THE RISING IMPACT OF MINIMUM WAGES

Finis Welch

THE NOTION that everyone should earn a decent wage is as appealing as the idea that everything good should be cheap. But does it follow that to ensure jobs at high wages it is only necessary to establish a wage floor? In its simplest form, a law setting a minimum hourly wage is a statement to workers that unless they can find jobs at or above the specified minimum they cannot work. It is simultaneously a statement to employers that workers who would be employed at lower wages must be paid the minimum (plus legally required fringe benefits) or they cannot be employed. Employment, per se, is not required; instead, the law establishes the terms of whatever employment occurs. Is it surprising, then, that minimum wage laws reduce employment? Or that they reduce employment most for groups whose wages are lowest?

Economists have long been aware of the likelihood of these effects. Yet, even though we have had a federal minimum wage law for forty years, virtually all of the systematic studies of the law's effects (studies concentrating primarily on teenagers) have been carried out in the past ten years—and most in the past five. Only in this period have data on the law's coverage become available, and their use has made possible more refined estimates and has revealed historical effects even more dramatic than were once supposed. These findings are particularly arresting for what they suggest about the current and future impact of minimum wage regulation.

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The Growing Impact

When Congress passed the Fair Labor Standards Act in 1938, it provided for a national minimum wage rate of 25 cents an hour and applied that minimum to an estimated 43 percent of all employees in private nonagricultural work. Forty years later, the minimum has reached $2.65 an hour, a tenfold increase, and coverage has been approximately doubled.

The 1938 act has been amended six times—first in 1950 and most recently in 1977. Each amendment raised the basic hourly minimum, and all but those in 1950 and 1956 also provided for subsequent step increases in the rate. In addition, the 1961, 1966, and 1974 amendments broadened the act's coverage, while smoothing the effects of this by setting lower —though gradually rising—minimums for the newly covered sectors. (These new coverage differentials were eliminated in 1977.)

Table 1 gives historical information on federal minimum wage rates and coverage. Note that the table leaves out the years between changes in the basic minimum—which means that the column showing the minimum as a percent of average wages (column three) does not reflect the impact of rising average wages for the times when the nominal rate was not increased. During those times, there would of course have been a decline in the minimum as

a percent of the average. What is clear is that, up until now, the upward movement in the minimum has been more or less in line with general wage growth.

The most important change in minimum wages has thus been the rise in the proportion of workers covered from 43 percent in 1938 to 84 percent today (column four). While the impact of higher nominal minimums has been lessened by inflation and rising real wages, the increase in coverage has not been offset. This is all the more so because minimum wages were originally applied mostly to high-wage industries (mining, manufacturing, transportation) and then extended to industries with lower wages (services and retail trade). Among other things, the expansion in federal coverage appears to have made state minimum wage laws increasingly redundant. After 1938, many states passed their own laws—usually to cover firms not covered at the federal level—but the effect of these laws has substantially declined in recent years. My estimates show that nonredundant state laws covered 17 percent of private nonagricultural employment in 1960 but only 8 percent in 1976, meaning that the uniformity of minimum wage coverage has risen substantially.

In column five of the table, I offer a simple index of the overall impact of federal minimum wage legislation. This index, which gives the combined effect of coverage and the minimum wage level, is calculated under the assumption that the only effect of a higher minimum is to increase the wages of those who were earning less than the new minimum. It ignores employment reductions in covered sectors and increases in uncovered sectors where displaced workers seek alternative employment—not because these changes do not occur but because the index is designed to measure the *pressure* for them to occur—a measure, so to speak, of the *impetus* for effect.

The index deserves a fairly full explication since it presents a measurement not in general use. It is proportionate to the coverage rate (column four) and to the *square* of the minimum wage measured as a percentage of the average manufacturing wage (column three). The proportionality with coverage reflects an assumption that a doubling of the fraction of workers covered doubles the effect—an obvious point. The second point, the more-than-proportionate effect of the minimum wage rate, is less obvious but can be illustrated with a simple example.

