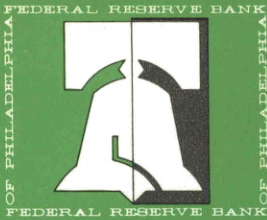


**april**



Paying for Social Security:  
Is It Time to "Retire" the Payroll Tax?

The Tax Bite:  
How the U. S. Stacks Up

How Reliable Are Those  
Price and Employment Measures?

**FEDERAL RESERVE BANK of PHILADELPHIA**

# business review



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**On our cover:** The Philadelphia Museum of Art is situated at the extreme upper end of the tree-lined Benjamin Franklin Parkway, near the east bank of the Schuylkill River and the southernmost end of Fairmount Park. This museum, the chief repository of art in Philadelphia, is the architectural product of Zantzinger & Borie and Horace Trumbauer. Opened in 1928, the neoclassical structure houses exhibits presenting a comprehensive view of the history of art from ancient times to the present.

*(Photograph courtesy of the Philadelphia Convention and Tourist Bureau.)*

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## Paying for Social Security: Is It Time to “Retire” The Payroll Tax?

By Donald J. Mullineaux

In the last five years, the effective tax rate for Social Security programs has increased over 18 percent. Since most Americans accord tax increases and bubonic plagues the same order of welcome, a public outcry might well have been expected to echo throughout the halls of Congress. Yet, until very recently, nary a whisper of complaint was heard.

Why should taxpayers prove so tolerant of increased government demands from payrolls to support retired and disabled workers and their survivors? After all, since the days when Robin Hood and his band of merry men popularized compulsory transfer-payment schemes, these systems have typically been assailed by those “called upon” to give—regardless of the apparent virtue of the cause. Social Security probably has proved exempt from such a reception because of the public’s fundamental misconception of the nature of the program.

Many people mistakenly perceive Social Security as insurance against future loss of earning power. In fact, the system is simply a method of making transfer payments from the young to the old. There is no firm contractual relationship between what you pay today and what you get tomorrow. Recognizing payroll deductions as “taxes” rather than “insurance premiums” means that the benefits and costs of Social Security can be discussed *separately*. In particular, the method chosen to finance this socially mandated program—the payroll tax—can be compared with other forms of taxation which might accomplish the same ends more equitably and efficiently.

### THE FINANCIAL DEMANDS OF SOCIAL SECURITY: A GROWING BURDEN FOR THE PAYROLL TAX

The Old-Age, Survivors, Disability and Health Insurance (OASDHI) program is a

product of the Social Security Act of 1935. Initially designed to guarantee a *minimum* level of income support to retired industrial and commercial workers, the program now embraces almost all workers<sup>1</sup> and their dependents and covers the additional contingencies of illness in old age, death, and disability (see Box). Today, one in every seven Americans receives a grayish-green Social Security check each month, and for many recipients this represents their princi-

<sup>1</sup> Those workers currently exempted from mandatory participation include clergy, employees of non-profit organizations, state and local government workers, and Federal employees under the Civil Service Retirement System.

pal source of income. Benefits per recipient have increased from \$157.65 a year in 1940 to \$1,715.43 in 1972, or over 1000 percent.<sup>2</sup> Since prices have increased about 200 percent over the same period, the "real" level of benefits has risen substantially.

As most workers know, Social Security is financed through compulsory payroll-tax deductions. Currently, workers and employers *each* pay 5.85 percent on the first \$10,800 earned each year. Because of increases in both the tax rate and the wage base to which

<sup>2</sup> The maximum pension for a couple in 1940, the first year benefits were paid, was \$820.80 annually. In 1972, the maximum benefit was \$4,668 or \$389 a month.

## WHY HAVE A SOCIAL SECURITY PROGRAM?

The establishment of Social Security and growth in the program are no doubt interpreted by many as a reflection of the humanitarian values of American society. However, a *compulsory* pension system also makes good sense from an economic (resource-saving) viewpoint. Left to their own devices, those individuals who would fail to provide sufficiently for retirement would not be the only ones to suffer the cost of such improvidence. Having become "public charges," society would be required to support them. These "social costs" can be reduced by *requiring* individuals to set aside a minimum level of current income for retirement.

Although "neighborhood effects" suggest an economic rationale for compulsory pensions, the argument does not demand that the required portion of retirement insurance be provided by the government rather than the private sector. The nationalization of the program is probably explained by the fact that Social Security was one of several New Deal programs such as the Agricultural Adjustment Act, the Works Progress Administration, and the National Recovery Act, all of which involved government intervention in private-sector activities in an attempt to combat the misery and economic dislocation caused by the Great Depression. Several economists have suggested that transferring the program to profit-motivated private firms would increase efficiency in the retirement-provision process.\* However, Social Security may well be the most popular political program since biblical times when Joseph dispensed wheat from government storage to starving Egyptians and Israelites. Clearly, the result of many more studies would be required to convince the public of the wisdom of shifting Social Security to private hands. Thus, most critics of the system have suggested reforms within the framework of continued government operation.

\* See, for example, Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962), chap. 11.



it applies, Social Security taxes have risen substantially relative to national income in recent years (see Table). Payroll taxes are currently the second-biggest revenue generator for U. S. Treasury coffers, personal income taxes being the largest.

Recent changes built into the Social Security setup insure the continued growth of the program. Present law provides that after 1974, the wage base subject to tax will automatically be adjusted upward as wage levels rise.

Benefits, too, will be raised without prior Congressional approval whenever the Consumer Price Index goes up 3 percent. If wages rise by 5 percent annually and inflation averages 2.75 percent, a couple at retirement age (65) in 2011 can expect a pension of nearly \$33,000 a year (about \$11,500 in 1972 dollars).

Observers have interpreted this rapid growth of Social Security as reflecting confusion concerning the objectives of the program. On the one hand, Social Security must expand to continue to provide a minimum

level of support for increasing numbers of retired workers in an economy where the cost of living trends ever upward. On the other hand, the program also has grown in response to social concern with the problem of destitution among the aged. (See Box on multiple goals for a discussion of why these objectives may conflict and how they might be reconciled.) Reformers contend that if the current system is restructured to eliminate the problem of multiple goals, the compulsory pension program can grow more slowly and the financial stresses will prove less severe. Such reforms probably lie considerably in the future, however, and even if implemented, will not solve many of the problems associated with the payroll tax.

