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An Assessment**

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**Wage and Job Trends in the U.S. Labor Market:
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Abstract

The American economy has experienced strong employment growth during most of the past 30 years. This period of sustained job creation was accompanied first by a narrowing of wage differences and then by a widening that brought wage inequality to an unusually higher level. Even though education levels of the work force were rising, the effects of this increase in the supply of skilled workers were overwhelmed by strong growth in skill demands that apparently originated mainly from the introduction of new technology. Although increases in skill premiums have been quite pronounced, adverse social and political consequences of increased wage dispersion have apparently been limited by the absence of pronounced cleavages between groups with different levels of education and work experience. Many observers have argued that wages of the average worker have declined, and that widespread layoffs have heightened workers' vulnerability to losing their jobs, reducing their job security and loyalty to employers. The view that workers have on average fallen behind is based on partial and incomplete measures of workers' pay and there is little evidence that job insecurity has contributed importantly to wage restraint. The reasons for the favorable combination of high employment and low inflation in the U.S. are not well understood, but vigorous competition and wage flexibility in a stable economic environment are more likely sources of wage moderation than fears about jobs and wages arising from job insecurity.

Key words: Wage Inequality, Skill Premium, Job Security, Skill Intensive
Economy

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Introduction

Developments in the U.S. labor market received a great deal of popular discussion and research attention during the 1980s and 1990s. One of the most prominent themes in domestic discussions of the U.S. labor market has been the idea that strong employment growth has been deeply flawed by stagnant or declining wages and growing wage inequality.¹ During a period in which most labor market trends have been extraordinarily favorable, the prevalence of commentary emphasizing unfavorable implications for workers and their families shows noteworthy disagreement about labor market facts and differences in their interpretation.

The strength of employment growth in the U.S. economy has been widely recognized. During the 1970s and 1980s, jobs were created in sufficient numbers to absorb the abnormally large influx of workers represented by the entry of the baby boom generation into the workforce. Moreover, the proportion of the working age population in the labor force increased, and the unemployment rate fell below 5 percent in 1997 – a level lower than seemed sustainable during the past 30 years. These trends look particularly good compared with the experience in European countries, where employment growth, particularly in the private sector, has been extremely weak.

It has been observed that a major reason for the larger increase in employment in the U.S. is the more rapid growth in the population and the workforce than in Europe. This

observation is valid, but the contrast can perhaps best be viewed as underscoring the magnitude of the U.S. job creation achievement instead of detracting from it.

When the “U.S. model” is described as an example of successful job creation, those who take a critical view often argue that many of the “new” jobs are “poor” jobs.

That is, pay levels for new jobs are said to be low, especially for people without professional skills. Critics also point to the increase in wage inequality that occurred.

Criticisms along these lines have made it easier to dismiss the U.S. record of job growth as seriously flawed, and to regard deterioration in job quality and increased inequality as too high a price to pay for strong employment growth. To set the stage for more detailed discussion, the first part of this paper is devoted to a broad description and interpretation of what has happened to the level of average wages and to wage inequality in the U.S. labor market.

The view that the economy relies increasingly heavily on a highly skilled and educated workforce to manage production and distribution of technologically sophisticated goods and services is another prominent theme in discussions of U.S. labor market performance. In the current economic and labor market environment, workers are sometimes characterized as increasingly vulnerable to changing production requirements. The rapid pace of change has implications for the kinds of skills workers need to develop, how much flexibility they need to assume for changing jobs and

adapting to new work, how job security and satisfaction are affected, and how wage-setting is influenced by a more dynamic and competitive economic environment. To address these questions, I discuss recent evidence on job stability and analyses of the underlying sources of changes in the U.S. labor market.

The rise in the value that the labor market has placed on workers with more sophisticated skills raises questions about the adequacy of education and skill development policies for upgrading workers' qualifications. The corresponding decline in the relative wages of the less skilled, in turn, raises the issue of whether policies can be developed that could help enable them to earn a middle-class living. Policies to address these specific concerns, of course, should be considered in the context of the need to maintain a broad policy and institutional environment that encourages job creation and economic growth. The extraordinarily favorable general performance of the U.S. economy in the late 1990s, with regard both to unemployment and inflation, raises questions about whether it can be attributed to traditional and perhaps temporary sources, or whether a new, more skill intensive and knowledge-based economy may be bringing about changes in productivity and labor market performance that can be expected to persist.

U.S. Labor Market Performance

Wage Levels

In popular discussion, the average worker is often described as falling behind. The real wages of the average worker have sometimes been characterized as declining to levels that prevailed in the 1960s. This view of workers' pay levels is contradicted by the most comprehensive information that is available on workers' productivity and pay.

Several different kinds of measures of what workers are paid are available.² Two of the most commonly cited conventional measures are charted in Figure 1. It is clear from this figure that these data can be used to tell quite different stories about how the average worker has fared. One measure suggests that workers are about 15 percent better off than they were in 1973; the other measure suggests that real wages declined by about 10 percent to their level in the late 1960s. One reason for the discrepancy is the difference between these two measures in the extent to which they include all components of the total compensation that workers receive. Another is the difference in the comprehensiveness of their coverage of all workers. To interpret what these and related measures of workers' pay mean for trends in the average worker's well-being, it is necessary to consider some of the most significant relevant differences between these measures.

Compensation per hour is much more inclusive than average hourly earnings in terms of the components of workers' pay that are included. Average hourly earnings does not include noncash benefits, and some cash wage payments such as bonuses, commissions, and irregular incentive payments, are also excluded. Compensation per hour, on the other hand, includes not only all cash wage payments, but also costs such as employers' contributions for social insurance and the costs of providing health plans and private retirement programs. The cost of providing some nonwage benefits, such as health insurance plans, has increased more rapidly over the years than wages, and these costs have accounted for a growing share of total compensation.

Compositional Shifts. Differences in the characteristics of workers whose pay is reflected in these measures are also important. The average hourly earnings measure covers only production and nonsupervisory workers while compensation per hour covers all workers in the nonfarm business sector. The first important point about production and nonsupervisory workers is that workers in this category are less skilled than average. As is clear in the discussion of the distribution of wages, less-skilled workers have received smaller wage increases than more-skilled workers during the past 20 years. This difference in the size of wage increases is illustrated by data charted in Figure 2 on average wages of hourly workers -- workers paid by the hour -- compared with salaried workers. Real wages of workers paid by the hour declined since the late 1970s in contrast to salaried workers. Workers who are paid by the hour are not

entirely equivalent to production and nonsupervisory workers, but in practice there is apparently a great deal of overlap.

A feature of production and nonsupervisory workers that has received very little attention is the lack of stability in the definition of which workers are included. The composition of workers in this category was apparently shifted away from workers with the highest wages in the group, especially during the early 1980s. To explain this shift, it should first be noted that the only reason why it is necessary for employers to distinguish between production and nonsupervisory workers and other workers is for the purpose of reporting the wages, hours, and employment data from which the average hourly earnings figures are computed. Payroll records do need to be kept, however, for workers who are not exempt from overtime requirements, a category of workers that is in turn closely comparable with workers paid by the hour. Failure to adjust upward the wage test component of the administrative regulations used to distinguish between exempt and nonexempt workers after the late 1970s meant that it became much easier for workers with some supervisory responsibilities to pass the wage-test hurdle in the early 1980s, thereby reducing average wages for the workers who remained in the lower-paid, production and nonsupervisory category.³

The decline in the real value of the wage test was very pronounced in the late 1970s and early 1980s, as shown in Figure 3, and to the extent that this has shifted the

composition of the sample, the decline helped to pull down the real average hourly earnings measure charted in the same figure. This erosion in the real level of the wage test produces a distorted measure of wages for the typical worker remaining in the nonexempt group. It would have the effect of reducing measured average real wages of nonexempt workers, even if there were no decline in the wage of any individual worker. Thus, in addition to its limitations because of the components of pay that it fails to include and the below-average skills of workers in this group, real average hourly earnings of production and nonsupervisory workers is not reliable as a measure of the trend in the level of wages for the typical worker because of changes in the composition of workers who are covered.

Price Measurement. The long-term trend in the level of real compensation depends largely on productivity growth, but real compensation is also influenced by short-term departures from measured productivity growth. Real wages could fall short of productivity growth if, for example, payments to labor were increasing less rapidly than payments to capital and other inputs, and real wage increases could exceed productivity growth if payments to labor were increasing at the expense of other payments. To see whether labor is sharing fully in productivity growth, however, it is necessary to measure real wages by using the same set of prices as those used to measure the real output that is used to compute growth in productivity. That is, wages need to be adjusted for inflation using the prices of output that workers produce, not

prices for a market basket that workers consume. Labor and other inputs need to be paid out of the real value of the output they are used to produce. As shown in Figure 4, the two measures of prices have diverged in recent years, and this divergence is the main reason why real wage increases measured on the basis of consumer prices for their consumption market basket have fallen short of productivity growth. Most of the divergence disappears when prices of domestically produced current output are used to adjust for inflation, however, and the difference that remains mainly reflects the dilution of measured private sector productivity gains because they need to be spread to public sector wages and the rise in the profits share during the current strong and sustained cyclical expansion.

A great deal of attention has also been focused recently on the adequacy of the Consumer Price Index (CPI) itself as a measure of the prices consumers pay for a market basket of goods and services.⁴ Issues that have been addressed include the extent to which changes in the index are an accurate reflection of changes in the real material well-being of consumers. Careful examination of many of the procedures that have been used to collect and assemble the price data has revealed significant opportunities for making technical improvements. Improvements of this kind can be made without addressing the more difficult conceptual issues such as whether compensation for price increases would leave consumers no better off than if the

previous pattern of prices and products prevailed or whose well-being should be measured.