In this example a $1.00 hourly minimum is established and then raised to $2.00. When the minimum is first imposed, only those earning less than $1.00 are affected and, since they would be earning something in any case, their average wage is increased by less than $1.00. As the minimum is raised to $2.00, all those initially affected get an extra increment of a *full* dollar and this alone gives a more than proportionate increase over the initial effect. Further, with the increase to $2.00, those originally earning between $1.00 and $2.00 are added to the pool of candidates for job losses. The index simply assumes that, in relevant ranges, the number of workers who would earn any given wage without the legislation is the

Table 1
THE BASIC MINIMUM WAGE AND AGGREGATE COVERAGE, 1938-81

Month/Year of Change in Minimum	Basic Minimum	Basic Minimum as a Percent of Average Manufacturing Wage	Coverage (Percent of nonsupervisory, private nonagricultural workers covered)	Index of Combined Effect of Coverage and Minimum Wage Levels[a]
10/38	$0.25	41.7	43.4	60.5
10/39	0.30	49.5	47.1	92.5
10/45	0.40	42.1	55.4	78.7
1/50	0.75	54.0	53.4	124.8
3/56	1.00	52.9	53.1	119.1
9/61	1.15	51.2	62.1	130.5
9/63	1.25	52.7	62.1	138.3
2/67	1.40	51.5	75.3	160.1
2/68	1.60	55.6	72.6	179.9
5/74	2.00	47.2	83.7	149.5
1/75	2.10	45.1	83.3	135.8
1/76	2.30	46.0	83.0	140.8
1/78	2.65	48.4[b]	83.8[c]	157.4
1/79	2.90	49.7[b]	83.8[c]	166.0
1/80	3.10	49.9[b]	83.8[c]	167.3
1/81	3.35	51.9[b]	83.8[c]	181.0

a The index, whose 1938–76 average equals 100, is proportional to CM^2 where C is the proportionate coverage rate and M is the basic minimum as a percentage of the average manufacturing wage. See Finis Welch, *Minimum Wages: Issues and Evidence* (Washington, D.C.: American Enterprise Institute, 1978), for rationale underlying this construction.
b Manufacturing wages are extrapolated based on log-linear trend, 1965–76. During this period wages grew 6.3 percent a year (R^2 for the trend line is 0.989).
c The coverage rate given is the one estimated for 1977 by Employment Standards Administration. The 1977 amendment did not change coverage.
Source: Wage and coverage data from unpublished tabulations of Employment Standards Administration, U.S. Department of Labor.

same as the number who would receive any other wage. In that case the effect is proportionate to the square of the minimum wage level.

The figures in column five describe an impact (or impetus) that is erratic and growing. Its erratic nature is understated because the table does not show erosion from wage inflation between steps, but is overstated because the table does not show the lower minimums provided for newly covered sectors in the 1961, 1966, and 1974 amendments. Even should the understatement and overstatement not cancel out, what is important is this: if the index is

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in the ballpark, and if general wage growth continues at its average rate of the last decade (6.3 percent a year), then by 1981 the impact of the hourly minimum will exceed anything we have seen before.

Characteristics of the Low-Wage Labor Market

Until 1973 when the Current Population Survey began collecting wage rate data for a large, nationally representative sample, minimum wage studies were restricted to demographic groups consisting disproportionately of low-wage earners, and virtually all of these studies focused on teenagers. This emphasis has had its cost. Teenagers and low-wage workers have become synonymous in the public mind. We have lost sight of the fact that what happens to teenagers is only illustrative of what happens to low-wage workers and that the low-wage population is dispersed throughout demographic categories. The fact is that, in 1973, only 30 percent of the persons with usual hourly earnings of less than $2.00 were teenagers. In addition, just under half of this population worked part time, a fourth were heads of families, some two-thirds were female, and about one-tenth were sixty-five years of age or more. Finally, almost 50 percent were twenty-five to sixty-four years of age. This last is particularly important, because the characteristics of the low-wage population in general are probably the same as those of workers displaced by minimum wage

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laws. Programs that are designed to reduce the undesirable side effects of minimum wages but that are targeted only at teenagers will therefore miss most of the affected population.

