

CHAPTER 1

Introduction and Overview

There are two excesses to avoid in regard to *hypotheses*: the one of valuing them too much, the other of forbidding them entirely.

—The *Encyclopédie* of Diderot and D’Alembert

NEARLY 50 YEARS AGO, George Stigler implored economists to be “outspoken, and singularly agreed” that increases in the minimum wage reduce employment. The reasoning behind this prediction is simple and compelling. According to the model presented in nearly every introductory economics textbook, an increase in the minimum wage lowers the employment of minimum-wage workers. This logic has convinced most economists: polls show that more than 90 percent of professional economists agree with the prediction that a higher minimum wage reduces employment.¹ Such a high degree of consensus is remarkable in a profession renowned for its bitter disagreements. But there is one problem: *the evidence is not singularly agreed that increases in the minimum wage reduce employment*. This book presents a new body of evidence showing that recent minimum-wage increases have not had the negative employment effects predicted by the textbook model. Some of the new evidence points toward a *positive* effect of the minimum wage on employment; most shows no effect at all. Moreover, a reanalysis of previous minimum-wage studies finds little support for the prediction that minimum wages reduce employment. If accepted, our findings call into question the standard model of the labor market that has dominated economists’ thinking for the past half century.

Our main empirical findings can be summarized as follows. First, a study of employment in the fast-food industry after the recent 1992 increase in the New Jersey minimum wage shows that employment was *not* affected adversely by the law. Our results are derived from a specially designed survey of more than 400 restaurants throughout New Jersey and eastern Pennsylvania, conducted before and after the increase in the New Jersey minimum wage. Relative to restaurants in Pennsylvania, where the minimum wage remained unchanged, we find that employment in New Jersey actually *expanded* with the increase in the minimum wage. Furthermore, when we ex-

2 · Introduction and Overview

amine restaurants within New Jersey, we find that employment growth was *higher* at restaurants that were forced to increase their wages to comply with the law than at those stores that already were paying more than the new minimum. We find similar results in studies of fast-food restaurants in Texas after the 1991 increase in the federal minimum wage, and of teenage workers after the 1988 increase in California's minimum wage.

Second, a cross-state analysis finds that the 1990 and 1991 increases in the federal minimum wage did not affect teenage employment adversely. The federal minimum increased from \$3.35 per hour to \$3.80 on April 1, 1990, and to \$4.25 per hour on April 1, 1991. We categorized states into groups on the basis of the fraction of teenage workers who were earning between \$3.35 and \$3.80 per hour just before the first minimum-wage increase took effect. In high-wage states, such as California and Massachusetts, relatively few teenagers were in the range in which the minimum-wage increase would affect pay rates, whereas in low-wage states, such as Mississippi and Alabama, as many as 50 percent of teenagers were in the affected wage range. On the basis of the textbook model of the minimum wage, one would expect teenage employment to decrease in the low-wage states, where the federal minimum wage raised pay rates, relative to high-wage states, where the minimum had far less effect. Contrary to this expectation, our results show no meaningful difference in employment growth between high-wage and low-wage states. If anything, the states with the largest fraction of workers affected by the minimum wage had the largest gains in teenage employment. This conclusion continues to hold when we adjust for differences in regional economic growth that occurred during the early 1990s, and conduct the analysis with state-level data, rather than regional data. A similar analysis of employment trends for a broader sample of low-wage workers, and for employees in the retail trade and restaurant industries, likewise fails to uncover a negative employment effect of the federal minimum wage.

Third, we update and reevaluate the time-series analysis of teenage employment that is the most widely cited evidence for the prediction that a higher minimum wage reduces employment. When the same econometric specifications that were used during the 1970s are re-estimated with data from more recent years, the historical relationship between minimum wages and teenage employment is weaker and no longer statistically significant. We also discuss and reanalyze several previous minimum-wage studies that used cross-sectional or panel data. We find that the evidence showing the mini-

imum wage has no effect or a positive effect on employment is at least as compelling as the evidence showing it has an adverse effect.

Fourth, we document a series of anomalies associated with the low-wage labor market and the minimum wage. An increase in the minimum wage leads to a situation in which workers who previously were paid different wages all receive the new minimum wage. This finding is difficult to reconcile with the view that each worker originally was paid exactly what he or she was worth. Increases in the minimum wage also generate a “ripple effect,” leading to pay raises for workers who previously earned wages above the new minimum. More surprisingly, increases in the minimum wage do not appear to be offset by reductions in fringe benefits. Furthermore, employers have been reluctant to use the subminimum-wage provisions of recent legislation. Each of these findings casts further doubt on the validity of the textbook model of the minimum wage.