Several important technical improvements in the methodology for the CPI have been introduced during the past couple of years. When a change in the way the costs of owner-occupied housing were measured in the CPI was introduced in 1983, data were developed to take this major change into account. A special measure, CPI-U-X1, is often used to measure levels of real well-being over time because it uses a method that is consistent over time. It is appropriate to apply the same reasoning to recent improvements in methods and procedures, by taking these changes into account. If these recent changes were not taken into account, there would be an apparent decline in inflation and a corresponding rise in real wage growth that would be solely attributable to changes in the way prices are measured.

To take into account recent changes in methods and procedures for measuring prices, I have reduced the price index used to compute real wages by one-half percent per year. An adjustment of this size is supported by research on the impact of the new procedures, although questions can be raised about the most appropriate path for adjusting the CPI over time.⁵ I have applied the adjustment from 1978 through 1997 because this corresponds closely to the period between the introduction and subsequent elimination of the most important source of bias that was removed by recent changes.

The data charted in Figure 5 reflect this adjustment in prices. These adjusted data show continuing increases in both real average compensation per hour and in hourly wages and salaries, with average wages up more than 20 percent since 1973 and compensation almost 30 percent. The trends these data show are consistent with measures of productivity growth and with other comprehensive measures of wages and compensation.⁶ Although increases since the early 1970s have not been as large as during the 1950s and 1960s, the improvement they show is quite different from the commonly expressed view of stagnation or widespread decline in real wages for the typical worker.

The Distribution of Wages

If the average level of real wages is up, what about wage inequality? Most measures of the distribution of wages show a substantial increase in wage inequality in the U.S. labor market that began sometime in the 1970s. Some of the questions raised by this widening of wage inequality include: What caused the wider wage disparity? Are any systematic patterns shown by the increase in wage inequality? What are the economic effects of increased wage inequality? What forces might limit or reverse the widening of wage inequality? What are the likely social and political consequences of greater wage inequality? All of these questions have received attention.

Inequality and Skills. In some popular discussions, a rise in wage inequality is described as resulting from “those who were already well off grabbing most of the gains,” with the major role implicitly assigned to greed. Some discussions point to policy changes as a source of increased inequality, and others see “the poor getting poorer and the rich, richer” as the normal state of affairs in the absence of vigorous efforts by government policies to counter this trend.⁷ Other commentary stressing the need for well-developed skills comes closer to the mark, and this is evident from comparisons of data on wage trends for workers with different levels of education.

The data charted in Figure 6 provide a simple and straightforward indicator of how much the spread of the distribution of wages has widened. By themselves these data do not provide any clues about why wages became more widely dispersed. And although this measure of the gap between wages at the 20th and 80th percentile compares only two positions in the overall wage distribution, since wage inequality has in fact widened quite evenly across the distribution, this simple measure sketches out a picture of what happened to wage inequality that is quite valid.

We can begin to get insight into the underlying sources of the rise in wage inequality by examining the trend of wage differences between workers with different schooling levels. Data on the ratio of wages of college graduates to high school graduates’ wages are charted in Figure 7. According to these data the college wage

premium declined from the late 1960s to the late 1970s, after which it began a substantial rise that continued into the 1990s. In 1978, the average wage of a college graduate was 25 percent higher than for a high school level worker; by 1996 the college graduate earned about 50 percent more. One point that should be noted about these changes is that about half of the increase in the college wage premium during the past 20 years represents a recovery from an unusually low level of the college wage premium in the late 1970s. Another point is that there are at least some tentative signs that the college wage premium may recently have stabilized or even perhaps declined.

Schooling is one way workers develop skills; learning through work experience on the job is another. If the schooling wage premium increased because the labor market placed a higher value on workers with more skills, then the wage premium for additional work experience would also be expected to rise. The work experience wage premium has risen since the late 1970s, although the timing of changes in wage premiums seems to reflect changes in both demand and supply. The rise in skill premiums at a time when the skills of the workforce were substantially upgraded implies that skill demands were rising. On the supply side, the big influx of young, college-educated members of the baby boom generation into the workforce in the 1970s was followed by a gradual slowdown in the growth of the share of the workforce accounted for by college graduates. The gradual aging of the workforce that has

resulted is associated with the accumulation of more work experience for the average worker.

Because one of the largest components of the cost of getting a college education is the earnings that are forgone while attending school instead of working, the rise in the college wage premium strengthened incentives for college-level schooling. The striking rise in the college enrollment rate in parallel with the rise in the college wage premium charted in Figure 8 illustrates the effect of higher rewards for investment in human capital. During much of the 1970s less than 50 percent of youth were enrolled in school during the fall following their graduation from high school, but by the 1990s more than 60 percent of recent high school graduates were enrolled in postsecondary schools. A larger proportion of youth obtaining additional schooling immediately after graduating from high school is only one dimension of such increases in investment, of course. Other dimensions include part-time schooling while working, going back to school full-time after working for a while, and taking advantage of more training provided by employers. A larger proportion of youth with college-level credentials results in a larger proportion who are able to earn college-level wages. In addition, the increase in the relative supply of college-level workers stimulated by higher economic rewards is a self-correcting force that limits the extent to which schooling wage premiums and wage inequality continue to widen. Some of the most recent data

suggest that wage premiums for schooling may have stabilized or perhaps declined slightly.

Socio-Political Implications. Economic effects on earnings levels, labor force attachment, and skill development incentives are, of course, not the only effects of wage inequality with which we should be concerned. Some commentators have expressed concerns that wider differences in average wages for workers with different schooling levels have given rise to a “two-tier labor market,” with workers with schooling beyond the high school level able to earn a middle-class income while those with only high school credentials or less cannot.⁸ It has also been suggested that wider wage differences are socially and politically divisive because workers whose wages are less equal will see themselves as having less in common with other workers and citizens.

The significance of these concerns is difficult to evaluate, but it is useful to look at relevant data to get some insight into how sharply divided wages are for workers with different educational credentials.

One way to assess the degree of separation between workers with different levels of schooling is to look at measures of overlap between distributions. The extent of overlap is affected by what happens to both changes in the gap in average wages between different groups and changes in dispersion within schooling groups. Both measures have widened since the late 1970s, mainly because years of schooling is an

important measure, but only a crude and incomplete measure, of workers' skills. It is possible to look at the degree of overlap between distributions in various ways, and I present some simple comparisons of wages for high school and college graduates in Figure 9.⁹ These comparisons trace the position in the high school wage distribution of the median wage for college graduates since 1963.

The location of the college median in relation to the high school wage distribution declined from the late 1960s to the late 1970s. That is, the degree of overlap increased when the wage gap narrowed. Since the late 1970s, the degree of overlap was reduced as the wage gap widened. By 1996, about 77 percent of high school graduates earned less than the median wage for college graduates. Conversely, almost one in four high school graduates earned more than the college median. The gap between average wages of college and high school level workers is considerably wider in the mid-1990s than during the 1960s. It is worth noting, however, that the measure of the degree of overlap reported in Figure 9 shows that these two wage distributions have recently been no more sharply divided than in the 1960s. Consequently, it is not clear that workers with different schooling credentials now have significantly less in common than previously, and recent developments in the labor market may not necessarily pose a more serious threat to social or political cohesiveness.

Focusing only on averages for two major schooling categories masks a great deal of diversity within each group. Moreover, the workforce can be further differentiated by more detailed schooling categories, occupational and skill specialties, and work experience. Smoothed wage distributions for high school and college graduates are charted in Figure 10, along with median wages for three other schooling categories. High school and college graduates account for more than 50 percent of the adult, full-time workforce. Almost another thirty percent is accounted for by workers with some college, for a total of about 80 percent of the workforce. Workers without high school credentials and those with advanced degrees each account for only about 10 percent. Differences between median wages of workers in each schooling category are certainly evident in these data, but the amount of overlap in the distributions is also striking. The wage data describe a continuum across the social and economic scales; there is no great divide based on differences in schooling credentials.

Job Security, Wages, and Labor Market Performance

Job Stability and Worker Insecurity

Whether jobs have become less stable and workers more insecure has come to public attention in several contexts. Serious doubt has sometimes been expressed about whether long term employment with a single employer is a realistic prospect for most workers, and in particular whether long-term or lifetime jobs have become much less common in the U.S. than in the past. It has also been noted that the proportion of employment consisting of temporary and contract jobs has increased, which some contend has reduced workers' job security and loyalty to employers. A great deal of publicity has also been given in recent years to corporate downsizing, in part because plans for major reductions in employment are now more likely than previously to be announced in advance to comply with legislation requiring advance notice, but perhaps for other reasons as well.¹⁰ Finally, wage acceleration that has been more modest than anticipated in view of increasingly tight labor markets and low unemployment in 1997 and 1998 has raised questions about whether workers' concerns about losing their jobs, with the reduction in pay that this could entail, might be keeping workers from pressing harder for pay increases.

A great deal of recent research has been carried out to try to ferret out facts about job stability. The issue can be explored at several levels. Has job tenure declined in

recent years? If it has declined, is this undesirable? Have workers' perceptions changed markedly, irrespective of actual job loss experience? The first of these questions is easiest to address by examining the data.

The information on job tenure that is available is essentially of two kinds: data on the length of time workers have been on their current job and data on the incidence of job loss. What do these data show? I conclude that job tenure remained essentially unchanged during the 1980s, but that it may have declined slightly by the mid-1990s. However, the decline, if any, was quite small, and most indicators of job stability remain well within the range of experience since the 1950s.

Estimated job retention rates over four-year periods for the workforce as a whole were on the order of 55 percent, and estimates of the maximum size of a change from the mid 1980s to the early 1990s were only about one percentage point.¹¹ The changes from 1979 to 1996 in the proportions of employed workers who had been on their job for 10 years (from .41 to .35) or 20 years (from .25 to .21) were more noticeable, but sensitive to factors such as end points for measurements. For example, from 1983 to 1993 (the next longest span for which these data are available), proportions who had their jobs for 10 years declined by only .01 with no change at all for workers with 20 years on their jobs.¹² Estimates of rates of job loss over three year periods derived from surveys of worker displacement showed a decline from about .13 to .11 from 1983

to 1995, but the lowest rate (.09) was registered for 1989.¹³ These data show that changes that may have occurred were very small.