#### CAN THE PAYROLL TAX CONTINUE TO "END-RUN" THE TAX REVOLT?

Since 1949, aggregate payroll deductions for Social Security have grown like rabbits in a lettuce patch. Overall tax collections have increased at a 16 percent annual rate and the maximum tax per worker has gone

### A GROWING PERCENTAGE OF NATIONAL INCOME GOES TO SOCIAL SECURITY TAXES BECAUSE OF BOTH RATE AND BASE INCREASES

Year	Employee's Portion of the Social Security Tax Rate (Percent)	Maximum Wage Base Subject to Tax	Total Social Security Taxes as Percent of National Income	Total Social Security Taxes as Percent of All Federal Tax Receipts
1937	1.0	\$ 3,000	1.0	10.9
1947	1.0	3,000	0.8	3.6
1957	2.25	4,200	2.1	9.2
1967	4.40	6,600	4.4	18.9
1972	5.20	9,000	5.2	21.5
1973	5.85	10,800	5.8 (est.)	25.0 (est.)

Source: U. S. Department of Health, Education and Welfare;  
U. S. Department of Commerce



## RECONCILING MULTIPLE GOALS: SOCIAL SECURITY AND THE NEGATIVE INCOME TAX

Some students of Social Security contend that the program suffers from a basic flaw since it tries to satisfy two goals with a single policy instrument. On the one hand, it attempts to maintain the livelihood of the aged *poor*, while on the other hand, it assures *all eligible recipients* of an income supplement which is purportedly *related to their previous standard of living*. Focusing on the former goal suggests it is wasteful to hand out money to those already well-off, while if the latter is emphasized, the program will not lift low-income old people out of poverty.

Students of policymaking are well aware that conflicts among goals can only be resolved through the use of additional policy instruments. Thus, both of the above objectives might be accomplished more efficiently if the antipoverty goal were assigned to an income-transfer scheme such as the negative income tax and the pension-provision goal were attacked through a revised Social Security program.

The negative income tax is a device for making transfer payments to low-income families. Individuals whose income falls below some "break-down" level would "pay" taxes at a negative rate. In other words, they would receive payments from Uncle Sam rather than sending him a check each April. The size of the payment would be determined by applying the negative tax rate to the amount by which their income falls short of the "break-even" level. For example, if the "break-even" point is \$4,000 and the negative tax rate is 50 percent, a family with income of \$1,000 will receive \$1,500 as a negative tax payment.

Although there are some practical problems, the Social Security Administration could manage the negative income tax for all aged persons. Those ineligible for Social Security could qualify for payments under this scheme and the cost of their benefits could be paid from the general fund of the Treasury. Recent estimates indicate the cost of a negative income tax to the aged poor would be relatively small compared with the total cost of a comprehensive negative income tax. However, because of the sweeping nature of the proposal and the administrative detail involved, it is usually suggested as a longer-run reform of the Social Security program.

from \$60 in 1949 to \$936 in 1972. Last year's Social Security tax hike constituted the largest Federal tax increase (\$7 billion) since the Korean War as Congress settled on a \$1,404 maximum figure for 1974. This event might have proved less surprising had it not occurred in the midst of a much-publicized "taxpayers' revolt."

Social commentators and economists often explain the apathetic public response to Social Security tax increases by noting that

many taxpayers believe that (1) payroll-tax deductions represent "insurance premiums" for vested benefits to be paid during retirement and (2) the tax rate for Social Security is low in comparison with other taxes. Both of these views are in fact misleading. As the nature and effects of Social Security "contributions" become more widely recognized, payroll-tax increases are likely to be vigorously debated in parlors, pubs, and parliamentary chambers.



**Insurance? No—Taxes? Yes.** Some years ago the Social Security Administration told Americans that:

Your account number on your Social Security card identifies your old-age and survivors *insurance* account. Your card is the symbol of *your insurance policy* under Federal Social Security law.

The Administration no longer uses this language, and the public is none the worse for it. While private insurance and Social Security have some elements in common, the concepts differ substantially. For example, the benefits from private insurance are pre-determined in a firm contractual relationship and depend on the “premium” paid. Social Security benefits, however, are subject to the whim of Congress and historically have proved only tenuously related to expenses. In addition, the U. S. Supreme Court has decided that Social Security recipients have no “property rights” in the system, but rather possess only a moral claim which Congress could theoretically deny.<sup>3</sup> Finally, participation in Social Security is compulsory, while private insurance purchases are, of course, voluntary.

Clearly, Social Security payments more readily satisfy the definition of a tax—a forced contribution of income to meet public needs—than that of an insurance premium. In fact, since payroll deductions are taxes rather than voluntary contributions, the program can be financed on a “pay-as-you-go” basis. Current payroll taxes are used to cover the costs of benefits for the

<sup>3</sup> In *Fleming v. Nestor*, 363 U. S. 603 (1960), the Supreme Court upheld the constitutionality of a provision which prohibits Social Security payments to persons deported for subversive activities. The majority opinion declared:

The noncontractual interest of an employee covered by the Act cannot be soundly analogized to that of the holder of an annuity, whose right to benefits are based on his contractual premium payment.

currently retired. Private insurance firms, however, must accumulate “reserve funds” to meet future obligations because their expected cash flows are uncertain.<sup>4</sup> Thus, Social Security taxes are determined by the level of benefits *currently* paid, while *insurance premiums* depend on the desired level of *future* benefits.

Recognition of Social Security as a tax-financed system for making transfer payments rather than a process of purchasing claims of future income permits a comparison of the program’s current financing procedures with other methods of accomplishing the same thing. Such a study suggests the payroll tax possesses some undesirable aspects relative to other types of taxes which make its true burden considerably greater than appears on the surface. As these liabilities become more widely recognized, payroll-tax increases will no doubt become a tougher row for Congress to hoe.

**The Burden of the Payroll Tax.** When compared to the minimum personal income tax rate of 14 percent, the 5.85 percent Social Security tax on wages hardly seems burdensome. Such a conclusion ignores a number of factors, however. The most im-

<sup>4</sup> As originally conceived, OASDHI payments were to be made from an accumulated reserve fund, but amendments to the Social Security Act in 1939 abandoned the reserve fund approach for “cash” or “pay-as-you-go” financing. This allowed pensions to be paid to the first crop of retirees in 1940, despite the fact they had paid practically nothing into the system. Under the present arrangements, payroll taxes are transferred from the Internal Revenue Service to OASDHI trust funds from which disbursements are consequently made. If taxes and interest on trust-fund investments (Treasury securities) exceed benefits paid, the size of the trust fund increases. The purpose of maintaining this reserve is apparently to provide for continuity of benefit payments if current tax receipts decline sharply because of a recession. Reserves in the trust fund are presently to be kept high enough to cover a total of *nine months* in benefits.



portant is that many economists believe that workers also bear the employer's portion of the tax in the form of foregone wages. For example, Milton Friedman has written:

[The employer's portion] . . . isn't paid by the employer; it is, in effect, paid by the wage earner. It is part of his wages that is sent to Washington instead of going to him.<sup>5</sup>

If this view is valid, the effective payroll-tax rate is of course 11.7 percent in 1973, rather than 5.85 percent.<sup>6</sup>

Another factor boosting the burden of payroll taxes is that no deductions or exemptions are permitted. Given the ceiling on taxable wages, this makes the payroll tax highly regressive. Such taxes take a larger piece of the poor man's muffin than the rich man's pie. For example, a worker earning less than \$10,800 pays 11.7 percent of his wages (if labor bears the full burden of the tax), while an executive earning \$100,000 pays only about 1.25 percent for Social Security. A family of four earning \$10,800 will pay a higher combined rate (Social Security and income tax) than a family earning \$20,000. Similarly, a family of six earning a poverty-range income of \$5,000 typically pays no income tax, yet surrenders \$585 to OASDHI trust funds.

