

COMPARISON OF COST ESTIMATES OF THE COMMITTEE ON ECONOMIC  
SECURITY WITH ACTUAL EXPERIENCE DATA

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A. Introduction

The Committee on Economic Security undertook numerous studies during 1934 and 1935 to serve as a basis for the enactment of the Social Security Act. One portion of these investigations involved the development of cost estimates for the several programs. Figures were evolved for the various proposals studied by the Committee on Economic Security and subsequently for the program enacted by Congress. In particular, year by year estimates were prepared for the old-age assistance program of Title I and the old-age insurance system of Title II, as well as for the taxes to be collected under Titles VIII and IX.

At this time experience data for several years is available so that it is interesting to make a comparison with the original estimates. It is also desirable to do this now on the past experience as an entity inasmuch as the Act has been amended materially in regard to Title II, thus necessitating entirely new cost estimates.<sup>a/</sup> The amendments to Title I also require revised estimates due to the increase of the maximum matching provision from \$15 per month per individual to \$20.<sup>b/</sup> The payroll tax provisions under Title VIII were amended by eliminating the scheduled increase in 1940 as well as certain other minor changes. Similarly, the major amendment to Title IX involved the restriction of taxes to the first \$3000 of wages as is the case in Title VIII.

B. Cost Estimates for Old-Age Assistance

Two sets of estimates were prepared--one based on the assumptions made by the consulting actuaries of the Committee, the other on those made by the technical staff. The actuaries felt that the costs would be appreciably higher than did the staff members so that it was felt advisable to develop two estimates with the computations in each case being performed by the actuarial staff.

Both calculations were made on a "year of operation" basis since it was impossible to determine exactly when payments would first be made due to uncertainty as to the time of passage of the Act and the subsequent availability of the funds. It may be remembered that although the Act was passed in August 1935, no funds were made available for grants to states until February 1936. As a result, this analysis is based on a February to January year.<sup>c/</sup> For example, Year 1 runs from February 1936

a/ Senate Report No. 734, 76th Congress, First Session, Table 1, p. 8.

b/ It is anticipated that the increased expenditures due to this change will be negligible at the outset.

c/ A slight error is introduced here due to the 1939 Amendments since January 1940 is included in the actual data. Thus, some matching beyond \$15 per person is included for this one month, but this amount is believed to be relatively negligible since most states grant more than \$30 per month to only a few individuals.

to January 1937, inclusive. Actual data is thus available for four years of operation from the material published currently in the Social Security Bulletin which shows the number of recipients and the amount of obligations incurred for payments to recipients for each month. The estimates of the Committee are also available on this basis.d/

Separate estimates were prepared for the two sets of assumptions in regard to the presence or absence of an old-age insurance program. Since the insurance system was not to be effective until 1942 in regard to the payment of monthly benefits, the figures for the first four years were the same in each case.

Table 1 makes a comparison of the actual data for old-age assistance with the estimates of the Committee on Economic Security. For the first year of operation the staff estimate made an allowance for administrative lag, but the actuaries estimate did not do this since it was felt that such a lag, although recognizably present, was impossible of accurate estimation. Consequently, in order to have comparability, the staff figure is shown in the table with no allowance for lag although a footnote does give the other figure.

First, considering the total obligations incurred, it may be seen that with the exception of the first year the staff estimate was about 30% too low, while the actuaries estimate was about 30% too high. Thus, the actual experience fell almost midway between the two estimates. For the second year of operation the average of the two estimates is 321 million dollars as compared to the actual data being 320 million dollars. Similarly, for the third year the corresponding figures are 408 and 394 million dollars. However, for the fourth year the average for the two estimates is 507 million dollars as compared to the actual figure of 435 million dollars, with the staff estimate being nearer the actual experience than the actuaries estimate. In other words, there has been a less rapid rate of growth in the cost than the actuaries had estimated. Whether this trend will continue in the future and thus make the staff estimate the more reliable prognostication is impossible to foretell from such a short period of experience.