Fifth, we find that recent increases in the minimum wage have reduced wage dispersion, partially reversing the trend toward rising wage inequality that has dominated the labor market since the early 1980s. Contrary to popular stereotypes, minimum-wage increases accrue disproportionately to individuals in low-income families. Indeed, two-thirds of minimum-wage earners are adults, and the earnings of a typical minimum-wage worker account for about one-half of his or her family’s total earnings. In states in which the recent increases in the federal minimum wage had the greatest impact on wages, we find that earnings increased for families at the bottom of the earnings distribution. The minimum wage is a blunt instrument for reducing overall poverty, however, because many minimum-wage earners are not in poverty, and because many of those in poverty are not connected to the labor market. We calculate that the 90-cent increase in the minimum wage between 1989 and 1991 transferred roughly \$5.5 billion to low-wage workers (or 0.2 percent of economy-wide earnings)—an amount that is smaller than most other federal antipoverty programs, and that can have only limited effects on the overall income distribution.

Sixth, we examine the impact of news about minimum-wage legislation on the value of firms that employ minimum-wage workers. Stock market event studies suggest that most of the news about the impending minimum-wage increases during the late 1980s led to little or no change in the market value of low-wage employers, such as restaurants, hotels, and dry cleaners. In contrast, more recent news of possible increases in the minimum wage may have led to small declines in shareholder wealth—1 or 2 percent, at most.

4 · Introduction and Overview

If a single study found anomalous evidence on the employment effect of the minimum wage, it could be easily dismissed. But the broad array of evidence presented in this book is more difficult to dismiss. Taken as a whole, our findings pose a serious challenge to the simple textbook theory that economists have used to describe the effect of the minimum wage. They also provide an opportunity to develop and test alternative theories about the operation of the labor market. As a step in this direction, we present and evaluate several models that depart only slightly from the textbook model, and yet are capable of explaining a broader range of reactions to the minimum wage.

WHY STUDY THE MINIMUM WAGE?

Economists in the United States have been fascinated with minimum wages at least since 1912, when Massachusetts passed the first state minimum-wage law. During the next decade, 16 states and the District of Columbia adopted legislation establishing minimum pay standards for women and minors in a variety of industries and occupations.² The constitutionality of minimum-wage legislation was challenged almost immediately, and in 1923, the U.S. Supreme Court declared the District of Columbia's minimum-wage law unconstitutional. The effects of this ruling were far-reaching and essentially struck down or curtailed most of the state laws (Davis [1936]). The Court reconsidered the issue several times before finally reversing itself in 1937, upholding a Washington state law and setting the stage for the national minimum-wage regulations that were enacted as part of the Fair Labor Standards Act of 1938. This law, as amended, forms the basis for federal minimum-wage legislation today.

At the heart of economists' interest in the minimum wage is the prediction that an increase in the minimum wage will destroy jobs. Indeed, this hypothesis is one of the clearest and most widely appreciated in the field of economics. Figure 1.1 illustrates the impact of the minimum wage on covered employment in a stylized market, using the conventional supply and demand apparatus. In the absence of a minimum wage, wages and employment are determined by the intersection of the supply and demand curves. Introducing a minimum wage forces employers to move up the demand curve, reducing employment and increasing unemployment. Note that this prediction holds *regardless* of the precise magnitude of the parameters that determine the shape of the supply and demand curves. If a minimum-wage increase does *not* reduce employment, the relevance

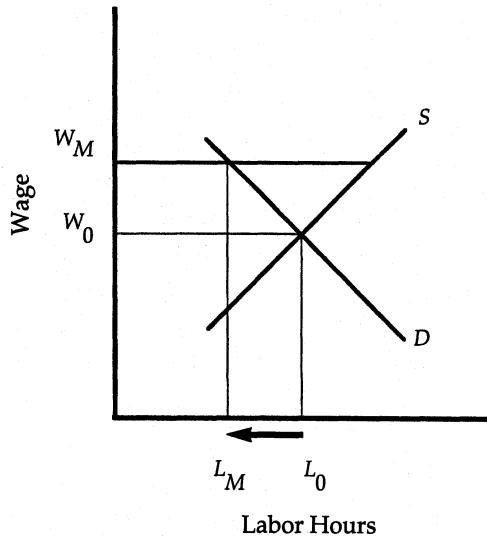


Figure 1.1 The impact of a binding minimum wage on employment in a market for homogeneous workers. The curve marked S is the supply curve, and the curve marked D is the demand curve. W_0 and L_0 represent the wage and amount of employment in the absence of a minimum, and W_M and L_M represent the minimum wage and amount of employment with a legal minimum.

of the textbook supply-and-demand apparatus seemingly is called into question.

