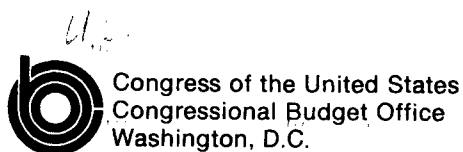


AGGREGATE ECONOMIC EFFECTS OF CHANGES IN SOCIAL SECURITY TAXES

Technical Analysis Paper

August 1978



AGGREGATE ECONOMIC EFFECTS OF CHANGES
IN SOCIAL SECURITY TAXES

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PREFACE

Aggregate Economic Effects of Changes in Social Security Taxes discusses the general economic consequences of the 1977 Social Security Amendments that raised payroll taxes considerably. In contrast to most social security actions, this particular act increased payroll taxes without also increasing benefit payments. The paper reviews some previous studies on effects of social security taxes and then focuses directly on the consequences of the 1977 Amendments. The study was prepared in response to requests by Senator Edmund S. Muskie, Chairman of the Senate Budget Committee, and Representative Thomas L. Ashley, Chairman of the Task Force on Economic Policy of the House Budget Committee. In keeping with CBO's mandate to provide objective analysis, this report offers no recommendations.

The principal author of the report was Helmut Wendel; other members of CBO's Fiscal Analysis Division, Nancy Morawetz, Michael Owen, Thyra Riley, Richard Stromberg, and Yolanda Kodrzycki, made important contributions. June O'Neill and George Iden gave helpful comments. The manuscript was typed by Marsha L. Mottesheard and edited by Patricia H. Johnston.

Alice M. Rivlin
Director

August 1978

CONTENTS

	<u>Page</u>
PREFACE	iii
SUMMARY	ix
CHAPTER I. INTRODUCTION	1
CHAPTER II. THE TAX INCREASES LEGISLATED IN THE SOCIAL SECURITY AMENDMENTS OF 1977	5
CHAPTER III. CHANNELS OF IMPACT OF PAYROLL TAXES	11
Employer Taxes	11
Employee Taxes	19
CHAPTER IV. ESTIMATES OF THE AGGREGATE EFFECTS OF THE 1977 PAYROLL TAX INCREASES	25
Estimated Effects of an Illustrative \$10 Billion Increase in Social Security Taxes	26
Estimated Effects of the 1977 Social Security Tax Increases	30
CHAPTER V. OFFSETTING THE EFFECTS OF INCREASES IN SOCIAL SECURITY TAXES	35
Rollbacks in Social Security Tax Increases	35
Cutting Other Taxes	37
Concluding Remarks	41
CHAPTER VI. SOME LONG-RUN AGGREGATE EFFECTS	43
Effects on Saving	43
Effects on Private Pension Plans	45
Effects on Capital Intensity of Production	46
BIBIOGRAPHY	51

TABLES

	<u>Page</u>
TABLE 1. COMPARISON OF NEW AND OLD OASDHI TAX RATES AND WAGE BASES	6
TABLE 2. EFFECTS OF 1977 AMENDMENTS ON OASDHI TRUST FUND FLOWS	7
TABLE 3. ECONOMIC EFFECTS OF ILLUSTRATIVE SOCIAL SECURITY TAX INCREASES	27
TABLE 4. ESTIMATED ECONOMIC EFFECTS OF THE PAYROLL TAX INCREASES LEGISLATED IN 1977	31
TABLE 5. COMPARISON OF ADDITIONAL SOCIAL SECURITY TAX BURDENS IN CALENDAR YEAR 1979 BY INCOME GROUPS	36

SUMMARY

Late last year, the Social Security Amendments of 1977 became law. These amendments will substantially increase payroll taxes beginning in 1979, and thereby provide sufficient funds to keep the social security system solvent over the next four decades or so. The public's reaction to these additional increases in social security tax burdens, which are especially large for persons affected by the substantial upward increase in the taxable wage base, led to a Congressional reexamination of the available alternatives in early 1978. At about the same time, the President's new budget advanced proposals for sizable cuts in personal and business income taxes. The thought naturally occurred that, if the tax cuts recommended by the President were advisable to achieve national output and employment goals, then these goals could perhaps also be advanced by rolling back a part of the new social security tax increases. A desire to preserve the self-financing character of the social security trust funds, however, is a major deterrent to action along these lines.

Within this setting, this paper mainly focuses on the channels through which payroll taxes affect wages, prices, and economic activity. Attention is paid to differences that result from changes in employee- versus employer-paid taxes.

Although previous research on the effects of payroll taxes on wages, prices, and profits has produced a wide variety of results, a number of investigators agree that a major part of employer taxes becomes embedded in the current dollar costs of labor compensation. By thus increasing production costs, these taxes also increase prices. There is some evidence that a smaller part of employer taxes, perhaps in the area of one-fourth, is likely to diminish direct wage payments after a period of time following a tax increase. Employee-paid payroll taxes, on the other hand, probably have few cost-price effects, since they tend to reduce the take-home pay of employees much as personal income taxes do.

While a substantial passthrough of employer payroll taxes into higher prices seems prevalent, it is also true that in the very short run it may be difficult to change prices or wages rates. Thus, for a short period of time profits may absorb the effects of a change in employer taxes. Later, when prices edge higher,

a good part of the burden of the employer tax tends to be shifted to consumers. Since there is a large area of overlap between consumers and earners of wages and salaries, such a shifting of the tax burden to consumers is similar in many respects to a cutback in real wages. When the payroll tax is reduced, the opposite effects are likely to occur, although in some situations there may be institutional reasons that make it easier for firms to cut prices than to increase them (regulated industries) or the other way around (advertised brand prices).

Analysis of the 1977 Tax Increase

The Social Security Amendments of 1977 provided large increases in social security revenues as well as some cutbacks in benefit payments. With benefits slightly diminished, on net, the additional revenues serve to increase the assets in the social security trust funds. In this paper, the numerical estimates of the impact of the 1977 tax changes on economic activity and price levels, from 1979 to 1982, are based on the results of large-scale econometric models. They represent a comparison with the situation that might have evolved without the Social Security Amendments of 1977. These data also can be used to compare current law with a complete rollback of the 1977 tax provisions.

The estimates indicate that by 1982 the gross national product (GNP) in 1972 dollars would be almost 1 percent larger if the 1977 tax increase were rolled back completely; employment would be some 0.5 million greater; and the GNP price deflator would be around one-half of a percent less. Prior to 1982, these effects build up gradually.

Channels of Impact of Payroll Taxes

The employee and the employer share of the payroll tax are estimated to have roughly similar effects in restricting the volume of economic activity. The employee share directly reduces take-home pay and hence household purchasing power. The effects of the employer share are more diffuse and more complicated, but probably similar in magnitude. Through the increase in prices, this tax reduces the purchasing power of consumers as well as of foreign and government purchasers. It is not clear how long the influence on foreign trade and government budgets will last. Eventually, exchange rate readjustments should offset the initial effects of higher U.S. prices on trade. In the case of governments, the

reduced buying power of the budget can be offset later if legislatures choose to restore the level of real government services through larger current dollar appropriations. In addition to these effects, the higher prices caused by an increase in the employer tax will tend to tighten financial markets, push up interest rates, and thus exert a negative effect on the various forms of capital spending.

While differences stemming from the employee and the employer tax are important, another differentiation is between tax increases from hikes in tax rates as compared with increases in wage-base ceilings. Wage-base changes affect the better-paid employees and those employers who use predominantly highly skilled labor. Tax rate changes, on the other hand, have their largest effect on middle- and low-earning employees. If employees in the various major income groups generally were to divide their incomes in similar proportions between consumption and saving, the overall consumption effects of changing the wage base rather than the tax rate should not be far apart. The study argues that this is in fact the likely case, since the available data suggest that long-run saving rates by major income classes are very similar. 1/

Employers could be affected differently by changes in payroll tax rates and wage base ceilings. An increase in the tax rate moves up employer costs for the lowest-paid workers in a way similar to an increase in the minimum wage. Employer wage costs for employees with higher pay possibly can be negotiated downward after a tax increase, but this is not permitted for those who work at the minimum wage. In the case of a large increase in the wage base ceiling, employers may try to substitute lower-paid labor with fewer skills for those highly paid workers whose tax payments have gone up sharply.

1/ An increase in wage bases normally leads to larger ultimate pensions for affected taxpayers. Some economists believe that a change in expected pensions would affect private saving, but there is no clear evidence that it does.

Approaches to Offset the Increases in Payroll Taxes

The impact of the 1977 social security tax increases on the general economy is widely considered to be unfavorable, even though these taxes would fulfill their primary task of providing funds for the social security trust funds. Hence, there has been a search for methods to offset, to some degree or another, the effects of the 1977 Social Security Amendments. This paper does not attempt to summarize the various proposals that have been considered. Rather, the aim is limited to presenting hypothetical examples of how different types of tax cuts would offset different aspects of the payroll taxes.

The most direct way of dealing with the undesirable economic effects of the 1977 payroll tax increases would be to roll the taxes back and to finance a portion of social security by general revenues. This approach, however, could begin to jeopardize the contributory insurance concept of social security which is a valued attribute of the system.

A way of maintaining the insurance character of the system in those areas where it is most important would be to make a distinction between the various trust funds. ^{2/} In contrast to old age and survivors' insurance, hospital insurance treats all those who are eligible for medicare on an equal footing. The benefits, that is, do not vary according to past earnings and past tax payments. Hence, the self-supporting insurance approach may be less needed in this area and use of general revenues may be less objectionable.

