domestic labor—that is, to downsize in the United States. The hypothesis itself is controversial, whether offered as an explanation of declining wages or of declining employment.⁷ Yet, because it has been discussed and debated so extensively, it may be useful to consider some of its observable implications.

In this version, downsizing is allegedly caused by intensified competition. If this is so, the inference seems obvious: the phenomenon should be most severe where the intensification of competition is greatest. While journalistic accounts regularly advance this idea, there is much less academic evidence, perhaps because it is not easy to measure the intensity of competition.⁸ Falling profit margins are one indication that a particular industry is facing greater competition, but profits are influenced by myriad other factors as well. Lower profitability would therefore be a poor statistical proxy for stiffer competition. Nor is greater *foreign* competition the only source (nor even the main source) of greater competition in most industries.

To the extent that increased international competition is the driving force, we should perhaps find a positive correlation between downsizing and the share of imports (and maybe even the share of exports) in an industry’s output. And as we will see in chapters 4 and 5, there is considerable evidence in support of this view. There are several pitfalls here, however. For example, the theory of contestable markets emphasizes that *potential* competition can sometimes be nearly as effective as *actual* competition in keeping profits down. Hence, profits can be depressed by growing foreign competitiveness even if the foreign market share is low and remains so.

Regardless of the underlying cause, it would appear that the “trimming fat” hypothesis has a clear empirical implication: downsizing should raise the *average* productivity of labor substantially—after all, when a firm rids itself of redundant labor, its labor input should be reduced without reducing output. This implication appears at least partly testable in a cross-section of firms: labor productivity should rise faster in industries that displace relatively more workers. We test this hypothesis in chapter 7. Like earlier work on the effects of down-

sizing on productivity, our findings do not provide much support for the frequent assertion that downsizing produces sharp gains in productivity.⁹

The implications for profits, however, are less clear. As we have mentioned, intensified competition should reduce profitability, all other things being equal. On the other hand, shedding of excess labor should increase profitability. To complicate things further, profits are heavily influenced by, for example, cyclical conditions, which must be controlled for in any empirical test.¹⁰ We will, of course, look at the implications of downsizing for profitability. But relating what we find (generally, an increase in profitability after downsizing) to any particular theory of downsizing is rather difficult.

Hypothesis 4: Downsizing Occurs When Capital Is Substituted for Labor

Another possible explanation for downsizing is that firms are shedding labor because they are adopting new production technologies that employ relatively less labor and relatively more capital. In this case, the total output of a typical firm does not fall, but employment falls and capital usage rises as firms substitute more capital for less labor.

In the early years of the great capital spending boom of the 1990s (approximately 1992 to 1994), there was indeed much written in the financial press suggesting that the surge in investment was motivated more by the desire to replace labor with capital than by any desire to expand capacity. However, this talk all but disappeared during the growth spurt between 1996 and 2000, when firms were scrambling for labor and the unemployment rate fell to a thirty-year low. Moreover, the U.S. Federal Reserve Board's index of industrial production shows a marked acceleration of the growth of industrial capacity throughout this period—indicating that firms were indeed building new productive capacity, not just replacing labor with capital. For example, the estimated compound annual growth rate of total industrial capacity (not capacity *utilization*) from December 1995 to December 2000 was 5.2 percent—well above the 3.0 percent growth rate over the previous five-year period.

But let us suppose for the moment that capital-labor substitution does indeed underlie downsizing. Why might this be so? Standard economic theory looks to the prices of the various inputs used in the production process to explain optimal factor proportions: in other words, given technology, firms should decide to use more of one factor of production (say, capital) relative to another (say, labor) when the *relative* price of the first factor falls. A rise in the capital-labor ratio

should therefore be prompted by a rise in the ratio of labor compensation to the cost of capital. But in fact, real wages were certainly not growing rapidly during what were apparently the prime downsizing years, 1985 to 1993. Indeed, real wages even lagged behind sluggish labor productivity. For example, the U.S. Bureau of Labor Statistics reported that real compensation per hour in the nonfarm business sector advanced at a mere 0.8 percent annual rate over those eight years, while labor productivity grew at an annual rate of 1.5 percent. That comparison hardly suggests that rapidly escalating wages were forcing firms to find ways to economize on labor.¹¹

However, the cost of capital probably did fall substantially from the early 1980s until at least 2000 (and probably beyond). In 2000, the stock market was much higher and real interest rates were slightly lower than they were around 1985. So labor costs may have risen faster than capital costs even though wages were barely creeping up. An empirical comparison of real compensation per hour with the (real) cost of capital may well shed light on this issue. We investigate the relative behavior of wages and profits in manufacturing in chapter 7, where we turn up a fascinating and potentially important finding: downsizing typically squeezes wages and raises profits.