Based on Current Population Survey data, we also find that 12.5 percent of teenage wage earners received less than the $1.60 minimum in 1973, compared to 3 percent of the young adults and 25.4 percent of the aged. Furthermore, of the low-wage teenagers, 84 percent worked part-time, 70 percent were students (students account for two-thirds of all part-time teenage job holders), and 60 percent were female.

By taking proportions of workers receiving wage rates near or below the minimums in the three years, 1973–75, we can get an idea of the overall size of the population affected, with those not working (that is, those who have lost their jobs *because* of minimum wage legislation) not reflected in the data. From this it is clear that low or near-minimum wage rates are a problem for far more than an irrelevant few. Perhaps 10 to 25 percent of the U.S. labor force is involved.

Some Effects of Minimum Wages: Theory

Simple Effects. If the world were simple, the theory of minimum wage effects would also be simple. For example, if wages were the only form of remuneration, if there were no job amenities or fringe benefits, and if all workers were of one quality, then everyone would get the same wage. A minimum that attempted to raise the wage would reduce employment. If the minimum were imposed on only some firms, their employment would fall and displaced workers would compete for jobs in uncovered sectors and would drive wages in those sectors down as employment rose to accommodate the increased number of applicants.

But workers are of varying productivity, so that wages also vary and a minimum that attempts to raise the wage of those with the lowest productivity should have effects for them similar to those described in the one-quality case. With full coverage, some will get jobs at higher wages and others will lose jobs. Among those who would earn less than the minimum without minimum wages, those who would be closest to it are the ones whose continued employment will cost employers least and they will be most likely to keep their jobs. Within the low-productivity group, the minimum will function much like a tax, from the poor to the poor, but winners will be those who in any case would have fared best. With incomplete coverage, those losing covered-sector jobs can search in the uncovered sector where, as a result of increased competition, wages should fall. If business cycles occur, so that labor demand fluctuates, then employment of those whose productivity is "near" the minimum will also fluctuate. In booms, their productivity will exceed the minimum and they will be hired; and in busts, their productivity will fall short of the minimum and they will be laid off.

Empirical work has addressed only these simple effects: employment reductions in covered sectors, shifts into uncovered sectors, and the heightened vulnerability of low-wage workers to business cycles. Although these studies necessarily gloss over most real-world complexities they largely support the simple theory. Nonetheless, other effects can be explored.

In the public debate there is much confusion between minimum wage effects on employment and on unemployment. These effects are not the same. Moreover, while the implications for employment are straightforward, those for unemployment are not. To see that theory makes no prediction of minimum wage effects on *unemployment* rates, consider the behavior of someone who loses his job as a result of an increase in the minimum. If he searches for a job (and he might, because if he is lucky enough to find one, it will have a higher wage) he is counted as unemployed. If he drops out of the labor force (and he might, because the number of job openings has fallen), he is not counted as unemployed.

The main point is that minimum wages reduce employment of low-wage workers. These reductions flow from two sources—the first being the reactions of consumers as firms try to pass on cost increases in the form of higher prices, and the second being the ways in which firms substitute as they try to avoid the cost increases. These ways include both automation and substitution in favor of high-wage labor.

Indirect Effects. Minimum wage legislation directly influences only one component of what workers receive in return for their services on a job. But fringe benefits (the nonwage components of remuneration) are affected indirectly. These benefits, which range from opportunities for on-the-job training or a pleasant work environment to health and disability benefits, are affected because they can be substituted for wages: employers might for example absorb part of the increased wage costs resulting from an imposed higher minimum by providing fewer fringe benefits. Consider three nonwage benefits for workers: job location, part-time work, and on-the-job training.

Suppose a firm is trying to decide where to locate a new plant. Should it find a site convenient to its workers or to the consumers of its product? If it chooses to locate near its workers, it can take advantage of the added convenience to them by offering a lower wage, but it will have to compensate consumers either by offering its product at a lower price or by transporting the product to them. A minimum wage rate restricts options for trade-offs between convenience to workers and their wages: as wages are forced upward, jobs migrate toward locations less convenient to workers.