We should be cautious about placing too much reliance on these data as measures of change. One reason for caution is the kind of adjustments that need to be made to take into account small differences over time in the questions that were asked in different surveys. Another reason is that cyclical conditions were different when surveys took place. Adjustments to take into account rounding and heaping in the survey responses introduce still another reason for caution. Whether adjustments should be made to take into account differences in age and other demographic characteristics, or whether primary attention should instead be focused on broad job aggregates is another issue. In many instances, the direction of estimated effects is affected by choices about what adjustments are most appropriate. Although the evidence, taken as a whole, seems to point to the possibility of a small reduction in job stability from the 1980s to the 1990s, any change that may have occurred has been very small.¹⁴

A somewhat different but related dimension of work experience has sometimes received attention by proponents of the view that the quality of jobs has deteriorated. Temporary, contract, and part-time work have often been criticized in this context. The subject of part-time work is not very relevant to job security issues in my judgment

because there has been little change in its incidence and the implications for wages of part-time work are often exaggerated.¹⁵ It is clear, however, that there has been a pronounced increase in temporary work. The implications of the growth of temporary work for workers' perceptions of job security should be assessed in terms of two features that seem to point in opposite directions. It may be that workers who are actually employed in temporary jobs are less secure about maintaining their employment than others. For the workforce as a whole, however, the availability of temporary work may be viewed as a significant new labor market institution that can be used to earn some income while looking for a more permanent job, and as an activity that can itself contribute to finding a good job match. That is, the availability of temporary employment in the event of job loss may assuage concerns about losing their job among those employed in long-term jobs more than it heightens concerns of those in temporary jobs, and on balance enhance workers' confidence that some kind of more-or-less suitable work is always available.¹⁶

The other main sources of information on job security experience and perceptions are the monthly employment and unemployment data collected in the Current Population Survey (CPS) and attitudinal surveys. A review of CPS data shows no unusual patterns for the incidence of job loss, although duration of unemployment has recently been on the high side. Workers also appear to be somewhat more reluctant to leave their job than has been typical during tight labor markets. Although

some reports based on special-purpose surveys seem to show an unusual degree of worker insecurity in view of labor market conditions, the large, well-established attitudinal surveys, such as relevant parts of the surveys of consumer confidence conducted by the Survey Research Center at the University of Michigan and the Conference Board, do not seem to show any atypical cyclical behavior. Taken together, the evidence provides little basis for concluding that workers feel sufficiently less secure in their jobs and that they are more reluctant to press for higher pay than might normally be expected under contemporary labor market conditions.

Sources of Changes in the Structure of Wages

Changes that took place in recent decades -- changes in technology, in workers' skills, in the wage structure, and in global trade -- have stimulated a great deal of research intended to develop and improve insights into the sources of these changes. With regard to analysis of the dramatic rise in the wage premium for skills since the late 1970s, three kinds of sources have been identified: supply, demand, and the institutional and regulatory environment. Among institutional and regulatory changes, those that have received the most attention are policies like the minimum wage that could have had a direct regulatory impact on the distribution of wages, trends like the decline in the extent of unionization that could affect wages for particular groups, and the introduction of more competition into transportation and communication markets by extensive deregulation.

As is widely recognized, the real value of the minimum wage has declined since the 1970s in relation to average wages. The likely implication of this decline for employment and for the distribution of wages is mitigated, however, by the less well-known expansion of coverage by minimum wage requirements to sectors with wages that were previously much lower than wages in covered sectors. The minimum wage, at levels that have prevailed recently, probably on balance has a smaller impact on the wage distribution now than in the 1970s. Nevertheless, there is general agreement that a decline in the real level of the minimum wage could have made only a small contribution to wage inequality, because the direct quantitative contribution it could make is very small and because the widening spread of wages is not concentrated in the lower part of the wage distribution, but instead extends across the entire wage distribution.¹⁷

The decline in unionization of the U.S. labor force is another factor in the environment that could have contributed to increased wage inequality. Some research points toward the possibility that lower unionization might have increased wage inequality, but questions remain about whether the decline in unionization is largely a result of broader economic trends that have influenced industry and occupational patterns.¹⁸ Certainly, the downward trend in unionization began long before wage inequality began to increase. After reaching a peak of more than 25 percent of the

workforce in the 1950s, unionization has gradually declined to about half that rate in 1997, and in the private sector alone the decline has been much steeper.

A trend toward stronger competition in U.S. markets for products and services has almost certainly influenced the competitiveness of the labor market as well. One source of this trend has been extensive deregulation in the transportation and communications sectors. Increased competition in the automobile and steel industries did not come about from deregulation, but from the development of strong competition from abroad that was only partially offset by efforts to protect domestic producers. Changes in competitive conditions in product markets seem to have contributed more to competition in the labor market, and to the changes in the structure of wages that resulted, than changes in labor market regulation.

The supply and demand framework that economists generally use to analyze economic changes is applicable to the labor market as well. Research indicates that changes in relative supplies of labor with different schooling levels have influenced the timing and magnitude of changes in relative wages. This research also shows that changes in the structure of wages cannot be accounted for by changes in supply alone.¹⁹

Demand shifts were also evidently at work.

Attention has been focused on two sources of changes in demand, international trade and technological change. The idea of trade as a cause of increased wage inequality comes readily to mind as a presumptive consequence of low-wage competition from abroad, especially for production of goods that do not rely heavily on highly skilled workers. A sophisticated body of theory lends support to trade as a possible source of downward pressure on relative wages of less-skilled workers. Although it has been argued that trade has made an important contribution to increased wage inequality, most economists apparently hold the view that only a relatively small share of the increase in the skill premium could be attributable to increased competition from low-wage countries.²⁰

Partly through a process of elimination, some degree of consensus has emerged among economists that a major role should be assigned to skill-biased technological change to explain the increase in the wage premium that employers are willing to pay for workers with better skills. Evidence in support of the view that technology is the main source of the increase in wage inequality is by and large indirect. Research on the relationship between wages and computer usage constitutes perhaps the most direct evidence.²¹ However, a great deal of indirect evidence from research using a variety of methods and approaches points to an important role for technology.²²

Although much attention has been focused on whether technological change has recently had a significant skill bias, and whether this bias has become more pronounced, there is really no question about its direction and significance over the long term. The impressive upgrading of the education levels of the U.S. workforce that has been taking place for more than half a century is shown in Table 1. In the absence of a significant bias toward making more effective use of workers with additional schooling, a big decline in the economic return to schooling would be expected instead of stability, and in recent years expansion, of the schooling wage premium.

In view of the presumed role of skill-biased technological change, is it reasonable to suppose that nothing can be identified on the horizon that might lead to stabilization or reversal of the recent rise in wage inequality? The increase in the proportion of youth who are investing in additional schooling that has already been noted should be viewed as an important qualification. But in addition, judgments about what can reasonably be expected in the future depend on ideas that are often implicit in thinking about causal relationships. A model that attempts to reconcile recent U.S. experience that combines a sharp decline in the price of investment goods (computers), a slowdown in productivity growth (beginning in the early 1970s) and an expansion of the skill premium for wages, has been developed by Greenwood, for example.²³ He uses the model to examine recent trends and relate them to earlier historical experience. This analysis suggests that strong gains in productivity growth

will be realized in the future and that further downward pressure on relative wages of the least skilled workers will be relieved as new technologies mature. This and other models should receive consideration as alternatives to approaches that simply project a continuation of trends in the recent past.

What kinds of policies should be pursued to facilitate constructive changes and to reduce adverse impacts on particular groups and sectors? The first step in considering this question, perhaps, is to identify the main problems that need to be alleviated. In my view, assuring a minimum, decent level of living for families of adults who are willing and able to work should be the main concern. In view of all of the many economic and policy forces that put that goal in jeopardy at one time or another for workers of all kinds, primary reliance on general policies to support incomes seems more appropriate than special programs for workers presumed to be affected mainly by changes in trade, technology, or other disturbances. In addition, it may be appropriate to try to speed up adjustments, even those adjustments that are already underway in response to stronger incentives, such as more investment in schooling.

Policies to stimulate more investment in workers' skills seems like one of the most obvious approaches to facilitating adjustment. Questions about education include, whether increased emphasis should be placed at lower or higher levels of schooling, as well as whether policy changes should originate at the federal level or at state or local

levels. It seems clear, however, on the basis of decades of experience in the U.S. and many empirical studies that federally-sponsored efforts to provide training to workers outside regular institutional schooling channels have not been very successful.²⁴ If further subsidies for postsecondary schooling and training are desirable, extensive reliance should be placed on the diverse opportunities that are available, from community colleges to major research universities.²⁵ Improving the quality of schooling at all levels is, of course, an appealing goal, and although there is no shortage of ideas about how this might be done, the evidence provides little assurance that devoting more financial resources to schooling at the elementary and secondary levels would have much effect.

Contemporary Labor Market Performance

The unemployment rate declined below 5 percent by the middle of 1997. The increase in jobs during the year that followed exceeded growth in the working age population by about half a million workers, driving the proportion of the working-age population with jobs to a record high above 64 percent. The proportion of people in the labor force with jobs was higher than at earlier cyclical peaks, the pace of job creation was higher than is sustainable over the long term, and instances in which firms experienced difficulties attracting workers with the requisite skills were frequently reported. Yet, the size of wage increases was rising only modestly, increases in total hourly labor cost were small, and labor costs per unit of output were quite stable as a

result of at least a temporary revival of productivity growth. Under these circumstances, despite labor market conditions that were extraordinarily tight, price inflation was gradually subsiding. This unexpectedly favorable combination of low unemployment and declining inflation was a puzzle that raised questions about its causes and whether they were temporary or permanent.²⁶

Although no consensus emerged about causes, a number of possible contributing factors have been suggested. Some involve price behavior, others relate to labor costs, and still others are based on structural or market changes. Explanations based on prices usually point to the deceleration in prices of imports and of health services, and the striking decline in the computer prices. The deceleration or decline in all of these prices was generally viewed as likely to be at least in part temporary. However, the changes in methodology for constructing prices indexes that were recently introduced can be expected to be a more durable source of smaller measured price increases.