Another possibility harkens back to the skill-biased technical progress of the second hypothesis, in which the advent of new technology reduces demand for less-skilled and less-educated workers. Most attention has been given recently to the notion that technical change over the last twenty years or so has shifted optimal input proportions away from unskilled labor and toward skilled labor. But suppose capital is both a *complement* to skilled labor (computers require literate and numerate workers) and a *substitute* for unskilled labor (machines replace brawn) (see Griliches 1969, 465–68). In that case, skill-biased technical progress would also promote capital deepening.

Hypothesis 5: Downsizing Is a Consequence of the Breakdown of the Social Contract Between Labor and Capital

A quite different explanation of the genesis of downsizing hypothesizes a sea change in the relationship between labor and capital in America. This story shares common elements with the parts of our third hypothesis that focus on trimming fat. However, it emphasizes the “fat” embodied in high *wages* rather than in redundant labor. The hypothesis comes in two variants.

According to the first variant, firms and their shareholders have become less generous toward or less solicitous of labor. Whereas previously at least the larger corporations entered into a kind of paternalistic “social contract” with their workers—one that involved con-

siderable job security and the sharing of any excess profits—capital has unilaterally broken that contract and demanded more of the spoils for itself. Labor is thus faced with a Hobbesian choice between lower wages and fewer jobs, the latter being used as a threat to achieve the former (see Gordon 1996).

The second, and related, variant of the social-contract hypothesis envisions a change in the nature of corporate shareholding: the historically more patient, relationship-oriented stockholders (such as company insiders) have given way to more impatient, return-oriented stockholders (such as mutual fund managers who must show quarterly results). For example, the percentage of corporate stock held directly by individuals dropped from 85.6 percent in 1960 to 41.1 percent in 1998, while the percentage held by pension and mutual funds soared from 7.5 percent to 42.2 percent (New York Stock Exchange 2000, 34). This second variant can possibly explain the first: more activist shareholders may have demanded that company management focus on “creating shareholder value”—to the detriment of labor and other stakeholders, if necessary.

If, indeed, the social contract has been rewritten in this way, we can think of several possible causes. One is the intensification of competition, whether domestic or foreign, that we have already discussed. A second explanation would attribute the change to the fact that the nature of shareholding has shifted toward large (especially institutional) shareholders who give less weight to stakeholders—such as the firm’s workers—and are more focused on the bottom line.

A third possible cause—but one that is likely to make economists uneasy—can simply be called the “discovery of error.” Discovering that they are not minimizing costs, firms may be mending their ways. This hypothesis, of course, raises some obvious questions: Why were firms not optimizing in the first place? What makes them realize their errors now? Until those questions are answered, it is hard to know how to test this hypothesis—or how to distinguish it from the idea that downsizing is just the latest management fad. One possible indicator is the prediction that more downsizing will occur among high-cost producers because they have the most to gain by mending their ways. However, as noted earlier, studies by Martin Neil Baily, Eric Bartelsman, and John Haltiwanger (1996a) and others on the effects of downsizing on productivity do not provide much support for the notion that downsizing has typically led to large productivity gains. Nor do our own findings in chapter 7 point in that direction.

Finally, an attitudinal change associated with the country’s political shift to the right may have played a role. That shift, in turn, may be ascribable in part to the success of economists’ teachings. We economists have been persuasive. The free-market message has gotten

through. Economic life is now imitating economic theory as never before.¹² One consequence of this “economics-ization” of America has been the elevation of shareholder value to primacy among a firm’s possible goals, to the exclusion of the interests of stakeholders. Thus, for example, labor is increasingly viewed as “just another commodity” whose price and conditions of employment are determined by supply-demand conditions and nothing else. Needless to say, this is a highly speculative hypothesis, not easily amenable to statistical testing.