Similarly, work interruptions caused by the arrivals and departures of part-time workers are expensive. Yet efforts can be made to accommodate people who prefer part-time work if wages can be reduced accordingly. A wage floor restricts options for this kind of trade-off: as wages are forced upward, employers have fewer incentives to accommodate part-timers.

Formal apprenticeships are rare today, but most careers include learning phases where what is learned is important to the career. Learners may be productive but their productivity is less than it will be when they are more fully trained, and the portion of on-the-job time spent learning instead of produc-

ing varies. Since workers can take the benefits of training with them when they leave for other employment, firms may have little incentive to offer training. But, as in the case of other kinds of fringe benefits, firms can be bribed through lower wages—that is, they can offer on-the-job training in exchange for lower wages. The worker sacrifices current wages for improved prospects, and the firm gets less current product while paying the lower wages. Again, a wage floor impedes this trade-off: as wages are forced upward, employers have fewer incentives to accommodate learners, so that potential learners must more often choose between jobs offering higher current wages with less future potential and schools where, although learning is work, few have argued that students be paid minimum wages.

Ripple Effects. There is a popular idea that an imposed minimum sets forces in motion that increase wages not only for those who would have earned less than the minimum but also for those who would have earned more—and that those closest to the minimum are affected most. This idea is a restatement of the substitution phenomenon mentioned above in the discussion of different qualities of labor—with an added assumption that those having the most similar wage potential are the best substitutes for each other. As minimum wages raise the cost of the lowest wage workers, firms adjust by replacing them with their best substitutes—in this case those whose wage would be just above the minimum.

The nature of the ripples, or derivative effects, extends from the way firms seek to mitigate effects by substituting to the way cost-conscious consumers react. Some industries (retail trade, services, agriculture) depend much more than others on low-wage workers, and minimum wages raise product costs (and the prices consumers pay) in direct proportion to each industry's dependence on low-wage labor. Consumers react by demanding less of the industry's products whose prices are more affected—and vice versa.

Are the ripples smooth? Among those who in any case would earn more than the minimum, do the largest gains go to those receiving the lowest wage? Although the answer is unclear, if cost-saving adjustments *within* firms dominate, the answer could be yes. But the story of cost-saving adjustments by consumers suggests a reverse ripple, so that if these effects dominated the answer would be no.

Whichever way the ripples go, the thing that makes them go is the elimination of jobs for those who would otherwise earn less than the minimum. They are the big losers—though not the only ones. Workers, after all, are consumers too, and when minimum wages raise costs in fast-food outlets, when theater managers respond to higher minimums by substituting chains (even in velvet wrap) for ushers or by making seating catch-as-catch-can, the consumer's enjoyment is affected.

Some Effects of Minimum Wages: Evidence

It would be nice if, after forty years of minimum wage regulation, I could say the evidence on its effects were unambiguous. But to economists the law that employment reductions accompany mandated wage increases is as basic as the law of gravity is to physicists—and, to paraphrase an old friend, "as scientists, economists have as much to gain from showing minimum wages reduce employment as physicists have to gain from showing that apples fall when dropped." Such a view has obviously restricted the amount of data analysis of minimum wage effects. Nevertheless, because legislators are more likely to ignore or try to repeal economic laws than physical laws, economists have conducted a number of analyses of these effects. What, then, do the data show?

The Run from Cover. The coverage provided in the initial minimum wage act was uneven, ranging from almost all workers in some industries to almost none in others. Since 1938 the proportion of low-wage earners employed in any given industry has fallen as coverage has been extended to that industry. With an increase in minimum wage rates, there is a shift in low-wage (especially teenage) employment from covered to uncovered sectors—a "run from cover."