Next considering the average number of recipients (as shown in Table 1 and Chart I) and disregarding the first year of operation, it may be seen that the actual recipients were more than  $\frac{1}{3}$  greater than the staff estimate. In fact, for the second year the actual recipients were almost 10% greater than the actuaries estimate, although in Year 3 they were 4% less and in Year 4, 18% less. In estimating the average number of recipients apparently the actuaries estimate was appreciably more accurate for the first few years although there is some indication that the actual figure in the future will tend to lie somewhere between the two estimates.

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d/ Committee on Economic Security, Social Security in America, Table 44, p. 194. The total amount of obligations incurred for payment to recipients was obtained by multiplying the estimated number of recipients by the assumed average grant shown. The amount of Federal subsidy given in this table applies to only about  $\frac{1}{2}$  the payments to recipients but includes an allowance for administrative expenses.

Table 1  
 OLD-AGE ASSISTANCE

COMPARISON OF ACTUAL DATA FOR OLD-AGE ASSISTANCE WITH THE ESTIMATES  
 OF THE COMMITTEE ON ECONOMIC SECURITY

<u>Year of Operation<sup>a/</sup></u>	<u>Actual Data</u>	<u>Estimates<sup>b/</sup></u>		<u>Ratio of Actual to Estimate</u>	
		<u>Actuaries</u>	<u>Staff</u>	<u>Actuaries</u>	<u>Staff</u>
<u>Total Obligations Incurred<sup>c/</sup></u>					
1	158	269 <sup>d/</sup>	215 <sup>d/</sup>	59%	73%
2	320	392	251	82	127
3	394	529	288	74	137
4	435	686	329	63	132
<u>Average Number of Recipients<sup>d/</sup></u>					
1	744	897	897	83%	83%
2	1,408	1,307	1,046	108	135
3	1,701	1,765	1,200	96	142
4	1,867	2,287	1,372	82	136
<u>Average Monthly Grant</u>					
1	\$17.70	\$25.00	\$20.00	71%	88%
2	18.94	25.00	20.00	76	95
3	19.31	25.00	20.00	77	97
4	19.41	25.00	20.00	78	97