A quite different and completely hypothetical offset approach would be general employment tax credits. If such tax credits were to apply to all employment, they would be in many respects the reverse of the employer share of the payroll tax. Since employment tax credits, though of a highly specific type, are currently in force, it seems pertinent to mention this aspect. President Carter's suggestion to eliminate the telephone excise tax and to cut unemployment insurance payroll taxes would be another approach that would concentrate on reducing cost and price pressures.

^{2/} Social security payroll taxes finance old-age and survivors' benefits, disability insurance, and medicare, each of which has a separate trust fund.

The offset possibilities that have been mentioned would increase purchasing power in the private economy, while also providing incentives to reduce costs and to moderate price pressures. A cut in personal income taxes, on the other hand, would boost household purchasing power, but could not be expected to counteract the upward pressure on prices exerted by higher payroll taxes. The effects of cuts in direct business taxes, such as recommended in the Fiscal Year 1979 Budget, would be somewhat more uncertain. Business tax effects on economic activity and business investment are likely to develop more slowly than in the case of a tax that changes personal disposable income.

Long-Run Effects

In general, the study discusses the effects of social security taxes in a time framework of a few years ahead. There is also some consideration, however, of the long-run effects of social security tax increases with benefit levels assumed to be unchanged. The long- and short-run tax effects are different for several reasons.

It is unlikely that the level of social security taxes would greatly affect the extent of economic activity and the rate of inflation over a long period. Such effects are mainly of a short-run nature, since after a number of years the private economy and fiscal and monetary policies have time to adjust to these taxes. After this adjustment process, the inflation rate is likely to be unaffected but the price level would remain permanently higher.

Some economists expect lasting effects on the saving rate from a change in social security flows, especially so if the public expected a change in social security benefits. These economists believe that the improved old-age security provided by the social security system should have lowered the personal saving rate, but such a downward movement has in fact not occurred. The evidence on a relationship between private saving and social security is not impressive, since the personal saving rate has tended to be stable during the last few decades despite the large expansion of social security. Another, more convincing, concern is that employer contributions to social security and to private pension plans can compete with each other, and hence an expansion of social security taxes can threaten the growth of the pension plan component of private saving.

A further question is whether payroll taxes that increase the cost of labor might lead to a substitution of capital for labor. While there are some incentives for business to move in this direction, the overall effect--even in the long run--is considered small. It is likely that workers in the main eventually will pay for the bulk of social security costs by accepting a reduced real wage, so that the ratio of labor to capital costs should not be affected to a substantial extent.

This paper analyzes the effects of changes in social security payroll taxes on total economic activity and on the levels of wages and prices. 1/ Primary attention is focused on the channels through which social security taxes affect the economy and on the differences that result from changes in employee- versus employer-paid taxes.

Particular estimates of aggregate economic effects are discussed for the tax increases legislated in the Social Security Amendments of 1977. This legislation is described in Chapter II; the estimates of its short-run economic effects and those of an illustrative \$10 billion tax increase are shown in Chapter IV. Chapter III prepares the ground for these estimates by discussing some of the previous empirical research on the effects of payroll taxes on wages, prices, profits, and short-run saving behavior.

Two more topics are taken up after the evaluation of the short-run aggregate effects of the 1977 amendments. Chapter V discusses some possible approaches to cushion or offset the undesirable byproducts of these tax increases. This chapter is conceptual--it describes the differences between various possible offset measures, such as income tax cuts and employment credits, but it does not take up such proposals that have been under consideration in the Congress, a task that has been done elsewhere. 2/ Finally, Chapter VI takes a look at the long-run effects of changes in social security taxes on personal saving, and private pension plans in particular, and on capital-labor ratios.

1/ Social security payroll taxes finance old-age and survivors' benefits, disability insurance, and medicare. Unemployment compensation and railroad retirement are also financed through payroll taxes, but the aggregate amounts of these taxes are considerably smaller. An analysis of the effects of these other payroll taxes would have many other similarities with that attempted here for social security taxes.

2/ Congressional Budget Office, Comparison of the Impacts of a Cut in the Hospital Insurance and Disability Insurance Payroll Taxes With Those of the Administration's 1978 Tax Cut Proposal (February 24, 1978).

Most of the increases in social security taxes prior to 1977 were designed to finance the growing volume of benefits and did not seek an improvement in the assets of the social security trust funds. ^{3/} The 1977 amendments, however, do seek a substantial increase in trust fund assets for the simple reason that these funds are starting to run out. The aggregate economic analysis, of course, would be quite different if the prospective tax increases were approximately matched by projected benefit increases, rather than primarily serving to increase trust fund assets. If one assumes balance between tax increases and growth in benefit payments, there is no immediate reason to think that the restrictive effects of higher payroll taxes should be greatly different in size from the expansive effects of larger benefits. Moreover, considering that in recent years the social security funds were moving more and more into deficit, the program in past years probably has tended to add to aggregate demand rather than to reduce it.

A chief concern of those who analyzed payroll taxes in recent years was the distributional effects. Payroll taxes were criticized because they fall disproportionately on low-income earners. The payroll tax is imposed only on income up to a ceiling (currently \$17,700), a ceiling that is also used as a cut-off point in computing pension entitlements. Because of the ceiling, higher-income families have tax-free income, and their tax advantage is further reinforced since higher-income families are more likely to receive interest, dividends, and rents--none of which is subject to payroll taxes. The regressive character of social security taxes was moderated through a provision in the Tax Reduction Act of 1975. Low-income earners with dependent children became entitled to a refundable earned-income tax credit on wages and salaries up to \$8,000. With the earned-income credit, the Congress aimed to provide a total or partial refund of social security taxes for those workers.

Distributional questions of this kind will generally not be discussed in this paper. Instead, the discussion is fairly closely focused on effects on inflation and economic activity. In this analysis, monetary policy is assumed to be "neutral," that is,

^{3/} Social security taxes are deposited in three trust funds: Old Age and Survivors, Disability, and Health Insurance. Together, they are abbreviated as OASDHI. Benefits are paid directly by the trust funds.

to provide additional bank reserves through open market operations according to an unchanged growth path. Monetary policy cannot be expected to wipe out inflationary cost-push effects of payroll taxes, since such a course of action might be too costly in terms of reduced economic activity.

CHAPTER II. THE TAX INCREASES LEGISLATED IN THE SOCIAL
SECURITY AMENDMENTS OF 1977

In legislation enacted in December 1977, social security taxes were increased in several steps, beginning with 1979. These tax increases consist of hikes in the payroll tax rate as well as in the maximum wage base to which the tax rates are applied. While there were also changes on the benefit side, their cost effects over the next five years are projected to be small in comparison to the tax increases. In this study, the 1977 amendments will be analyzed purely as a tax change, an approach that frequently would be inappropriate for social security tax increases, because they are often linked to the provision of larger benefits.

Social security tax provisions can usually be summarized in terms of the payroll tax rate, which is applied to both the employer and the employee, and the wage base, with wages below the ceiling subject to the tax and those above the ceiling exempt from the tax. Table 1 shows the new tax rates and wage bases and compares them to the former figures. It may be noted that, beginning in 1981, the tax rate paid by self-employed individuals has been set at 1.5 times the employee rate, a somewhat larger multiple than recently used.

As Table 1 indicates, the new law begins to increase the tax take in 1979 and causes a particularly large jump in taxes in 1981. These newly legislated increases are additional to the provision of previous law that already had a rising tax rate schedule as well as yearly advances in wage base ceilings designed to keep social security revenues in pace with inflation.

Column (1) of Table 2 shows the annual additions to aggregate payroll tax revenues estimated to result from these tax changes, increasing from \$6.6 billion in 1979 to \$24.9 billion in 1982. The data in this column would be substantially larger if the tax increases scheduled under prior law were also included. The

TABLE 1. COMPARISON OF NEW AND OLD OASDHI TAX RATES AND WAGE BASES

Calendar Year	Payroll Tax Rate ^{a/} (in percents)		
	Old Law _{b/}	Present Law	Change
1977	5.85	5.85	--
1978	6.05	6.05	--
1979	6.05	6.13	.08
1980	6.05	6.13	.08
1981	6.30	6.65	.35
1982	6.30	6.70	.40
1986	6.45	7.15	.70

Taxable Wage Base (in dollars)			
1977	16,500	16,500	--
1978	17,700	17,700	--
1979	18,900*	22,900	4,000
1980	20,400*	25,900	5,500
1981	21,900*	29,700	7,800
1982	23,400*	31,800	8,400
1986	29,400*	40,200*	10,800

a/ These rates are levied on both employees and employers. The rate for a self-employed person was 1.35 times the basic rate in 1977, but will be increased to 1.5 times the basic rate by 1981.

b/ This schedule was in effect prior to the passage of the Social Security Amendments of 1977 in December 1977.

* Figures marked with an asterisk are subject to adjustment in response to trends in wage levels. The data shown here are based on Social Security Administration assumptions regarding inflation and productivity. Figures without an asterisk are specified by statute.

TABLE 2. EFFECTS OF 1977 AMENDMENTS ON OASDHI TRUST FUND FLOWS: BY CALENDAR YEAR, IN BILLIONS OF DOLLARS

Calendar Year	Additional Taxes (1)	Reduced Net Benefits (2)	More Interest (3)	Trust Funds		
				Change Caused by 1977 Law (4)	Prior Law (5)	Level Funds at End of Year (6)
1978	--	0.2	a/	0.2	-4.4	42.1
1979	6.6	0.5	0.3	7.4	-5.7	43.8
1980	9.8	1.3	0.9	12.0	-8.5	47.3
1981	19.8	2.1	2.0	23.9	-7.8	63.4
1982	24.9	3.1	3.2	31.2	-9.8	84.8

a/ Less than \$50 million.

