AN ANALYSIS OF THE COSTS OF DUPLICATING THE BENEFITS UNDER TITLE II BY THE USE OF INSURANCE COMPANY CONTRACTS

Including a description of certain types
of annuity contracts issued by
insurance companies

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SUMMARY

Legal separateness of titles II and VIII is assumed to be understood and borne in mind in reading the material which follows. These titles are related in this material only for purposes of comparison with insurance company benefits and rates. Such comparisons are very difficult because of the following items of fundamental difference between the two:

1. No insurance policy on the market exactly duplicates the death benefits of title II. The detailed discussion herewith uses the closest possible approach to such duplication through employing a combination interlocking two forms of available insurance policies.

2. The insurance policy benefit accrues and is finally determined according to the amount of premiums paid, such premiums being level throughout and uniform as to periodicity; the title II benefit accrues irregularly according to the actual payment of covered wages. The detailed discussion herewith must assume a condition which experience will not bear out in practice; namely, level wages and continuous employment.

3. The amount of insurance policy benefit for a unit of premium, say $1 a year, is dependent on a single factor, an individual's age at entry; the title II benefit related to each $1 of taxable wages is a function of two factors, the age at entry and the level of wages received in employment. The detailed discussion herewith covers examples for various entry ages and wage levels.

4. Insurance policy benefits may be obtained only under minimum premium rules; that is, the amount of the policy may not be geared so low that the cost of collection of the premium

> is inordinate with the premium itself; the title II benefit however applies regardless of the size of wages or amount of tax collected. In the accompanying detailed comparisons it is assumed that the insurance policies used would be purchasable regardless of the size of the premium.

The above points should be kept in mind when reading the accompanying detailed discussion.

Four different types of insurance policies involving annuity benefits are discussed and compared, ranging from what might be called low cost to high cost, depending upon the death benefit provision included and upon the type of company chosen, i. e., whether nonparticipating (stock) or participating (mutual). For entrants at age 20 the highest cost premium is about three times the lowest cost premium and for entrants at age 40 over twice as much.

In tables 3a, 3b, and 3c are shown the insurance premiums based on 1922 rates, 1937 rates, and current rates, respectively, using the combination of policies required substantially to duplicate title II benefits. The figures of table 3a are valuable in giving an indication of the increases in insurance company annuity costs in the last 15 years. Table 3b is presented as being applicable to insurance rates in effect at the time the old-age insurance program was inaugurated, while table 3c is of interest in regard to the present-day situation. The important part of these tables for purposes of comparison is the percentage of wage figures, since by this percentage a ready measure is afforded for comparison with title VIII taxes.

A study of these tables will be necessary to develop a comprehensive understanding of the comparisons, but they indicate that, except in a few instances involving those workers entering at low ages in combination with high wage levels, the covered employee under the act is receiving much more in benefits than could be purchased with his own tax under the insurance company combination program. In addition to the above-mentioned exception, another exception would be in the case of multiple employment such that the covered employee builds up to his maximum of $85 a month fairly soon but continues to be taxed after that maximum is reached; in such a case his continued taxes, if used under the insurance plan as premiums, would continue to build up benefits such that more than $85 might well be obtained.

When the initial step-rate taxes under title VIII are considered, the employee's benefits compared to his tax payment are of course still more favorable to the act than under the level 3% tax. Even on the graduated tax basis, however, it would be possible, under one or both of the remote exceptions noted, for insurance policy benefits to exceed those of title II.

Looking at the percentage of wage figures in tables 3a, 3b, and 3c with the joint employer-employee tax in mind, it is seen that there is a range over the younger ages where the insurance premium is less than the 6% joint tax (assuming the ultimate tax scale). This range of ages depends upon the wage level assumed. For employees earning $50 a month, title II is "better" for ages at about 23 or over;

for the $100-a-month employees title II is "better" for ages at about 28 or over, whereas the $250-a-month employee would appear to have better treatment under the insurance plan for ages up to 40. This is on the assumption of a level tax of 3% from each. The above ages would of course have to be modified downward for comparisons within the period of the graduated tax scale.