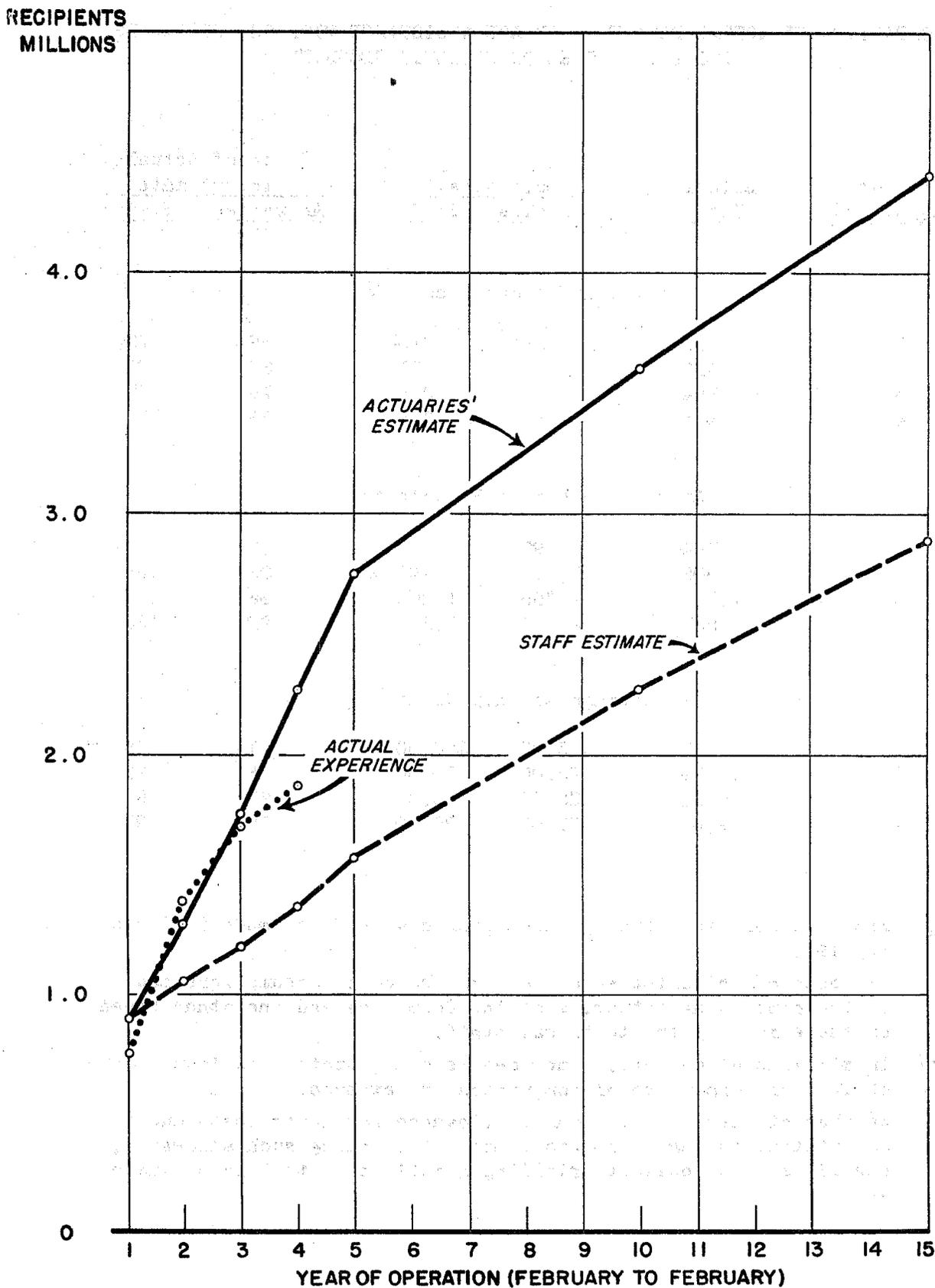
a/ From February to February since grants were first made in February 1936.

b/ Two sets of estimates were made, one based on assumptions made by the consulting actuaries of the Committee and the other based on those made by the technical staff.

c/ In millions of dollars. Includes Federal, state, and local obligations exclusive of administrative expense.

d/ Neither of these figures makes allowance for lower costs due to administrative lag. The Staff Estimate, making such allowance, was 137 million dollars, yielding a ratio of actual to estimate of 115%.

CHART I  
ACTUAL AND ESTIMATED AVERAGE NUMBER OF RECIPIENTS OF  
OLD-AGE ASSISTANCE



It is interesting to note that the actual average number of recipients in the fourth year of operation is not attained in the staff estimate until the seventh year.

The method of determining the amount of obligations incurred for payments to recipients was based on first estimating the average number of recipients in each year of operation, and then hypothesizing as to the size of the average grant. The estimate of the number of recipients is probably more accurate than the estimate of the average grant since the latter depends so much more upon the financial, psychological, political, and philosophical attitude of the various states. The number of individuals in need of assistance would naturally have some variation depending upon the attitudes of the different states, but the size of the grant would undoubtedly vary even more relatively.

In the two sets of estimates no trend was estimated for the average grant; i.e. each assumed a given average grant applicable alike in all years of operation. The figure used by the actuaries was \$25 per month, while that assumed by the staff was \$20. As compared to the actual experience it may be seen that both figures are high, although the staff figure is appreciably close. In fact, at the present time the latter is only about 3% too high since the average is now about \$19.50. Correspondingly, the actuaries estimate is considerably over. However, it should be mentioned that both sets of estimates were developed primarily to show the long-range cost picture rather than the expected cost in the early years. As a result, the \$25 average figures may not be as much an over-estimate as would at first appear from this data. The actuaries believed that old-age assistance in the absence of old-age insurance might eventually develop into a program under which practically all recipients would get the maximum amount which the Federal Government would match (originally \$30, but now \$40). The estimates based on the presence of an old-age insurance system allowed for a small proportion of the "annuitants" thereunder receiving supplementary old-age assistance grants of less than \$25 with all "non-annuitant" recipients averaging \$25 per month.

