count rate of approximately 4 percent (1 06/1 0175 = 1 042). An 8-percent discount rate similarly adjusted results in a rate of 6 percent (1 08/1 0175 = 1 061). These two rates, 4 percent and 6 percent, are intermediate in the range of rates currently employed and were used in this study to estimate the present value of lifetime earnings

Consumption — In the past, there was some diversity of opinion regarding the treatment of consumption—whether or not to deduct it from a person's contribution to output[28] Recently, however, there has been wider agreement among economists that to deduct consumption in cost-of-illness calculations would be wrong since it is the losses to society that are being measured rather than those to the individual family.[29]

[28] See Burton A Weisbrod, *Economics of Public Health*, University of Pennsylvania Press, 1961, Louis I Dublin and Alfred J Lotka, *The Money Value of Man*, The Ronald Press Company, 1946, and Rashi Fein, *Economics of Mental Illness*, Basic Books, 1958
[29] E J Mishan, "Evaluation of Life and Limb," *Journal of Political Economy*, 1971

Notes and Brief Reports

Self-Employment Income At Low Earnings Levels*

The social security tax rate on self-employment earnings differs from the tax rate on wages Under certain conditions this situation could lead to the taxing of workers with low earnings at a higher average rate than those with high earnings

Since 1951, when self-employment first became covered by the social security system, the self-employment tax rate has ranged from about 68 percent to about 75 percent of the combined employee and employer rates on wages. If it is assumed for the purpose of this study that the employee ultimately bears the entire wage tax then the self-employed pay a lower rate than wage earners do And if self-employment is concentrated among individuals of moderate and higher earnings—the question this study investigates—it follows that the average tax rate is regressive in relation to taxable earnings, that is, the rate is higher for taxable earnings at the lower levels

This assumption on the burden, or incidence, of the tax means that were it not for the employer tax (a) the market wage structure would be higher by precisely the amount of the tax and (b) employers would therefore have to pay the higher going wage to obtain the employees they desire Economists disagree on the extent to which the tax burden shifts[1] (The incidence of the employee's share of the tax is part of the same theoretical question, yet observers appear to agree that at least half of the combined employee-employer tax falls on the worker Controversy in the literature on the proportion of the tax borne by the worker seems limited to a range that goes from half to all of it.)

This note presents data on the proportion of taxable earnings that is derived from self-employment at various earnings levels and examines the hypothesis of regressivity in the light of the data

TERMINOLOGY

"Earnings" in the context of taxes and the social security program are not identical with income They consist only of those portions of income that result largely from the personal effort of the earner—wages and income from self-employment. Dividends, rent, interest, and other forms of property income that involve relatively little personal effort are not called earnings and are not taxable or creditable for benefits under the program

Earnings from covered employment are taxed each year to the "maximum" amount specified

[1] For a presentation of the views of several economists on the incidence of the social security tax, see John A Brittain, *The Payroll Tax for Social Security*, The Brookings Institution, 1972, chapters II and III

in the law. The portion of self-employment net earnings that falls below the taxable maximum and is taxed is called "self-employment income" (SEI). "Taxable earnings" are the total of "taxable wages" (wages up to the maximum) and SEI

The weighted average tax rate is defined here as $W \cdot T_w + S \cdot T_s$ where W and S are the proportions of taxable earnings consisting of wages and SEI, respectively, and T_w and T_s are the corresponding tax rates $W + S = 1$. If the average tax rate declines as taxable earnings rise, the tax is regressive in relation to taxable earnings (The tax will necessarily be regressive in relation to earnings beyond the maximum because of the maximum itself, but the issue here is the effect of the special SEI tax rate Furthermore, although earnings above the maximum are not taxed, neither are they creditable toward benefits The regressivity caused by the maximum must be thus considered in the light of the benefit-computation procedure SEI, on the other hand, has the same force as wages in computing benefits, so regressivity caused by the special SEI rate is not compensated for by differences in benefit payments)

THE DATA

The data were computed from the 1970 data in the Continuous Work-History Sample of 1 percent of all workers, maintained by the Social Security Administration [2] In 1970 the tax rates for old-age, survivors, disability, and health insurance were 4 8 percent each for employee and employer and 6 9 percent for the self-employed The taxable maximum was $7,800 The accompanying table shows the amounts and proportions of taxable earnings deriving from each source and the weighted average tax rates—considering the employee portion but not the employer portion, as well as the combined tax on wages