There was little acceleration in the rate of increase in labor costs despite tight labor markets. Price behavior probably contributed to the limited acceleration in wage increases in at least two ways. First, the difficulties that firms experienced in passing on cost increases reduced their willingness to allow labor costs to rise, and declining inflation has increased the acceptability to workers of small nominal wage increases. Second, smaller increases in health care costs are translated quite directly into smaller

increases in this component of total costs. It should be recognized, of course, that it is the total cost of labor, including nonwage benefits like health plans, that is presumably critical for business firms. However, trends in the costs of health plans often become evident only after a lag, particularly for firms that self-insure, and it is uncertain how long a lower health cost trend will persist. These circumstances produced a combination of some acceleration in the wage component of labor costs and smaller than projected increases in the total cost of labor.

The changes discussed so far should probably be regarded as temporary and subject to reversal, with the result that conditions could change rapidly to bring about price and employment performance more comparable with earlier experience. It is possible, however, that changes in regulatory and institutional arrangements might make a more lasting contribution to improved performance. Stronger competition from international trade and extensive deregulation of the transportation and communications sectors of the economy may increase resistance to labor and other cost increases. Increased competition in capital markets, through a more active market for corporate control, for example, could be having a more general impact on the discipline that firms exercise to keep cost increases under control and to cut costs when feasible. On the labor market side, the extraordinary growth in jobs in the temporary help services sector may be making a noticeable contribution to enabling the economy to run at a lower unemployment rate without overheating.²⁷

Increased competitiveness in markets for goods and services, in the capital market, and in the labor market could result in less job security for workers. The evidence does not suggest that job tenure of the average worker declined very much, and the incidence of job loss seems, if anything, less concentrated among particular groups, such as construction and manufacturing production workers. The unemployment data suggest that the likelihood of being recalled to the same job has declined, and that layoff more frequently entails finding a new job instead. Finding a new job may also more frequently include acceptance of at least a temporary reduction in pay, although there is no evidence that such a change has occurred. Workers could, perhaps, have become more fearful of losing their jobs, as has been suggested by data from some specialized surveys.²⁸ In view of the small size of changes in job stability and the uncertainty about how these changes should be interpreted, however, it seems quite unlikely that workers' worries about their jobs has produced a reluctance to press for wage increases that could be a significant source of wage restraint under contemporary labor market conditions.

Why wage and price behavior has been so subdued during the past couple of years of tight markets remains a major puzzle. Some of the sources of better-than-expected performance are most likely temporary. There are also reasons to believe that stronger competition has contributed to more timely and thoroughgoing adjustments to changes

in conditions, including pervasive shifts in the structure of wages. New technology has almost surely contributed to stronger demand for skilled workers, but important linkages between the technology, skill demands, and achievement of better employment and inflation performance have not been established. Indeed, the widespread upgrading of skill requirements in recent years that has been associated with increased emphasis on knowledge and information based production requirements could, if anything, have the opposite effect if these developments increase the difficulties that less-skilled workers experience in finding suitable jobs.

Endnotes

1. For discussions that are representative of conventional views, see, for example Uchitelle (1998), Auerbach and Belous, eds. (1998), and Bollier (1998).
2. The most important measures of the level and distribution of workers' pay are discussed in Kusters (1998).
3. The administrative tests for exemption from the minimum wage and overtime provisions of the Fair Labor Standards Act involve both a duties test and a wage test. To be classified as exempt, it is necessary for an employee to meet the requirements of the duties test for supervisory responsibilities and independent exercise of discretion, and in addition, the employee's pay must exceed levels set by the regulations. There are two levels specified for the wage test, with somewhat less stringent duties requirements specified for employees that meet the higher wage test level. Because the increase in wage test levels that was scheduled for implementation in 1980 was postponed indefinitely, the erosion of the real level of the wage test since the late 1970s has made the wage test essentially irrelevant in recent years for establishing the exempt and nonexempt status of employees.
4. See Boskin, et. al. (1996).
5. This is a conservative estimate based largely on estimates developed by the Bureau of Labor Statistics (1997). See also, Council of Economic Advisers (1998, Table 2-4).
6. Information on wages and compensation from the Employment Cost Index, for example, shows similar trends. See Kusters (1998).
7. For an influential treatment of these issues, see Phillips (1990).
8. Reich (1991) and Thurow (1996).
9. Wage data are presented in this way in Pierce and Welch (1996, Figure 4.2, p.56).
10. For examples of high profile commentary along these lines, see, for example. The New York Times (1996) and Barlett and Steele (1996).
11. Neumark, Polsky, and Hansen (1997, Table 3).
12. Farber (1997, Table 1).
13. Farber (1998).

14. Gottschalk and Moffitt (1998) review earlier studies and the new evidence they present shows no deterioration in job stability or related conditions associated with job change in the U.S. Jaeger and Stevens (July 1998) also analyze evidence from different data sources. This conclusion is also corroborated by evidence from studies of job stability in the U.K. and Italy cited in *The Economist* (1998, p. 76).
15. Kusters and McCullough (1995).
16. Kusters (1997).
17. Bound and Johnson (1991).
18. For a careful analysis of effects of labor unions, see Freeman (1993).
19. For an excellent general, formal treatment of this question, see Murphy and Welch (1991).
20. Some selections from an extensive and rapidly growing body of literature on this subject are: Bhagwati and Kusters, eds. (1994), Wood (1994), Burtless (1995), Borjas, Freeman, and Katz (1997), and Cline (1997).
21. Krueger (1993).
22. Much of this research is reference and summarized in Autor, Katz, and Krueger (1997).
23. Greenwood (1997).
24. See LaLonde (1995); Orr, Bloom, Bell, Doolittle, Lin, and Cave (1996); Friedlander, Greenberg, and Robins (1997); and O'Neill and O'Neill (1997).
25. For discussions of the likely effects of policies intended to expand postsecondary schooling, see Heckman, Lochner and Taber (1998), and Marvin H. Kusters, ed. (1999).
26. For contemporary commentary on these issues, see, for example, Council of Economic Advisers (1998) and Congressional Budget Office (1998).
27. Although average daily temporary employment of some 2.5 million workers may seem small in relation to about 130 million employed workers, it looms much larger in relation to 6.5 million unemployed.
28. Alan Greenspan, Chairman of the Federal Reserve Board of Governors, cited data from one of these surveys, for example, in his Humphrey-Hawkins Testimony on February 26, 1997.

Table 1
EMPLOYMENT SHARES BY SCHOOLING CATEGORIES: 1940-1995

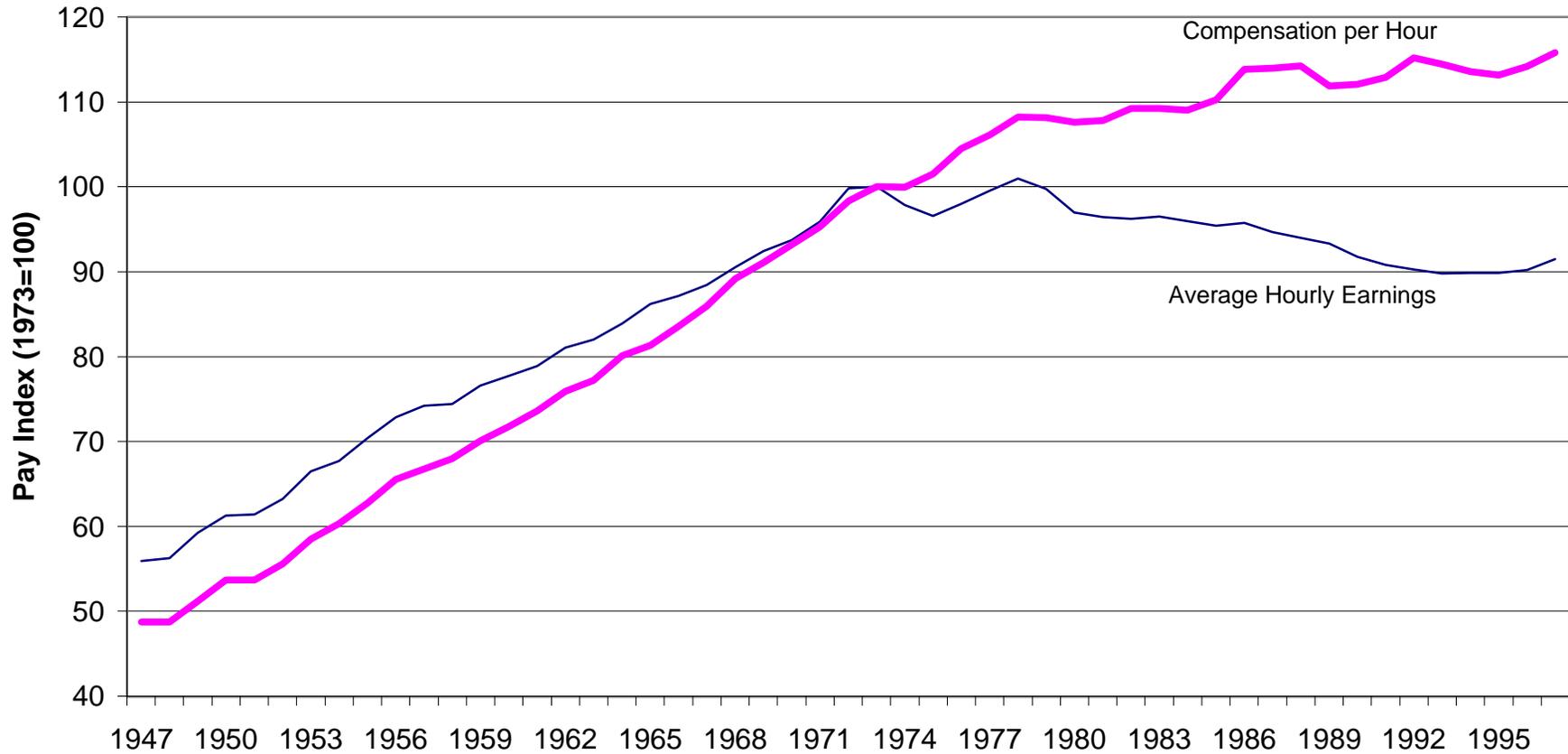
	High School Dropouts	High School Graduates	Some College	College Graduates
	percent			
1940	68.7	19.0	6.3	6.0
1950	58.5	24.3	9.5	7.7
1960	50.0	27.4	12.5	10.1
1970	36.1	34.1	16.4	13.4
1980	21.4	35.8	23.6	19.2
1990	12.0	33.3	30.8	24.0
1995	9.7	34.0	30.1	26.2

NOTE: Data are from decennial census, except for 1995 which are based on the Current Population Survey.