<sup>5</sup> Milton Friedman, "Transfer Payments and the Social Security System," *Conference Board Record*, September 1965, p. 8.

<sup>6</sup> Economists use the term "incidence" when analyzing the way the burden of a tax ultimately gets borne. For statistical evidence supporting the view that labor bears the full burden of the employer's portion of the payroll tax, see John A. Brittain, *The Payroll Tax for Social Security* (Washington: Brookings Institution, 1972). Martin Feldstein criticizes Brittain's analysis in "The Incidence of the Social Security Payroll Tax: A Comment," *American Economic Review* 72 (1972): 735-38. In the following discussion, workers are presumed to bear the burden of both portions of the tax.

Social Security taxes also fall forcefully on multiple-worker families. A working husband and wife earning \$10,800 each will pay over \$2,500 in OASDHI taxes, while a wage earner with a nonworking spouse making \$21,600 will pay only half as much. Yet depending on future earnings, the two couples in this example might well draw the same amount of Social Security benefits. Since the public files no payroll-tax returns, none of these inequities are highly visible.

While Social Security taxes are clearly regressive, low-income retirees receive larger benefits relative to income than their well-to-do counterparts. The entire program is therefore usually considered progressive. Nevertheless, a part of this income redistribution is a transfer from the youthful poor to the elderly poor. By operating in this way, the system makes it more likely that today's young poor family will be tomorrow's old poor family. It does so by leaving the youthful poor with fewer dollars to invest in their own earnings capability ("human capital") or that of their children.

All of these arguments suggest that the present method of financing Social Security conflicts with both (1) the generally accepted principle that taxation should be based on ability to pay and (2) society's decision to attempt to eradicate poverty as expressed in the waning War on Poverty. Thus, consideration of alternative financing schemes is merited.<sup>7</sup>

<sup>7</sup> The payroll tax has a number of other potentially undesirable aspects. For instance, it has little stabilizing effect on the economy, and, in fact, ill-timed increases have sometimes proved destabilizing. In addition, to the extent that employers bear some portion of the tax, it may induce firms to substitute capital for labor or high-wage employees for low-wage workers. These artificially induced substitutions will result in smaller output or higher prices, as well as additional unemployment. However, economists believe this is not a serious problem because labor bears the full burden of the tax. Thus, the discussion has focused on the equity aspects of the payroll tax.



## MOVING TO GENERAL REVENUE FINANCING?

Many critics of the payroll-tax method of financing Social Security have suggested that OASDHI trust funds draw upon the general funds of the U. S. Treasury to meet their obligations. In effect, this would mean integrating income and payroll taxation, or substituting the former for the latter. Several different means of easing the distributive burden of the payroll tax in this manner have been advocated.

### **Integrating the Payroll and Income Tax.**

According to this plan, individuals receive credit against their income taxes for each dollar of Social Security taxes paid. Payroll deductions would be counted as withholdings for income-tax purposes, and the amount exceeding the total income-tax liability would be refunded. Partial integration could be achieved by allowing taxpayers to count only a portion of payroll taxes as income-tax withholdings. A melding of payroll and income taxes would, of course, result in a loss of government revenues, so that unless a tax cut were in order, income-tax rates would have to be increased to maintain the flow of government receipts.

### **Allowing Exemptions from the Payroll Tax.**

An alternative proposal is to allow wage earners exemptions for themselves and their dependents in computing their payroll taxes. A minimum standard deduction might also be permitted. The cost of those exemptions in foregone OASDHI revenues is considerable, but could be significantly reduced by denying exemptions to those with incomes above a certain level.

**Replacing the Payroll Tax with the Income Tax.** Neither of the previous proposals eliminates *all* of the inequities associated with the payroll tax. The tax would remain regressive above the ceiling on taxable wages. Discrimination against multiple-earner families would also continue, unless

a single ceiling were applied to pooled family income. The most comprehensive reform, therefore, would appear to be replacement of the payroll tax by the income tax. In 1969, a complete substitution of income for payroll taxes would have required a boost in income-tax yield of about 45 percent. One economist has shown that this could be accomplished by restructuring existing rate schedules to fall less heavily on low-income earners (relative to the combined Social Security-income tax rate), and generally more heavily on incomes above the ceiling on taxable wages.<sup>8</sup>

Proposals to shift the financing of Social Security to general revenue funding have drawn fire from several quarters. Business groups have opposed the idea on the grounds that financing benefits out of earmarked taxes has tended to temper Congress's generosity. The more likely case, though, is that misconceptions about the nature of the payroll tax have made it easier for Congress to expand the program. Some economists have also resisted such a change, arguing that foreign countries which use general revenue financing usually have the lowest levels of benefits. While this is true, it should be remembered that the purpose of the program is not to maximize benefits, but to fix them at levels which satisfy the basic objectives of the program. No evidence has been presented that suggests that general revenue financing will prove unable to satisfy this objective.

## WHAT THE CRYSTAL BALL SEES FOR THE PAYROLL TAX

As the public becomes more aware of the true nature of the compulsory pension scheme and of the inequitable and regressive aspects of the payroll tax, the present method of financing Social Security will no doubt prove considerably less flexible than

<sup>8</sup> See Brittain, *op. cit.*, pp. 147-49.

in the past. Yet some benefit increases have recently become "automatic" and Congress will probably find it difficult to eschew the temptation to boost benefits near election times. These considerations will eventually force some modification in the payroll tax, such as allowing personal exemptions, a minimum standard deduction, or both. In the long run, the payroll tax may be phased

out and replaced with the income tax. The types of reforms are difficult to predict, but their inevitability becomes more apparent with each increase in the government's bite on workers' paychecks to feed the Social Security trust funds. While these reforms won't make the bite any smaller in the aggregate, the hope is the bite will be felt more evenly. ■