### C. Cost Estimates for Old-Age Insurance

The estimates for old-age insurance were prepared on an incurred basis rather than a cash basis.<sup>e/</sup> In other words, the figures indicate the amounts which would be paid out each year if all eligible claims were filed immediately upon date of eligibility. It was felt that it was both impractical and impossible to estimate the extent of the claims lag that would be present as well as the proportion of claims that would never be

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<sup>e/</sup> Senate Committee on Finance, Report on the Social Security Bill, Report No. 628, 74th Congress, First Session, Table IV, p. 9. The figures used here differ from those of the Senate Report in that they are on a calendar year rather than a fiscal year basis. The calendar year figures are available in "Cost Estimates for the Old-Age Insurance System of the the Social Security Act" by R. J. Myers (Record of the American Institute of Actuaries, Vol. XXVIII, June 1939), Tables 1-4.

filed since both would depend to an appreciable extent upon the administration of the program rather than upon actuarial factors. Similarly, the estimates of tax collections were made on an incurred basis, but here there is probably only a small amount of non-filing so that all the taxes which should be paid are probably collected, although frequently in a different year than that to which they were in respect.

Table 2 compares the aggregate actual financial data for old-age insurance with the estimates. In 1937 and 1939 the appropriations were quite close to the estimates, but in 1938 they were  $\frac{1}{3}$  less. The explanation for this difference may be seen from Table 3 which compares cumulative data for appropriations and tax receipts under Title VIII.f/ The Committee on Economic Security made its appropriation estimates on the basis that a certain proportion of the tax receipts (91 $\frac{2}{3}$ % for 1937-39) would be used as the appropriations.g/ Moreover, it was assumed that the appropriations would be made currently as the taxes accrued (i.e. as the wages were being earned) rather than in arrears as the taxes were collected.

The "current basis" of making appropriations was followed fairly closely until March 1938, as may be seen by the comparison of cumulative "current taxes" with cumulative appropriations which shows a uniform differential of about 10%. However, at this time the method of making appropriations was changed to a "receipt basis" so as to relate to taxes collected rather than taxes accrued. This is indicated in Table 3 by the comparison of cumulative appropriations to cumulative tax receipts. Before June 1938 the former exceeded the latter but since then have been about 8% less which is approximately the differential estimated by the Committee on Economic Security. This change over from the "current basis" of making appropriations to the "receipt basis" was accomplished by practically eliminating transfers from the appropriation balance to the Account during the second quarter of 1938.h/ As a result, the appropriations made for 1938 were far below the estimate merely due to a change in the administrative procedure of financing rather than to a difference in the actual experience.

Considering benefit payments in Table 2, the actual experience has been appreciably lower than the estimates due principally to the fact that the estimates were made on an incurred basis as explained previously. For 1937 the actual payments were only about one-fourth of the estimates, while for the subsequent two years they were about one-half.

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f/ A further analysis of the tax estimates will be made in the next section.

g/ Although the Act called for the appropriations to be annual premiums sufficient to provide for the payments, with the amount to be determined on a reserve basis in accordance with accepted actuarial principles, this procedure of tying up the appropriations with the tax collections was valid since the original estimates predicted that the act was exactly self-supporting.

h/ Only 13 million dollars was transferred during this period as compared to normal transfers of more than 100 million dollars per quarter.