Regardless of the cause, how would we know whether the social-contract hypothesis is valid? One source of potential evidence begins with several studies published in the late 1980s that documented sizable and persistent interindustry wage differentials (see Dickens and Katz 1987; Krueger and Summers 1987, 1988). These studies found that some industries tend to pay all their workers—and not just the occupational groups in short supply—more than other industries do. Several hypotheses were advanced to explain this phenomenon, but one in particular was and has remained convincing. Suppose managers and owners of large, profitable firms were inclined to share the largesse with other stakeholders—in particular, with their workers. And suppose further that only certain industries had such largesse to distribute, perhaps because only they enjoyed market power. Then employees fortunate enough to work in these industries would enjoy higher wages across the board.

The question is: Have such supernormal wages been squeezed or eliminated? The answer appears to be that the interindustry wage differentials observed in the 1980s persisted into the 1990s, but they appear to have shrunk a bit. For example, Alan Krueger (1998) found from Current Population Survey (CPS) wage data that, after controlling for differences in the educational attainment and experience of their workforces, the interindustry wage distribution became less dispersed over the decade from 1983 to 1993. This evidence is vaguely consistent with the hypothesis that the social contract has been amended in ways that reduce labor’s rents.

Another source of evidence is aggregate data on the division of business income among the factors of production. If the owners of capital become more aggressive about pursuing profits—and are successful at it—then factor shares should shift toward profits and away from labor compensation. The available historical data series on factor shares appear to contain some crude evidence in support of this hypothesis: the share of corporate profits in national income rose in the 1990s—from 9.1 percent in 1992 to 10.8 percent in 1999—while the share of employee compensation declined by about the same amount over the same seven-year period, from 73.0 percent to 71.1

percent.¹³ But care must be taken in interpreting such numbers because profits are extremely cyclical. Corporate profits as a share of national income dropped all the way back to 9.0 percent in the weaker economy of 2001.

A more reliable industry-level test of the explanation of the shift in factor shares would begin by noting that the shift should be greater in industries in which the forces of competition have increased and the power of labor has declined. One way to test such a hypothesis is to use our industry database to relate capital's (or labor's) share within an industry to, among other things, the unionization rate, the degree of import penetration, and the concentration ratio. This will be done statistically in chapter 7. Returning to explanations of downsizing (rather than to explanations of the decline in labor's share), we may expect to find downsizing more prevalent where unions are weaker (another implication we test in chapters 5 and 6, without finding much support for it).

Incidentally, the hypothesis that downsizing is based on a change in the social contract has a fascinating implication for the level of stock prices. If profitability is raised permanently (a big if), the stock market should enjoy a transition period—perhaps lasting for several years—during which price appreciation is extraordinarily high. That is just what seemed to be happening, of course, as stock prices soared from 1995 to their extraordinary peak in 2000. But permanently higher profitability may not have been the only reason, nor even the main reason. Many observers of the stock market, for example, believed then (and some still believe now) that investors were willing to accept a lower risk premium for holding equity than they had previously demanded.¹⁴ If so, that would enduringly (if not permanently) elevate equilibrium price-earnings ratios. Others insisted, with some foresight, that stocks were (and perhaps still are) seriously overvalued and were bound to fall (see, for example, Shiller 2000). We will refrain here from entering the debate over the proper valuation of common stocks.

Downsizing based on a breakdown of the social contract clearly carries rather doleful implications for the labor market: real wages should fall and job insecurity should rise. But the fall in employment should be transitory; in this scenario, job insecurity is a way to discipline the workforce. Once workers have been properly disciplined, the economy will have adjusted to the new "rules of the game," with rents squeezed out of real wages. Then labor should have become (permanently) cheaper, and the optimal capital-labor ratio should fall.

What about productivity? In the standard neoclassical view, if downsizing is all about the redistribution of rents, its implications for productivity should be nil. It is just that capital should capture more

of the rent, and labor less. In fact, as we have noted, there is precious little evidence that downsizing systematically enhances productivity.

There is, however, another view, one reminiscent of the Japanese model of labor-management relations. Under George Akerlof's (1982) gift-exchange model, cooperation between a firm and its workers yields a productivity bonus that pays for these "rents" through a mutually beneficial exchange of gifts: firms offer better compensation packages and working conditions than the Darwinian marketplace dictates, and workers reciprocate by working harder and more efficiently. Theories that emphasize the efficiency gains from well-developed "internal labor markets" have similar implications. If the rents in big companies stem from efficient gift-exchange or internal labor markets, rather than from inefficient slack, then unilateral attempts by capital to expropriate these rents will destroy them and thus will reduce productivity and profitability. This is a place where, once again, studies of the effects of downsizing on productivity, such as those of Baily, Bartelsman, and Haltiwanger (1996b) and the American Management Association surveys, are relevant. And these sources do not suggest that downsizing has been systematically associated with exceptionally rapid gains in productivity.

