

Workers' purchasing power rises despite slowdown in wage and salary gains

There is no clear relationship between changes in the purchasing power of wages and salaries and the business cycle; changes in purchasing power reflect the greater volatility of price, rather than wage, changes

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Changes in the purchasing power of wages and salaries, as measured by the constant-dollar Employment Cost Index (ECI), show a dramatic reversal during the last 4 years (1980–83) from the trend of the preceding 4 years (1976–79). The rate of change declined steadily from 1976 through March 1980, but since then has generally been rising. During the last 2 years, purchasing power has actually increased. (See chart 1.) This improvement occurred despite a sharp drop in the rate of increase in wages and salaries, as measured by the current-dollar ECI. The explanation for this apparent anomaly is that although the rate of wage and salary increase has been dropping, the rate of price increase has declined even faster.

This article examines fluctuations in the purchasing power of wages and salaries for private industry workers, as well as for major industry and occupation categories, over the 1976–83 period. The critical determinant of purchasing power changes has been the rate of increase in consumer prices. There appears to be no clear relationship between the stage of the business cycle and changes in purchasing power but, consistently, the ECI adjusted for price changes (constant-dollar ECI) rose most when prices rose least, and vice versa. Fluctuations in purchasing power reflect the greater volatility of price increases, compared with wage and salary gains, over the past 8 years: pay increases trail price changes during periods of rapid price rises, and exceed price increases when the rate of price change is low.

Over the 8-year period studied, purchasing power decreased for most workers. However, changes were not uni-

form across the economy. Some groups lost more purchasing power than others, and a few groups even experienced an increase. None of the occupational or industry groups studied gained purchasing power during the 1979–80 period of high price inflation, no matter the size of their wage and salary increases.

How change in purchasing power is measured

The measure of purchasing power used for the analysis in this article was the constant-dollar ECI for wages and salaries. The constant-dollar ECI was calculated by first converting both the ECI and the Consumer Price Index for All Urban Consumers (CPI-U) to a common base of September 1975 = 100. The converted ECI was then divided by the converted CPI-U for the same period. The result is an index which measures the amount of goods and services which could be purchased with the wages and salaries paid for an hour of labor in the current period, compared with what could have been purchased in the base period.

For example, a constant-dollar index of 105.0 indicates that current wages could purchase 5 percent more goods and services than wages in the base period, even though wages unadjusted for price changes may have increased by more or less than 5 percent (or may have even decreased).¹

The ECI is used in this analysis because it measures changes in wage and salary rates, not changes in earnings, which are affected by hours worked as well as shifts in the composition of the work force. The appendix provides an explanation of how the ECI differs from earnings series.

Cyclical behavior of purchasing power

The relationship between price increases and rates of wage and salary change over the 1976–83 period is shown in

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chart 1. When the current-dollar curve for the ECI is above that for the CPI, purchasing power is increasing; when it is below the CPI curve, purchasing power is declining. Purchasing power increased in the early (1976–77) and latter (1982–83) parts of the period studied.

The critical determinant of changes in purchasing power in recent years has been the rate of price inflation. The following tabulation shows annualized percent changes in wages and salaries in private industry and in the Consumer Price Index over the 1975–83 period, by stage of the business cycle. The months chosen for comparison are those closest to the officially designated turning points and consistent with the ECI's reference months. The latest expansion is incomplete, not yet having reached its peak.

	<i>Current-dollar ECI</i>	<i>Consumer Price Index</i>	<i>Constant-dollar ECI</i>
Expansion: September 1975– December 1979 ..	7.6	8.3	-.6
Contraction: December 1979– June 1980	9.4	16.0	-5.9
Expansion: June 1980– June 1981	9.3	9.6	-.3
Contraction: June 1981– December 1982 ..	6.8	5.1	1.5
Expansion: December 1982– December 1983 ..	5.0	3.8	1.1

There is no clear relationship between the stage of the business cycle and changes in purchasing power, but there is a pattern in that the largest price increases are associated with decreases in constant-dollar wages and salaries, and the smallest price increases are found with constant-dollar pay increases.

The relationship between the CPI and constant-dollar ECI resulted, in part, from the nature of the price changes and conditions in the labor market. This conclusion is supported by a review of wage and price developments over the history of the ECI series.