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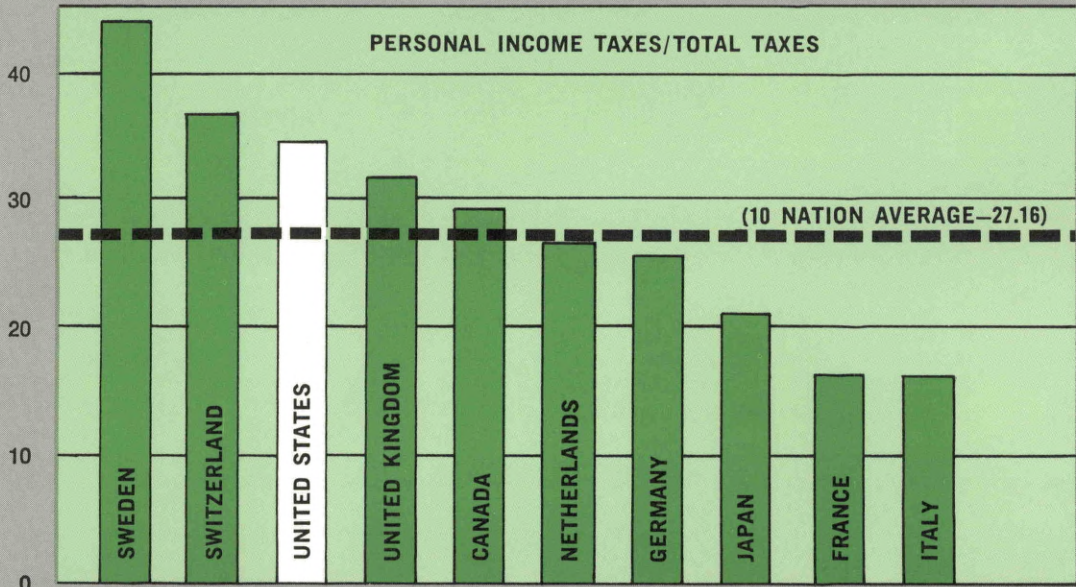






**CHART 1**  
**COMPARED TO THE AVERAGE TAXPAYER OF OTHER INDUSTRIALIZED COUNTRIES OF THE NONCOMMUNIST WORLD, AMERICANS PAY A GREATER SHARE OF THE NATION'S TOTAL TAX TAKE IN THE FORM OF PERSONAL INCOME TAXES**

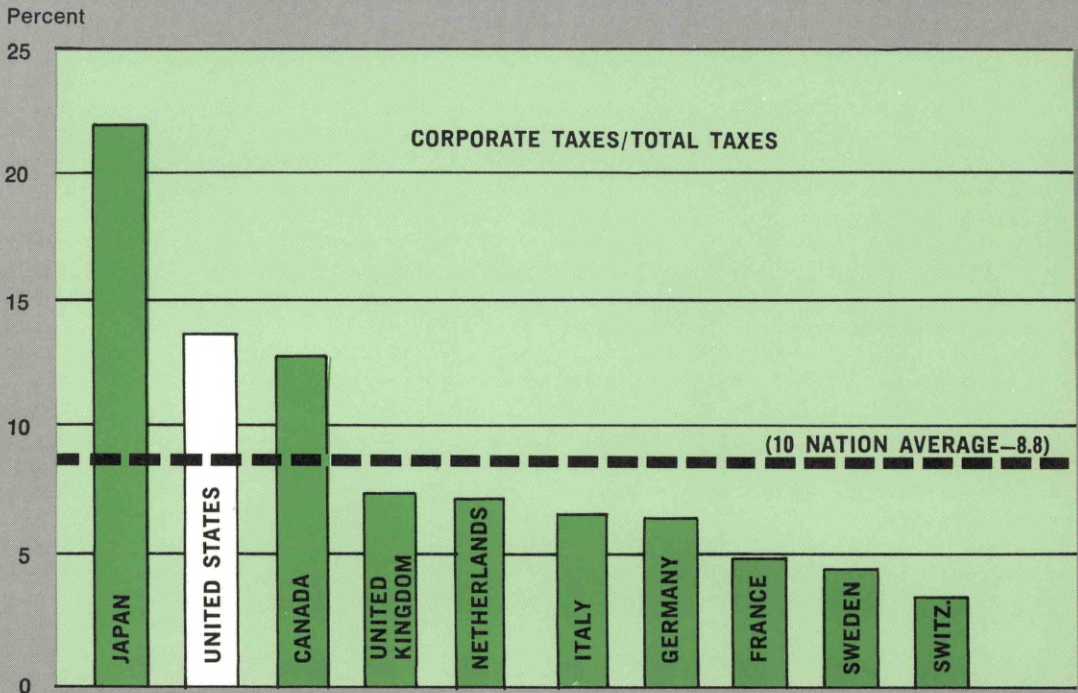
Percent



Source: Organization for Economic Cooperation and Development, *Revenue Statistics of OECD Member Countries, 1968-1970*



**CHART 2**  
**SO DOES THE CORPORATE SECTOR WHOSE SHARE IS WELL ABOVE THE AVERAGE**  
**OF NEARLY ALL ITS FOREIGN COUNTERPARTS**