The minimum wage is also of obvious importance to policy-makers. Countries around the world, including the United States and most other member nations of the Organization for Economic Cooperation and Development, maintain minimum-wage laws. Figure 1.2 shows the quarterly value of the U.S. minimum wage in constant 1993 dollars, from the first quarter of 1950 to the last quarter of 1993. The minimum wage currently is at a relatively low level, and federal and state legislators recently have debated increases in the minimum. Each time an increase is discussed, there is renewed debate about whether minimum wages help or hurt the disadvantaged, and whether the labor market functions as smoothly as economics textbook writers assume.

Another reason for the prominence of the minimum wage in economics and policy discussions is the fact that, at some time during their lives, most individuals are paid the minimum wage. Indeed, we estimate that *more than 60 percent of all workers* have worked for the minimum wage at some time during their careers.³ On any given

6 · Introduction and Overview

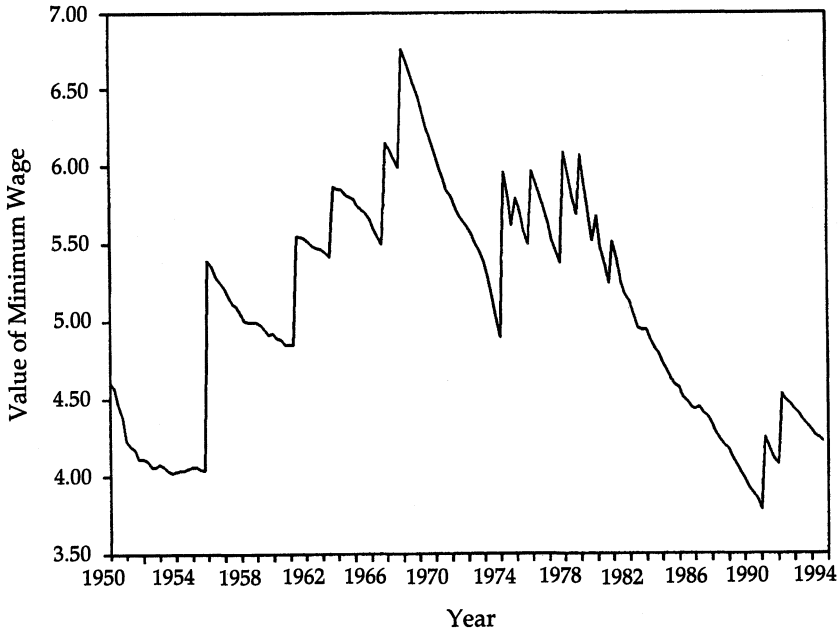


Figure 1.2 Quarterly value of the minimum wage from 1950 to 1993 in constant 1993 dollars, using the CPI as price deflator.

day, however, only about 5 percent of U.S. workers earn the minimum wage. Because those who earn the minimum wage tend to be disproportionately from low-income and minority families, the minimum wage has attracted the attention of social activists, as well.

WHAT DOES THE MINIMUM WAGE DO? ECONOMISTS' PERSPECTIVES

If we imagine the total output of the economy as a pie, then the minimum wage can accomplish two things. First, it can alter the size of the overall pie. Second, it can change the size of the slice that different groups—low-wage workers, high-wage workers, and business owners—receive. Conservative economists generally argue that the minimum wage helps no one. They argue that it substantially shrinks the size of the overall pie *and* reduces the size of the slice that low-income people receive. For this reason, George Stigler called Michael Dukakis's support for a minimum-wage increase during the 1988 presidential campaign "despicable."⁴ Finis Welch (1993) went even further, calling the minimum wage, "one of the cruelest constructs of an often cruel society."

Many liberal economists also find fault with the minimum wage.

They argue that, even though the minimum wage might give a slightly larger slice of the pie to some low-wage workers, other, equally deserving workers are shut out of the labor market by the minimum. In the 1979 edition of their introductory textbook, William Baumol and Alan Blinder explained, "The primary consequence of the minimum wage law is *not* an increase in the incomes of the least skilled workers but a restriction of their employment opportunities." Similarly, Robert Heilbroner and Lester Thurow (1987) wrote, "Minimum wages have two impacts. They raise earnings for those who are employed, but may cause other people to lose their jobs."

On the other side of the debate, social activists, policymakers, and other noneconomists often argue for an increase in the minimum wage. Advocates of the minimum wage have included Franklin D. Roosevelt, Martin Luther King, A. Philip Randolph, Walter Reuther, Edward Filene, and Beatrice and Sydney Webb. Within academia, social scientists from outside the field of economics often support minimum-wage legislation. Many noneconomists are skeptical of economic theory and downplay the predicted employment losses associated with a higher minimum wage, while emphasizing the potential pay increases for low-wage workers.