The early part of the 1975–80 expansion saw increases in real wages and salaries as inflation moderated from the high levels of 1973–74, and wage and salary rates rose about 7 percent in both 1976 and 1977. (See table 1.) A strong labor market, as reflected in the decline in the unemployment rate from a high of 9.2 percent in May 1975 to 6.4 percent in December 1977, contributed to the steady increase in wages and salaries. During 1978 and 1979, prices rose dramatically, largely in response to increases in the cost of oil, while wage gains were slower.²

The brief 1980 recession did not have a dampening effect on wages. They continued to rise at an annualized rate of

9.4 percent even though unemployment increased from 5.9 to 7.8 percent during the period. The short duration of the recession limited its impact on employers, particularly those with labor contracts which did not expire during the period. During this recessionary period, prices rose at an annualized rate of more than 16 percent. These increases generated large wage gains for workers covered by automatic cost-of-living escalator clauses, further offsetting the wage dampening effects of the recession.

During the 1980–81 expansion, wage and salary increases peaked at 9.3 percent and essentially remained at that rate, while unemployment moderated to 7.0 percent. Price increases slowed to 9.6 percent, a sharp drop from the rate of the previous 2 years, but still a historically high level.

The 1981–82 recession saw wage and salary increases decline sharply, from 9.3 percent for the year ended June 1981 to 6.3 percent for the year ended December 1982. Over the same period, the labor market deteriorated as unemployment rose from 7.0 percent in July 1981 to 10.8 percent in November 1982. The rate of price increase dropped dramatically, from 8.9 percent for the year ended June 1981 to 3.9 percent for the year ended December 1982.

The most recent economic expansion, which began in December 1982, is following a trend similar to that of the early period of the 1975–80 expansion. Purchasing power increased 1.1 percent during the first year of the current expansion, as the decline in the rate of wage increase was more than offset by the continued drop in the rate of price increase. The labor market tightened somewhat as unemployment declined during the period, dropping from 10.8 percent in December 1982 to 8.2 percent in December 1983.

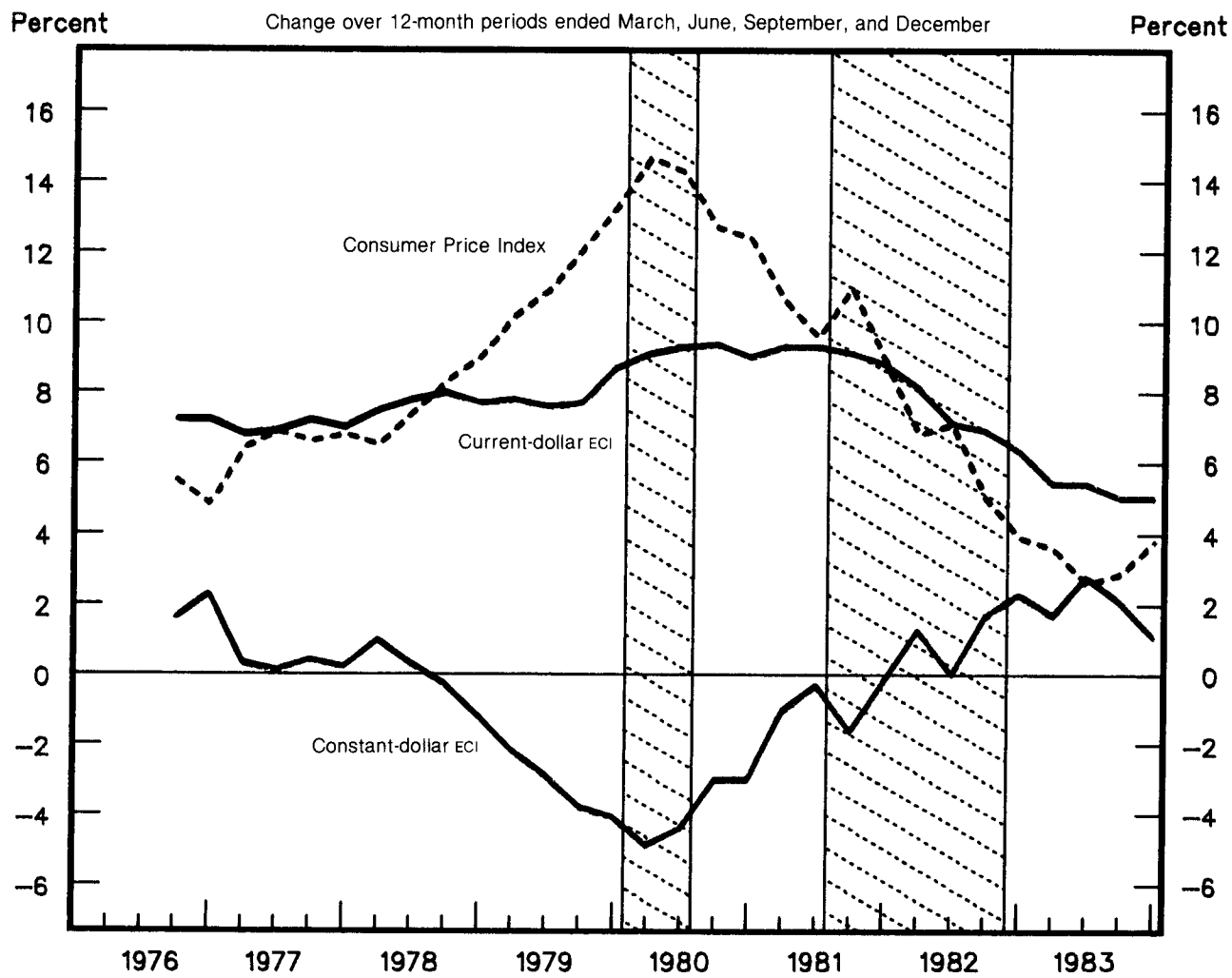
The cyclical pattern of wage movements for most occupation and industry groups was similar to that for all private industry workers.