The conclusions revealed by this study are that practical comparisons are not susceptible of being drawn between the benefits of the act and insurance company policies. Getting away from the practicability standpoint, where comparisons are made with all the necessary assumptions, such comparisons result in figures favorable to the liberality of the act as regards employees' taxes except in a few remote situations, viz., extremely young entrants with sustained high wages and the situation of taxation under multiple employment and high wages.

AN ANALYSIS OF THE COSTS OF DUPLICATING THE BENEFITS UNDER TITLE II BY THE USE OF INSURANCE COMPANY CONTRACTS

Many analysts of the Social Security Act have attempted to make a comparison between the benefits under title II of the Social Security Act and similar benefits purchasable from an insurance company with the taxes under title VIII. Under title II benefits are provided for individuals in certain covered occupations who were under 65 years of age on January 1, 1937. Similarly, under title VIII a tax is imposed upon such employees and their employers for the purpose of raising general revenue. This tax is shared equally by the employer and the employee and is at the rate of 2% of wages for the calendar years 1937-39, increasing by 1% every 3 years thereafter until reaching 6% in 1949, at which figure it remains level thereafter.

While the act does not specifically state that these taxes are for the purpose of financing the benefits under title II, many individuals believe that there is a connection between the two and regard the taxes as contributions to a contributory old-age insurance system. Often a comparison is made between the benefits under title II and those purchasable from an insurance company using the taxes under title VIII as premiums. It is the purpose of this report to compare the benefits under title II with insurance company benefits on the arbitrary assumption that the taxes are contributions or premiums, although legally there is no connection.

The chief difficulty in making a comparison such as this is the difference between the provisions of title II and those of various insurance company contracts which have annuity features. Not only is there difficulty in duplicating the exact amount of benefits, but also in duplicating the time of benefit payment. Thus, all insurance company contracts provide for an annuity beginning at a certain given age, whereas under title II monthly benefits are payable after age 65 only if the individual does not engage in "regular employment." For the purpose of any comparison it is necessary to assume that the individual under consideration retires at a given age, such as 65 or 70, and thereafter does not engage in "regular employment." However, the major pitfall into which most analysts fall in making these comparisons is the failure to duplicate the death benefit as provided by the act.

There are four major types of annual premium insurance contracts having an annuity feature. Although these go under slightly different names among the various insurance companies, we may define them as follows:

(1) Insurance with life income. Under this contract there is a death benefit up to retirement age of $1,000 (or the cash value should it be greater) and a monthly annuity of $10 at retirement age. This monthly annuity is continued for 100 or 120 months certain (i. e., regardless of death during that period) and for as long thereafter as the individual lives. The cash value is less than

$1,000 until a few years before the retirement age so that the death benefit is $1,000 over the early part of the contract and up to $1,500 over the latter part of the contract.

(2) Retirement annuity. Under this contract the death benefit is a return of premiums for death within the first 8 or 10 years, while for death thereafter there is a return of premiums plus some allowance for interest. After 40 years the death benefit is about twice the total premiums paid, which is equivalent to a compound interest return of about 3½% over that entire period. At retirement age, the individual may elect one of several options in regard to death benefit after retirement. The amount of the annuity varies with the retirement age chosen and with the option selected as to death benefits after retirement. Obviously, the larger the value of the death benefit after retirement, the smaller will be the monthly annuity obtainable for a given premium.

(3) Deferred cash refund annuity. Under this contract the death benefit before retirement age is the return of premiums paid without any allowance for interest; the annuity at retirement age is $10 per month. The death benefit after retirement is a lump-sum payment of the excess, if any, of the total premiums paid over the total annuity payments received.

(4) Deferred life annuity. Under this contract the monthly annuity at retirement age is $10 and there is no death benefit at any time.

In table 1 there is presented a summary comparison of the provisions of these four types of contracts.

An important factor, often overlooked, is the variation of premium rates between different companies, especially as between nonparticipating and participating contracts. Under a nonparticipating contract the quoted rate is guaranteed against increase by the company regardless of future trends in interest or mortality, whereas under a participating contract a higher premium rate is charged with a likelihood of some return in the form of dividends. In general, the higher initial cost under the participating contract will be balanced approximately later by the lower costs resulting from dividend payments. In comparisons of insurance company benefits with those under title II, it is best to use nonparticipating rates. By using participating rates without allowance for dividends the insurance company benefits are understated, whereas if the estimated dividends are used, another uncertainty is introduced into the comparisons.