Hypothesis 6: Downsizing Amounts to the "Blue-Collarization" of White-Collar Labor

Job instability in the United States (and in other countries) has always been high. Millions of workers lose their jobs each month. (Of course, in most months a slightly larger number acquire jobs.) But one new feature of contemporary labor markets may be that more white-collar workers are now experiencing the degree of job instability that has long been the lot of blue-collar workers. On this view, by the way, *perceptions* of the rise in job insecurity may have been far worse in the 1980s and early 1990s than the objective reality because job instability was then hitting the class of people whom journalists knew personally—and hence was being reported more often in the media.¹⁵

If it is true that white-collar workers are increasingly being treated like blue-collar workers, the cause is far from clear. Perhaps the phenomenon is a manifestation of the effort to root out X-inefficiency, as in our "fat-trimming" third hypothesis: companies discovered that they had too much middle management and took steps to slim down. If so, we must again ask: Why did they not discover this sooner?

An alternative, and perhaps more plausible, answer is that modern communications and computing technology are gradually eliminating the need for several layers of management. If so, this would be yet another form of "skill-biased technical progress"—but now technology

would be biased against highly skilled employees rather than in their favor. It is one possible explanation for regression toward the mean.

Yet a third explanation could be a change in attitudes, which would be reminiscent of our fifth hypothesis (breakdown of the social contract between labor and capital). Managers—especially those with long job tenure—used to be important stakeholders whom firms would shelter from adversity, even at the expense of profits. Now that firms are more single-mindedly devoted to maximizing shareholder value, they must be more ruthless about trimming the managerial ranks.

If this theory of downsizing has validity, we would expect to find the increase in job instability concentrated among white-collar workers, not blue-collar workers. Findings from studies of the Displaced Workers Surveys provide clear support for this view. Specifically, in comparing the periods 1981 to 1982 and 1991 to 1992, Jennifer Gardner (1995) found that the incidence of job loss *increased* among white-collar workers but *decreased* among blue-collar workers. (The overall rates of job loss were similar in the two periods.) Similarly, Henry Farber (1997, 77) found substantial increases in the rate of job loss for managers over the periods 1987 to 1989, 1989 to 1991, and 1991 to 1993, and then some decline from 1993 to 1995.

These six hypotheses on downsizing, with which we began our research for this book, were elucidated before we had accumulated any systematic evidence on the subject (though we were not, of course, innocent of the claims and findings of others). Some of the hypotheses are “soft” and almost sociological—like the breakdown in the social contract. Others, like capital-labor substitution, are strictly neo-classical. These disparate hypotheses have partially overlapping, partially differing implications for a number of observable variables. Some of their implications can be tested using existing data, and some cannot. (We perform some of the relevant tests in subsequent chapters.) To give the reader a kind of Baedeker’s guide to what is to come, we conclude this chapter by offering a quick summary of our major findings—including some that go beyond the six hypotheses and that we had not anticipated.

What Is to Come: A Preview of Major Findings

Chapter 2, an examination of the popular press accounts of downsizing, contains quite a few surprises, at least for us. We had expected the journalists’ reporting to be exaggerated and to have missed many if not most of the subtleties. But in fact, we found them to be surprisingly accurate. For example, journalists unearthed the fact that

many reported cases of “downsizing” were actually restructurings *without* net reductions in force. In our statistical analysis of a sample of newspaper articles, we find that roughly 55 percent of announced “downsizings” did not in fact reduce the company’s total employment. As a matter of fact, in a substantial portion of the cases in the sample, firms ended up with workforces larger than those they had prior to the downsizing announcement. The newspaper sample also provides our first hint of regression toward the mean in firm size as measured by employment—a hint that is subsequently verified (at least for manufacturing) in chapter 5.

In chapter 3, we look at what basic microeconomic theory can tell us about the determinants of firm size. Our conclusion is that technology *must* drive average firm size in the long run, but that demand can play a large role in the short run. As we shall see, looking at the data through this particular theoretical prism suggests that short-run influences (demand, for example) must dominate what we observe in the available data.