Recent shifts in the pattern of wage changes

The contraction that began in mid-1981 marked a turning point in the relative rates of pay increase for white-collar workers compared with blue-collar, and for manufacturing workers compared with those in nonmanufacturing industries. The following tabulation shows annualized percent increases in private industry wage and salary rates, and in the CPI-U.

	<i>September 1975– June 1981</i>	<i>June 1981– December 1983</i>
All private industry	8.1	6.0
White collar	7.7	6.6
Blue collar	8.5	5.3
Service workers	8.2	6.3
Manufacturing	8.4	5.6
Nonmanufacturing	7.9	6.3
Union	8.8	6.4
Nonunion	7.7	5.8
Consumer Price Index	9.2	4.6

Chart 1. Changes in current- and constant-dollar wage and salary component of the Employment Cost Index and in the Consumer Price Index for All Urban Consumers, 1976-83



NOTE: Shaded areas indicate recessionary period.

During the September 1975–June 1981 period, blue-collar workers and workers in manufacturing industries received larger wage and salary increases than white-collar workers and workers in nonmanufacturing industries. This relationship held even during the brief 1980 recession. However, this pattern reversed during the 1981–82 recession. There was a dramatic slowdown in the rates of wage and salary increase for all worker groups, but the declines for blue-collar workers and those in manufacturing were unusually sharp. During 1983, the first year of the most recent expansion, a reversal of the usual pattern also occurred when nonunion wage increases exceeded those of union workers.

Blue-collar occupations, and workers in manufacturing industries were affected more than other workers by the

economic conditions of 1981–82. Unemployment among blue-collar workers was 16.1 percent in the fourth quarter of 1983, up from 9.8 percent in the second quarter of 1981, greatly exceeding the 5.4-percent and 3.9-percent rates for white-collar workers. Similarly, unemployment in manufacturing peaked at 14.2 percent in the fourth quarter of 1982, up from 7.6 percent in the second quarter of 1981.

Union workers, who are heavily concentrated in blue-collar jobs and in manufacturing industries, were affected by the deteriorating labor market. They continued to receive larger wage increases than nonunion workers during the 1981–82 recessionary period, but for the year ended in December 1983, wage increases for nonunion workers (5.2 percent) exceeded those for union workers (4.6 percent).