In order to show the different costs of the various types of contracts previously mentioned, table 2 has been prepared. In this table there is shown for two ages at entry the annual premium necessary to provide an annuity of $10 per month at age 65 under the various types of contracts described above. For a given contract, four rates are shown, the lowest and highest rates available for nonparticipating policies, and similarly for participating policies

Table 1

SUMMARY OF PROVISIONS OF VARIOUS TYPES OF ANNUITY CONTRACTS

Textual description number	Descriptive name of policy	Death Benefits prior to retirement	Income commencing at retirement age	Death benefits after retirement	Cash surrender value option before retirement	Paid-up option upon cessation of premiums
1	Insurance with life income	Face amount of policy or cash value, when greater in later years	Monthly income for life	Sufficient continuation of monthly income to make a total of 100 or 120 payments	Yes	Yes
2(a)	Retirement annuity, refund option	Total premiums paid or cash value, when greater after 8 to 10 years	Same as 1	Payments sufficient to make total received equal to the cash surrender value at retirement age	Yes	Yes
2(b)	Retirement annuity, life option	Same as 2(a)	Same as 1	None	Yes	Yes
3	Deferred cash refund annuity	Total premiums paid	Same as 1	Payments sufficient to make total received equal to total premiums paid	Yes	Yes
4	Deferred life annuity	None	Same as 1	None	No	Yes

Table 2

COMPARISON OF ANNUAL PREMIUMS FOR AN ANNUITY OF $10 PER MONTH AT AGE 65 UNDER DIFFERENT TYPES OF CONTRACTS[a/] FOR VARIOUS COMPANIES[b/] FOR A MALE ENTERING AT AGES 20 AND 40

(Based on Rates in Effect During 1937)

Textual Description Number	Descriptive name of policy	Nonparticipating		Participating	
		Low	High	Low	High
		For individual entering at age 20			
1	Insurance with life income	$18.18	$19.63	$22.77	$25.63
2(a)	Retirement annuity, refund option	12.27	15.58	15.22	17.88
2(b)	Retirement annuity, life option	10.56	12.91	11.64	14.81
3	Deferred cash refund annuity	10.62	12.28	c/	c/
4	Deferred life annuity	8.27	9.41	c/	c/
		For individual entering at age 40			
1	Insurance with life income	41.70	44.83	49.57	54.18
2(a)	Retirement annuity, refund option	36.06	42.74	41.33	45.87
2(b)	Retirement annuity, life option	31.03	35.42	31.61	38.01
3	Deferred cash refund annuity	34.32	36.95	c/	c/
4	Deferred life annuity	25.17	26.87	c/	c/

a/For description of contracts, see Table 1 and pages 2 and 3.
b/Rates are shown for both participating and nonparticipating contracts, where available. Rates for the largest companies were studied and the lowest and highest rates charged are given here.
c/No company studied quotes this contract.

(with no allowance for estimated dividends).

For age at entry 20, the annual premium for an annuity of $10 per month at age 65 varies from $8.27 to $25.63, a range of 310%. For age at entry 40, the corresponding figures are $25.17 and $54.18, or a range of 215%. This great variation is due chiefly to the different types of death benefits provided and the use of participating rates without allowance for dividends, rather than actual cost differences between companies. As can be seen from table 2, the policies with the larger death benefits (see pages 2-4 for details of these benefits) require larger premiums.

From the above discussion it can be seen that an indiscriminate selection of insurance company contracts so as to merely duplicate the monthly old-age benefit under title II or to use the title VIII taxes to buy as much pure annuity as possible, will result in inaccurate comparisons due to the differences in death benefits. For example, if the annuity benefits under title II are duplicated by an annual premium deferred life annuity, the social security benefits would be shown in a relatively unfavorable light because the insurance company contract provides an equal monthly annuity but no death benefits. On the other hand, the situation would be reversed if the insurance with life income policy had been selected for the comparison.