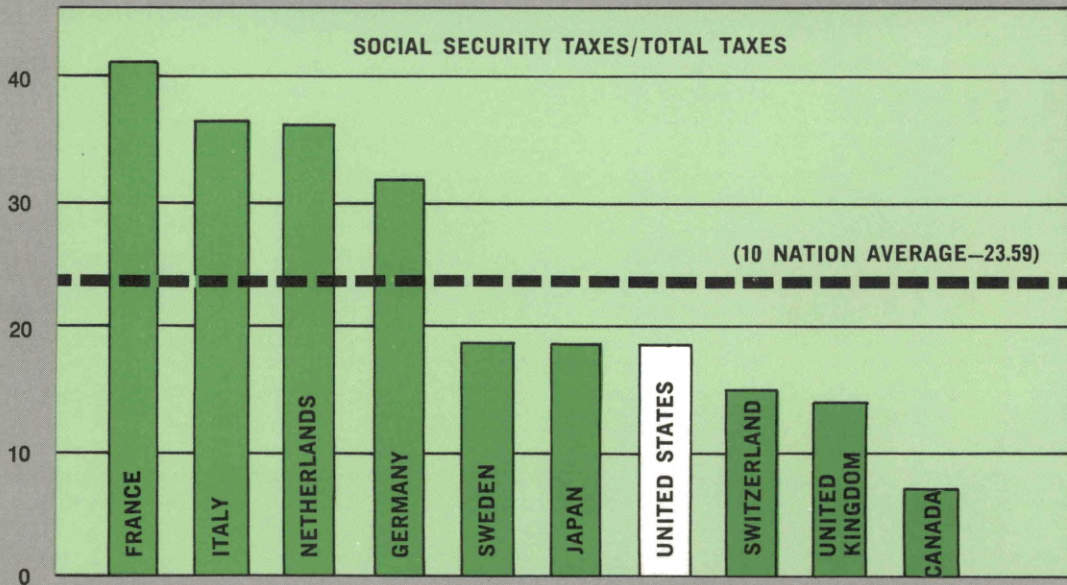




**CHART 3**

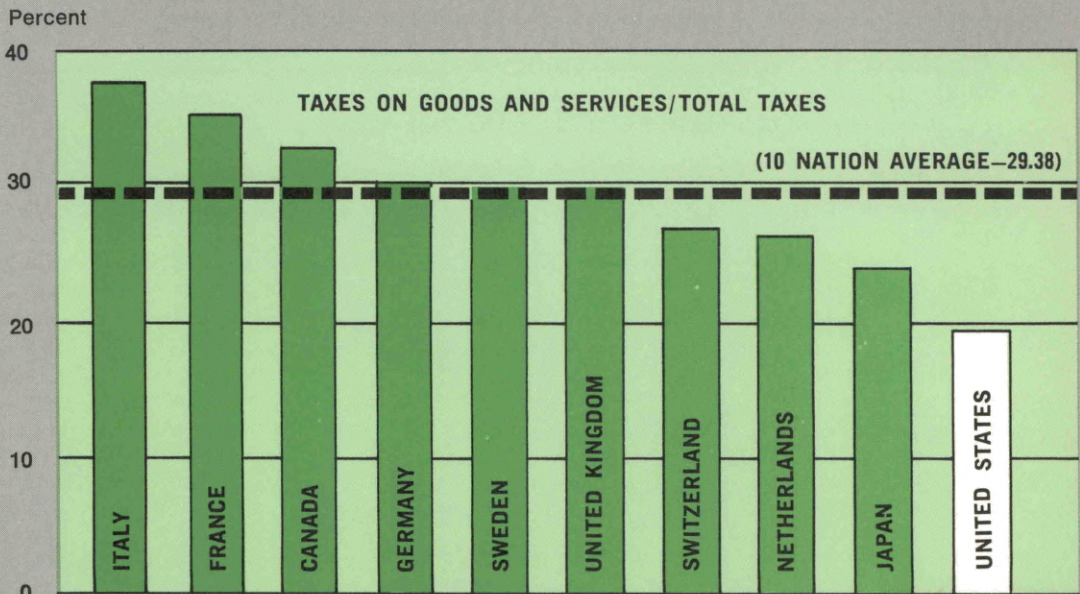
**BUT THE PORTION OF TOTAL COLLECTIONS ACCOUNTED FOR BY SOCIAL SECURITY IS CONSIDERABLY LOWER THAN THE FOREIGN AVERAGE . . .**

Percent





**CHART 4**  
**AND IN COLLECTIONS OF TAXES ON GOODS AND SERVICES,\* THE UNITED STATES**  
**IS AT THE BOTTOM**



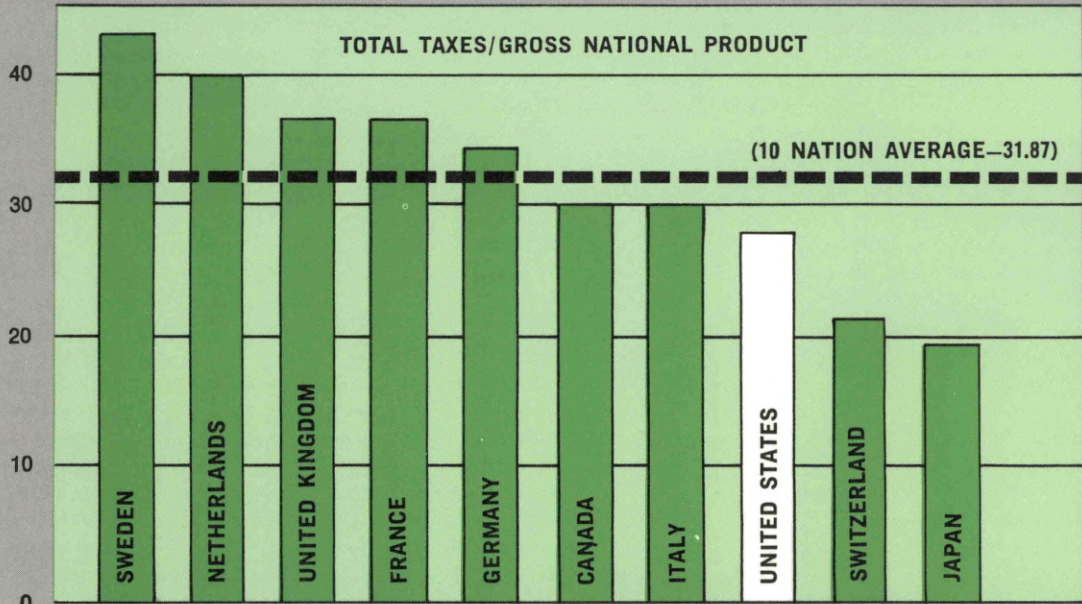
\* Examples include sales taxes, customs and import duties, taxes on exports, special taxes on investment goods, taxes on betting and gambling, property taxes, and motor vehicle registration fees.



**CHART 5**

**YET, WHEN OVERALL CONTRIBUTIONS ARE CONSIDERED IN TERMS OF THE TOTAL TAX PICTURE,\* TAXES IN THE UNITED STATES TAKE A SMALLER BITE OF THE GNP THAN IN MOST OF ITS INDUSTRIALIZED COUNTERPARTS**

Percent



\* These figures are for 1968, 1969, and 1970. Since 1970 the United States has had a reduction in the Federal income tax and corporate profits tax, but this has been offset by increases in Social Security taxes and many state and local taxes. Thus, the U. S. tax burden may be a little higher, but the ranking is probably the same.



## How Reliable Are Those Price and Employment Measures?

By David B. Thomas

“Price Index Is Up Sharply on Record Grocery Rise,”

*New York Times*, February 23, 1973

“Unemployment Rate Dips to 5%, Best in 2½ Years,”

*Philadelphia Inquirer*, February 3, 1973

“Consumer Price Increase Narrowed 0.3%,”

*Wall Street Journal*, November 22, 1972

“Prices Rise 0.4% ; Increase Biggest in Last 5 Months,”

*New York Times*, August 23, 1972

Striking an acceptable balance between inflation and unemployment has become, in recent years, a herculean task for policymakers who must ride herd on the American economy. With the public clamoring for slower inflation and lower unemployment, furrow-browed officials in Washing-

ton complain that conventional policy instruments can't seem to handle both problems simultaneously. Recent experience bears this out. Unemployment has responded only sluggishly to the stimulative economic policies of the last two years, while at the same time inflationary pressures have continued to plague the economy.

Curing this malady would be difficult even with perfect statistics. The problem is compounded by the fact that our most commonly used measures of inflation and unemployment—the Consumer Price Index (CPI) and the unemployment rate—may not be infallible. Unemployment occasionally charts a substantially different course than the official rate suggests. And the Consumer Price Index, built into many wage settlements, may significantly overstate the level of inflation.