Earnings are distributed by the standard intervals of $600, except for the first Self-employment earnings that total less than $400 are not considered self-employment income for social security purposes: They are not taxable or creditable for benefits Earnings below $400 are thus not comparable with earnings in the other in-

[2] See the Technical Note, page 39, for information on the sampling procedure and variability.

tervals, and the first interval covers the range $400–$1,199 The 8 2 million workers whose wages were less than $400 earned a total of $1 5 billion, not included in the table totals

If a worker works for more than one employer in the same year, the taxable maximum applies to his total wages for the purpose of the employee tax, but it applies separately to his wages from each employer for the purpose of the employer tax Thus, more than $7,800 of his wages can be taxable There are about 5 4 million such workers, and the excess of their wages above $7,800 totals $9 5 billion. These wages were omitted from the computations

VARIATION IN AVERAGE TAX RATE

The range of weighted average tax rates is 9 37–9 46 percent The $1,200–1,799 interval, in which the rate is 9 37 percent, is atypical in that it includes 96,400 farm self-employed who elected the optional computation of SEI available to persons with low farm incomes The maximum farm SEI under this option is $1,600 [3]

The total SEI of 135,500 farmers using the optional computation is $200 1 million of which $152 3 million falls into the $1,200–1,799 interval. Wages earned by the 96,400 self-employed farmers (in other employment) in this interval total $1 1 million.

The overriding conclusion from the data is that the proportion of SEI in any interval is too small to cause substantial regressivity in the average rate Indeed, for the rate in an interval to be one-half percentage point lower than the overall average rate of 9 43 percent would require that the proportion of SEI be 25 percent of taxable earnings The proportion would have to be as high as 59 percent in an interval to lower its average rate to 8 percent.

As for minor tendencies, the average rate progresses slightly from the $2,400–2,999 interval

[3] Persons with self-employment gross earnings of $2,400 or less from farming may opt to report as SEI two-thirds of their gross farm earnings, which is almost always a greater amount than the SEI would otherwise have been If their gross farm earnings exceed $2,400 they may report SEI of $1,600, but only if their farm SEI would not have been greater than $1,600 without the option They may elect this option even if they have earnings from nonfarm businesses besides Their total SEI can therefore exceed $1,600

Workers with taxable earnings Number and amount of earnings for wage and self-employed workers, and weighted average tax rate, 1970

Taxable earnings	Number of workers (in thousands)				Taxable earnings (in mil lions)	Taxable wages				Self-employment income				Weighted average tax rate (percent)	
	Total	With wages only	With SEI only	With wages and SEI		Amount (in millions)			Total as a percent of taxable earnings	Amount (in millions)			Total as a per cent of taxable earnings	Excluding employer tax	Including employer tax
						Total	For workers with wages only	For workers with wages and SEI		Total	For workers with SEI only	For workers with wages and SEI			
Total	84,158	78,105	4,712	1,340	$401,941	$375,696	$372 366	$3 331	93 5	$26,245	$22,479	$3,766	6 5	4 934	9 425
$400-1,199	10,513	9,871	593	49	8 146	7,649	7,639	10	93 9	497	464	33	6 1	4 928	9 435
1,200-1,799	6,527	5 960	490	77	9,773	8 948	8,913	35	91 6	825	741	84	8 4	4 976	9 373
1,800-2,399	5,263	4 885	290	88	10 993	10,266	10,201	65	93 4	727	607	120	6 6	4 939	9 422
2,400-2,999	4,790	4,433	270	88	12 911	12,038	11,947	91	93 2	873	727	146	6 8	4 943	9 416
3,000-3,599	4,732	4,397	250	85	15,614	14,629	14,514	115	93 7	985	821	164	6 3	4 932	9 430
3,600-4,199	4,817	4,505	228	85	18 777	17,706	17,559	146	94 3	1,071	888	183	5 7	4 920	9 446
4,200-4,799	4,492	4 199	206	86	20,195	19 054	18 881	172	94 4	1,141	927	214	5 6	4 918	9 449
4,800-5,399	4,314	4,036	195	82	21,979	20,756	20,567	190	94 4	1,223	995	228	5 6	4 918	9 449
5,400-5,999	4,038	3,787	173	77	22,983	21 765	21,557	208	94 7	1,218	985	233	5 3	4 911	9 457
6,000-6 599	3,812	3,580	157	75	23,992	22 770	22 532	237	94 9	1,222	989	233	5 1	4 907	9 462
6,600-7,199	3,477	3 262	143	72	23,974	22,748	22 490	258	94 9	1,226	988	238	5 1	4 907	9 462
7,200-7,799	3 360	3 117	132	110	25,216	23,849	23,388	461	94 6	1,367	992	375	5 4	4 913	9 454
7,800	24,024	22,074	1,584	366	187,388	173,518	172,177	1,341	92 6	13,870	12,354	1,516	7 4	4 955	9 400