Chapter 4 is an exhaustive statistical analysis of the basic facts about downsizing (or upsizing), based mainly on a previously unexploited data source: the U.S. Commerce Department’s Enterprise Statistics. We find not only that firm size did typically shrink in manufacturing industries during the “downsizing period” (1987 to 1992), as the media reports suggested, but that this is actually an old story. The U.S. manufacturing sector has been downsizing, on average, since about 1967 (but not before that). Outside of manufacturing, however, we find little evidence of downsizing. In fact, upsizing is the norm.

Why the sharp difference between manufacturing and nonmanufacturing? In chapter 4, we offer preliminary evidence for an extremely simple model: fast-growing industries (like retailing and most services) tend to upsize, while slow-growing or shrinking industries (like many manufacturing industries) tend to downsize. This is hardly a subtle thought. But analysis in subsequent chapters offers rather strong support for this finding, which, incidentally, is not one of the hypotheses with which our study began.

Chapter 5 focuses on the causes of downsizing in manufacturing, the one sector where downsizing has in fact been prevalent. We find that interindustry shifts—that is, workers moving from industries in which the typical firm is larger to industries in which it is smaller—account for essentially *none* of the observed downsizing in the U.S. manufacturing sector. The entire story plays out within industries, and hence is attributable to declining firm size in many manufacturing industries. We also find some evidence for regression toward the mean, but we find no such evidence outside of manufacturing.

Turning to the original six hypotheses, we find only very limited

support for hypotheses 1 and 2 (technologically driven downsizing): more R&D spending does seem to lead to more downsizing, but faster total factor productivity growth does not. However, the data offer substantial statistical support for hypothesis 3—which emphasizes the role of international trade—including an ancillary finding that lower profitability leads to more downsizing. But there is essentially no evidence in favor of hypothesis 4 (substitution of capital for labor). As we have emphasized, hypothesis 5 (breakdown of the social contract) is slippery and very hard to test econometrically. But consistent with one of its seeming implications, we find that the more unionized industries tend to downsize *more*, not less.

Finally, it is worth noting that the results for manufacturing differ only slightly depending on whether we use data on firms or data on establishments. This reassuring finding is repeated in chapter 6's analysis of the (limited amount of) data that are available for non-manufacturing industries.

Chapter 6 repeats and reinforces the finding of chapter 5 that the most important determinant of changes in firm size, at least in the short run, is the change in industrywide employment—which we interpret as an indicator of the strength of product demand. We also find openness, especially import intensity, to exert significant influence on *upsizing*. But none of three other possible influences—total factor productivity, capital intensity, and unionization—seem to matter much.

Since we find that genuine downsizing is largely restricted to manufacturing, it is on that sector that we focus when we turn to an investigation of the *consequences* of downsizing in chapter 7. Our findings are both clear and fascinating. Firms that downsize appear, on average, to increase their *profits* but not their *productivity*. How is that possible?

We may safely assume that the act of downsizing does not raise the prices at which firms can sell their outputs. After all, buyers do not care about the size of the average firm in the industry. Hence, downsizing must on average reduce unit costs of production—presumably unit labor costs. But since we, like others who have studied the question, find that productivity does *not* generally rise when firms downsize, that must mean that wages typically fall (compared to wages at firms that do not downsize). In short, downsizing in U.S. manufacturing appears to have been largely a way to squeeze labor. That finding conforms nicely with hypothesis 5 (breakdown of the social contract), although we certainly cannot demonstrate that a changing social contract is the reason for the wage squeeze. Curiously, however, we also find that downsizers are *not* generally rewarded by the stock market, despite the increase in their profits.¹⁶

Since much of what is commonly called downsizing actually turns out to be labor-market churning resulting from industrial restructuring, we turn in chapter 8 to turbulence in the labor market and look at it from the point of view of individuals. The greater churning during the downsizing period is apparent in these microdata. We find that labor did indeed shift around more—both by occupation and by industry—in the years from 1981 through 1992 than in the earlier 1969 to 1980 period. Unsurprisingly, younger workers changed occupation and industry more frequently than did older workers. Men also changed more frequently than did women.

Finally, in chapter 9 we present a short and somewhat interpretative summary of our findings.