Table 2

COMPARISON OF ACTUAL FINANCIAL DATA FOR OLD-AGE INSURANCE  
WITH THE ESTIMATES OF THE COMMITTEE ON ECONOMIC SECURITY

(Figures in millions of dollars)

<u>Calendar Year</u>	<u>Actual Data</u>	<u>C.E.S. Estimates</u>	<u>Ratio</u>
<u>Appropriations<sup>a/</sup></u>			
1937	514.0	511.0	101%
1938	343.0	515.9	66
1939	566.0	521.0	109
<u>Benefit Payments</u>			
1937	1.3	6.0	22
1938	9.7	18.6	52
1939	14.2	32.7	43
<u>Interest on Reserve<sup>b/</sup></u>			
1937	2.3	0.0	-
1938	15.4	15.2	101
1939	26.9	30.5	88
<u>Balance in Reserve<sup>c/</sup></u>			
1937	515.0	505.0	102
1938	864.9	1017.5	85
1939	1442.4	1536.3	94

a/ Amounts shown are actual transfers rather than appropriations by Congress.

b/ Actually, interest is paid at end of fiscal year on average balance on hand during year, whereas the estimate assumed that interest would be paid at the end of each calendar year on the balance on hand at the end of the previous calendar year.

c/ At end of year. Includes only investments held and cash with disbursing officer and not the unexpended appropriation.

Table 3

COMPARISON OF CUMULATIVE DATA ON APPROPRIATIONS TO OLD-AGE RESERVE ACCOUNT  
AND TAXES UNDER TITLE VIIIa/

(Figures in millions of dollars)

Month	Appropriations <sup>b/</sup>	Tax Receipts <sup>c/</sup>	"Current Taxes" <sup>d/</sup>	Ratio of Appropriations to	
				Tax Receipts	"Current Taxes"
March 1937	135	49	*	276%	*
June 1937	265	198	294	134	90%
September 1937	389	346	*	112	*
December 1937	514	517	586	99	88
March 1938	629	578	715	109	88
June 1938	652	709	845	92	77
September 1938	761	838	976	91	78
December 1938	857	966	1110	89	77
March 1939	994	1100	1247	90	80
June 1939	1155	1238	1388	93	83
September 1939	1289	1381	1541	93	84
December 1939	1423	1534	1702	93	84

\* Not available because wages were tabulated by halves of year rather than quarters in 1937.

a/ Now the Federal Insurance Contributions Act.

b/ Amounts shown are actual transfers rather than appropriations by Congress.

c/ Based on tax collections by Internal Revenue Collection Districts as reported in various issues of the Social Security Bulletin.

d/ Based on estimates of total taxable wages for each calendar year as contained in OASI Operating Statistics Review for February 1940 (p.10). Annual figures for 1937 subdivided by halves of year according to proportion of taxable wages for year included in tabulation for each half (see Social Security Bulletin, September 1938, p.22). Annual figures for 1938 and 1939 subdivided by quarters according to proportion of taxable wages for year included in tabulation for each quarter.

Note: All figures are cumulative from January 1937 up to and including the specified month.

Table 4 compares the estimated number of potential claims with the actual experience on two bases: claims filed and claims certified. For both death and attainment claims those filed in 1937 were only about  $\frac{1}{4}$  of the estimates, whereas in the two subsequent years they were about  $\frac{2}{3}$ . The figures for 1937 are low due to the lag in filing. This does not enter so much into the figures for 1938 and 1939 since the lag of the current year is, to a great extent, counterbalanced by that of the previous years. However, in all periods there is the element of lack of filing of eligible claims which has probably been present due both to the newness of the program leaving many individuals uninformed of their rights and the small size of the benefits involved so that many persons did not take the trouble to file claims. Judging from this crude analysis, the estimates are apparently overstatements although there is some question as to how much effect lag and lack of filing have had.