## UNEMPLOYMENT RATE: A PROBLEM OF SAMPLES AND SEASONS

The unemployment rate, which shows what portion of the labor force is out of work at any given time, is one of the most widely used and closely watched barometers of economic conditions. Policymakers, concerned with providing jobs for all those willing, able, and wanting to work, use it in determining and evaluating programs geared toward this goal. The jobless rate also is often used to gauge the utilization of productive capacity. As such it acts as a thermostat by signaling when the economy is either straining or operating beneath its productive capacity. While the unemployment rate (see Box) can be useful in assessing the state of the economy, it has many shortcomings.

**The Sampling Scheme.** If Bureau of Labor Statistics measurements indicate the unemployment rate dropped from 5.5 to 5.3 percent last month, this would be heralded by the news media and public as proof that labor market conditions are improving. In such a case, however, it is possible that the percentage of unemployed didn't change a bit—it may even have risen!

Such potential discrepancies between the measured and actual unemployment rates arise because jobless figures are derived from only a sample of the population. These sample results may differ from the figures that a full census would produce.

For example, to be certain that any measured change in the unemployment rate isn't only the result of variations inherent in the sampling process, it must change by .2 percent or more between the consecutive months.<sup>1</sup> Movements in the jobless rate of less than this amount can reasonably be

attributed to sampling errors. And even though a .2 percent decline is significant "statistically," it doesn't necessarily indicate a large decrease in the percentage of the labor force out of work.<sup>2</sup>

**Predictable Patterns?** Because factors such as school opening and closing dates, crop seasons, production schedules, and holidays cause employment to fluctuate regularly from month to month, published unemployment figures are most often seasonally adjusted. The fluctuation which usually occurs during a particular month is removed in the adjusted rate, making it easier to discern how the jobless picture has changed relative to previous months.

Additional error may creep into monthly unemployment figures, almost gremlinlike, through the seasonal adjustment process. This is because the method used relies mainly upon seasonal patterns observed in past years and cannot pick up any new pattern before it actually occurs. Variations in weather conditions, holidays, production schedules, and school openings and closings insure that seasonal patterns will never be constant. To the extent that such events occur, the adjustment process may compound the error already present.

Predicting the size of this "seasonal adjustment" error for any particular month is impossible. After one or two years, however, when any new seasonal patterns have been identified, the official rate is revised. Over the past few years these revisions have averaged about .1 percent—a reasonable approximation of the error caused by the adjustment process.

<sup>1</sup> John E. Bregger, "Unemployment Statistics and What They Mean," *Monthly Labor Review*, November 1971, p. 24.

<sup>2</sup> The chances are nine out of ten that the true change in the unemployment rate will be within .2 percent of the measured change. Thus, when the measured rate declines by .2 percent between two consecutive months, the true decline could be any value between zero (since  $.2 - .2 = \text{zero}$ ) and .4 (since  $.2 + .2 = .4$ ).



## EMPLOYED OR UNEMPLOYED? CONFLICTING CONCEPTIONS

Employment figures are culled from the largest monthly sampling in the world, the Current Population Survey. Conducted for the Bureau of Labor Statistics (BLS) by the Bureau of Census, this survey gathers data concerning the employment status of some 105,000 people, 16 years or older, across the country. During 1971 some 145 million Americans fitted this description. Thus, each person in the survey represents about 1,350 in the total population.

The Bureau of Labor Statistics is responsible for defining what is meant by “employed” and “unemployed”<sup>\*</sup>:

**Job Holders.** Employed are persons 16 years or older who, during the week previous to the monthly Current Population Survey, either

- did any work at all for pay or profit, or
- worked a minimum of 15 hours without pay for a family business, or
- have a job but are temporarily out of work because of such factors as strikes, vacations, bad weather, or illness.

**Job Seekers.** To be classified as unemployed, a person must

- be 16 years or older, and
- be currently available for work, and
- have engaged in some specific job-seeking activity during the previous four weeks, and
- not have worked at all for pay during the week previous to the survey.

Many critics claim that BLS requirements for being classified as unemployed are too stringent. Because of this, they state, there’s a small army of the “disguised” or “hidden” unemployed—those who would like to work but have had such bad luck finding jobs in the past that they have given up pounding the pavement.

According to the BLS classification scheme, discouraged workers such as these would not be counted as members of the labor force, since they have not engaged in a specific job-seeking activity within the last month. Some believe that because of this, the official unemployment rate tends to understate the actual jobless rate.

<sup>\*</sup> Source: U. S. Department of Labor, Bureau of Labor Statistics; *BLS Handbook of Methods*, Bulletin 1711.

**Unemployment Figures in Perspective.** The total error for BLS monthly estimates of changes in the unemployment rate might be as high as .3 percent—about .2 percent from sampling error and .1 percent from seasonal adjustment error. To be absolutely certain that the job scene differs between two consecutive months, then, the unemployment rate must change by at least this much (for

example, fall from 5.8 to 5.5 percent). Yet, during the past year it varied by this amount during only two months.

Does this make movements like those reported for the remaining ten months completely meaningless? Perhaps. If the measured unemployment rate fluctuates by small amounts around a particular level for several months in a row, chances are that



these changes are only the result of measurement error. If it shows small movements in the same direction for several consecutive months, however, then the jobless picture is *actually* changing. Trends in the rate give a better reflection of what is happening in the job market than the change for a single month (even if none of the month-to-month movements forming the trend are "statistically" significant in themselves).

Finally, inasmuch as the amount of sampling error decreases when the size of a sample increases, quarterly figures for unemployment, which are derived from samples three times the size of the monthly samples, are much more reliable than monthly ones. If the official rate falls from 5.9 to 5.7 percent between two quarters, as it did during 1972, for example, the chances are greater than 19 out of 20 that the jobless rate actually decreased.

### GAUGING INFLATION WITH THE CPI

Coming to grips with slippery unemployment figures is just one aspect of the problem economists and policymakers face in analyzing the tradeoff between rising prices and joblessness. The other side of the problem is that of measuring inflation. The Consumer Price Index is the yardstick commonly used.<sup>3</sup> The "cost of living" index, the CPI's popular name, suggests the rationale undergirding this choice. Of all price indices, this one best gauges the effect of rising prices on the workers' purchasing power. Thus, it reflects many of the headaches and hassles caused by inflation.

Although calculation of the CPI is a relatively straightforward task (see Box), the index may not accurately reflect inflationary pressures in the economy. Errors infiltrate the CPI just as they do jobless figures. However, sampling errors and the seasonal

adjustment process account for only a small portion of the potential inaccuracies in the CPI.<sup>4</sup> Two major problems with the CPI are caused by improved goods and services and by changes in the buying habits of consumers.

**Quantifying Quality.** Technological progress improves the quality of many goods and services. A color TV made in 1973 is quite different from one built ten years earlier: It has a wider screen, clearer reception, sharper color, and hopefully will last longer. Some consumer advocates, notwithstanding, there are few people who would trade a '73 color set for an unused '63 model.