NOTE: Past and Projected Changes in Total Trust Fund Balances: by calendar years, in billions of dollars

<u>Year</u>	<u>Amount</u>
1969	5.9
1970	4.6
1971	2.2
1972	2.2
1973	5.5
1974	3.8
1975	-0.1
1976	-3.1
1977	-5.4
1978 (estimated)	-4.2
1979 (see Column 6)	1.7
1980 (see Column 6)	3.5
1981 (see Column 6)	16.1
1982 (see Column 6)	21.4

focus was kept solely on the effects of the 1977 amendments for two reasons:

- o The tax increases under the old law were smaller than projected benefit increases and hence the net effect of the social security system was to provide additional funds to the public, rather than withdrawing them.
- o The substantial wage base increases expected under the old law largely represented an indexation for wage inflation and thus should not have resulted in increased tax burden for wage earners relative to their real wages.

Column (2) of Table 2 shows that the 1977 amendments, on net, are expected to diminish aggregate social security benefits somewhat. This diminution of benefits gradually increases and is estimated by CBO to amount to some \$3 billion by 1982. By that time, the main reason for smaller benefits is "decoupling," that is, a more straightforward formula to set initial pensions in line with the purchasing power of wage levels. Prior law included a formula for adjusting the dollar amount of retirement benefits that substantially overcompensated for the effects of inflation. Decoupling refers to the correction of that unintended generosity for those who retire in future years. Under the new formulas, the basic real retirement benefit for the average wage earner amounts to about 42 percent of eligible preretirement wages.

The amendments, however, contain a number of smaller items that increase the volume of benefits, notably a larger annual income that may be earned without sacrificing social security benefits.

When Treasury accounts are consolidated, the tax and benefit changes in the 1977 amendments will result in a smaller unified budget deficit and in less borrowing from the public. The resultant reduction in interest payments to the public will be earned by the social security trust funds because they will hold additional government securities as the funds grow.

The first three columns of Table 2--taxes, benefit reductions, and interest--show the large additional flows of funds that are expected to add to the trust funds. Column (4) measures the

combined effect of the 1977 law on trust fund assets and thus also indicates the direct reduction in the unified budget deficit caused by this law.

Under prior law, the trust funds would have been in deficit each year and the deficit would have grown larger over time, reaching an annual amount of \$9.8 billion in 1982. Under the new law, however, the level of trust fund assets is projected to increase, and substantially so in the early 1980s, with an accumulated surplus of \$84.8 billion at the end of 1982. Trust fund assets need to increase if they are to keep a constant ratio to the volume of benefit payments. The asset increases currently projected for the early 1980s, however, would do more than that, since they would boost the ratio of assets to annual outgo.

This completes a brief description of some major features of the 1977 Social Security Amendments. In order to keep the analysis within manageable size, the macroeconomic effects discussed in Chapter IV will cover only the impact of the tax increases. The estimated effects on economic activity would be somewhat larger if the benefit reductions had been taken into account. These benefit reductions, just like tax increases, tend to dampen economic activity; but for the next few years they are only about one-tenth the size of the tax increases.

CHAPTER III. CHANNELS OF IMPACT OF PAYROLL TAXES

Changes in payroll taxes, just like changes in other taxes, affect both the general level of economic activity and the distribution of national income among various economic units. A major issue in the debate about payroll taxes concerns the effects on households versus businesses, that is, whether the shares of total income between these groups are changed by the tax. This issue will be discussed initially without taking into account the tax effects on overall economic activity. Effects on total economic output can be corrected by changes in other fiscal policies, in monetary policies, or by recuperative tendencies in the private economy. Distributional effects could be more lasting.

This chapter will deal with channels through which social security taxes affect prices, wages and profits, while the next chapter will incorporate effects on overall economic activity into the analysis. In both chapters, unless stated otherwise, monetary policy is assumed to remain relatively neutral, adding a predetermined amount of bank reserves in open market operations. This particular assumption provides sufficient money and credit so that increases in production costs, caused by increased payroll taxes, would push the general price level higher. This process, however, would also generate upward pressure on interest rates, which would tend to result in dampened economic activity.

This chapter begins with an examination of the effects of employer-paid taxes. The analysis subsequently is extended to employee payments. Finally, there is a discussion of the spending and saving habits of those major income groups that need to be distinguished to compare effects of wage-base changes with those of payroll tax-rate changes.

EMPLOYER TAXES

There are three main ways in which employers could react to an increase in their payroll taxes: (1) they could curtail their profits; (2) they could roll back wage rates, or at least trim normal increases in wage rates; and (3) they could raise prices. Which of these actions predominates is likely to depend on the

time span under consideration. Initially, profits might be curtailed, then prices might rise, and eventually real wages would likely be reduced.

Further actions are also possible. Employers could cut back contributions to private pension plans as an alternative to curtailing money wages. If the payroll tax increases labor costs relative to capital costs, employers might eventually try to increase the intensity of capital. To the extent that the tax raises the effective minimum-wage cost, it could lead to the laying off of marginal workers and cause an increase in structural unemployment. The major possible reactions--smaller profits, lower wages, or higher prices--will be discussed in turn.

Curtailling Profits

Most economists do not expect a tax on labor, whether collected from the worker or the employer, to reduce capital's long-run share in total income. To arrive at this conclusion, it is usually assumed that profits and wages are being maximized before the imposition of the tax. The tax makes labor input more expensive without changing labor productivity. Hence, labor is likely to bear most of the burden of the tax, but exceptions could occur if labor had abstained from fully utilizing its bargaining powers prior to the imposition of the tax.

Another exception would occur if work behavior were changed because of the burden of the tax. With a reduction in real wages, some persons might be less inclined to hold a job, while others might want to work more in order to maintain their former living standards. Because of these opposing incentives, it is not clear in which direction work effort might be affected by larger payroll taxes; moreover, it is likely that changes in work behavior would take a long time to develop. In general, a smaller supply of labor tends to increase wages and reduce the rate of return to capital. In this way, changes in work behavior could change the allocation of the tax burden between labor and capital.

The theoretical expectations that long-run profit margins are usually shielded from the payroll tax are consistent with

empirical findings. 1/ For the most part, investigators have found that payroll taxes have no major effects on profits. In contrast, John Brittain did find a large degree of offset between employer payroll taxes and real wages, to be discussed further below. Given the big volatility of profits, payroll taxes could, of course, have undetected effects on profit margins. Also, temporary effects on profits should be expected in the initial quarter or so after a tax increase, because it can take time to announce price changes, let alone to change wage policies, and in the meantime profits may bear a major share of the adjustment.

Retrenchment of Wages

A payroll tax is likely to cause a retrenchment of real wages in the long-run. There is little dispute, for instance, that the social security system tends to transfer income from those who work to those who have retired or are disabled. The available empirical evidence suggests that, in the long run, the real take-home pay of workers is diminished by both the employer and the employee contributions to social insurance. As a test, John Brittain compared real wages in manufacturing (and subindustries) across countries with greatly differing payroll tax rates. Brittain measured the relationship between wage disbursements and productivity (value added per worker) in each particular industry, and he included employer payroll taxes as a separate variable in this relationship: "The finding is simply that, given the level of productivity (value added per worker), the higher the employer tax rate, the lower the basic wage rate by about the same amount." 2/ Brittain's results have been questioned because he did not take into account the possibility that both wages and productivity could have increased if the tax had an effect on the supply of labor

1/ John A. Brittain, The Payroll Tax for Social Security (Washington, D.C.: The Brookings Institution, 1972), Chapter III; and Wayne Vroman, "Employer Payroll Tax Incidence: Empirical Tests with Cross-Country Data," in Public Finance, vol. 29, no. 2, (The Hague: Public Finance/Finances Publiques, 1974), pp. 184-200.

2/ Ibid., p. 54.

or capital, and this could lead to a wrong interpretation of the statistical findings. 3/ Brittain has expressed the opinion that work behavior effects are probably minor, 4/ and CBO agrees with that judgment, especially for a time span of a short number of years.

Brittain also related wages and employer contributions to value-added in U.S. industries from 1947 to 1965. While the results did not contradict the notion that the employer tax diminishes real wages, the statistical relationships were not significant in contrast to the results of the cross-country tests. Brittain correctly notes that the small variance of the U.S. tax rate over time makes a significant relationship unlikely.

Trimming Back Employer Contributions to Private Pension Plans

One way of retrenching wages, broadly defined, would be to cut employer contributions for private pensions. A few pension plans provide that the employer may reduce his contribution to the private plan whenever employer payroll taxes are increased. In most plans, however, provisions for integration with social security are made on the benefit side only. 5/ For these plans, private retirement benefits are reduced if social security benefits provide an improved pension. For these more prevalent plans, a rise in social security taxes that is not accompanied by an increase in benefits would not provide an automatic opportunity to reduce employer contributions. Any curtailing of employer contributions would need to await new labor contract negotiations and the outcome would depend on the parties' preferences for current or delayed compensation.

3/ Martin S. Feldstein, "The Incidence of the Social Security Payroll Tax: Comment," American Economic Review (September 1972), pp. 735-38.

4/ John A. Brittain, "The Incidence of the Social Security Payroll Tax: Reply," in *Ibid.*, p. 742.

5/ Dennis E. Logue, "How Social Security May Undermine the Private Industrial Pension System," (Paper, Conference on Financing Social Security, American Enterprise Institute for Public Policy Research, October 1977).