to the $6,000-6,599 interval At the $6,600-7,199 interval it seems to begin to regress The differences between the $5,400-5,999 interval and each higher interval up to $7,799, however, are not quite statistically significant under a two-tailed test with a 5-percent rejection error [4] By $7,800 the rate is regressing with statistical significance

RELATION OF SEI TO TAXABLE EARNINGS

The proportion of SEI to taxable earnings fluctuates within the range of about 5 percent to 8½ percent It does not exhibit the hypothesized tendency to rise as earnings rise until it reaches almost to the taxable maximum At $7,800 it jumps to 7.4 percent—about one-seventh above the overall proportion of 6 5 percent and one-fourth above the 5 8 percent for all workers with earnings below $7,800

The share of SEI in the $7,800 earnings class is not greater than it is partly because of the way in which self-employment earnings are taxed for persons having both wages and self-employment earnings SEI is the smaller of self-employment net earnings and the difference between the worker's wages and the taxable maximum That is, he is taxed first on his wages and then on his self-employment earnings up to the maximum

Analysis of the Internal Revenue Service 1970 Tax Model indicates that at least 660,000 income tax returns were filed showing business income of $400 or more, wages and taxable earnings of $7,800 or more, and no SEI [5] Nine-tenths of these returns are joint Thus the number of persons with wages at the maximum and some self-employment earnings can exceed 660,000 if there are cases in which both the husband and the wife are in that situation

Another moderating influence on the amount of SEI reported is the fact that the income of an owner of an incorporated business is classified as wages and/or dividends, rather than as self-employment earnings The regular tax on wages applies to such wages, and dividends are not subject to social security taxes at all

REGRESSIVITY IN RELATION TO INCOME

The discussion to this point compares average social security tax rates at various levels of taxable earnings In recent literature,[6] both professional and popular, it is asserted that a regressive

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[4] See the Technical Note, page 40

[5] Figures are approximate See the Technical Note, page 39

[6] See, for example, Milton Friedman in Wilbur J Cohen and Milton Friedman, *Social Security Universal or Selective*, American Enterprise Institute, 1972, page 35, and Roger LeRoy Miller, "Social Security, the Cruelest Tax," *Harper's*, June 1974, pages 22-23

relationship between social security tax rates and *income* results from the differential in the employee-employer and self-employment tax rates These publications assume that the incidence of both portions of the wage tax is on the employee and presume that self-employment is more prevalent the higher the income

Earnings data cannot conclusively establish the relationship between the tax rate and income because of the inherent differences between the earnings and income concepts and because the earnings are those of individuals while the incomes referred to are those of families If the relationship with earnings studied here had proved to be substantially regressive, it would have furnished some support to the assertion of regressivity relative to income The data show, however, that the differences in average tax rates between the intervals of low earnings and the $7,800 class can be measured only in magnitudes no larger than hundredths of 1 percent These earnings levels correspond best to the poor and middle-class income levels discussed and compared by Milton Friedman [7]

It would be interesting to know how the prevalence of SEI varies with earnings above the taxable maximum Social Security Administration data are not, however, sufficiently complete for that purpose The trend of the proportion of SEI to taxable earnings does seem to suggest the possibility of mild regressivity in relation to total earnings beyond $7,800 but in the range of a few tenths of 1 percent, at most

SUMMARY

If self-employment were much more prevalent at moderate and high earnings levels than at low levels and if the incidence of both the employee and employer taxes on wages is on the employee, then the social security tax structure would be regressive relative to taxable earnings Analysis shows, however, that this is the case only in a very limited sense For 1970, 6 5 percent of taxable earnings derives from self-employment At least 6 3 percent of taxable earnings consists of self-employment income in each observed interval

[7] Milton Friedman, "The Poor Man's Welfare Payment to the Middle Class," *The Washington Monthly,* May 1972

from $400 to $3,600 The proportion declines slightly with rising earnings until near the taxable maximum, when it begins to rise If the average tax rate on earnings up to the maximum were tabulated by earnings both below and above the maximum, it appears very likely that mild regressivity would be shown beyond the taxable maximum, but of not more than a few tenths of a percent