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Today we think of industries such as retail trade and services as teenage-intensive. Moreover, we know that industrial patterns of teenage and adult employment are uneven, and we think of this as normal. But it has not always been so. In 1930, teenagers generally worked where adults did and the age distribution of workers across industries was amazingly even by today's standards. Then, between 1930 and 1940, teenage employment fell from 9.2 to 5.9 percent of the U.S. total. Part of this drop may have resulted from the introduction of the minmum wage rate in 1938, but the Great Depression and increasing school enrollment probably played a larger role. What is particularly intriguing about the 1930-to-1940 change is not that teenage employment fell but that it fell the most in the industries that were newly covered.

Table 2
MINIMUM WAGE COVERAGE AND CHANGES IN TEENAGE EMPLOYMENT, BY INDUSTRY, 1930–40

Industry	Extent of Coverage (percent of all workers covered) 1940	Teenagers as Percent of All Workers 1930	Teenagers as Percent of All Workers 1940	Relative Change in Teenage Share of Employment, 1930 to 1940[a]
Coverage above national average:				
Mining	99	5.3	2.3	0.66
Manufacturing	95	9.6	4.8	0.78
Transportation and Communication	88	5.5	2.1	0.78
Finance, Insurance, and Real Estate	74	7.1	2.9	0.64
Coverage below national average:				
Construction	44	3.2	2.5	1.19
Services	19	7.5	6.0	1.23
Wholesale, Retail, and Trade	13	8.8	6.0	1.05
Agriculture, Forestry, and Fishing	—	14.2	10.6	1.16
Governments	—	3.2	3.4	1.63
Miscellaneous	—	11.2	10.5	1.45
TOTAL	56[b]	9.2	5.9	1.00

[a] Calculated by dividing the 1940 share (column 3) by the 1930 share (column 2) and then dividing this ratio by the national averages (5.9/9.2).

[b] These coverage data were issued by the U.S. Department of Labor prior to 1973. Recent revisions place the initial (1938), average coverage rate at 43 percent (see Table 1).

In the 1930s, teenage employment dropped more than the national average in every industry with above-average coverage (see Table 2). Correspondingly, in every industry with below-average coverage, the drop in teenage employment was less than the drop in the national average. Overall, teenage employment not only fell, but also shifted from covered to uncovered sectors.

This process continued for many years. Since 1930 over 80 percent of working teenagers have been employed in three industries—manufacturing, trade, and services—and the minimum wage has not changed this. It has only shifted teenagers from the covered to the uncovered sectors and, presumably, driven wages in uncovered sectors down. In 1930 manufacturing was by far the largest teenage employer, accounting for roughly 40 percent of working teenagers, and the figure for adults, 36 to 38 percent, was nearly the same. The initial legislation covered approximately 95 percent of manufacturing workers and, by 1955, the percentage of teenagers working in manufacturing had fallen to half the earlier level while the figure for adults remained roughly constant. After the 1938 act, wholesale and retail trade replaced manufacturing as the leading teenage employer. The shift was largely into retail establishments, where initially only workers in mail-order houses (3 percent of total retail employment) were covered.

The data show that, with the 1961 and 1966 amendments (which broadened coverage first to 30 percent and then to 58 percent of retail trade employees), the proportion of employed teenagers working in retail establishments fell. As coverage has expanded, the amount of available teenage employment has shrunk, and as the originally uncovered industries have been included, the initial bulge in those sectors has subsided. With each step in the process, there have been fewer and fewer uncovered jobs for teenagers to turn to for employment.

Employment Effects. If there is a general theme to the empirical literature on the subject, it is that the simple theoretical predictions are confirmed. Almost every serious scholar of minimum wages would argue (on the basis of available evidence) that wage minimums have reduced employment for those who would otherwise earn low wages, particularly teen-

agers. But because employment of teenagers is affected by other things and because minimum wage laws are complex (and it is not clear how their complexities should be taken into account), the available studies paint a mixed picture: they generally agree that employment has been reduced, but their estimates on the extent of the reduction differ.