Inflationary Impact of Employer Tax

Although there is general agreement that workers' pay, in the long run, is diminished by payroll taxes, this sidesteps the question to what extent employer payroll taxes induce cost-push inflation in the short run. There are two different ways in which the long-run wage retrenchment could proceed. One would be to give employees smaller raises when their wages periodically come up for review, in collective bargaining or otherwise, and to pay smaller wages when employees are hired because of labor turnover. The other way would be for employers to increase prices. The resulting inflation, unless fully compensated on the wage side, would tend to reduce real wages and thus put much of the burden of the employer payroll tax on employees. These effects have been studied by Constance and Morton Schnabel:

While international cross-section analysis (presented by John Brittain) is relevant to investigations of the effects of payroll taxes on the long-run distribution of income, it cannot be used in connection with projections of short-run effects of payroll tax changes on near-term price inflation. For example, the long-run result that labor pays all payroll taxes would be consistent either with zero net effect on labor cost from payroll tax change or with the failure of wage rate increases to recoup price inflation associated with passing all payroll taxes forward as price increases. 6/

This inflation would also have aggregate demand effects, but their discussion will be postponed until the next chapter.

The distribution of burdens, of course, need not be fully the same under these two alternatives. Higher prices in the first instance would affect all consumers, not only those who earn their incomes from wages and salaries. The distributional difference between the case in which the tax burden falls on consumers versus the case in which it falls only on employees is too elusive to be picked up in a statistical test with available economic data.

6/ Constance and Morton Schnabel (U.S. Departments of Labor and Commerce, respectively), "The Short Run Incidence of Payroll Taxes" (a paper presented at the Eastern Economic Association Meeting, April 1978).

A direct test of the prevalence of passing employer payroll taxes through in the form of price increases would involve employer payroll tax rates as an independent variable in an equation that explains prices. Investigators have not been able to obtain good results in such a test, however. Results are obscured since most years in the last decades included tax increases, usually of fairly small size. On the other hand, in years like 1966 and 1973, when large tax changes occurred, prices were accelerating for other reasons.

The preferred test has concentrated on compensation per manhour. This variable includes wage payments, fringe benefits, and employer payroll taxes. If compensation tends to increase by the same amount as an increase in the tax, it would seem that employers incur the tax as an additional cost. Presumably they would revise prices upward accordingly; such a reaction to a cost increase is suggested by the standard wage-price equations. If labor compensation, on the other hand, is found to increase by less than the associated tax increase, then some of the tax apparently is financed by a direct retrenchment of wages. A number of investigators have tested this relationship. The findings differ considerably, ranging from indications of major wage retrenchment all the way to labor cost increases that exceed the employer tax and thus also include a recoupment by workers of a part of the employee tax. Recent investigations, however, have shown a tendency toward agreement. A frequent finding is that a major part of employer taxes becomes embedded in the nominal costs of employee compensation, but a smaller fraction, perhaps in the area of one-fourth, diminishes wage payments directly.

Many of these tests are in the form of traditional wage equations. Changes in compensation per manhour are represented to depend on previous price changes, the unemployment rate, changes in employer payroll tax rates, etc. In interpreting the influence of the payroll tax on compensation, one may also allow for the impact of the tax on prices and the subsequent effect of price changes on compensation.

A result obtained by Wayne Vroman suggests that after two to three quarters, as much as one-fourth to perhaps one-half of the employer tax is likely to be shifted backward, while the remainder adds to employers' labor costs. If a choice has to be made "between the two extreme hypotheses of no shifting and

complete backward shifting, the results were more favorable to the former." 7/ The results of some other tests are cited in footnote 8.

7/ Wayne Vroman, "Employer Payroll Taxes and Money Wage Behavior," Applied Economics, vol. 6 (September 1974), pp. 189-204.

8/ Other tests along these lines were made by:

Constance and Morton Schnabel, *ibid.* About three-fourths of the combined employer-employee tax is estimated to be passed forward in price increases after a four-quarter interval.

George L. Perry, "Changing Labor Markets and Inflation," Brookings Papers on Economic Activity, 1970:3 (Washington: The Brookings Institution). About 70 percent of the combined employer-employee tax is estimated to be passed forward after a four-quarter interval.

Difficulties in obtaining sensible estimates are cited by Robert J. Gordon, "Inflation in Recession and Recovery," Brookings Papers on Economic Activity, 1971:1, p. 122. This quotation is included here to underscore the difficulty of obtaining reliable statistical results in this area:

"In an initial attempt to explore this problem, I estimated wage equations in which past values of the change in the employer tax were included in addition to current values, with their impacts estimated in a relatively unconstrained way using the polynomial distributed lag technique. The results were not theoretically sensible. The coefficients indicated that, holding all other variables constant, in the first year after an increase in the employer tax rate the burden was more than shifted back to the employees, while in the second and third years, wage increases were higher than would have otherwise be expected and the burden was shifted back to employers again."

Leon W. Taub, "Investigation of the Incidence of Taxes on Wages in the United States," (New York: Chase Econometric Associates, Inc., September 1977, unpublished). Equations calculated by Taub distinguish among major industries and suggest that the inflationary effects of employer taxes are greater in the highly unionized industries, like manufacturing, than in the service sectors.

Rather than dealing with economy- or industry-wide wage equations, some researchers have investigated microeconomic data. An example is an investigation of individual wage and salary earners by Hamermesh.^{9/} Using data from a detailed sample study of individual incomes, Hamermesh developed an equation that explains hourly earnings on the basis of schooling, location, type of industry, and other such variables. To these equations he added a payroll tax variable--dividing payroll tax payments by each individual's actual earnings. This tax variable differs according to the extent to which annual earnings exceeded the statutory wage ceiling. The sample was selected from adult white males in order to have a large representation of persons who earn more than the wage ceiling. Hamermesh tested long-run results, allowing for a seven-year adjustment process in his equations.

The results of several different formulations suggest that somewhere from zero to one-third of the employer tax is borne by labor in the form of lower wage rates following the adjustment period. It is possible, of course, that Hamermesh's sample may be flawed, since variations in the effective tax rate in his sample largely depend on the wage-base ceiling and hence on employees' income levels. This could introduce biases because changes in fringe benefits and in the supply of skills could also affect income distributions. In any case, Hamermesh's results from microeconomic data are interesting and they are roughly similar to some that have been cited for aggregative equations. Despite some occasional statistical findings that wage rates are rolled back within a few quarters of imposition of a payroll tax, most studies do agree that the employer payroll tax, or at least a large part of it, becomes an additional cost to employers.

Since prices closely reflect costs, even in the short run, these studies imply that employer taxes push up prices, or at least that a large fraction of these taxes do so. Any such upward price effect will become further magnified as workers subsequently receive cost-of-living pay increases that push up prices even more. To arrive at an overall judgment of long-run inflationary consequences, one would also want to take into account effects

^{9/} Daniel S. Hamermesh, "New Estimates of the Incidence of the Payroll Tax," (Michigan State University, February 1978, unpublished).

on aggregate economic activity. Furthermore, one would need to consider the likely fiscal and monetary policy reactions to unfolding pressures on prices and economic activity.

EMPLOYEE TAXES

Students of public finance generally agree that the burden of a tax will eventually be distributed in the same way, whether the tax is collected from the buyer or the seller in a market. A tax on new automobiles, for example, should eventually have similar effects, whether it is collected as a sales tax or as a manufacturers' excise tax. By the same logic, the effects of employee payroll taxes should be similar to those of employer taxes. In the short run, the adjustment process to these taxes can be quite different, however. The employer tax, as has been noted, is likely to exert a push toward inflation, mainly because it is more difficult to adjust nominal wages downward than to move prices up. The burden of the employee tax, however, is likely to be carried by the employee right from the start, since it is institutionally difficult to renegotiate nominal wages upward simply because the tax has increased. Some researchers have obtained statistical results that suggest that employees are able to recoup a moderate portion of increases in the employee tax as well as in the personal income tax in subsequent wage bargains. 10/ The evidence on this remains quite tentative, however.

GENERAL ECONOMIC CONSEQUENCES OF INCREASING WAGE BASES RATHER THAN TAX RATES

The preceding analysis has stressed the idea that the burden of payroll taxes falls mainly on households. There is interest, of course, in the distribution of such tax burdens by type of household. The wage base exempts annual earnings above the base from the payroll tax. Hence, an increase in the wage ceiling affects the taxes of middle- and higher-income groups, while an increase in the payroll tax rate has a proportionately larger effect on those with earnings at or below the wage base. To anyone following the

10/ See, for example, Robert Gordon, op. cit., 1977:1, p. 121-22.

intense Congressional debate about wage-base versus tax-rate increases, it was clear that this choice was important. Several consequences are involved in this choice:

- o There is a direct tax impact on various income groups. Such analysis is not covered in the present study which focuses primarily on aggregative economic effects.
- o There is an effect on the eventual size of an employee's pension. Individual benefits are computed on the basis of a weighted average of taxable wages prior to retirement. Hence, raising the employee's wage base entitles the worker with high earnings to more benefits after retirement, and thus there is an eventual cost involved for the social security trust funds that is not incurred in the case of a simple hike in tax rates. While the rates of return on tax payments generated by a higher wage base are smaller than the average return for social security, a significant return flow still is likely. Benefit increases do not ensue, however, when employers' wage bases alone are singled out for an increase, as proposed in 1977 both by the Administration and in the Senate social security bill. Increases in the employer wage base do not generate additional pension entitlements.
- o A shift in the tax burden between rich and poor taxpayers could also affect the total size of consumer expenditures and the volume of household saving. Such results would obtain, for example, if higher-paid individuals generally were to save a larger percentage of additions to their incomes than lower-paid persons. This question will be discussed further below.
- o Finally, there may be implications for the distribution of employment opportunities among groups. Workers who receive the minimum wage, for instance, cannot absorb the employer share of the tax through lower wages and may have more difficulty in finding a job as a consequence of an increase in the payroll tax rate.