TECHNICAL NOTE

Internal Revenue Service Tax Model

The annual IRS Tax Model is a sample of all individual income tax returns of the year, published on magnetic tape The 1970 edition contains 95,316 returns A detailed description is available from IRS The version used for the present computations was augmented with social security taxable earnings, but wages and the presence of SEI are IRS data For joint returns, wages are the joint total, presence of SEI refers to husband or wife or both, and taxable earnings are only the husband's (or only the wife's, if she was named first on the income tax return)

Business income includes nonfarm proprietorship income from Form 1040, Schedule C, farm proprietorship income from Schedule F, and partnership income from Schedule E. Usually, all of Schedule C and Schedule F income is earnings Schedule E partnership income can, however, differ from earnings For this reason, and because the raw data may contain some inaccuracies, the conclusions drawn are approximations

Continuous Work-History Sample

The Continuous Work-History Sample of the Social Security Administration is a history of the covered earnings and employment of 1 percent of all persons with social security numbers, together with the identifying information—birth date, race, and sex—that they provided when they applied for their numbers

The sample is based on combinations of the last four digits of the number, which are serial The first five digits have geographic and chrono-

logical meanings, so that the sampling procedure can be characterized as stratified sampling.

The standard error is a measure of the extent to which an estimate based on a sample is likely to vary from the population value of the parameter being estimated For this type of sample, the probability is about 0 68 that an estimate of earnings, number of workers, or the respective proportions will differ from those population parameters by not more than one standard error. The probability of a difference not more than two standard errors is 0 95 and that of a difference not more than 2½ standard errors is 0 99

One group of population parameters discussed in the present study is the proportion of SEI to taxable earnings in the various earnings intervals Another group of parameters being estimated is the extent and the direction (positive or negative) of the change in those proportions between each interval and the immediately following interval The direction of this change determines whether the average tax rate is progressing or regressing

For two given intervals, if the observed change between them is 1 96 times the standard error it can be said, with only a 5-percent probability of being mistaken, that there is some change in the SEI proportions between these two intervals in the whole population and that the population change is in the same direction as the change observed in the sample—that is, the change is statistically significant.

The standard errors of the ratio of wages and SEI to taxable earnings are about 0 001 except in the intervals with the largest number of workers, where they are somewhat smaller The standard errors of the changes are approximately 0 0015 to 0 0016

Health Benefits for Laidoff Workers*

Most Americans have some degree of financial protection for hospital care costs and generally some type of medical care coverage for out-of-hospital costs through group or individual insurance plans The most common form of protection is through commercial group insurance or Blue

Cross-Blue Shield plans provided at their place of employment to workers and their dependents One limitation of the majority of these plans, however, is that they terminate when or soon after the worker loses his job

A survey of about 52,000 private industry plans offering hospitalization and other health care coverage was made by the Bureau of Labor Statistics for the Social Security Administration at the beginning of 1974. The plans protected 28.4 million workers, of whom 11 1 million or 39 percent were in plans that continued to cover them for at least 1 month after a job loss These are plans filed at the Department of Labor in compliance with the Welfare and Pension Plans Disclosure Act The survey covered plans in most of private industry, excluding those with fewer than 26 participants and excluding plans of most nonprofit organizations These excluded workers plus government workers largely account for the differences between the 28 4 million workers in this survey and the estimated 56 4 million wage and salary workers with health plans at the end of 1973 in the annual series by the Social Security Administration [1]

This is the first of a series examining the characteristics of health care protection currently available through these plans Future analyses will examine benefit provisions, the administration and method of insuring health care plans, restrictions on coverage such as employment requirements, and types and amounts of contributions made to finance these benefits Sampling procedures and limitations will also be described

EXTENT AND PROVISIONS OF LAYOFF PLANS

Some 12 9 million workers participated in 28,000 health benefit plans that did not extend protection to employees who had been laid off Another 4 4 million workers were in 12,900 plans that provided no information on health benefits after layoff. The remaining 11.1 million workers in 10,700 plans reported definite provisions to continue health benefits for at least 1 month after layoff.

The degree of protection for those with layoff health benefits varied considerably. A little more

[1] See Alfred M Skolnik, "Revised Coverage Estimates for Employee-Benefit Plan Series," *Social Security Bulletin*, October 1975