Most significantly, the general public does not widely share the negative opinion of the minimum wage that most economists hold. Surveys find that a majority of the public often supports increasing the minimum wage. A 1987 poll (Gallup [1987]), for example, found that three-fourths of the U.S. population favored an increase. Polls find even stronger support for the minimum wage among the low-income population, the group that many economists argue is hurt by the minimum. The general public is more evenly divided over the question of whether a minimum-wage increase reduces employment. A 1987 poll found that 24 percent of the public "agree a lot" with the statement that "raising the minimum wage might result in some job loss," whereas 22 percent "disagree a lot" with the statement.⁵

WHERE DO ECONOMISTS' VIEWS OF THE MINIMUM WAGE COME FROM?

How can the general public, most governments, and many other social scientists disagree with the negative view of the minimum wage that is so widely held by economists? First, one should recognize that economists' views of the minimum wage are based largely on abstract theoretical reasoning, rather than on systematic empirical study. Indeed, introductory economics textbooks rarely cite any evidence for the hypothesized negative impact of the minimum

8 · Introduction and Overview

wage. As we shall see throughout this book, close examination of the evidence reveals considerable uncertainty over the employment effect of the minimum wage.

Second, psychologists have found that people have a tendency to see patterns that support simple theories and preconceived notions, even where they do not exist. For example, the belief that basketball players shoot in streaks is widespread, even though empirical research has found no evidence of the so-called “hot hand” (Tversky and Gilovich, 1989). As another example, some investors continue to follow strategies that are based on recent trends in the stock market, even though economists have found that short-run stock market returns are essentially unpredictable. The weakness of this tendency is that researchers might discover patterns that support their theories, even if the theories are inaccurate. One way to overcome this shortcoming is to focus on empirical methods that all sides agree can provide a test of a particular theory *before* collecting and analyzing the data. In our view, this is an attractive aspect of the methodology used in our research, which relies on relatively simple comparisons among workers, firms, and states that were affected to varying degrees by a particular increase in the minimum wage.

Third, one should recognize that many models of the labor market have been developed, yet much of what occurs in that market remains a mystery to economists. Furthermore, many features of the labor market are at odds with the simple models that are presented in the introductory textbooks, and that most policymakers have in mind when considering a minimum-wage hike. The following passage, from the distinguished economist Paul A. Samuelson (1951, p. 312), suggests that the labor market has long posed a special challenge to economic theorizing:

But I fear that when the economic theorist turns to the general problem of wage determination and labor economics, his voice becomes muted and his speech halting. If he is honest with himself, he must confess to a tremendous amount of uncertainty and self-doubt concerning even the most basic and elementary parts of the subject.

Social Economics Revisionists

The view that a higher minimum wage necessarily reduces employment was not always so strongly held by economists. Economists who led the field of labor economics during the middle half of the twentieth century—including Lloyd Reynolds, Clark Kerr, John Dunlop, and, especially, Richard A. Lester—believed that the mini-

imum wage could increase employment in some instances, and reduce it in others. These so-called “social economics revisionists” believed that a number of noneconomic considerations, such as fairness and ability to pay, influence wage setting and employment.⁶ These factors were believed to generate what Lester (1964) called “a range of indeterminacy,” within which wages could vary with little effect on employment. Higher wages, for example, could reduce worker turnover and, therefore, improve productivity. Alternatively, increases in the minimum wage could “shock” some firms into adopting better management practices, leading to gains in output and employment.⁷ According to the revisionist school, an increase in the minimum wage could cause some firms to increase employment, and others to reduce it. In general, however, the revisionists expected a modest increase in the minimum wage to have little effect on employment.

This view of the labor market and the minimum wage developed from empirical studies of individual firms and markets. Richard Lester, for example, analyzed the impact of the minimum wage on low-wage textile producers in the South, supplementing employment and wage data with survey information on firms’ management practices. Judged against the empirical research on the minimum wage that was conducted during the 1970s and 1980s, the revisionists’ style of research is surprisingly sophisticated, although their statistical methods are relatively simple. Nevertheless, the subsequent wave of neoclassical researchers has largely ignored the social economics revisionists’ empirical research.⁸

The Neoclassical Model

As the influence of the revisionists waned during the 1960s, an alternative “neoclassical” view of the labor market rose to prominence. With this shift, the consensus view of the minimum wage changed radically. In contrast to the inductive reasoning of the institutionalist school, the neoclassical view of the labor market is based primarily on deductive reasoning. To understand the neoclassical view of the minimum wage, one must understand the theoretical logic that contemporary economists apply to the minimum wage. According to the standard model of the labor market, each employee is paid his or her “marginal product”—the contribution that he or she makes to the firm’s revenue. If a worker is earning \$3.50 per hour and contributing the same amount to the firm’s revenue, and the government imposes a minimum wage of \$4.25, then it is no longer profitable to employ that worker. In response to an increase in the minimum

10 · Introduction and Overview

wage, employers attempt to adjust their operations so that workers are worth at least as much as the new minimum wage. They make this adjustment by cutting back on the employment of low-wage workers, and by substituting machinery and more highly skilled workers, whose wages are unaffected by the minimum wage.