Consumption Effects of Changes in the Income Distribution

In the 1930s when Keynes developed his General Theory, ^{11/} it was taken for granted that rich households save a significantly larger portion of additional income than poorer households. This notion has an intuitive appeal, but since World War II economists have become impressed by the difficulty of finding statistical confirmation. ^{12/} Kuznets, for instance, found that over the period from 1869 to 1929 the fraction of consumption to national income had remained practically constant while income had quadrupled; ^{13/} and Goldsmith further strengthened such findings. ^{14/} This showed that, as the nation was becoming substantially richer, it did not increase its saving rate. These findings, however, left open the possibility that at any one moment those who receive relatively high incomes might tend to have higher saving rates.

Friedman advanced a consumption theory maintaining that persons who expect to receive large incomes for a number of years would have no particular incentive to save a larger fraction of their income than persons who expect to receive a small income for a number of years. ^{15/} A sudden increase in income, however, would tend to cause extra saving for a while, and a temporary curtailment of income would have the opposite effect. The current

^{11/} John Maynard Keynes, The General Theory of Employment, Interest, and Money, (New York: Harcourt, Brace and Co., 1936).

^{12/} For additional discussion of this subject, see Michael K. Evans, Macroeconomic Activity, (New York: Harper and Row, 1969), Chapter 2.

^{13/} Simon Kuznets, Uses of National Income in Peace and War (New York: National Bureau of Economic Research [NBER], 1942), p. 30.

^{14/} Raymond Goldsmith, A Study of Saving In the United States, vol. 1 (Princeton, New Jersey: Princeton University Press for NBER, 1955).

^{15/} Milton Friedman, A Theory of the Consumption Function (Princeton, New Jersey: Princeton University Press for NBER, 1957).

statistical evidence by and large supports Friedman's notion that, apart from effects of temporary blips in income, the underlying saving rates by major income groups are similar.

For instance, Modigliani and Ando grouped house-owner households according to the value of their home; they computed the ratio of consumption to income for these groups, and this ratio remained stable as the home values increased. ^{16/} Households were classified according to the value of their homes because the home tends to reflect income status on a more permanent basis than any one year's income.

Metcalf constructed a variable that showed the extent to which incomes in the highest income decile exceed the median income. Traditionally one would have expected increasing values for this measure of income inequality to be associated with greater saving rates. But, this "anticipated result does not occur." ^{17/}

Alan Blinder extensively tested whether the income distribution affects consumption. He found that a move toward "equalizing the income distribution will either have no bearing on or (slightly) reduce aggregate consumption." ^{18/} Several special reasons for the latter, rather surprising, possibility are discussed in his article.

This general body of evidence suggests that an equal amount of revenues obtained either by increasing payroll tax rates or by hiking wage bases should have about the same aggregate effects on consumption expenditures and on personal saving. This conclusion is incorporated in the statistical analysis in the next chapter.

^{16/} F. Modigliani and A. Ando, "The Permanent Income and the Life-Cycle Hypothesis of Savings Behavior: Comparative Tests," I. Friend and R. James, eds., Consumption and Saving, vol. II (Philadelphia: University of Pennsylvania Press, 1960), pp. 153-54.

^{17/} Charles Metcalf, An Econometric Model of the Income Distribution (Chicago: Markham Publishing Company for University of Wisconsin), p. 150. In fact, Metcalf got some opposite results from the traditionally expected direction, but the interpretation of these results is open to question.

^{18/} Alan Blinder, "Distribution Effects and the Aggregate Consumption Functions," Journal of Political Economy (University of Chicago Press, June 1975), pp. 447-75.

In general, increases in payroll taxes are expected to affect saving because they curtail spendable incomes. Social security developments can also affect saving through another route. An increase in expected social security benefits could reduce the provisions that a person may undertake on his own for old age. This subject will be discussed in Chapter VI.

The Wage Base Effect on Employers

Employers could be affected differently by changes in the payroll tax rate as compared with changes in the wage base. These alternative revenue sources could affect the competitive situation of firms that specialize in using high-wage labor--such as research and consulting firms or electrical contractors--as against others that specialize in low-wage labor. With an increase in the wage-base ceilings, costs for the firms that use highly skilled labor would increase relative to costs for other firms. Relative employment levels in these industries might not change much, however, to the extent that competition between the affected industries is limited. This question is of special interest because some of the proposals debated in 1977 call for very large increases in the wage-base ceilings for employers only. In the 1977 law, as enacted, wage bases continued to be treated identically for employers and employees, but for both they are scheduled to increase considerably.

There is another way in which wage-base increases could have a different impact from a tax-rate change. An increase in the tax rate increases labor costs in a fairly even manner for a large number of firms. Since these increased costs are widely shared, it should be less risky for firms to increase prices. In the case of a rise in the wage-base ceilings, however, only the costs of high-priced employees would be increased. There might be possibilities of substituting lower-wage workers for those with higher wages. Hence, a larger share of the increased costs might have to be absorbed by highly skilled workers than would be expected for workers in general in case of a tax rate increase. In the case of an industry that is in close competition with foreign imports, it is also more plausible to expect backward shifting of the employer tax into reduced wages.

Despite these qualifications, it still appeared justified in the next chapter not to make a distinction between the macroeconomic effects of a change in the payroll tax rate and the wage-base ceiling.

CHAPTER IV. ESTIMATES OF THE AGGREGATE EFFECTS OF THE 1977 PAYROLL TAX INCREASES

The purpose of this chapter is to evaluate the macroeconomic effects of the social security tax increases legislated in December 1977. Some problems immediately arise in such an undertaking.

To evaluate a tax change, one needs to compare the results expected from that change with those that would have occurred without the change. In the case of social security, a projection without a tax increase encounters unusual consequences because the social security trust funds would be depleted in a few years.

Some people would consider such a depletion similar to the bankruptcy of a private firm, which would stop paying its obligations after such an event. In this chapter, however, the assumption will be made that social security benefits would continue to be paid out of general funds after the trust funds become exhausted and that consumer confidence would not be shaken by this sequence of events. By virtue of these assumptions, the 1977 law can be analyzed as a fairly routine tax measure without evaluating the economic effects that may ensue from its contribution to increased stability of the social security system.

Some of the major questions that have to be faced in analyzing the effects of social security taxes have been described in the preceding chapter. The following conclusions were adopted for this report:

- o Employers tend to view a major part of their share of social security taxes as costs that are passed forward into prices;
- o Employees' take-home pay declines roughly by the amount of their share of social security taxes. In this sense, employee payroll taxes have aggregate effects similar to personal income taxes; and

- o Current knowledge does not permit one to make a distinction between a hike in the payroll tax rate and an increase in the wage-base ceiling for the purpose of estimating aggregate economic effects, such as the change in consumption. These distinctions are important, however, for analyzing effects on the distribution of household income and on the competitive position of industries specializing in high-wage or low-wage labor.

ESTIMATED EFFECTS OF AN ILLUSTRATIVE \$10 BILLION INCREASE IN SOCIAL SECURITY TAXES

The judgments summarized above are also incorporated in several of the large macroeconomic models of the United States. Such models will tend to provide answers about the effects of social security taxes that are consistent with the framework of analysis adopted here. The discussion so far has dealt only with a few key features of payroll taxes; the magnitude of effects of payroll tax changes on economic activity, employment, and prices has not been evaluated. This is attempted in Table 3, in which the estimated reaction to an illustrative tax increase of \$10 billion is set forth. This increase, either in employee or in employer taxes, was chosen rather than an actual tax change because the effects of actual changes are complicated by the staggered introduction of tax rate changes in successive years and by simultaneous changes in employer and employee taxes. Panel A of Table 3 assumes that only employee-paid taxes are increased by \$10 billion, while Panel B assumes that only employer-paid taxes are raised by this same amount. These illustrative changes are assumed to begin in 1979. Several aspects of the results deserve special note.

Effects on Real GNP

Whether employer or employee payroll taxes are increased, real economic activity is shown to be affected in the same way--by a decrease of \$7 billion, \$9 billion, and \$5 billion (in 1972 dollars) in the fourth, eighth, and twelfth quarters, respectively, after the tax increase. This uniformity is a CBO assumption which was made after carefully weighing the influence of several complex effects. The effects on real economic activity, caused by an

TABLE 3. ECONOMIC EFFECTS OF ILLUSTRATIVE SOCIAL SECURITY TAX INCREASES a/

	Quarters After Tax Change		
	4th	8th	12th
<u>A. \$10 Billion Hike in Employee Taxes b/</u>			
Real GNP (billions of 1972 dollars)	-7	-9	-5
Current Dollar GNP (billions of dollars)	-11	-19	-17
GNP Price Deflator (percent)	*	-0.1	-0.2
Employment (thousands)	-200	-300	-200
Unemployment Rate (percentage points)	0.2	0.2	0.2
<u>B. \$10 Billion Hike in Employer Taxes</u>			
Real GNP (billions of 1972 dollars)	-7	-9	-5
Current Dollar GNP (billions of dollars)	7	1	6
GNP Price Deflator (percent)	0.7	0.6	0.5
Employment (thousands)	-200	-300	-200
Unemployment Rate (percentage points)	0.2	0.2	0.2

<u>Addendum for Change in GNP Price Deflator Under Different Assumptions</u> (percent)			
<u>C. If Real GNP Effects Were Offset c/</u>			
Employee Tax Increase	0.0	0.0	0.0
Employer Tax Increase	0.7	0.7	0.8
<u>D. Assumption C, but Less Passthrough of Cost Increase d/</u>			
Employee Tax	0.0	0.0	0.0
Employer Tax	0.5	0.5	0.5

SOURCE: CBO estimates based on CBO's Multipliers Model and Wharton Econometric Forecasting Associates.

a/ The illustrative policy changes in this table begin at the start of 1979. The estimates represent changes relative to the 1978 CBO five-year projections.

b/ Available estimates of the effects of a \$10 billion reduction in benefit payments would be similar to the figures for employee taxes.

c/ For instance, an income tax cut could offset the real GNP effects of a payroll tax increase.

d/ Assumes that one-third of the employer tax is not shifted forward, but paid out of profits and wages. Profits would be affected initially since they absorb short-run price shocks and wages would be scaled back later.