Although no one policy will duplicate the benefits under title II, an almost exact matching may be obtained by combining two

policies, the deferred life annuity and the deferred cash refund annuity. The latter provides a death benefit increasing by a fixed amount each year (namely, the annual premium), while the former provides no death benefits but only annuity benefits. Thus, the death benefit before age 65 can be exactly duplicated by using an annual premium of 3½% of wage to purchase a deferred cash refund annuity and using a deferred life annuity (no death benefit) for any remaining amount of annuity not purchased by the deferred cash refund annuity. However, the death benefit after age 65 will not be exactly duplicated since under title II <u>all</u> monthly benefits received are subtracted from the death benefit at age 65, while under the insurance contract combination only that portion of the annuity arising from the 3½% of wage used as cash refund premiums is so deducted. Since the financial value of the death benefit after age 65 is quite small, this difference has a negligible effect on the results.

In the numerical comparisons it is necessary to make certain assumptions.

(1) Individuals are assumed to enter at a given age and thereafter earn a level wage until age 65 or prior death. Individual policies such as those used here cannot be sold on a varying premium basis depending on earnings. (Group annuity contracts do provide benefits related to fluctuating earnings with rates not greatly different from those of individual policies. Since group annuity rate schedules are so limited in the period for which they

are guaranteed and since there is great diversity among different coverages for group annuities, they seem less suitable for long-range rate comparisons than do individual policy rates, which can be compared using a level wage situation.)

(2) The insurance premiums are assumed to be payable at the beginning of the year, while taxes under title VIII are payable at periods during the year. This factor would increase insurance company costs by about 5-7%.

(3) Insurance company rates for these annuity contracts are from 10-25% higher for women so that title II would be shown in a correspondingly more favorable light if women were considered instead of men.

(4) It is assumed that all individuals retire at age 65 and do not thereafter engage in "regular employment." Under the insurance contracts benefits are payable after age 65 regardless of work status, while under title II they are not payable in respect to any month in which the individual engages in "regular employment." If the retirement age were actually 67½, the costs under the insurance company contracts would be reduced by 20-30%. Thus, if the possibility of this factor were neglected, the Social Security Act might be shown in too favorable a light.

(5) The rates of the company with the lowest rates (as shown in table 2) are used in the calculations. If the highest rates were used instead, the insurance company costs would be increased by 5-15%.

Tables 3a, 3b, and 3c show the annual premiums required to duplicate the benefits under title II for various level monthly wages and ages at entry according to the annuity rates of 1922, 1937, and the present time. These annual premiums are also shown as percentages of the level wage.

Table 3a

ANNUAL PREMIUM REQUIRED TO DUPLICATE THE BENEFITS UNDER TITLE II FOR VARIOUS MONTHLY LEVEL WAGES AND AGES AT ENTRY, MALE LIVES AND RETIREMENT AT AGE 65

(Based on Rates Effective During 1922)

Age at entry	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage
	Level wage of $25		Level wage of $50		Level wage of $75	
15	$14.97	4.99%	$23.70	3.95%	$32.42	3.60%
20	17.64	5.88	27.39	4.56	37.13	4.13
25	21.06	7.02	31.96	5.33	42.86	4.76
30	25.56	8.52	37.77	6.30	50.00	5.56
35	31.64	10.55	45.32	7.55	59.02	6.56
40	40.30	13.43	55.71	9.28	71.14	7.90
45	53.35	17.78	70.78	11.80	88.19	9.80
50	75.38	25.13	95.09	15.85	114.85	12.76
55	119.89	39.96	142.38	23.73	164.96	18.33
60	*	*	*	*	*	*
	Level wage of $100		Level wage of $125		Level wage of $150	
15	$38.02	3.17%	$43.61	2.91%	$49.21	2.73%
20	44.52	3.71	50.72	3.38	56.92	3.16
25	52.75	4.40	59.60	3.97	66.44	3.69
30	62.22	5.18	71.11	4.74	78.65	4.37
35	72.72	6.06	86.41	5.76	94.73	5.26
40	86.55	7.21	101.99	6.80	117.40	6.52
45	105.62	8.80	123.02	8.20	140.45	7.80
50	134.60	11.22	154.32	10.29	174.07	9.67
55	187.46	15.62	209.96	14.00	232.45	12.91
60	*	*	*	*	*	*
	Level wage of $200		Level wage of $250		Level wage of $500 a/	
15	$60.40	2.52%	$67.22	2.24%	$91.95	1.53%
20	69.31	2.89	80.13	2.67	106.63	1.78
25	80.13	3.34	93.82	3.13	124.70	2.08
30	93.76	3.91	108.86	3.63	148.37	2.47
35	111.35	4.64	127.97	4.27	180.63	3.01
40	135.83	5.66	154.25	5.14	228.92	3.82
45	171.69	7.15	192.14	6.40	294.41	4.91
50	213.54	8.90	253.01	8.43	367.00	6.12
55	277.53	11.56	322.52	10.75	498.97	8.32
60	*	*	*	*	*	*