A further analysis of claims experience is made in Table 5 in regard to the average payment and total payments made. The element of lag is present for all years since the estimates indicate the average size of claim incurred in each year, while the actual figures apply to claims certified in the given year regardless of the year of eligibility. The effect of the lag is thus to make the actual certification data smaller than if it were on an incurred basis. On the other hand, the actual certified figures tend to be larger than the data for actual total eligible claims since the smaller ones are less apt to be filed. Thus, for 1937 the average payment made for both types of claims was about 25% larger than estimated. Here the effect of the predominant filing of the larger claims more than offset the consequence of the lag. However, in 1938 and 1939 the actual payments certified were 10-15% lower than the estimates; here the lag was probably the more important of the two elements.

The total payments certified were appreciably less than the estimates for 1937 due to the lag involved, while for 1938 and 1939 they represented about 50% of the estimates with the attainment claims tending to have a slightly higher percentage.

The previous discussion has been handicapped by the indeterminable element of lag. Various tabulations of claims have been made so that it is possible to make very accurate estimates of the certifications according to year of eligibility. This will then remove the lag element although there will still be present the question of the proportion of claims that were never filed due to lack of knowledge of the benefits available or the smallness of the amounts involved. A detailed estimate is presented in Table 6 showing the source of the data and the method of estimation in each case; as a result, no discussion of the procedure will be given here since the table is complete in itself.

The estimate indicates that about 140,000 claims have been paid in respect to 1937 eligibilities and about 180,000 in regard to 1938. The estimation of 1939 death claims involves a prediction of those claims which will be filed in 1940 and is thus not so accurate as the 1937 and 1938

Table 4

COMPARISON OF ESTIMATED NUMBER OF POTENTIAL CLAIMS<sup>a/</sup>  
WITH ACTUAL CLAIMS EXPERIENCE

<u>Calendar Year</u>	<u>Estimated Potential Claims<sup>a/</sup></u>	<u>Actual Claims Filed<sup>b/</sup></u>	<u>Actual Claims Certified<sup>c/</sup></u>	<u>Ratio to Estimated Claims</u>	
				<u>Claims Filed</u>	<u>Claims Certified</u>
Death Claims					
1937	191,300	35,298	25,831	18%	14%
1938	194,400	121,594	121,850	63	63
1939	197,500	118,815	115,481	60	58
Attainment Claims					
1937	123,000	34,473	27,406	28%	22%
1938	136,000	92,330	91,819	68	68
1939	92,000 <sup>d/</sup>	57,551	59,360	63	65
Total Claims					
1937	314,300	69,771	53,237	22%	17%
1938	330,400	213,924	213,669	65	65
1939	289,500 <sup>d/</sup>	176,366	174,841	61	60

<sup>a/</sup> Number of claims arising in the given year due to death or attainment in that period.

<sup>b/</sup> Claims received in Washington in the given year regardless of year in which claim was incurred.

<sup>c/</sup> Claims certified to the Treasury for payment in the given year regardless of year in which claim was incurred or filed.

<sup>d/</sup> Adjusted for the fact that the 1939 amendments eliminated attainment benefits as of August 10, 1939.

Table 5

COMPARISON OF ESTIMATED AVERAGE PAYMENT AND TOTAL PAYMENTS<sup>a/</sup>  
WITH ACTUAL CERTIFICATION EXPERIENCE<sup>b/</sup>

Calendar Year	Average Payment			Total Payments <sup>c/</sup>		
	Estimated <sup>a/</sup>	Certified <sup>b/</sup>	Ratio	Estimated <sup>a/</sup>	Certified <sup>b/</sup>	Ratio
Death Claims						
1937	\$19.25	\$24.27	126%	3,700	627	17%
1938	55.50	47.37	85	10,700	5,772	54
1939	91.75	80.72	88	18,200	9,321	51
Attainment Claims						
1937	\$19.25	\$23.74	123%	2,300	651	28%
1938	57.75	51.25	89	7,900	4,706	60
1939	83.50 <sup>d/</sup>	77.08	92	7,700 <sup>d/</sup>	4,575	59
Total Claims						
1937	\$19.25	\$24.00	125%	6,000	1,278	21%
1938	56.50	49.04	87	18,600	10,478	56
1939	89.50 <sup>d/</sup>	79.48	89	25,900 <sup>d/</sup>	13,896	54

a/ Based on claims arising in the given year due to death or attainment in that period.

b/ Claims certified to the Treasury for payment in the given year regardless of year in which claim was incurred or filed.

c/ In thousands of dollars.

d/ Adjusted for the fact that the 1939 amendments eliminated attainment benefits as of August 10, 1939.