* Less than one-half of one percent.

increase in employee taxes, were estimated on the basis of the personal income tax effects in CBO's Multipliers Model. ^{1/} In this case, economic activity would be restrained mainly as a result of the cut in household disposable income.

For employer taxes, it was assumed that the effects on real economic activity would be equivalent. In the employer-tax case, real disposable personal income would also be curtailed because of higher prices, but there are a number of additional channels of impact:

- o Higher domestic prices would encourage price-sensitive imports and discourage exports. These effects would eventually tend to be counteracted by a slight weakening of the dollar exchange rate.
- o Higher prices also could cause cutbacks of unit purchases by governments, since both federal and state and local budgets are formulated in current dollar values for near-term periods.
- o An important consideration is that higher prices would be likely to exert an upward push on interest rates, thereby dampening investment and economic expansion generally. The intensity of interest rate results would depend on the conduct of monetary policy.
- o In sum, employer tax increases would probably have a smaller short-run impact on real consumption than employee taxes, since the effects are less concentrated on disposable income. However, increases in employer taxes would have larger downward effects on other components of GNP, such as investment, net exports, and government purchases. It seems plausible that the overall effects of these two taxes might be about the same.

^{1/} Congressional Budget Office, The CBO Multipliers Project, Technical Analysis Paper, (August 1977).

Effects on Prices

The big difference in effects between employee and employer taxes is in the behavior of prices. An increase in employee taxes is expected to result in a slight moderation of price increases--such as would be expected from the general dampening of economic activity--and would decrease the GNP deflator by 0.1 and 0.2 percent by the eighth and twelfth quarters, respectively, after the tax increase. This effect also operates for increases in employer taxes, but it is expected to be swamped by the cost-push effect of these taxes. This impact was discussed at some length in Chapter III. While no conclusive evidence was found on the portion of employer taxes that is added to costs and prices, it seemed to be a reasonable judgment that a sizable portion of the tax does get added into prices.

Three different increases in the GNP price deflator are shown in Table 3 in response to a hike in employer payroll taxes. The largest increase--0.7, 0.7, and 0.8 percent in the fourth, eighth, and twelfth quarters, respectively--occurs when it is assumed that other government policies are adopted to offset the curtailment in economic activity that results from the tax increase (see Panel C). A smaller price increase--0.7, 0.6, and 0.5 percent occurs without this assumption (see Panel B), and a more moderate price increase--0.5 percent for each quarter shown--results from the assumption that one-third of the employer tax is not shifted forward, but paid out of profits or wages (see Panel D).

The first of these price estimates (Panel C) was obtained from a simulation using the Wharton Econometric Model. This model incorporates a quick and fairly complete passthrough of increases in employer taxes into prices. In addition, the initial price increases trigger further upward adjustments in wages and prices. After several quarters, this ripple effect adds more than half again as much to the price increase as the initial cost-push effect. Monetary policy is assumed to be unaffected by these tax increases, with an unchanging path of bank reserves directly supplied by the Federal Reserve.

The alternative calculation, in which one-third of the employer tax is not shifted forward, assumes that initially after a tax increase profits would decline, because it would take time in some industries to edge prices higher. Later on, there might be some moderation in wage payments, as a number of empirical tests suggest.

As would be expected, the reaction of current dollar GNP to these illustrative tax changes depends on changes in both prices and economic activity. An increase in employee taxes reduces current dollar GNP on both of these grounds--by \$11, \$19, and \$17 billion in the three quarters shown (see Panel A). But in the case of an increase in employer taxes, current dollar GNP is expected to rise--by \$7, \$1, and \$6 billion, respectively--since the price increases are estimated to dominate the outcome (see Panel B).

ESTIMATED EFFECTS OF THE 1977 SOCIAL SECURITY TAX INCREASES

The likely effects of the tax increases provided by the 1977 Social Security Amendments (see Tables 1 and 2) are shown in Table 4 for calendar years 1979-1982. To derive these estimates, the main tasks were to combine the employee- and employer-share effects of Table 3 into a single outcome and to take into account that tax hikes are scheduled for each year, so that the effects after 1979 combine first-year and subsequent-year changes.

The same sources and methods were used as in Table 3, with special reliance on CBO's Multipliers Model and Wharton's econometric model. The results, of course, are uncertain, as must be expected in this type of economic analysis.

The message of the estimated data in Table 4 is that the new social security taxes will exert an increasingly restraining effect on real economic activity between 1979 and 1982. The dampening effects of the large tax increases scheduled in 1981 are particularly noticeable in 1981 and 1982. Real GNP is expected to be 0.2 percent below baseline estimates in 1979, 0.5 percent in 1980, and as much as 0.9 percent in 1982. Similarly, the number of jobs lost in 1979 is estimated to be around 100,000, rising to about 500,000 in 1982. The corresponding increase in the unemployment rate is 0.3 percentage points in 1982.

Usually, events that restrain real economic activity would have some dampening effect on inflationary pressures, since both labor and product markets would be experiencing increased slack. As already mentioned, such an effect cannot be expected from an increase in social security taxes. Payroll taxes restrict purchasing power but at the same time increase the costs of producing

TABLE 4. ESTIMATED ECONOMIC EFFECTS OF THE PAYROLL TAX INCREASES
LEGISLATED IN 1977: BY CALENDAR YEARS a/

	1979	1980	1981	1982
Additional Payroll Taxes (billions of dollars)	6.6	9.8	19.8	24.9
Real GNP (billions of 1972 dollars)	-3	-7	-12	-15
Real GNP (percent change)	-0.2	-0.5	-0.7	-0.9
GNP Price Deflator (percent)	0.2	0.3	0.5	0.5
Current Dollar GNP (billions of dollars)	<u>b/</u>	-4	-7	-12
Employment (thousands)	-100	-200	-400	-500
Unemployment Rate (percentage points)	0.1	0.2	0.3	0.3

<u>Addendum for Change in Price Deflator Under Different Assumptions</u> (percent)				
I. If Real GNP Effects were Offset <u>c/</u>	0.2	0.3	0.7	0.8
II. Assumption I, but Less Passthrough of Cost Increase <u>d/</u>	0.1	0.2	0.4	0.6

SOURCES: Tax increases from Table 2; procedures to derive estimated effects from CBO's Multipliers Model and Wharton Econometric Forecasting Associates.

a/ These estimates represent changes relative to the 1978 CBO five-year projections.

b/ Less than \$500 million.

c/ For instance, an income tax cut could offset the real GNP effects of the payroll tax increase.

d/ Assumes that one third of the employer tax is not shifted forward, but paid out of profits or wages.

goods and services. Hence, decreased economic activity and increased inflation should both be expected. Table 4 shows an increase in the general price level (measured by the GNP deflator), amounting to 0.2 percent in the initial year of 1979 and growing to 0.5 percent by 1982.

The estimates for the effects on current dollar GNP show the combined influence of curtailed economic activity--exerting a downward influence--and higher prices--exerting an upward push. The downward effect dominates, so that current dollar GNP is estimated to be a bit smaller than it would have been otherwise, decreasing \$12 billion in 1982.

The lower half of Table 4 shows two additional estimates of price impact. In the first line, it is assumed that the negative effect of the payroll tax on economic activity is cancelled by other policies or events. This could be achieved through an income tax cut, through larger government spending, or through a stronger private economy than had been previously anticipated. Without a dampening of economic activity, the increased cost effects of the larger payroll taxes would have an even greater influence and especially so toward the end of the period when these price effects would have had time to build up, with the GNP deflator increasing by 0.8 percent in 1982 (see Item I).

In the bottom line of Table 4 (Item II), it is assumed that firms recapture only two-thirds of their increased tax costs by increasing prices, whereas the remaining one-third is funded by a curtailment of profits and by smaller wage increases than would otherwise have occurred. In contrast, the assumption in the main part of the table is that employers pass on to consumers virtually all the costs incurred by them in paying the new payroll taxes. As expected, the new assumption would lead to smaller price increases.

The estimates in Table 4 indicate that the general economic effects of the 1977 payroll tax increases are undesirable, whether the focus is on real economic activity or on inflation. The beneficial effect, on the other hand, is a stronger social security system. The budgetary goals of the tax increases are to boost the reserves in the social security trust funds and to reduce the unified budget deficit.

The Congress, of course, may decide to take action to offset some of the economic effects of the increases in payroll taxes. Such measures have been discussed in Congressional committees

and several bills for payroll tax relief have been introduced. Relief action does not need to take the form of payroll tax roll-backs. Policymakers could keep the social security tax legislation as enacted and realign the rest of fiscal policy in terms of the needs that would best satisfy general economic goals. Administration proposals for income tax cuts in 1979, for instance, partly represented an attempt to offset the dampening effects of the social security tax increases.