Let me briefly summarize eight recent studies. All but the one that James Cunningham and I carried out used U.S. aggregate data beginning in 1954 or later (reflecting the fact that in that year the monthly *Current Population Survey* began to carry information on employment, unemployment, and labor force status disaggregated by age, sex, and color). I will emphasize effects on *employment* because, as Jacob Mincer showed in his article in 1976, no firm theoretical predictions can be made for the effects of minimum wages on measured *unemployment*.

Mincer and Masanori Hashimoto, in their 1970 study for the National Bureau of Economic Research, found statistically significant employment reductions associated with rising wage minimums for white and nonwhite teenagers, for white and nonwhite males aged twenty to twenty-four years, for white males aged sixty-five and over, and for white and nonwhite females aged twenty and over. Their estimates also suggested (though with less statistical precision) employment reductions for nonwhite males aged sixty-five and over and—surprisingly—for white and nonwhite males aged twenty-five to sixty-four years. It is not surprising that they found reduced employment for low-wage groups. But the fact that they found no corresponding increase—but rather a probable decrease—for males aged twenty-five to sixty-four suggests that the minimum-wage employment lottery is not a zero-sum game. Their evidence is that the minimum wage causes *net losses* in employment.

The Hashimoto-Mincer study is also noteworthy because it found employment reductions to be associated with a reduction in the size of the labor force. In other words, potential workers are evidently more likely to drop out of the labor force than to queue for rationed jobs.

As part of a 1970 Labor Department survey, Hyman Kaitz analyzed employment and unemployment effects separately for males and females, white and nonwhite, for ages sixteen through seventeen and eighteen through nineteen. He reported significant employment reductions for white males aged sixteen through nineteen and for white females aged sixteen through seventeen. The estimates were erratic for other groups and showed numerically large (and marginally significant) employment increases for nonwhite males eighteen and nineteen years old.

It is somewhat surprising that the studies by Kaitz and by Hashimoto and Mincer showed so little agreement for nonwhites. I think the main explanation is that Kaitz used "fine" partitions (by age, race, and sex), while Hashimoto and Mincer used the simple white-nonwhite division for teenagers. The data came from a random sample of the U.S. population, and were subject to sampling error that can be important when data are finely partitioned. For the less noisy data—data that give a clearer signal—the two studies agreed. In fact, when Kaitz pooled all teenagers into a single composite, his estimated unemployment effect was much larger than the effects Hashimoto and Mincer reported for whites and nonwhites separately.

In a closely related study using the same data that Kaitz used, I found statistically significant employment reductions for all teenagers aged sixteen through nineteen years, but when fourteen- and fifteen-year-olds (a group presumed more vulnerable) were added, the estimated effect was reduced and statistical significance lost. This is evidence of the nature of these data. If minimum wages affect anyone, it is most likely to be the very young. Noisy data can conceal the effects.

James Ragan used the same sex, race, and age partitions as Kaitz, as well as the same minimum wage variable, but began with 1963, the year when students were first distinguished in the data. Ragan found more precise estimates than Kaitz: higher minimums reduced employment for males in each of eight groups (sixteen and seventeen or eighteen and nineteen years of age, black or white, student or nonstudent)—and in five of the eight by statistically significant amounts. As with the Hashimoto-Mincer results, the bulk of the evidence showed that both employment and labor force participation fall as the minimum wage rate increases.

In his recent study, Edward Gramlich of Brookings found that, between 1948 and 1975, minimum wages had no significant effect on the total number of teenagers employed; but when full- and part-time workers were distinguished (from 1963 on, when separate data are available), he found reductions in full-time work with partially offsetting increases in part-time work. Since part-time workers earn less than full-time workers, and since the effect of minimum wage rates should be greater in lower-wage sectors, this result may seem perverse.