The standard model makes a number of simplifying assumptions about the operation of the labor market that are important to this story. Firms have no discretion in choosing the wages that are paid to their workers. Workers are perfectly informed about wages at other firms and will readily move to a new job, if it pays more. In the standard model, workers are treated no differently than are other inputs that employers purchase, such as computers or electricity. The labor market is assumed to operate as smoothly and impersonally as the markets for these other inputs.

The assumptions of the standard neoclassical model lead to what is often called the “law of one price.” It is easiest to understand this “law” in the context of a simple auction market, such as the commodities market or the stock exchange. In a frictionless auction market, each buyer pays the same price, and buyers can purchase all they want at the going price. When an investor goes to the stock market, she expects to be able to buy as many shares of AT&T as she wants at the “market price.” If she isn’t willing to pay the market price, she won’t get any shares. And, she has no reason to pay more than the market price.

In the labor market, the law of one price translates into the assumption that employers can hire as many workers as they need at the market wage rate. Furthermore, workers of a given skill level receive the same wage rate at all firms. For example, janitors with the same training and skills earn the same pay at IBM as at McDonald’s. The law of one price is in direct conflict with the revisionist economists’ notion of a range of indeterminacy of wages. Indeed, the failure of the law of one price is what led many revisionists to abandon the simple neoclassical model, and to search for richer models, which could more readily explain the observed features of the labor market.

The standard model rules out a variety of other behaviors that might be important in understanding the workings of the labor market and the effect of the minimum wage. For example, the assumptions of the standard model imply that:

- Higher wages have no effect on worker productivity, or on the likelihood that employees shirk on the job
- Employees’ productivity and turnover behavior are unaffected by inter-

personal wage comparisons. Employers need not worry about the perceived “fairness” of their wage structures.

- Employers always operate at peak efficiency and exploit every opportunity for profit. For example, they cannot negotiate lower prices from their suppliers if profits are squeezed by an increase in wages.
- Highly profitable firms do not share some of their profits with workers by offering higher wages or bonuses.

In the standard model, the role of a company’s personnel department is exceedingly simple. A personnel manager need only observe the market wage and set pay rates accordingly. He or she need not worry about choosing wages to reduce turnover or motivate employees to work harder. Simply paying the going wage is the right strategy. This is clearly an abstraction of the personnel function. The key question is: “Does this simplification matter?”

To be useful, a theoretical model can never capture all the nuances of the real world. Therefore, economic theory must abstract from many aspects of reality. A widely held view in economics is that theoretical models should be judged by the accuracy with which they can predict observed phenomena, and not necessarily by the realism of their underlying assumptions. Unfortunately, the standard model of the labor market does not always yield clear and unambiguous predictions, making it extremely difficult to test the model. The minimum wage is an exception, however, because the standard model makes strong and unambiguous predictions about the impact of a minimum wage on employment, wages, profit, and prices. Economists’ fascination with the minimum wage arises in large part because it provides such a clear test of the standard neo-classical model.

What If Employers Set Their Own Wages?

The assumption that firms can hire all the workers they want at the going wage rate is widely adopted in modern discussions of the labor market. In fact, this assumption is the linchpin of the standard model of the labor market and underlies the reasoning that each worker is paid his or her “marginal product.” Nevertheless, the standard model can be modified easily to include situations in which firms cannot recruit all the workers they desire at the wage they are paying their current work force. This modification allows firms some discretion in choosing the wages that they pay. A firm that wants to recruit more workers, or to recruit workers more quickly, will have to pay a higher wage.

12 · Introduction and Overview

This generalization of the standard model gives rise to what is known as a “monopsony” model. The term *monopsony*, which means a “sole buyer,” was coined during the late 1920s by Joan Robinson, a British economist who first used the tools of neoclassical economic theory to analyze situations in which firms have some wage-setting power in the labor market.⁹ Why might the buyers of labor, unlike the buyers of shares in large companies, have some monopsony power? In the simplest example of monopsony, there is only one employer in an area, and, in order to coax additional employees to work at the firm, the employer must offer a higher wage than he or she is currently paying. Some degree of monopsony power also arises in modern theories of the labor market that are based on “search theory”—formal models that take into account workers’ and firms’ lack of information about employment opportunities elsewhere in the market and the costs of moving between jobs and recruiting new workers.¹⁰ As long as a higher wage helps firms to recruit workers, the firm has some monopsony power.