SOURCE: Adapted from Autor, David, Lawrence F. Katz, and Alan B. Krueger, "Computing Inequality: Have Computers Changed the Labor Market?" National Bureau of Economic Research Working Paper #5956, March 1997, Appendix Table A1.

Figure 1

Real Average Hourly Earnings and Compensation

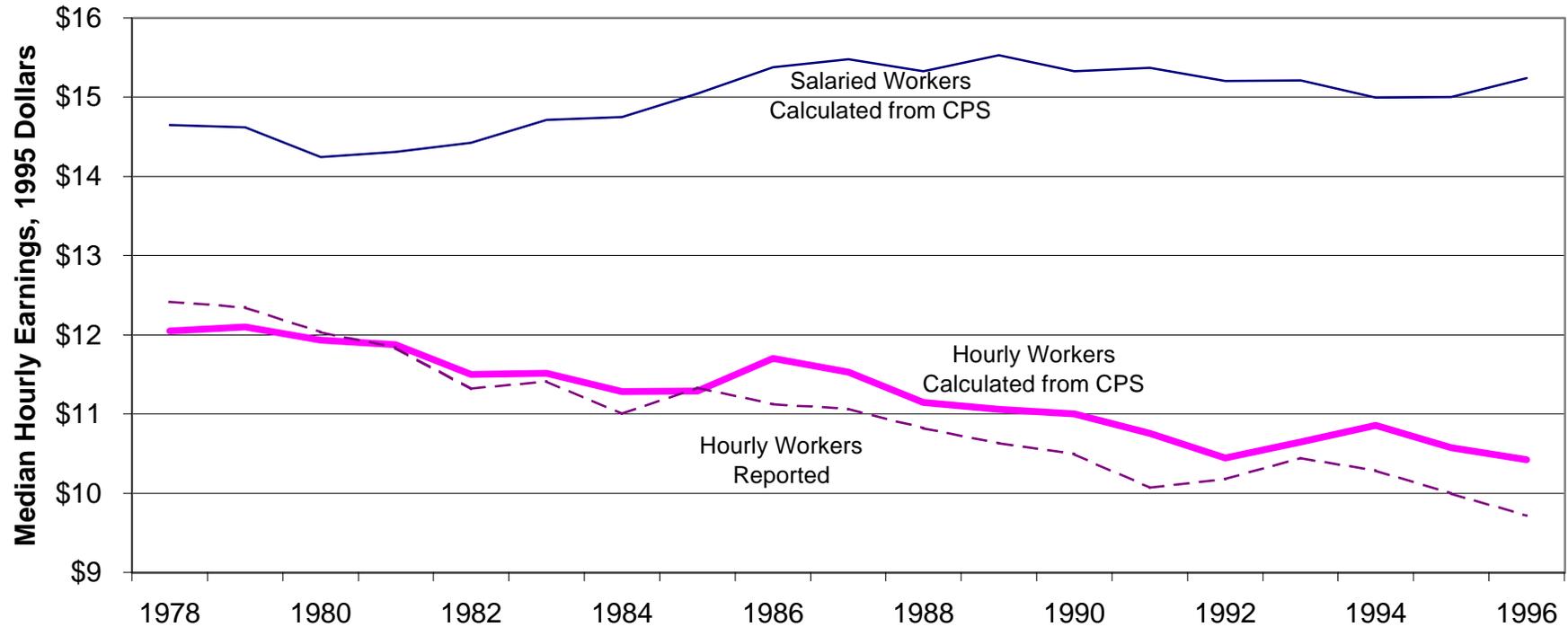


Note: Compensation per Hour includes wages and salaries of employees plus benefits (employers' contributions for social insurance and private benefit plans). It covers the nonfarm business sector. Average Hourly Earnings does not include non-wage benefits. It covers production and nonsupervisory workers in the private nonfarm sector of the economy. Both measures are adjusted for inflation using CPI-U-X1.

Sources: Bureau of Labor Statistics,
M. Koster, AEI, April 1998

Figure 2

Real Median Hourly Earnings, Hourly versus Salaried Employees

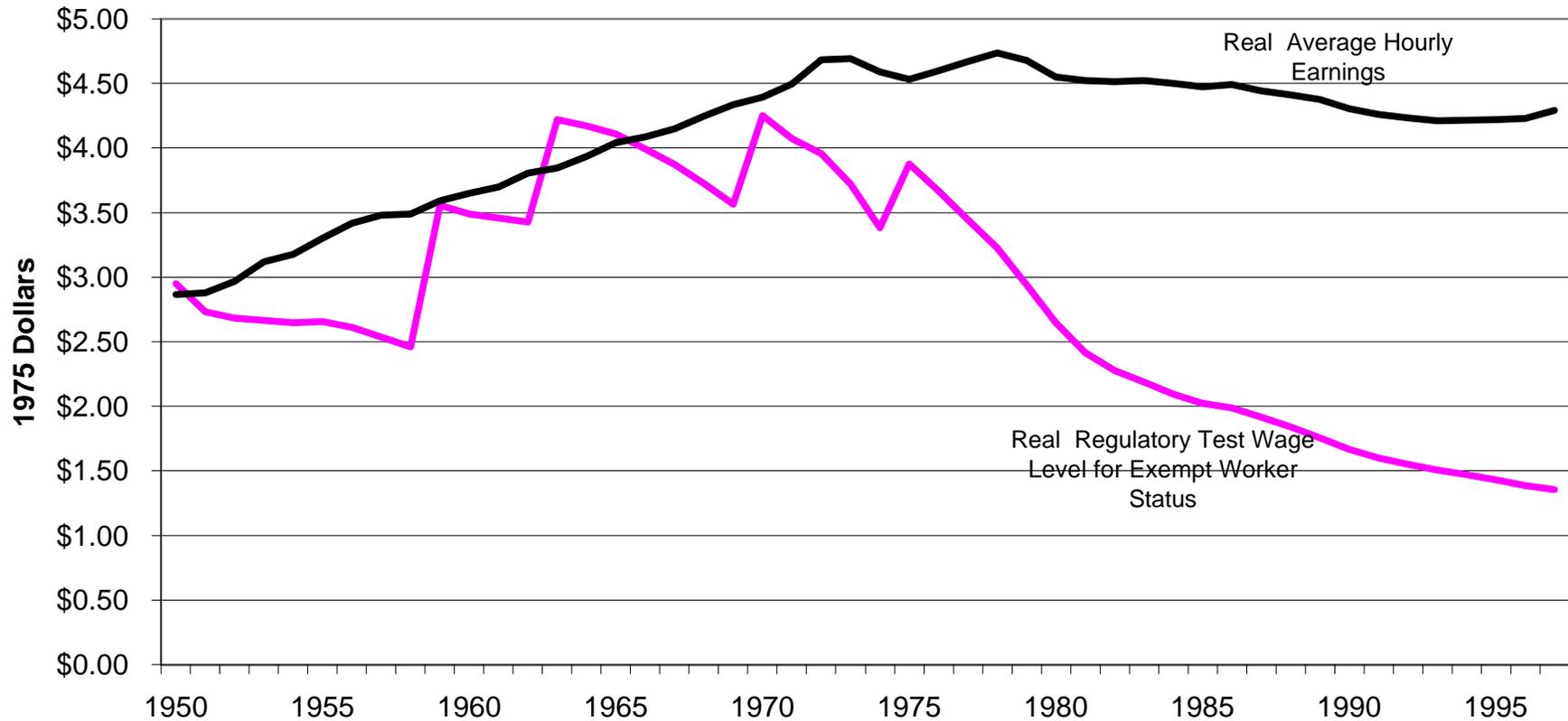


Note: Real Median Hourly Earnings is median average hourly earnings for workers age 25-54 in the Earner Study sample of the Current Population Survey. Workers must have the following characteristics: a) the longest job in the reporting year was not farm, self-employed and unincorporated, or without pay; b) workers reported having been employed full-time in the reporting year; c) workers must have reported working over 13 weeks in the reporting year. Hourly earnings as calculated from the CPS are derived by dividing income from wage and salary by total weeks worked in the reporting year to derive average weekly earnings, then dividing average weekly earnings by average hours worked per week in the reporting year. Reported hourly earnings for hourly workers is self-reported. Medians are deflated by CPI-U-X1.

Sources: Bureau of the Census and Bureau of Labor Statistics
M. Kusters, AEI, April 1998.