If the CPI is to measure changes in purchasing power accurately, the prices of goods and services included in the market basket must be adjusted to represent such quality changes. Suppose the price of a particular color model rose by 20 percent since 1963. To some consumers this might indicate a 20 percent inflation in the price of color TVs during this period. But the '73 model offers the consumer more quality and satisfaction than the '63 one. The price of color TVs may not have risen at all, if

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<sup>4</sup> Seasonal adjustment isn't as significant a problem in the all-items CPI, so the index isn't presented in the adjusted form. The prices of goods included in the market basket have different seasonal variation patterns which largely cancel each other. To the extent that this is true, the adjusted numbers would provide no new information.

It is inevitable that a certain amount of sampling error be present in the CPI, because the index is constructed from monthly samples of retail outlets. Fortunately, however, the amount of error originating here is insignificantly small. The chances are 19 out of 20 that sampling error will not exceed .08 percent for any particular month. When the "rounding-off" of the price figures is taken into consideration, this makes a .2 percent change in the CPI between two consecutive months statistically significant. For example, if BLS measurements indicate the CPI rose from 100.0 to 100.2 during some months, we can be 95 percent confident that prices actually did rise.

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<sup>3</sup> The CPI is officially called "The Consumer Price Index for Urban Wage Earners and Clerical Workers."



## THE "BASE PERIOD MARKET BASKET": HOW THE BLS KEEPS TABS ON PRICES

The method used by the Bureau of Labor Statistics to measure changes in the price level of consumer goods and services involves two basic steps. First, about once every ten years a large sample of consumers falling into the category of "urban wage earners and clerical workers" are interviewed concerning their spending habits.\* (The most recent survey was undertaken in 1960-61.) From the results of this Consumer Expenditure Survey, the BLS is able to construct the index's "base period market basket." For the sake of simplicity, consider the market basket as representing a single budget that shows how Norman Normal, the typical consumer, spent his income of \$10,000 during the base year.

About 400 different goods and services are included in the market basket—everything from apples to washing machines. These items are divided into 52 expenditure classes of similar products or services. A fixed weight is assigned to each class on the basis of how Norman Normal divided his income among the classes. For example, if he budgeted 5 percent of his income for fresh vegetables, this expenditure class would receive a weight of .05. Weights are assigned to products within each class on the same basis, with these weights showing how Mr. Normal budgeted his money among the products included in a particular class.

After the "base period market basket" has been constructed, the second step, that of monitoring prices, is relatively easy. Each month the BLS sends surveyors to selected retail outlets in major cities across the country to collect data concerning current prices of goods and services included in the market basket. When this information has been gathered, the BLS calculates exactly how much it would now cost to purchase the same set of goods and services (the market basket) that Norman Normal bought in the base period with his \$10,000 income.

The level of the CPI is calculated by dividing the market basket's current cost by its base period cost and multiplying this figure by 100. Suppose we find that it now costs \$11,000 to buy Mr. Normal's market basket. The new level of the index, then, is  $\{(\$11,000/\$10,000) \times 100\}$  or 110. This indicates that the prices of goods and services purchased by consumers have risen, on the average, by 10 percent since the base period.

\* Some people critically point out that this group represents only about 40 percent of the total population. In recent years, however, this occupational classification has lost most of its significance, as the spending habits of this group have become similar to those of the rest of the population. Thus, although the index does not claim to represent all consumers, it probably represents a large majority of them.

price increases reflect the changes in quality.

The BLS is confronted with the need, in such a case, to decide what part of a price increase is the result of quality improvement and what part is purely inflationary. Methods have been developed to do this.

But assigning a dollar and cents value to things such as TV set durability or better color reception is a tricky business.

Many economists claim that BLS methods of adjusting the prices of goods for quality changes have failed to capture the full effects of quality improvements. This short-



coming, they maintain, causes the CPI to overstate the rate of inflation by .5 to 1.5 percent annually.<sup>5</sup>

**Changing Consumption Patterns.** Additional upward bias in the CPI is caused by the relative inflexibility of the "market basket" used in its calculation (see Box). The current weight structure of the expenditure classes is based upon the results of the 1960-61 Consumer Expenditure Survey. According to the index, then, consumers today have the same basic spending patterns as they did more than a decade ago.

The "fixed" construction of the CPI's market basket ignores the tendency of consumers to substitute relatively low-priced goods for relatively high-priced ones. Since the early 1960s, for example, families might have budgeted a higher percentage of their income for chicken and a lower percentage for pork, because the price of chicken has risen less than the price of pork.

Overlooking such "substitution effects" gives too much weight to goods and services with rapidly rising prices. This, in turn, causes the index to overstate the rate of inflation. Judging by the experience gained from past revisions of the market basket, the amount of upward bias coming from this source is in the neighborhood of .5 percent

annually.<sup>6</sup>

**A Relatively Accurate Index.** In the final analysis, the CPI, like most other economic indicators, has its strong and weak points. The index's strength lies in its ability to measure *relative* changes in the rate of inflation on a month-to-month basis. For example, when the CPI rises by .8 percent in July and .4 during August, the rate of inflation has dropped by about half during August. However, inadequate adjustment for quality changes and new consumption patterns may cause the index to overstate *absolute* changes in the level of consumer prices by as much as 1 to 2 percent a year. Thus, although the rate of inflation fell by about half in the example, it is much less certain that prices increased by .8 percent in July and .4 percent in August. And this is the CPI's basic weakness.

### BETTER CAUTIOUS THAN CONFIDENT

Policymakers continue to base their decisions on changes in the Consumer Price Index and the unemployment rate, even with the awareness that these indicators may not be totally accurate. There is little choice, for even if the two measures are less than perfect, they are among the best we have at present. Given these circumstances, the indices' limitations, with respect to accuracy, must be recognized and considered when basing policy decisions on their movements. Overreacting to small month-to-month changes in unemployment figures, as the news media and public often do, could lead to perverse policy decisions. The same should be said of relying too heavily on changes in the price level as measured by the CPI. Finally, it should be remembered that monthly price and unemployment figures are only rough gauges of economic trends and, as such, do not lend themselves to "fine tuning" the economy.