Monopsony power puts firms in an interesting position. On the one hand, if they offer a higher wage, they can recruit more workers, which, in turn, leads to higher output and profits. On the other hand, if they pay a higher wage to new recruits, then they must increase the wages of all their current employees.¹¹ A profit-maximizing firm will make a rational calculation and will raise wages to the point at which the wage paid to an additional worker is just equal to the worker’s marginal product, *minus* the additional wages that must be given to all the current workers when this worker is added to the payroll. Each worker no longer is paid what he or she contributes to output, but something less.

In a monopsony situation, firms operate with ongoing vacancies. Although each employer would like to hire more workers at the current wage, it is not worthwhile to offer a higher wage, as the firm would have to pay the higher wage to all its current employees. Furthermore, different firms might choose to pay different wage rates, depending on the sensitivity of their recruiting efforts to the level of wages. Some firms might choose to offer a lower wage, and to operate with higher vacancies and higher turnover. Others might choose a higher wage, and to operate with lower vacancies and lower turnover. The result of these actions is a persistent range of indeterminacy for wages.

From our point of view, the most interesting aspect of the monopsony model is that it can *reverse* the predicted adverse employment effect of an increase in the minimum wage. In fact, in a monopsony situation, a small increase in the minimum wage will lead employers

to increase their employment, because a higher minimum wage enables formerly low-wage firms to fill their vacancies quickly. The minimum wage forces these firms to behave more like the high-wage firms, which experienced lower vacancies and lower turnover rates. Of course, if the minimum wage is increased too much, firms will choose to cut employment, just as in the conventional model.

Economists typically take a dim view of the monopsony model. For example, Baumol and Blinder (1979) wrote, "Certainly the types of service establishments that tend to hire the lowest-paid workers . . . have no monopsony power whatever. While minimum wage laws can conceivably raise employment, few if any economists believe that they actually do have this pleasant effect." This view is based mainly on deductive reasoning. Most economists will ask the introspective question: How can a fast-food restaurant have any discretion in the wage that it pays for cashiers? In our view, the question is an empirical one. Do higher wages lead to more rapid recruiting rates and lower quit rates? Do different fast-food restaurants pay different wages? Does an increase in the minimum wage always lead to employment losses, as most economists believe, or can it lead to employment gains, as the monopsony model predicts?

PLAN OF THE BOOK

This book investigates the effect of the minimum wage on employment, prices, and the distribution of income. In chapters 2, 3, and 4, we summarize our research on the employment effects of recent increases in the U.S. minimum wage. This new research is based on comparisons across firms or across regions of the country that were affected by increases in the minimum wage to varying degrees. As noted, we believe that this research provides fairly compelling evidence that minimum-wage increases have no systematic effect on employment. Indeed, some of the research, based on employment changes at individual fast-food restaurants affected by an increase in the minimum wage, and on comparisons of employment trends in eating and drinking establishments across different states, suggests that a rise in the minimum wage may actually increase employment.

This is not to say that we believe that an increase in the minimum wage always leads to no change in employment at all firms. As our detailed microdata samples show, employment growth varies greatly across firms. In any given year, some firms grow, some shrink, some die, and some are born. A hike in the minimum wage could lead to an increase in employment at some firms, and to a

decrease at others. As a result, it is always possible to find examples of employers who claim that they will go out of business if the minimum wage increases, or who state that they closed because of a minimum-wage increase. On average, however, our findings suggest that employment remains unchanged, or sometimes rises slightly, as a result of increases in the minimum wage. This conclusion poses a stark challenge to the standard textbook model of the minimum wage.

In chapter 5, we investigate other employment-related outcomes that are affected by the minimum wage. We find that the minimum wage has a “ripple effect” in many firms, leading to pay increases for workers who initially were earning slightly more than the new minimum wage. Although this effect is inconsistent with simple versions of the standard model, its existence is readily acknowledged by many low-wage employers. We also point out many other anomalies associated with the minimum wage. For example, we show that a large spike in the wage distribution occurs exactly at the minimum wage. The spike moves in response to minimum wage changes and becomes more prominent after a minimum-wage increase, as workers who formerly were paid less than the new minimum are “swept up” to the minimum wage. This pattern implies that workers who were paid different wages before the increase are paid the same wage afterward—seemingly at variance with the claim that all workers are paid in accordance with their true productivity. Even more puzzling, we cite research showing that firms that are exempt from the minimum wage often pay the minimum wage anyway. Finally, we find that minimum-wage employers are extremely reluctant to take advantage of subminimum-wage provisions. All these results complement our conclusion that recent increases in the minimum wage have not harmed employment. A variety of evidence suggests that the minimum wage does not have the effect on the labor market that would be predicted from the competitive neoclassical model.