Figure 3

Real Average Hourly Earnings and Regulatory Test Wage for Exempt Status

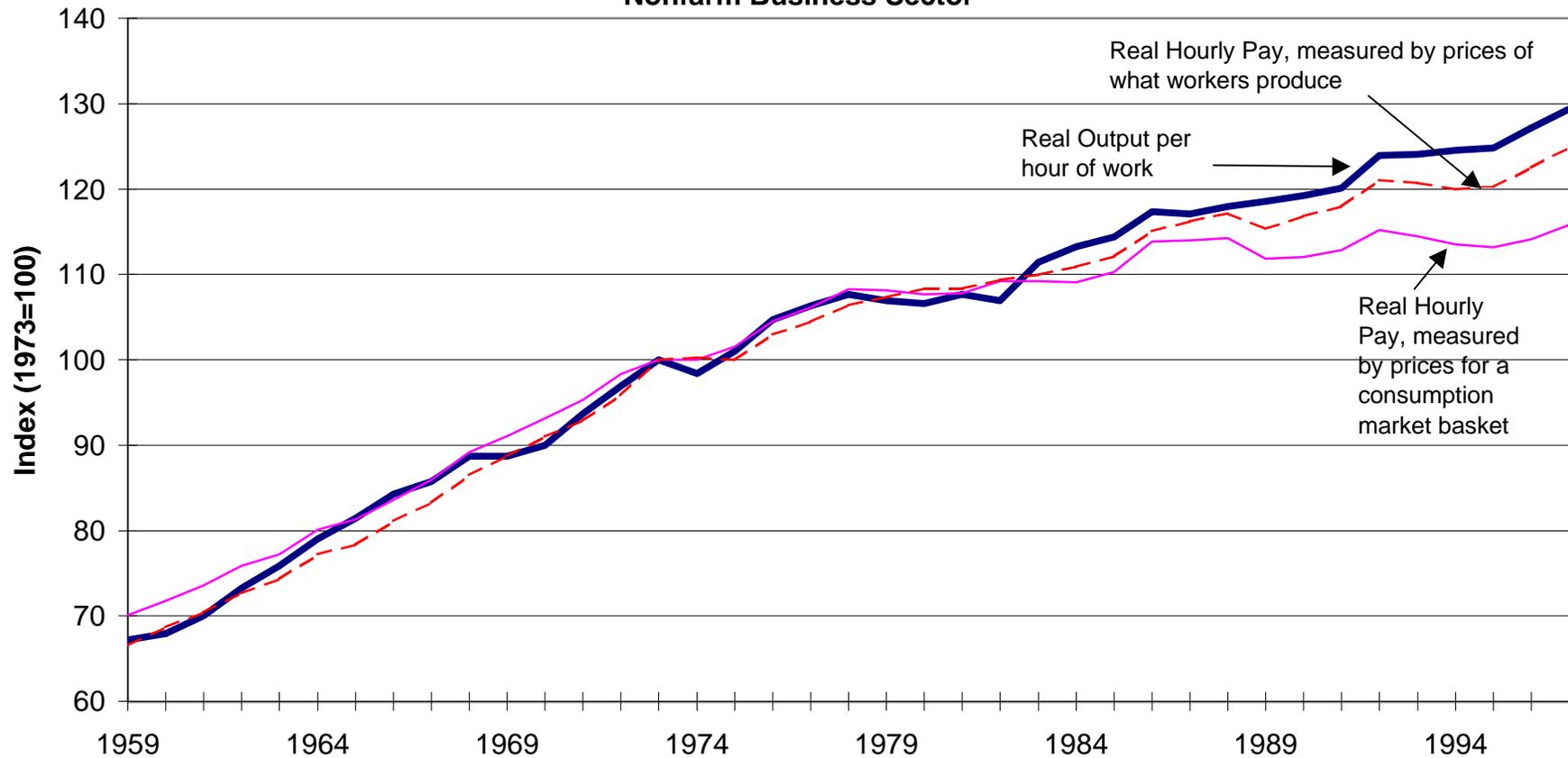


Note: Real Average Hourly Earnings covers production and nonsupervisory workers in the private nonfarm sector of the economy. The Regulatory Test Wage for Exempt Worker Status is the "Long-Test" wage for administrative classification of workers as exempt from the minimum wage and overtime provisions of the Fair Labor Standards Act. Both measures are adjusted for inflation using CPI-U-X1.

Sources: Bureau of Labor Statistics
Marvin Kusters, AEI, March 1998

Figure 4

Workers' Productivity and Pay Nonfarm Business Sector

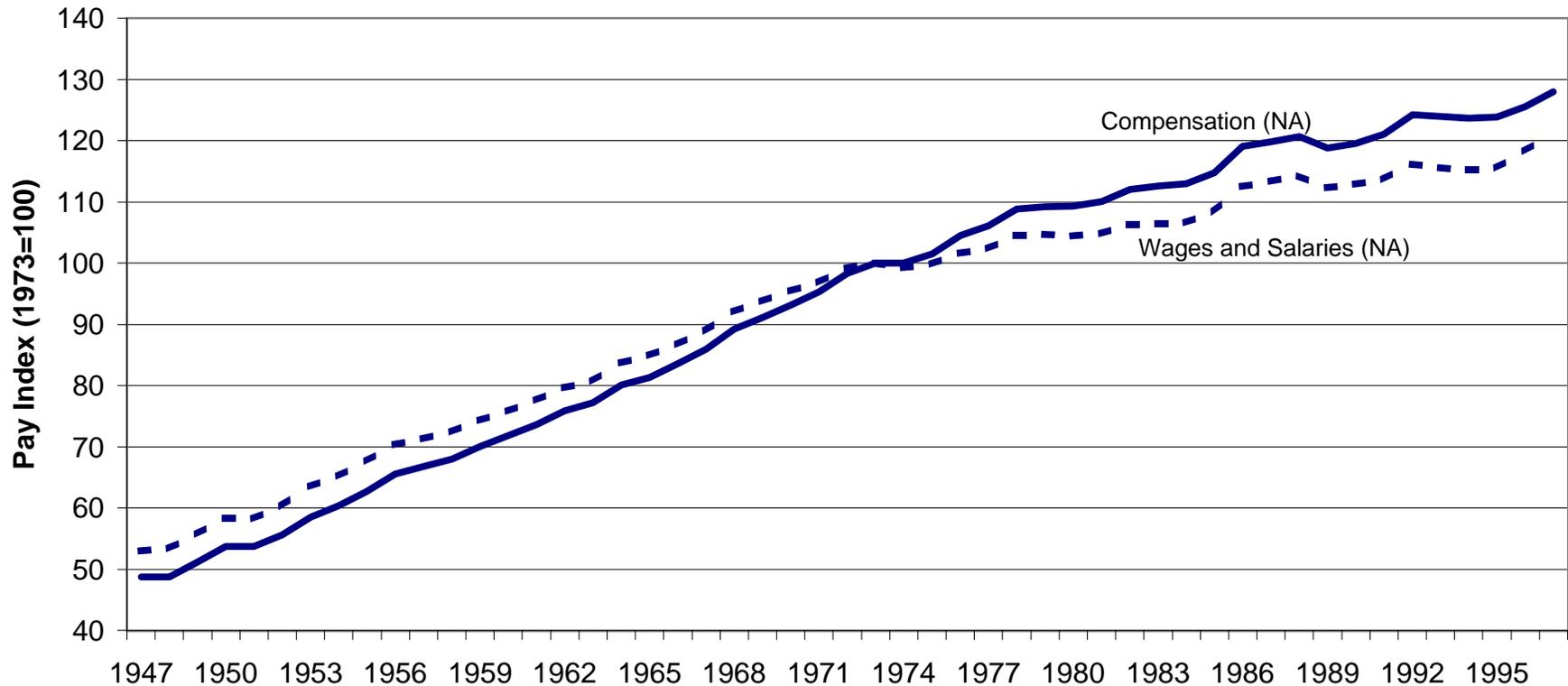


Note: Real Output per Hour is adjusted for inflation using the Implicit Price Deflator for the nonfarm business sector for the economy; this price index is also used to measure workers' pay in terms of prices of what they produce. To obtain Real Hourly Pay in terms of its consumption value, nominal wages are deflated by CPI-U-X1. Compensation per Hour is used as the basis for both measures of real hourly pay.

Sources: Bureau of Labor Statistics, U.S. Department of Labor
Bureau of Economic Analysis, U.S. Department of Commerce
M. Kosters, AEI, February 1998.