None of these studies took cognizance of state minimum wage laws, only Gramlich distinguished full- from part-time work, and only Ragan distinguished students. In a study that considered coverage of both state and federal laws and that adjusted for reduced student work hours (students work only slightly more than half as many hours as nonstudents), James Cunningham and I found dramatic effects from minimum wage laws. This study used a larger sample from the 1970 census to distinguish teenage employment by age groups: fourteen and fifteen, sixteen and seventeen, and eighteen and nineteen. We measured the estimated effect of the minimum wage on the costs of hiring eighteen- and nineteen-year-olds. This effect was greatest in states where wages were low, where federal coverage was high, and where state extensions covered many workers at high minimums.

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We found that, for an increase in the minimum that raised the costs of hiring eighteen- and nineteen-year-olds by 1 percent, the employment of this group fell by 1.3 percent, while employment of sixteen- and seventeen-year-olds fell by 2.4 percent, and employment of fourteen- and fifteen-year-olds fell by 4 percent. The larger responses for younger workers came from the fact that, without the minimum wage rate, their wages would have been lower than those of the others. Given our estimate that by spring 1970 wage minimums had on the average increased the costs of hiring eighteen- and nineteen-year-olds by 11.3 percent over what those costs would otherwise have been, the inference is that the employment of eighteen- and nineteen-year-olds had been reduced by 15.2 percent as a result of wage minimums, that of sixteen- and seventeen-year-olds by 26.9 percent, and that of fourteen- and fifteen-year-olds by 45.6 percent. These estimates should be viewed as conjectural because of the much smaller effects found in time series studies.

Minimum Wages and Business Cycles. Aggregate U.S. employment steers an unsteady course as the currents of business activity fluctuate and the impact of fluctuating labor demand is felt unevenly among different industries and workers. With some workers more marginal to the work force than others, the figures react as though firms divided laborers into a hard-core and a marginal group. When conditions are steady, both groups are employed and form some sort of normal composite. When demand booms, firms expand first by relying disproportionately on marginal workers and then by gradually enlarging the long-term base as the boom appears to provide a firmer footing for longer-term commitments. When demand busts, marginal workers are the first to go.

Since the minimum wage provides a floor below which wages cannot fall, it contributes to the way workers are distributed between the normal and transitory work forces. There are other reasons for expecting firms to depend more than proportionately on less-skilled workers to absorb the brunt of cyclical variations. But, regardless of what these effects would otherwise be, wage floors destabilize employment of those whose productivity fluctuates about the minimum.

Marvin Kosters and I, in a 1972 study, estimated the effects of the minimum wage on the age, race, and sex composition of aggregate employment during cyclical changes (using quarterly data). Our estimates showed that for the 1954–68 period teenagers constituted, on average, about 6.3 percent of normal employment and 22.1 percent of transitional employment. White adult males were found to be generally more immune to the cycle than any of the other groups considered, and teenagers peculiarly vulnerable: between 1954 and 1968 a teenager was more than four times as likely as an adult to lose his or her job in a cyclical downturn.

We also estimated how minimum wages affected employment over business cycles, stating our results in terms of the minimum wage's effect on an index of "marginality" (or vulnerability to cycles). For example, we estimated that a hike of 1 percent in the minimum reduced the vulnerability of white adult males by 1.5 percent—that is, further insulated them from cyclical variations. Larger effects in the opposite direction were found for teenagers—that is, a minimum wage increase heightened their vulnerability to the cycle.

How important are these estimated effects? Because of expanded coverage, the effective minimum wage rate increased greatly between 1954 and 1968. If the average effective minimum that existed in the years 1954–58 were raised in one step to the average for the 1965–68 period, our estimate is that cyclical vulnerability would have been a third lower for white adult males and more than double for teenagers. Clearly, teenagers have been especially vulnerable to business cycles, and our findings suggested that no small amount of this vulnerability has been the result of minimum wages.

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Some Policy Implications

The most obvious result of the interaction between business cycles and wage minimums is the increase in job losses during recessions. In an unsteady world, minimum wage laws have raised the real costs of economic fluctuations. Because hourly minimums are set in nominal terms rather than being indexed to the general price level, inflation reduces their adverse effects on employment; consequently, a lowering in the rate of inflation makes those adverse effects stronger than they would otherwise have been. For example, recall the index presented in Table 1 (column 5), in which the projected minimum wage impact reaches an unprecedented 181 in the year 1981. Should the rate of inflation be reduced by one percentage point a year between now and then, that number would rise to 192.