What about the body of previous research that generally concluded that minimum-wage increases are associated with employment losses? For example, the 1981 Minimum Wage Study Commission concluded that a 10 percent increase in the minimum wage reduces teenage employment by 1 to 3 percent. Most of the research was based on aggregate time-series analyses of teenage employment. In this research, teenage employment rates in periods in which the minimum wage is relatively high are compared with rates in periods in which it is relatively low. In the past, this work generally found that the teenage employment-to-population rate was

lower in periods of relatively high minimum wages. No systematic relationship was found for adults, perhaps because their wages were too high to be affected by the minimum.

In chapters 6 and 7, we reinvestigate previous empirical research on the minimum wage. We reach two surprising conclusions. First, the historical time-series relationship between minimum wages and teenage employment has become much weaker. If we use more recent data to estimate the same models that found negative effects of the minimum wage in the past, we no longer find statistically reliable evidence that the minimum wage reduces employment. To the extent that one found the past evidence convincing, the new evidence suggests a different conclusion. Second, some of the previous cross-sectional and panel-data studies rely on questionable assumptions and research methods. We have obtained and reanalyzed the data sets that were used in a number of these studies. Our reanalysis provides results that are generally consistent with the findings of our own studies.

One explanation for the small effect of the minimum wage in the U.S. labor market is that the minimum wage is set at a low level relative to average wages. Typically, only about 5 percent of workers are paid the minimum wage in the United States, compared with approximately 25 percent in Puerto Rico. In chapter 8, we investigate recent evidence of the impact of the minimum wage in other countries. We focus on Puerto Rico, which, because it is bound by U.S. minimum wage laws, has an extremely high minimum wage relative to average wages. We also review evidence with respect to the United Kingdom and Canada. The evidence for Canada is surprisingly similar to the aggregate time-series evidence for the United States: the same models that previously showed large negative effects of the minimum wage on teenage employment now show much smaller and statistically insignificant effects.

Of course, even if one believes that minimum-wage increases sometimes lead to employment increases, one need not support a minimum-wage increase. Likewise, some people may support a minimum-wage hike even if it is demonstrated to have a negative effect on employment. Given that our own and previous research find the magnitude of the employment effects of the minimum wage to be relatively small, opinions about the desirability of a minimum wage are based largely on distributional issues.

In chapter 9, we examine the effects of the minimum wage on the distributions of wages, earnings, and incomes. We use data from 1989–1992 to examine the family-income characteristics of minimum-wage earners and compare changes in the distributions of wages

and earnings across different states after the 1990 and 1991 increases in the federal minimum wage. We also compare the family-income circumstances of workers whose wages were affected by the most recent increases in the minimum wage with those of workers who were affected by the 1974 increases. We find that, relative to the situation in 1974, workers affected by the recent minimum-wage increases are more highly concentrated in poorer families. We find strong evidence that an increase in the minimum wage raises pay rates for workers in the bottom 10 percent of the wage distribution. As a result, we conclude that recent increases in the minimum wage have contributed to a partial reversal of the rising wage inequality that emerged during the 1980s. The minimum wage has a similar effect on family earnings for families in the bottom 10 percent of the earnings distribution. Finally, we find some evidence that minimum wages reduce the poverty rates of families having at least one wage earner.

In chapter 10, we examine a different aspect of the distributional consequences of the minimum wage. We use a standard event-study methodology to evaluate the impact of news about minimum-wage legislation on the stock market values of a sample of firms in low-wage industries. We track news about the federal minimum wage, beginning in early 1987, when proposals to amend the Fair Labor Standards Act first appeared in Congress during the Reagan administration, and ending in 1993, with the most recent round of speculation about additional increases in the federal minimum. The standard model of the minimum wage predicts that the market values of firms employing low-wage workers should be very sensitive to changes in the relative likelihood of a minimum-wage change. On balance, we find only weak evidence of such an effect. One interpretation of our results is that the standard model overstates the profitability effects of a higher minimum wage. Another is that “news” about the minimum wage is released so slowly that it is difficult to capture discrete changes in investors’ attitudes toward the probability of a change in the law.