Figure 5

Adjusted Measures of Real Wages and Compensation Comparisons from 1973

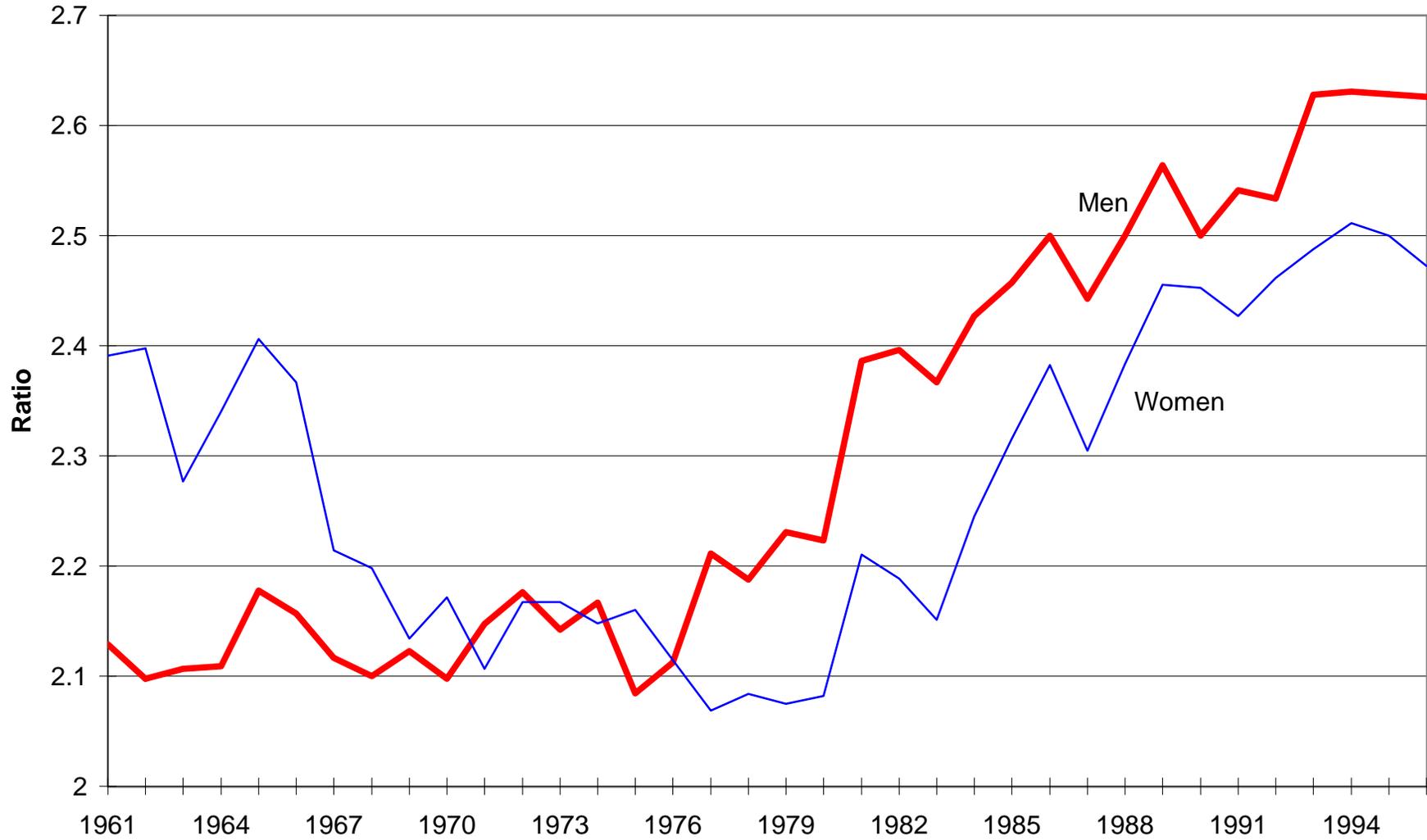


Note: Compensation (NA) includes wages and salaries, plus benefits, for the nonfarm business sector, and Wages and Salaries (NA) uses National Income and Product Accounts data to remove the growth of nonwage benefits from Compensation per Hour. In addition to adjustment for inflation using CPI-U-X1, a further adjustment is made to the price index of one-half percentage point per year beginning in 1978 to take into account changes in methodology and procedures used by the Bureau of Labor Statistics.

Sources: Bureau of Labor Statistics, Bureau of the Census, and Department of Commerce
Marvin Kosters, AEI, April 1998.

Figure 6

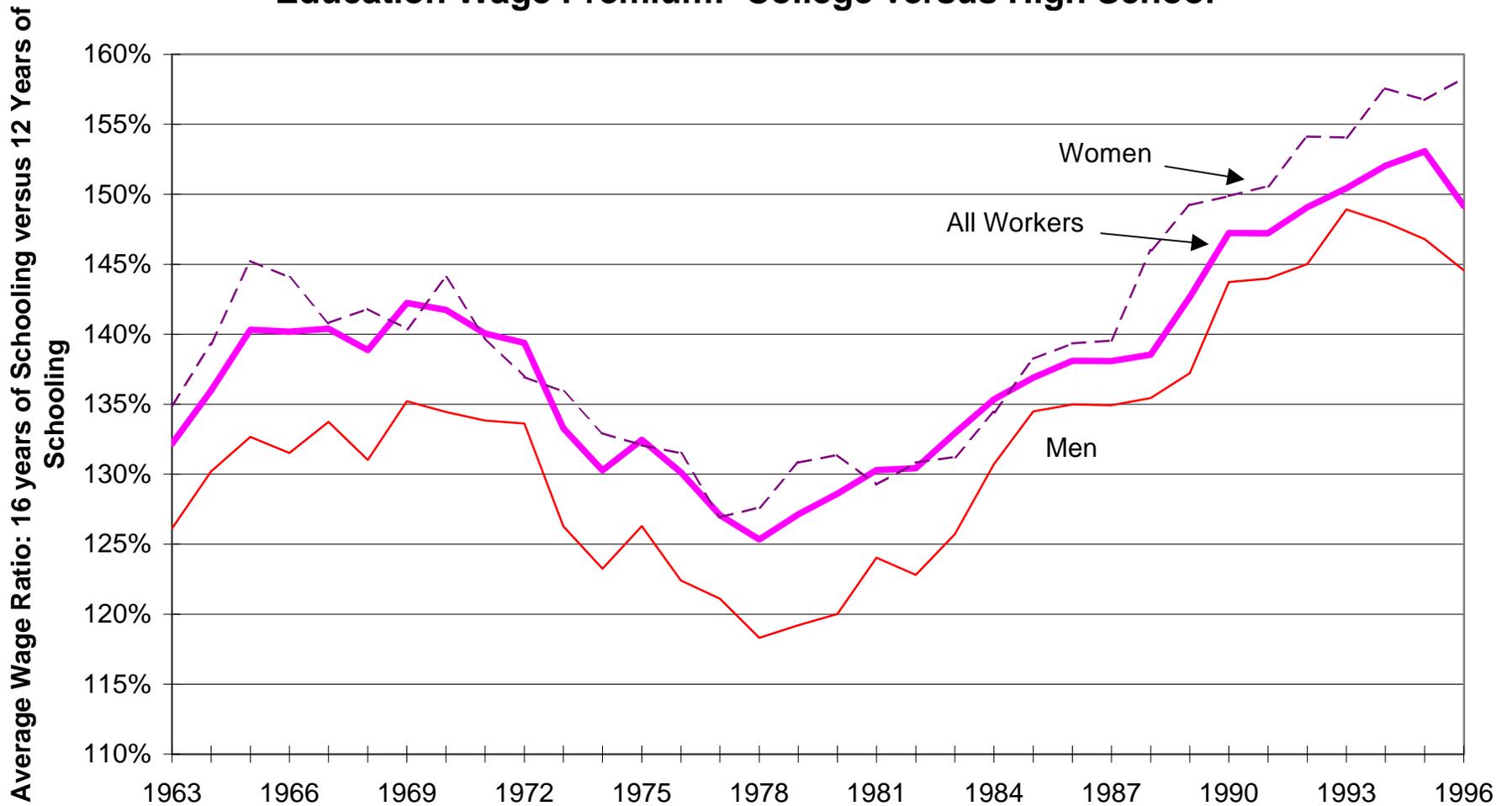
Ratio of Wages at the 80th Percentile to Wages at the 20th Percentile of the Distribution



Source: March CPS; M. Kosters, AEI, February 1998

Figure 7

Education Wage Premium: College versus High School

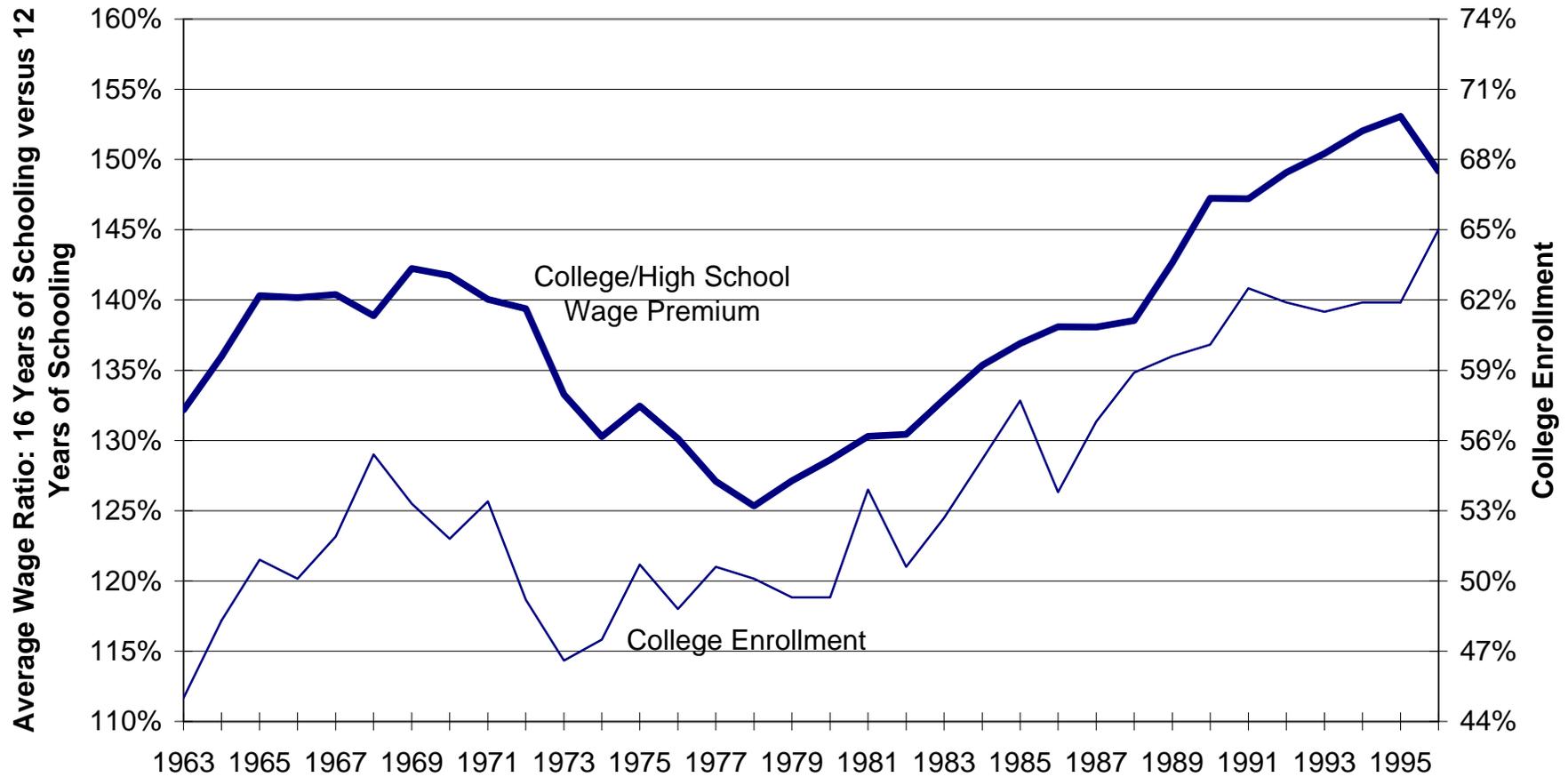


Note: Average wages were computed for the middle 80 percent of hourly wages for each group (the top and bottom 10 percent were excluded). Wages of workers with 16 years of schooling are compared with those with 12 years of schooling.