Alternative ways of offsetting the effects of the payroll tax increases are discussed in the next chapter.

CHAPTER V. OFFSETTING THE EFFECTS OF INCREASES IN
SOCIAL SECURITY TAXES

The social security tax increases enacted in 1977 have three particular consequences that have sparked the search for offsetting policies:

- o The dampening effect on economic activity that is usually exerted by a tax increase.
- o The inflationary effect exerted by payroll taxes because they raise the costs of production. (Estimates of the magnitude of this and the above consequence are shown in Table 4 in the preceding chapter.)
- o The surprisingly big payroll tax increases that will be experienced by the segment of the population with earnings above the previous wage ceilings, as illustrated in Table 5. The tax changes include rapid and large increases in the wage-base ceilings in addition to higher tax rates. Thus, the amount of the prospective tax hike is quite large for persons who are affected by both the tax rates and the higher wage base. The increases stem from the provisions of previous law as well as from the 1977 Social Security Amendments. According to the formulas that determine benefits, the higher wage bases eventually should result in larger pensions after retirement. Taxpayers, however, may not appreciate the prospect of this eventual return flow.

ROLLBACKS IN SOCIAL SECURITY TAX INCREASES

The 1977 Amendments were passed with the knowledge that some of their economic effects would be negative, but with a strong feeling that the "self-supporting" nature of the social security trust funds, which are maintained through earmarked payroll taxes, is important to preserve. Proposals to offset the recently legislated tax increases include rollbacks, with funds to be replaced from general revenues, which clearly would serve to reverse the economic effects of the recent legislation. While such cuts

TABLE 5. COMPARISON OF ADDITIONAL SOCIAL SECURITY TAX BURDENS
IN CALENDAR YEAR 1979 BY INCOME GROUPS

Single-Earner Income	Increase in Employee Tax from 1978
Up to \$17,700	Up to \$14
\$17,700 to \$22,900	\$14 to \$333
\$22,900 and over	\$333

in social security taxes could jeopardize the notion of a contributory pension system, a middle-ground position could be taken that under these proposals general funds would finance only portions of social security benefits and a major part would continue to be financed by earmarked payroll taxes.

Some proposals have dealt with this issue by drawing a distinction between the various trust funds. The old age and survivors fund, it is claimed, needs to be financed by earmarked payroll taxes, because the size of pensions depends on the level of previous incomes and the associated payment of payroll taxes. The trust fund is justified in paying a higher-income worker a larger pension than is received by a low-income worker, because the higher-income worker and his employer contributed considerably more in payroll taxes. The justification for differences in entitlements would be less clearly perceived if the pensions were financed by general revenues. In the latter case, the question might arise: who needs a large pension, rather than who is entitled to it.

The situation is different in the case of the hospital insurance trust fund, since all who are entitled to medicare services are provided with the same standard of financial support. Thus, since hospital services are offered independently of the particular size of past payroll tax contributions, the need for a contributory trust fund is less than in the case of old age and survivors insurance. The disability fund probably falls in between these two cases. It provides income maintenance insurance against a risk that can befall anyone; in this sense it resembles medical insurance. As the term income maintenance implies, however,

compensation differs considerably according to the size of previous income. Such insurance is not equivalent to old age pensions since the need for old age pensions is not a question of risk, but almost of certainty, and thus can be better prepared for.

Based on these distinctions, there are proposals to reduce the 1977 payroll tax increases by financing hospital insurance, and sometimes also disability insurance, through general revenues. Such a move would obviate those payroll taxes that are earmarked for these funds.

CUTTING OTHER TAXES

Action to offset the effects of payroll tax increases can also be taken by cutting taxes other than payroll taxes. A merit of this approach is that it leaves the self-financing character of the trust funds intact, while promoting a tax revenue total that may be more suitable for economic goals. Of course, such a measure could not be expected to remove all of the undesirable effects of payroll tax hikes, since the offsetting tax measure would have its own characteristics and could not cancel out the effects of a payroll hike in every area. For instance, an income tax cut can offset the short-run dampening effects on economic activity that are engendered by a payroll tax increase. It cannot, however, offset the inflationary effects of the payroll tax increase, since a cut in income taxes does not reduce production costs while an increase in payroll taxes tends to increase them.

This chapter will not consider the actual plans that have been proposed to offset social security tax increases. Some examples will be given, however, that illustrate how different types of tax cuts might work as offsets to an increase in payroll taxes. The examples have been picked to show a diversity of results and not because the particular instruments are the likely ones to be used. The following instruments are discussed:

- o Employment tax credits;
- o Cuts in excise taxes and in unemployment insurance payroll taxes;
- o Personal income tax cuts; and
- o Cuts in direct business taxes.

Employment Tax Credits

A general employment tax credit in many respects is the reverse of the employer share of the payroll tax. Thus, it would be an effective method to offset some of the negative by-products of an increase in the payroll tax.

An employment tax credit--not just for additional workers but for existing workers as well--would widely reduce unit labor costs and hence production costs, an effect that is not achieved by a reduction in personal income taxes or in the corporate profits tax. The latter action would improve business cash flows, but would not reduce the costs of production.

Even for an employment tax credit, however, there would be some technical difficulties in achieving an offset to the labor cost increases of the payroll tax. Some firms, for instance, do not have enough earnings to pay profits taxes and they might not be able to take advantage of the credit. In addition, the employer share of the payroll tax is treated as a cost before profits taxes are computed, while the tax credit is taken after tax liabilities have been calculated.

Excise Taxes and Unemployment Insurance Payroll Taxes

The Administration's proposals in the 1979 federal budget include recommendations to repeal the federal excise tax on telephone services and to cut the rate paid by employers under the federal unemployment insurance system from 0.7 percent to 0.5 percent. The tax reductions involved in these two recommendations amount to \$1.6 billion in fiscal year 1979 and \$1.9 billion by fiscal year 1980, thus offsetting only about one-fifth of the near-term social security tax increases.

In general, tax measures of these types are worth consideration as offsets to payroll tax increases, since they tend to add to private purchasing power while exerting some anti-inflationary effects. The federal unemployment insurance tax is a payroll tax like the social security tax, but this tax is levied only on the employers. The telephone excise tax tends to increase the price of telephone service for households, businesses, and other users.

Opportunities to propose offsets along these lines, however, are limited. All payroll tax receipts--whether OASDHI, unemployment, or railroad retirement taxes--flow into trust funds, so

that major efforts to reduce these taxes would encounter problems similar to a rollback of social security taxes. If repeal of the telephone service tax were accomplished, the excise taxes that would remain all serve purposes besides revenue raising. These taxes are designed to discourage specific types of consumption, such as alcohol, tobacco, and crude oil (an energy tax proposed by the Administration).

Thus, the possibilities of substantial offsets by cutting excise taxes or payroll taxes other than social security appear to be quite limited. 1/

Personal Income Tax Cuts

The more the structure of a given tax differs from that of the payroll tax, the more closely economic conditions and prevailing monetary policy need to be examined to judge the effectiveness of that tax as an offset. For instance, the greater the concern about inflationary pressures, the less suitable would be a cut in the income tax to offset a hike in the payroll tax, compared to the types of instruments mentioned before. A cut in the income tax tends to add further to inflationary pressures, and the more so the closer the economy is to full capacity utilization.

In comparing the combined effects on economic activity of a hike in payroll taxes and an equal-size cut in personal income taxes, the following factors can be mentioned:

- o As was discussed in Chapter IV, changes in employee payroll taxes can be considered roughly equivalent, from the standpoint of macroeconomic effects, to changes in the personal income taxes. For this part of the payroll tax, the income tax is an effective instrument of offset.

1/ Some economists have proposed that the federal government should compensate state and local governments to the extent that they agree to reduce sales taxes. Such a course of action, however, would be difficult to administer equitably.

- o Chapter IV also advanced the tentative judgment that the effects on general economic activity of a given change in personal income taxes (or employee payroll taxes) would be about similar to that of employer payroll taxes. Specific results would depend partly on monetary policy. If, for example, the monetary authorities did not accommodate the price increases resulting from the payroll tax, then this tax would turn out to be particularly restrictive for economic activity. A cut in income taxes of equal size might not fully offset these effects.
- o Specific estimates of the inflationary effects of an offset policy using personal income taxes were included in Tables 3 and 4. These tables showed inflationary effects with and without a tax policy that offsets impacts on real GNP.
- o Effects on employment might not be offsetting if the payroll tax--a tax on labor inputs--were to cause a substitution of capital for labor. Such substitutions, however, are expected to be minimal, as is discussed in the next chapter of this study.

Cuts in Direct Taxes on Business

Economists are particularly uncertain about the size and timing of the economic effects of changes in business taxes, such as the corporate income tax, integration of corporate and individual income taxes, the investment tax credit, and accelerated depreciation of capital investment. For this reason, only very general remarks will be attempted:

- o A cut in the corporate income tax has its immediate effect on increasing after-tax profits, while an increase in employer payroll contributions has an immediate impact of raising production costs. Thus, the two tax actions do not directly offset each other. Prompt relief from the inflationary impact of the payroll tax cannot be expected.
- o Over a number of years, business tax cuts that increase the capital stock may increase productivity and thus may contribute to reduced price pressures.