In light of our new research, and our reanalysis of previous studies, we believe that the standard model of the labor market is incomplete. Chapter 11 presents a detailed discussion of alternative theoretical models of the labor market, and the implications of our empirical findings for the validity of these alternatives. We describe several versions of “the” standard model of the minimum wage, including a version that allows for covered and uncovered sectors of the labor market, and versions that explicitly take into account differences in skills across workers. We then present an alternative set

of models, which share the common feature that employers have some discretion over the wages that they pay. We focus on a simple dynamic monopsony model, and on generalizations of this model that describe an equilibrium distribution of wages across firms. We highlight two important contrasts between the standard model and alternative models in which employers have some wage-setting power. First, all versions of the standard model lead to the prediction that an increase in the minimum wage will reduce employment of workers whose pay is increased by the minimum wage, whereas the alternative models suggest that employment can rise with modest increases in the minimum wage. Second, the alternative models provide a more natural interpretation of many other labor-market phenomena, including wage dispersion across seemingly identical workers, the existence of vacancies, and low-wage employers' use of a wide variety of recruiting tools. A rigorous evaluation of these alternative models will have to await subsequent research. Nevertheless, we hope that a careful consideration of the alternatives ultimately will lead to a better understanding of the labor market, and to better formulation of public policy.

In chapter 12, the concluding chapter, we summarize our research findings and consider the implications of our work for future policy discussions on the minimum wage. Finally, we evaluate the implications of our findings for the narrower debate within economics on the appropriate model of the labor market. We also outline some important areas for additional research on the effects of the minimum wage and the operation of the labor market.

CONCLUSION

Many of the findings in this book challenge the prevailing economic wisdom about the labor market and the effect of the minimum wage. Some of the research has provoked a great deal of critical comment and reaction. As a result, it is important to understand the strengths and weaknesses of the evidence on which we base our conclusions. For this reason, we describe our empirical findings in what many readers might consider excruciating detail. An important feature of the book is that our conclusions are based largely on the quantitative analysis of several data sources, in several settings. Our approach is to identify a series of "natural experiments" that would provide convincing evidence, even to a skeptic. We then analyze existing data sets and, in some cases, collect new data sets, in order to examine the impact of the minimum wage. The study of the impact of the New Jersey minimum wage is a good example of this

approach. The fact that we designed the analysis in advance of collecting the data gives an added measure of credibility to the results, because the empirical findings could have supported one conclusion as easily as the other.

Judged against the standard of previous empirical research on the minimum wage, we believe that the new research that we present in this book is convincing. Nevertheless, all quantitative analyses have limitations. A major concern is that the minimum wage is never increased randomly for one group of employers. Consequently, we can analyze only “quasi-experiments,” rather than classical randomized experiments, which routinely are used in the “hard” sciences. We try to probe the limitations of our analyses by using alternative “control groups” to compare the results. More importantly, we try to assemble a variety of evidence on different minimum-wage increases, which affect different groups of workers in different regions of the country at different times.

Some readers may be interested in exploring our analysis further, or in using our data sets for course work or problem sets. We will make the new data sets available via anonymous FTP until the end of the century. Specifically, the key data sets used in chapters 2, 4, and 6, are available in the MINIMUM directory of IRS.PRINCETON.EDU. The READ.ME file in that directory describes the data sets.

NOTES

1. See Kearl et al. (1979) and Colander and Klamer (1987).
2. Only the state of Wisconsin adopted a minimum wage covering adult male workers. For a detailed account of the state legislation, see U.S. Department of Labor, Women’s Bureau (1928).
3. This estimate is based on data from the National Longitudinal Survey of Youth. Specifically, we tracked the 1964 birth cohort between 1979 and 1991 to estimate the percentage of workers who were ever paid within 5 cents of the minimum wage.
4. Transcript, “McNeil/Lehrer News Hour,” September 28, 1988.
5. This poll was conducted for the Service Employees International Union in May 1987. See *Public Opinion Online*, accession number 0023319, question number 50.
6. The term *social economics revisionist* is used by Kerr (1994).
7. The “shock” theory of firm behavior recently has been endorsed by Alan Greenspan, chairman of the Federal Reserve Board. In describing the positive productivity effects of low inflation, Greenspan argued that low inflation causes businesses to become more efficient because they cannot raise their prices (see *New York Times*, June 9, 1994, p. D1).

8. The influential review article by Brown, Gilroy, and Kohen (1982), for example, does not mention Lester's work.

9. Robinson (1933, page 215, footnote 1) credits Mr. B. L. Hallward, of Cambridge, England, for the word.

10. One of the ironies of this line of research is that it was begun by George Stigler, who remained a staunch opponent of the minimum wage.

11. Of course, some employers actually try to pay higher wages for the new recruits than for their existing labor force. This practice often generates considerable turmoil in the work place, however.