Source: March CPS; M. Kosters, AEI, January 1998.

Figure 8

College Enrollment and College Wage Premium

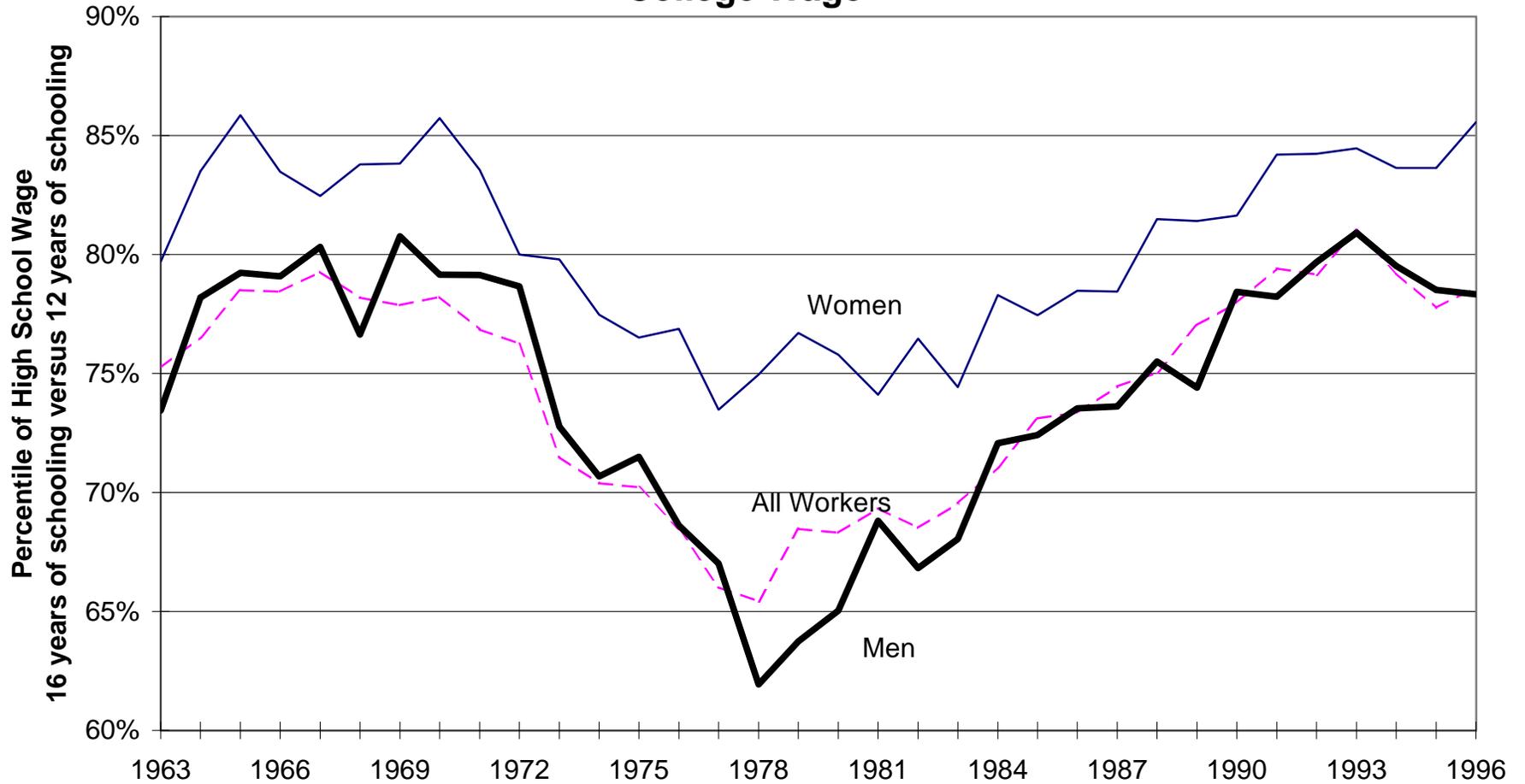


Note: Enrollment figures are the percentage of high school graduates age 16-24 who were enrolled in college in the October following graduation. Average wages were computed for the middle 80 percent of hourly wages for full-time workers age 25-54 (the top and bottom 10 percent were excluded). Wages of workers with 16 years of schooling are compared with those with 12 years of schooling.

Sources: Bureau of the Census; March CPS; M. Kosters, AEI, March 1998.

Figure 9

Percentile Location in High School Wage Distribution of the Median College Wage

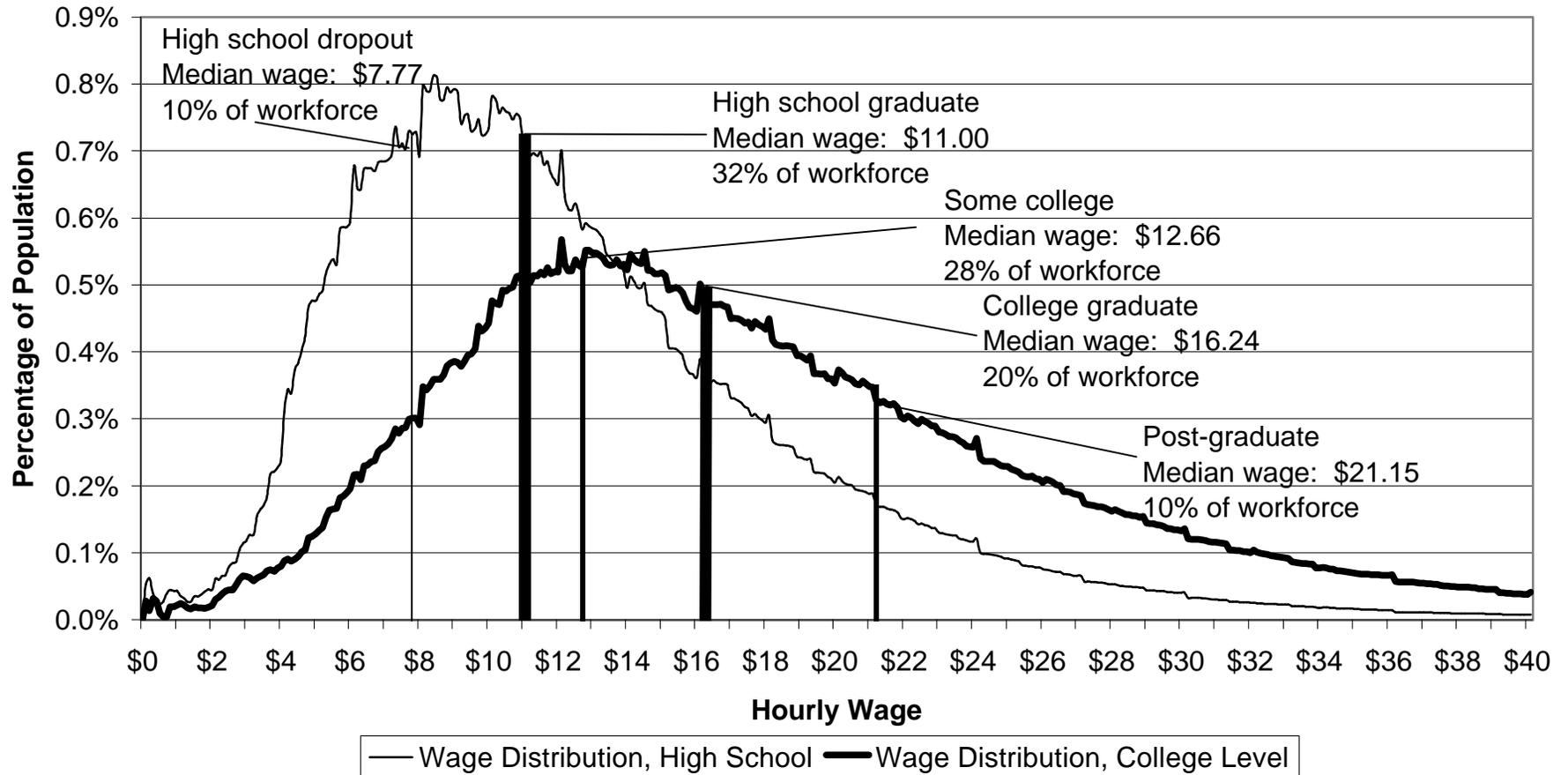


Note: Percentile location in the wage distribution for high school level workers of the median wage for college level workers.

Source: March CPS; M. Kosters, AEI, January 1998.

Figure 10

1996 Wage Distributions by Education, Full-Time Workers Age 25-54



Note: Histograms calculated on \$0.10 increments in wage levels. Histograms have been smoothed using a symmetric moving average filter with a width equal to $\pm 20\%$ of the wage level.

Source: March 1997 CPS; M. Kosters, AEI, January 1998

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