Table 1. Percent changes in the wage and salary component of the ECI and in the CPI-U for the 12 months ended in December

Characteristic	1976	1977	1978	1979	1980	1981	1982	1983
Private industry								
Current dollar	7.2	7.0	7.7	8.7	9.0	8.8	6.3	5.0
Constant dollar	2.3	0.2	-1.2	-4.1	-3.0	-0.2	2.3	1.1
Occupational group								
White collar:								
Current dollar	6.6	6.5	7.2	8.6	8.7	9.1	6.4	6.0
Constant dollar	1.9	-0.4	-1.6	-4.0	-3.3	0.1	2.5	2.1
Blue collar:								
Current dollar	8.0	7.7	8.2	9.0	9.6	8.6	5.6	3.8
Constant dollar	3.2	0.8	-0.8	-3.8	-2.5	-0.4	1.7	0.0
Service workers:								
Current dollar	7.9	6.4	8.7	7.2	8.1	8.3	8.5	4.6
Constant dollar	3.1	-0.5	-0.2	-5.5	-3.8	-0.6	4.5	0.7
Industry division								
Manufacturing:								
Current dollar	7.5	7.8	8.3	8.6	9.4	8.7	5.6	4.3
Constant dollar	2.6	1.0	-0.7	-4.2	-2.7	-0.3	1.8	0.4
Nonmanufacturing:								
Current dollar	7.1	6.5	7.4	8.8	8.8	9.0	6.5	5.4
Constant dollar	2.3	-0.5	-1.3	-4.1	-3.1	0.0	2.5	1.6
Bargaining status								
Union:								
Current dollar	8.1	7.6	8.0	9.0	10.9	9.6	6.5	4.6
Constant dollar	3.3	0.7	-1.0	-3.9	-1.2	0.5	2.5	0.8
Nonunion:								
Current dollar	6.8	6.6	7.6	8.5	8.0	8.5	6.1	5.2
Constant dollar	2.0	-0.4	-1.3	-4.2	-3.9	-0.4	2.2	1.4
Consumer Price Index	4.8	6.8	9.0	13.3	12.4	8.9	3.9	3.8

Clearly, relative rates of wage and salary changes among various subgroups shifted during the June 1981–December 1983 period. The rate of increase dropped for all subgroups, but the decline was greatest for those who had posted the highest rates of increase in the earlier period. This shift reflects factors such as competition from imports, deregulation, and the growth of nonunion establishments as well as recessionary effects. In the last 3 years, wage cuts or freezes have been frequent in such heavily unionized industries as automobiles, steel, construction, airlines, and trucking as unemployment was especially high in these areas.

Changes in purchasing power, 1975–83

From September 1975, when data for the ECI were first collected, through December 1983, purchasing power for private industry workers declined 2.5 percent, as wage increases of 80.9 percent were offset by price increases of 85.5 percent. (See table 2.) Workers in virtually all occupational and industry groups experienced a decline in purchasing power. Purchasing power rose only for groups with consistently above-average annual wage increases during the entire 8-year period and for those with unusually large wage gains during the latter half (1979–81), when prices rose rapidly.

Among the groups with a rise in purchasing power were workers in transportation, communications, and public utilities, whose wage and salary increases exceeded the average

for all workers in 6 of the 8 years studied; union workers, whose wage and salary increases were below the average for all workers only in 1983; and professional and technical workers, whose salary gains were substantially above the average during 1979–81, after trailing those of most other groups during 1975–78.

Declines in purchasing power were the greatest for managers and administrators, salesworkers, and workers in construction and wholesale and retail trade industries. Increases for managers and administrators exceeded the average for all workers only in 1983. The salesworkers and construction series do not include data for some quarters before March 1977, a period during which purchasing power was rising, but both series have lagged the average for all workers over the last several years. Wholesale and retail trade is strongly affected by changes in the salesworker category.

Summary

The period studied (1975–83) begins shortly after the trough of a severe recession. Constant-dollar wages were increasing early in the period as the moderate rate of wage increase was higher than the increase in consumer prices. The period ends shortly after the trough of another severe recession. Constant-dollar wages are again increasing as the moderate rate of wage increase is higher than the increase in consumer prices. Between the two troughs, there was a period of severe wage and price acceleration, followed by

Table 2. Percent change in the wage and salary component of the ECI, current- and constant-dollar, September 1975–December 1983

Characteristic	Current dollar	Constant dollar
All private industry workers	80.9	-2.5
Occupational group:		
White-collar workers	79.8	-3.1
Professional and technical	86.7	0.3
Managers and administrators	71.2	-7.7
Salesworkers ¹	58.9	-6.7
Clerical workers	83.7	-1.0
Blue-collar workers	82.2	-1.8
Craftworkers	82.0	-1.9
Operatives, except transport	85.0	-0.3
Transport equipment operatives	76.3	-5.0
Nonfarm laborers	80.8	-2.5
Service workers	83.5	-1.1
Industry division:		
Manufacturing	82.0	-1.9
Durable goods ²	71.5	-2.5
Nondurable goods ²	66.1	-5.5
Nonmanufacturing	80.3	-2.8
Contract construction ³	68.5	-7.0
Transportation, communication, and public utilities	94.7	5.0
Wholesale and retail trade	73.3	-6.6
Services	80.9	-2.5
Bargaining status:		
Union	89.5	2.2
Nonunion	76.7	-4.7

¹Change from March 1977 to December 1983.