a/In order to be credited with a level wage of $500 per month ($6,000 per year) the individual must be employed by two employers at a salary of $3,000 per year from each one over the entire period from age at entry to age 65.

*Premium rates for age 60 not available.

Table 3b

ANNUAL PREMIUM REQUIRED TO DUPLICATE THE BENEFITS UNDER TITLE II FOR VARIOUS MONTHLY LEVEL WAGES AND AGES AT ENTRY, MALE LIVES AND RETIREMENT AT AGE 65

(Based on Rates in Effect During 1937)

Age at entry	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage
	Level wage of $25		Level wage of $50		Level wage of $75	
15	$18.54	6.18%	$28.93	4.82%	$39.31	4.37%
20	21.96	7.32	33.59	5.60	45.22	5.02
25	26.29	8.76	39.34	6.56	52.38	5.82
30	31.89	10.63	46.54	7.76	61.18	6.80
35	39.42	13.14	55.87	9.31	72.33	8.04
40	49.99	16.66	68.52	11.42	87.05	9.67
45	65.98	21.99	86.90	14.48	107.78	11.98
50	92.83	30.94	116.55	19.42	140.22	15.58
55	147.25	49.08	174.29	29.05	201.34	22.37
60	*	*	352.91	58.82	384.49	42.72
	Level wage of $100		Level wage of $125		Level wage of $150	
15	$45.61	3.80%	$51.91	3.46%	$58.21	3.23%
20	53.74	4.48	60.72	4.05	67.69	3.76
25	64.10	5.34	71.84	4.79	79.60	4.42
30	75.84	6.32	86.17	5.74	94.78	5.27
35	88.78	7.40	105.25	7.02	114.83	6.38
40	105.58	8.80	124.11	8.27	142.64	7.92
45	128.70	10.72	149.62	9.97	170.54	9.47
50	163.95	13.66	187.62	12.51	211.34	11.74
55	228.38	19.03	255.42	17.03	282.46	15.69
60	416.30	34.69	447.88	29.86	479.45	26.64
	Level wage of $200		Level wage of $250		Level wage of $500 a/	
15	$70.81	2.95%	$77.70	2.59%	$99.89	1.66%
20	81.64	3.40	93.52	3.12	116.75	1.95
25	95.09	3.96	110.58	3.69	139.00	2.32
30	112.00	4.67	129.22	4.31	168.74	2.81
35	133.98	5.58	153.12	5.10	209.85	3.50
40	163.97	6.83	185.29	6.18	269.90	4.50
45	207.83	8.66	231.64	7.72	350.63	5.84
50	258.73	10.78	306.12	10.20	439.34	7.32
55	336.54	14.02	390.62	13.02	600.93	10.02
60	542.84	22.62	606.23	20.21	922.93	15.38

a/In order to be credited with a level wage of $500 per month ($6,000 per year) the individual must be employed by two employers at a salary of $3,000 per year from each one over the entire period from age at entry to age 65.

*Not eligible for monthly benefits because total wages are less than $2,000.