- o Business tax cuts tend to increase after-tax profits and thus they add to business liquidity. To the extent that businesses do not pass on all of the cost impact of higher payroll taxes in the form of price increases, their liquidity is diminished by the payroll tax. Hence, there is the possibility of some offset here between the two counter-vailing tax effects.
- o Certain business tax cuts, namely the investment tax credit and accelerated depreciation, provide a powerful and direct stimulus to investment spending not available from cuts in corporate profits tax rates. Over time, such incentives to invest from these special instruments should more than counteract any diminution of investment caused by a payroll tax hike.
- o An increase of payroll taxes might also have some effect toward a substitution of capital for labor. Since the employment of workers has become somewhat more expensive through the hike of the payroll tax, employers may look for ways to cut down on the use of labor. This process is not likely to go very far, however, since real wages would tend to adjust downward in the long run.
- o Measures designed to affect investment spending are believed to operate with longer lags than measures that stimulate consumer spending.

CONCLUDING REMARKS

It may be useful to compare briefly various offset strategies. A rollback of payroll tax increases is a highly effective method to eliminate the negative consequences of these tax increases, but this approach also eliminates the positive effects, such as the maintenance of a trust fund that is solely financed by persons who expect to become beneficiaries and by their employers. There is also a problem with the design of a tax rollback. A rollback is sometimes visualized as a general cut in payroll tax rates. This would give only partial relief to those households whose tax burdens are scheduled to increase sharply because of large upward movements in the wage base.

A general employment tax credit, a cut in the employer federal unemployment insurance tax, and reductions in excise taxes are attractive ways to counteract the inflationary effects of the

social security tax increases. The economic effects of these instruments are more akin to those of the employer share of payroll taxes than the employee share. But these instruments are highly specialized, they frequently serve purposes of their own, and they may involve such small amounts of revenues that it would be difficult to use them as the major element in an effort to offset payroll taxes.

From the standpoint of general effects on economic activity, personal income tax reductions are a good way to offset the undesirable effects of payroll tax hikes. However, there obviously are distributional problems in using this quite different tax structure as an offset vehicle. Federal workers, for instance, do not pay social security taxes but they would benefit from the income tax cut that is supposed to offset these taxes. Another serious difficulty is that reductions in personal income taxes do not alleviate the extra inflation caused by the hike in payroll taxes.

It is difficult to judge the efficiency of reductions in business income taxes as a possible offset to payroll tax hikes. Employer payroll taxes immediately change the costs of production, while taxes on businesses' net income (and investment tax credits) directly change the return on capital. These taxes affect the economy through rather different channels.

In the short run, the economy tends to adjust to an increase in payroll taxes, holding other things constant, by reining in the pace of economic activity and by pushing up prices. These effects, however, need not continue for many years; in the long run, these reactions are likely to fade as economic activity would be expected to recuperate through market adjustments or through new government policies. The rate of inflation is also likely to return to its previous path though the level of prices could be expected to remain permanently higher. This would follow if the Federal Reserve increases the money supply somewhat more in response to the initial cost-push price pressures, and does not subsequently reverse this extra addition to the money supply.

The following aggregate effects may be particularly important in the long run:

- o Effects of social security on household saving behavior;
- o Interactions between social security taxes and the growth of private pension plans; and
- o Employer payroll taxes and the desired capital intensity of production.

These effects are taken up briefly in this chapter. In addition, of course, there are many distributional aspects of social security taxes, such as the transfer of income from those who work to the aged, that are not dealt with in this study.

EFFECTS ON SAVING

A number of economists believe that permanent increases in social security benefits would tend to diminish private savings,

while increases in social security taxes--keeping benefits constant--have only small effects on private saving. ^{1/} These propositions are based on the belief that a chief motive for private saving is to save for retirement. When social security benefits are expected to be larger, private households are said to respond by saving less. If social security taxes are increased and no change in the benefit flow is expected, there is likely to be only a small downward adjustment in long-run private savings, because of the cut in disposable income.

To evaluate the total long-run effects of social security on saving, government saving needs to be taken into account in addition to private saving. When social security benefits are increased, both the private and the government sectors save less, and this presumably has a large negative effect on national saving. In the case of any tax increase, the government's position moves toward surplus and some increase in total national saving is likely. In the case of an equal increase in social security taxes and benefits, government saving would stay unchanged, but private saving presumably would decline because of the expectation of more liberal benefits.

While this reasoning has plausibility, it implies that there should have been a large downward push on the personal saving rate over the 40 years since the inception of the social security system. Benefit entitlements have increased greatly over this period. The saving ratio has been constant, however, rather than moving downward. ^{2/}

^{1/} See, for example, Alicia H. Munnell, The Future of Social Security (Washington, D.C.: Brookings Institution, 1977), Chapter 6; Martin Feldstein "Social Security, Induced Retirement and Aggregate Capital Accumulation," Journal of Political Economy, vol. 82:5 (September/October 1974), pp. 905-26; and Martin Feldstein and Anthony Pellechis, "Social Security and Household Wealth Accumulation: New Microeconomic Evidence," Discussion Paper No. 530, (Cambridge, Mass.: Harvard Institute of Economic Research, January 1977).

^{2/} Alicia H. Munnell, The Effect of Social Security on Personal Saving (Ballinger, 1974).

It is, of course, possible that the general constancy of the saving ratio hides several offsetting pressures on saving. For example, the downward effect of anticipated social security benefits could be cancelled by the upward effect of the increasing number of years that people expect to spend in retirement. This latter effect tends to increase the perceived need for saving. A longer period of retirement has been caused both by an increased life expectancy and a shift toward earlier initial retirement, partly engendered by provisions of the social security system. The need for saving, of course, could also have been strengthened by other factors.

Given the stability of the overall saving rate, there is no firm evidence available so far that the existence and growth of social security pensions has affected private saving. At best, there is scattered survey evidence that "employed men approaching retirement (in the 55-57 age group) who did not expect benefits saved more than those who did." ^{3/}

The effects on saving could be different in the future, if the average retirement age should be delayed because of elimination of compulsory retirement. Any decline in saving would raise the question of whether society is providing sufficiently for capital formation. So far, however, the existence of a long-run effect of social security on private saving is a matter of conjecture.

EFFECTS ON PRIVATE PENSION PLANS

The relationship between changes in social security and saving in private pension plans is a special case within the previous topic. The two pension systems have been able to grow side by side in the past, without crowding each other out. But, taking a long view, their relationship is clearly competitive, one system will grow faster at the expense of the other. For example, many private pension plans are specifically designed to complement the pattern of social security benefits, so that additional social security pensions will cause smaller payments of private benefits. For such plans, an increase in the employee's wage-base ceiling--which ultimately assures increases in pensions to middle- and upper-level employees--would eventually lead to slower asset growth in private pensions.

^{3/} Ronald B. Gold, "Tax Deductions for Individual Retirement Saving," National Tax Journal (December 1972), pp. 585-93.

Another aspect of private pension plans is that employer contributions are the mainstay of their revenues, even for those funds that also receive employee contributions. When employers experience an increase in their payroll taxes, they will naturally consider whether it is possible to cut down contributions to private pension funds and still maintain an overall retirement system that the employees find acceptable. It is far easier, however, for employers to cut back on contributions to private pension plans if there is an increase in social security benefits than if there is an increase in payroll taxes without a benefit change.

A decrease in the growth of private pension plans would mean a reduced flow of saving, particularly into the corporate bond and stock markets. Other things being equal, this would reduce total saving and thereby depress the rate of capital formation in the long run.

EFFECTS ON CAPITAL INTENSITY OF PRODUCTION

Social security actions have short-run effects on private investment by changing aggregate demand and by influencing interest rates. These effects were taken into account in the short-run macroeconomic simulations of Chapter IV. The question posed here is whether an increase in social security taxes, which might add to employer labor costs, would make employers strive to substitute capital for labor. To some extent, employers might undertake steps in this direction. After a long period, however, the burden of payroll taxes--whether paid by the employer or the employee--is probably mainly borne by labor, as was discussed in Chapter III. Under such an outcome, incentives to change the capital-labor ratio would fade out.

There are three exceptions to such neutral eventual outcomes for capital-labor ratios. One is that social security provisions may affect the supply of saving as discussed earlier in this chapter. Capital formation, of course, is dependent on the incentives for saving at times when the economy is reasonably fully employed.

Another exception occurs if the supply of labor is responsive to the changes in take-home pay caused by social security taxes. The increase in taxes makes it less remunerative to hold a job--and thus some workers might withdraw from the labor force. At the

same time, however, the fact that it has become more difficult to maintain their standard of living might persuade other persons to enter the labor force or to work longer hours. The net effects of these two forces--the substitution and the income effect--is difficult to judge. If there should be a decrease in the labor force, this would strengthen wages and tend to increase the capital-labor ratio.

Thirdly, one would expect an increase in the capital-output ratio if unskilled workers were replaced by a smaller number of skilled workers. An increase in the payroll tax effectively raises the minimum wage, since the employer has to pay at least the statutory minimum wage plus the employer contribution thereon. Some jobs may be threatened by a substantial payroll tax increase, if the productive contribution of some workers is considered sufficiently marginal. Skilled workers would be better protected from such possible layoffs because they have more flexibility. If necessary, they can accept a smaller wage, which the lowest-paid workers cannot accept. Moreover, for highly skilled workers the increase in payroll taxes represents a smaller fraction of their wage since some of their earnings are tax free. With high payroll tax rates, then, there are some grounds to expect employers to develop a somewhat greater preference for skilled workers. One of the prominent features of the 1977 Social Security Amendments, however, is the large increase in wage bases. This actually increases the employer's cost of hiring a highly skilled worker by a higher percentage than the cost increase for an unskilled worker.

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