²Change from September 1976 to December 1983.

³Change from March 1976 to December 1983.

a period of sharp wage and price deceleration. During this middle period, prices rose more than wages, so constant-dollar wages declined.

The decline in constant-dollar wages that occurred during the period of high wage and price inflation was greater than

the increase in constant-dollar wages that resulted during the period of moderate wage and price inflation. Consequently, over the entire period constant-dollar wages declined. In December 1983, constant-dollar wages were 2.5 percent below the level of September 1975.³ □

—FOOTNOTES—

¹The measure of purchasing power used in this article is an index of the quantity of goods and services that could be purchased with an hour's wages. In fact, though, movements in purchases may not correspond to movements in wage rates. Individuals may increase purchases more than the increase in their wage rate by drawing on savings or receiving transfer payments, or may purchase less by saving or paying taxes. Because the CPI is an expenditure-based index, income taxes are excluded. For research purposes, Robert Gillingham and John Greenlees have defined and estimated a price index which incorporates income taxes. For a brief description of their research, see *Problems in Measuring Consumer Prices*, Report 697 (Bureau of Labor Statistics, 1983), p. 3.

²Voluntary wage and price guidelines, administered by the Council on Wage and Price Stability, were in effect from the 4th quarter 1978 to the 4th quarter 1980. It is uncertain what impact those guidelines had on wage and price changes during the period.

³Beginning with the index for January 1983, the method of pricing owner-occupied housing in the official CPI-U was changed from the "asset price" approach to a rental equivalence approach. Prior to that time, an experimental CPI measure using the rental equivalence approach was available; that index did not rise as rapidly as the CPI-U over the 1976-82 period. For a discussion of methods for pricing housing, see *Problems in Measuring Consumer Prices*, Appendix B.

APPENDIX: How ECI wage rate change is calculated

The ECI eliminates the impact of employment shifts by collecting wage rates for specific occupations and using fixed occupation and industry weights in the calculation of indexes. Consider the case of an employer with two types of workers, electricians and janitors. In March 1982, he employs 10 electricians at \$10 per hour and 10 janitors at \$5 per hour. The average wage (and average earnings) is \$7.50.

	<i>Number</i>	<i>Wage</i>	<i>Aggregate wage</i>
Electricians	10	\$10	\$100
Janitors	<u>10</u>	5	<u>50</u>
	20		150

Average wage (earnings): $\$150 \div 20 = \7.50

In March 1983, both groups are given a 10-percent wage increase, but now only 5 janitors are employed. Average earnings increase to \$9.17.

	<i>Number</i>	<i>Wage</i>	<i>Aggregate wage</i>
Electricians	10	\$11.00	\$110.00
Janitors	<u>5</u>	5.50	<u>27.50</u>
	15		137.50

Average earnings: $\$137.50 \div 15 = \9.17

Earnings change: $\$9.17 \div \$7.50 = 1.22$ (or a 22-percent increase)

But when fixed employment weights are used (that is, the number of janitors remains fixed at 10), the average change in wage rates is calculated, not the change in average hourly earnings.

	<i>Number</i>	<i>Wage</i>	<i>Aggregate wage</i>
Electricians	10	\$11.00	\$110.00
Janitors	<u>10</u>	5.50	<u>55.00</u>
	20		165.00

Average wage rate: $\$165 \div 20 = \8.25

Wage rate change: $\$8.25 \div \$7.50 = 1.10$ (or a 10-percent increase)

In this case, the increase is 10 percent, the size of the wage rate increase which was granted to both occupations. If consumer prices had also increased 10 percent, then the purchasing power of wage rates would have been unchanged for both electricians and janitors separately as well as for the two combined. The change in the purchasing power of earnings, calculated by dividing the relative increase in average earnings by the change in the price index, would give different results: purchasing power would have remained unchanged for the two occupations separately but would have increased 11 percent for the two combined.