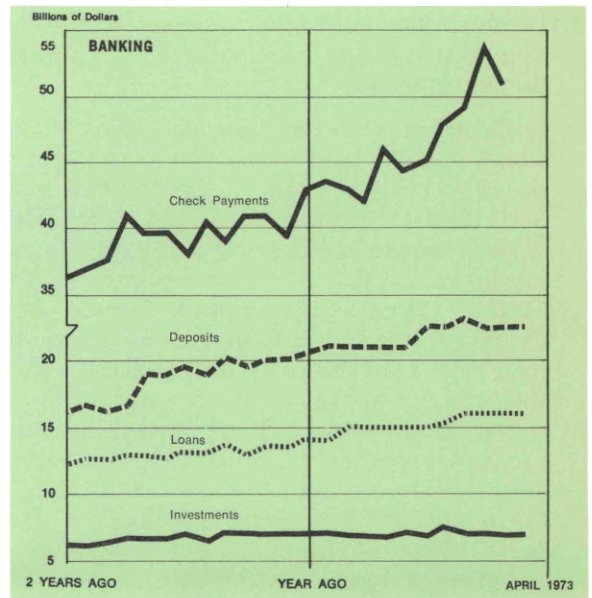
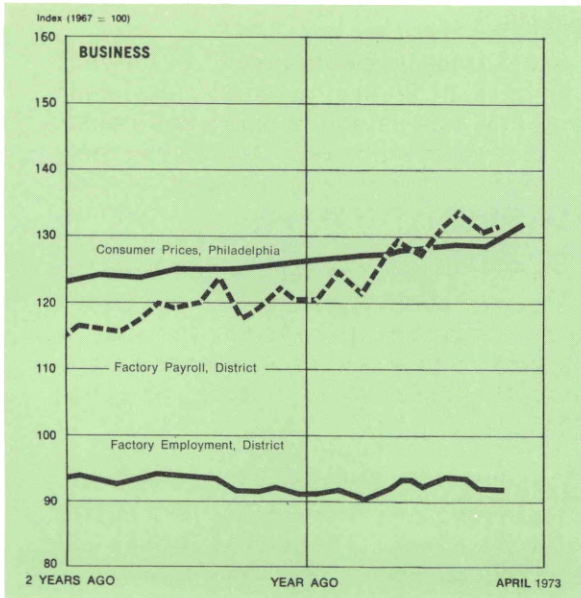
<sup>6</sup> See "Needed: A New Dimension for the CPI," *Monthly Economic Letter*, First National City Bank of New York, November 1970.

<sup>5</sup> The argument that unaccounted-for improvements in quality cause an upward bias in the CPI is by no means universal. Some economists, although probably less than the majority, believe the reverse is true—that unaccounted-for deterioration of quality causes the CPI to understate the actual rate of inflation.

For a more thorough analysis of the upward bias in the CPI resulting from quality changes, see William H. Wallace, "Measuring Price Changes," *Monthly Review* of the Federal Reserve Bank of Richmond, November 1970; and Richard Ruggles, "Measuring the Cost of Quality," *Challenge*, November 1961. A fuller discussion of possible downward bias in the CPI appears in Jack E. Triplett, "Quality Bias in Price Indexes and New Methods of Quality Measurement," Zvi Griliches, ed., *Prices Indexes and Quality Change: Studies in New Methods of Measurement* (Cambridge, Mass.: Harvard University Press, 1971), pp. 180-214.



# FOR THE RECORD...



SUMMARY	Third Federal Reserve District			United States		
	Percent change			Percent change		
	Feb. 1973 from		2 mos. 1973 from	Feb. 1973 from		2 mos. 1973 from
	mo. ago	year ago	year ago	mo. ago	year ago	year ago
<b>MANUFACTURING</b>						
Production.....	.....	.....	.....	+ 4	+10	+10
Electric power consumed ...	- 4	+ 5	+ 9	.....	.....	.....
Man-hours, total*.....	0	+ 3	+ 4	+ 2	N/A	N/A
Employment, total.....	0	+ 2	+ 2	+ 1	N/A	N/A
Wage income*.....	0	+11	+12	+ 2	N/A	N/A
<b>CONSTRUCTION**.....</b>	-52	-32	+ 9	+ 1	+22	+18
<b>COAL PRODUCTION.....</b>	+ 7	0	- 4	+ 7	+ 1	- 5
<b>BANKING</b>						
(All member banks)						
Deposits.....	0	+11	+ 8	+ 1	+13	+12
Loans.....	+ 1	+18	+18	+ 3	+22	+21
Investments.....	- 2	+ 2	+ 3	- 3	+ 4	+ 5
U.S. Govt. securities.....	- 3	- 2	- 3	- 8	- 3	0
Other.....	- 1	+ 4	+ 6	0	+ 7	+ 8
Check payments***.....	- 6†	+23†	+27†	+ 3	+23	+23
<b>PRICES</b>						
Wholesale.....	.....	.....	.....	+ 2	+ 8	+ 8
Consumer.....	+ 1†	+ 4†	+ 4†	+ 1	+ 4	+ 4

\*Production workers only  
 \*\*Value of contracts  
 \*\*\*Adjusted for seasonal variation

†15 SMSA s  
 ‡Philadelphia

LOCAL CHANGES Standard Metropolitan Statistical Areas*	Manufacturing				Banking			
	Employment		Payrolls		Check Payments**		Total Deposits***	
	Percent change Feb. 1973 from		Percent change Feb. 1973 from		Percent change Feb. 1973 from		Percent change Feb. 1973 from	
	month ago	year ago	month ago	year ago	month ago	year ago	month ago	year ago
Wilmington.....	0	+11	0	+22	+ 7	+ 25	0	-88
Atlantic City.....	+ 5	+ 8	+ 4	+12	- 9	+ 7	- 1	+17
Bridgeton.....	+ 1	+ 7	N/A	N/A	N/A	N/A	+ 1	N/A
Trenton.....	0	+ 2	- 2	+ 9	+27	+ 55	- 2	+15
Altoona.....	+ 1	+ 3	0	+ 6	-14	+ 11	+ 1	+16
Harrisburg.....	0	+ 5	+ 1	+17	-10	+ 15	+ 3	+23
Johnstown.....	- 1	+ 1	- 2	+ 9	-11	+ 8	+ 3	+17
Lancaster.....	+ 1	+ 9	+ 1	+17	-16	+127	+ 1	+17
Lehigh Valley.....	0	+ 2	+ 2	+13	- 5	+ 19	+ 1	+16
Philadelphia.....	0	+ 1	+ 1	+ 8	-10	+ 22	0	+13
Reading.....	0	+ 2	0	+11	-12	- 6	+ 3	+22
Scranton.....	+ 1	- 2	+ 3	+ 8	- 6	+ 10	+ 1	+14
Wilkes-Barre.....	+ 1	+ 1	+ 1	+ 6	-10	+ 25	+ 2	+34
Williamsport.....	- 1	+ 5	N/A	N/A	-20	+ 23	+ 1	N/A
York.....	0	+ 4	+ 1	+13	-11	- 46	+ 2	+17

\*Not restricted to corporate limits of cities but covers areas of one or more counties.  
 \*\*All commercial banks. Adjusted for seasonal variation.  
 \*\*\*Member banks only. Last Wednesday of the month.



**FEDERAL RESERVE BANK of PHILADELPHIA  
PHILADELPHIA, PENNSYLVANIA 19101**

## **business review**

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