Table 3c

ANNUAL PREMIUM REQUIRED TO DUPLICATE THE BENEFITS UNDER TITLE II FOR VARIOUS MONTHLY LEVEL WAGES AND AGES AT ENTRY, MALE LIVES AND RETIREMENT AT AGE 65

(Based on Rates Effective After July 1, 1938)

Age at entry	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage	Annual premium required	Premium as % of wage
	Level wage of $25		Level wage of $50		Level wage of $75	
15	$21.38	7.13%	$34.20	5.70%	$47.02	5.22%
20	24.52	8.17	38.38	6.40	52.24	5.80
25	28.54	9.51	43.59	7.26	58.64	6.52
30	33.82	11.27	50.23	8.37	66.65	7.41
35	41.02	13.67	59.04	9.84	77.03	8.56
40	51.36	17.12	71.25	11.88	91.12	10.12
45	67.13	22.38	89.24	14.87	111.31	12.37
50	93.84	31.28	118.55	19.76	143.32	15.92
55	148.12	49.37	176.01	29.34	204.00	22.67
60	*	*	355.23	59.20	387.96	43.11
	Level wage of $100		Level wage of $125		Level wage of $150	
15	$55.56	4.63%	$64.10	4.27%	$72.63	4.04%
20	62.90	5.24	71.97	4.80	81.02	4.50
25	72.34	6.03	82.00	5.47	91.66	5.09
30	83.08	6.92	95.15	6.34	105.47	5.86
35	95.04	7.92	113.05	7.54	124.16	6.90
40	111.00	9.25	130.87	8.72	150.76	8.38
45	133.42	11.12	155.49	10.37	177.57	9.86
50	168.03	14.00	192.74	12.85	217.45	12.08
55	231.89	19.32	259.88	17.33	287.87	15.99
60	420.70	35.06	453.43	30.23	486.40	27.02
	Level wage of $200		Level wage of $250		Level wage of $500 a/	
15	$89.71	3.74%	$100.79	3.36%	$143.36	2.39%
20	99.14	4.13	115.13	3.84	157.76	2.63
25	110.96	4.62	130.28	4.34	176.94	2.95
30	126.12	5.26	146.77	4.89	203.08	3.38
35	146.35	6.10	168.57	5.62	240.47	4.01
40	174.76	7.28	198.78	6.63	296.80	4.95
45	217.24	9.05	143.40	4.78	374.14	6.24
50	266.93	11.12	316.36	10.55	459.90	7.66
55	343.76	14.32	399.64	13.32	619.10	10.32
60	551.87	22.99	617.58	20.59	945.39	15.76

a/In order to be credited with a level wage of $500 per month ($6,000 per year) the individual must be employed by two employers at a salary of $3,000 per year from each one over the entire period from age at entry to age 65.

*Not eligible for monthly benefits because total wages are less than $2,000.

The annual premium is obtained for a given case by first applying a premium equal to 3½% of wage to the purchase of a deferred cash refund annuity so as to duplicate the death benefit, and the annuity arising from this premium is determined. The difference between this annuity and that under title II for the given case must then be purchased with a deferred life annuity (which has no death benefit). The sum of this premium and the previous one (which is 3½% of level wage in all cases) is then the required premium.

As an example of the calculation involved consider in table 3b the $100-per-month individual who enters at age 20. An annual premium of $42 (3½% of wage) purchases a monthly annuity of $39.55a/ at age 65 on the deferred cash refund annuity basis. Since the annuity under title II for this case is $53.75, it is necessary to purchase an annuity to balance of $14.20 on the deferred life annuity basis; the annual premium required is $11.74b/. The total annual premium required is thus $53.74 (42.00 + 11.74).

Although the annual premium required to duplicate the benefits is shown in these tables, it is far more significant to consider the premium as a percentage of wage. For a given level wage the premium as a percentage of wage increases with age at entry. Thus in table 3c for a level monthly wage of $100, there is almost a tenfold increase in cost from age at entry 15 to age at entry 60. On the other hand,

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a/From table 2, $10.62 buys $10 per month so that $42 buys $\frac{42}{1.062}$, or $39.55 per month.

b/From table 2, it costs $8.27 to purchase $10 per month so that $14.20 per month costs $14.20 x .827, or $11.74.

for a given age at entry the cost as a percentage of wage decreases with an increase in the level wage. Thus, for age at entry 20 the relative cost for a level monthly wage of $25 is more than double that for a level monthly wage of $250.