Economists have used teenagers to study the effects of minimum wages simply because, in the available data for broadly defined demographic classes, teenagers have a higher proportion of low-wage workers than other groups. The bulk of the evidence is that teenage employment has been partly shifted into uncovered sectors—as coverage expansion has been gradually shrinking those sectors and thereby diminishing these secondary opportunities. In covered sectors, teen employment has fallen overall and what has remained has become more vulnerable to business cycles. But in considering the measured effect of minimum wages on teenagers, remember that it *understates* the effect on low-wage workers in general. This is true because some teenagers would earn more than the minimum in any case and because the measured effect for *all* teenagers combines job losses for those with the lowest wage potential with partially offsetting gains for those of greater potential.

As the evidence of adverse effects on teenagers has accrued, support for youth differentials—lower wage minimums for teenagers—has grown. A number of European countries have adopted such programs, as have some U.S. states, and the 1977 minimum wage amendment calls for detailed consideration of a youth differential by a recently established federal commission.

There is, of course, a possibility that enacting a youth differential could have value as a demonstration. We would expect it to show that lower minimums increase employment, just as the lack of a youth differential has had the cruel advantage of making teenagers a good subject for study—guinea pigs for research on the employment effects of minimum wages. If it had not been for this research, the evidence for teenagers would not be available, and there is a real question whether the basic minimum would now be higher than it is.

In addition, if we had a nationwide youth differential, we would be forced to ask about those just above the age break, and we would be forced to ask about those near or past normal retirement who seek supplementary income through part-time work and who would earn wages close to those of teenagers. With a full-

fledged "two-tiered" minimum they would have the worse of two worlds. First, they would have to convince employers they were worth the higher minimum and, second, they would have to compete with youths who, because of the differential, could accept lower wages. Should we not then consider differentials for young adults, the aged, the less schooled, and so forth? We have enacted temporary differentials for a limited number of students and for handicapped workers, which is an acknowledgment that lower wages are necessary to give them a competitive edge. The logic for extending these differentials is inexorable. Why not extend a differential to all who would earn less than the minimum? In other words, why have a minimum wage at all?

Against the fact that a youth differential would increase teen employment must be weighed the undesirable side effects on the other low-wage groups. Advocates of youth differentials must have mixed feelings. I do believe, however, that one can make a less ambiguous case for regional differentials than for age differentials. Wages vary among states, and some areas have much higher percentages of low-wage workers than others. In the Welch-Cunningham study, we estimated that a uniform federal minimum had raised costs of employing teenagers by more than twice as much in Arkansas as in Illinois and New Jersey.

Although I have dwelt on the evidence that teenagers are adversely affected by minimum wage rates, the effects are not limited to them. They may be more affected than other specific classes or categories of workers, but the low-wage low-productivity population is widely dispersed and hard to separate into classes or categories. Because of this, remedial measures (like youth differentials) that are aimed at specific classes or categories of workers may not reach most of those affected. And when they do reach one specific group, it is likely that they will exacerbate the plight of others.

In comparison with welfare-related programs that transfer income from the "haves" to the "have-nots," minimum wage laws are perverse: the transfer they make is actually from some have-nots to other have-nots. Of course this country has added (and will continue to add) welfare programs that partially compensate minimum wage losers, spreading the losses more broadly across the population. Perhaps this is as it should be, but let us bear in mind the nature of this transaction. We first impose a law that results in job losses. Then, for those who lose their jobs and qualify for welfare, we give partial compensation. Is it not strange that at a time when a major concern of welfare programs is to increase work incentives we also push a minimum wage program that reduces work?

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The establishment of a minimum wage rate was one of our earliest forays into a national welfare program. It was a misguided idea even in 1938, and the world of welfare has changed since then. After forty years of evidence of adverse effects, it would seem that the time for requiring minimum wage rates has passed. ■

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