Both of the preceding trends are explained by the heavy weighting in the old-age benefit formula for the first $3,000 of total wages. As a result of this weighting older individuals and low-salaried individuals receive far more proportionately than do the younger or high-salaried individuals. Thus on an "individual equity" basis the relative cost for the former group is far greater than for the latter group. A striking example of this is the case of the $50-per-month individual who enters at age 60. The annual premium required to duplicate the benefits under title II based on current rates is over $350, or almost 60% of his average wage, whereas the taxes paid in his behalf under title VIII could never under the present act be more than 6%, and might be as low as 2-3%. On the other hand, individuals entering at a young age with high salaries would have to pay only relatively small premiums to duplicate the benefits under title II. Thus, for a level wage of $250 the cost based on current premium rates is only about 3% of wage, or approximately the same as the ultimate employee tax. In this case it might be said that the employer's tax is used for the benefit of the individuals for whom the cost is in excess of the 6% ultimately paid by the employer and employee jointly.

The cost of duplicating the title II benefits is much greater

when current premium rates are used as in table 3c than when earlier rates are used as in table 3a and 3b. This is due to the increases in annuity rates during the last 15 years necessitated by a fuller understanding of the cost trends in the annuity business, the improvement in mortality, and the decline in the interest rates. Thus, for a $100-per-month individual entering at age 20, the annual premium required according to the 1922 rates is 3.71% of wage, while for the 1937 rates it is 4.48% and for the current rates 5.24%. There is a difference of 1.53% of wage in the costs as between 1922 and current rates and .76% between 1937 and current rates. The relative increases in cost as between the current rates and the 1922 and 1937 rates are 41% and 17%, respectively. For older ages at entry these relative increases are not so great.

It is interesting to note the boundaries for certain classes of individuals; namely, those for whom the insurance cost is less than 3%, those for whom such cost is less than 6%, and those for whom the cost is more than 6%. The first category might be said to include those employees who pay more in ultimate taxes under title VIII than seems necessary to purchase similar benefits from an insurance company. The second category includes those for whom the insurance cost of the benefits is greater than the ultimate taxes which they pay themselves, but is less than the joint employer and employee taxes paid on their behalf. The third category includes those individuals the insurance cost of whose prospective benefits is more than the ultimate

combined employer and employee taxes under title VIII.

In table 3c (based on current insurance rates) the first category, those for whom the cost is less than 3%, includes only those individuals who enter the system before age 26 and have a credited level wage of $500 (e. g., they may be employed by two employers at a salary of $250 per month from each).

In tables 3a and 3b (based on 1922 and 1937 insurance rates) a larger number of cases are included in this category. However, only those entering at ages 15 or 20 with relatively high level wages are so affected. Thus, in a few scattered cases individuals will pay more in taxes (mainly under the higher tax rate basis of the future) under title VIII than the annual premiums under insurance company contracts duplicating the benefits under title II.

The table below shows the limiting age at entry for various level wages, above which the cost of duplicating the benefits is greater than 6%, and conversely, below which the cost is less than 6%:

Level wage	Table 3a (1922)	Table 3b (1937)	Table 3c (current)
$25	21	14	9
50	28	22	17
100	33	28	25
150	38	33	31
250	43	39	37

From this it can be seen that individuals entering at ages 20 to 25 in the future will, in general, receive benefits which if purchased from

an insurance company would cost less than 6% of pay roll. It might thus be reasoned that part of the 6% ultimate tax is used to finance the large "unearned" benefits now payable to older individuals. In addition, any apparent "overcharge" would tend to make up for the "undercharge" for low-paid individuals or for individuals who are covered for only a short period of time.

The wide variations between the ultimate tax rate under title VIII and the insurance company costs for similar benefits do not indicate a weakness in the old-age insurance system of title II. Instead, they point out the considerable difference between social insurance under title II and private insurance as exemplified in an "individual purchase" system. Both are designed to be "self-supporting" but under different methods and circumstances. Under the Social Security Act it might be alleged that the funds to pay benefits to the older employees must be obtained at the expense of the younger well-paid individuals. This might be alleged concerning low-paid individuals as a group as compared with the higher-paid ones. However, it might with equal logic be argued that a larger proportion of the employer's tax is used to pay the excess cost of the benefits for the older and low-paid young individuals, very much as is the case in group insurance.