Table 6

ESTIMATE OF BREAKDOWN OF CLAIMS CERTIFIED ACCORDING TO CALENDAR YEAR IN WHICH CLAIM AROSE<sup>a/</sup>

<u>Category</u>	<u>Period of Filing</u>	<u>Period of Certification</u>	<u>Death Claims</u>	<u>Attainment Claims</u>	<u>Total Claims</u>
Claims Incurred in 1937					
A	1937	Prior to 1/1/38	25,831	27,406	53,237
B	1937	1/1/38 to 2/28/38	7,718	*	*
C	1937	After 2/28/38	400	*	*
D	1937	After 12/31/37	8,100	6,800	14,900
E	1938-39	Before 7/1/39	37,724	32,827	70,551
F	1938-39	After 6/30/39	1,500	300	1,800
G	Total		73,200	67,300	140,500
Claims Incurred in 1938					
H	1938-39	Before 7/1/39	102,001	74,210	176,211
I	1938-39	After 6/30/39	3,600	600	4,200
J	Total		105,600	74,800	180,400
Claims Incurred in 1939					
K	1939	Before 1/1/40	84,400	36,500	120,900
L	1939-40	After 12/31/39	35,100	--	35,100
M	Total		119,500	36,500	156,000

\* Not available.

a/ i.e. year in which death or attainment occurred.

Source of Data or Method of Estimation:

Category A - Operating Statistics Review, January 1938, p. 5.

Category B - Cumulative data for death claims certifications through February 1938 from Social Security Bulletin, July 1939, P. 22 (33,549) minus category A.

Category C - Estimated to be 85% of the 482 death claims filed in 1937 but not certified before March 1938 or disallowed before January 1938. Filed in 1937 - 35,298 (O.S.R., January 1938, p. 5); certified through February 1938 - 33,549 (see Category B above); and disallowed through December 1937 - 1,267 (Claims Report of Administrative Division, OASI).

Category D, Death Claims - Sum of Categories B and C.

Category D, Attainment Claims - 6,832 attainment claims were filed in 1937 but not certified or disallowed before January 1938 (34,473 filed in 1937, 27,406 certified in 1937, and 235 disallowed in 1937) and similarly 8,200 such death claims (35,298 filed, 25,831 certified, and 1,267 disallowed). Of the latter 8,100 or 99% are estimated to have been finally certified (Category D). This percent is also assumed to apply to the 6,832 attainment claims giving 6,800.

Category E - From unpublished tabulation.

Category F - Estimated to be 3% of claims certified from July to December, 1939 (51,164 death claims and 8,891 attainment claims; source - O.S.R. various issues). Estimated percent based on unpublished monthly samples of claims certified in July-December 1939.

Category G - Sum of Categories A, D, E, and F.

Category H - From unpublished tabulation.

Category I - Estimated to be 7% of claims certified from July to December, 1939 (see discussion of Category F).

Category J - Sum of Categories H and I.

Category K - Cumulative certifications to December 31, 1939 (263,162 death claims and 178,568 attainment claims; source - S.S.Bull., February 1939, p. 75) minus Categories G and J.

Category L - Based on certifications in January-May, 1940 (27,463) plus an estimated 7,600 certifications after May 1940.

Category M - Sum of Categories K and L.

figures. On the other hand, the estimate of 1939 attainment claims is reasonably accurate since it depends only upon the estimates for 1937 and 1938 claims and the total claims paid up to August 10, 1939.

Since some of the figures for the three years involve estimates, it is interesting to examine what proportion of the total comes from actual tabulations and is thus presumed to be completely accurate. Of the estimated 73,200 1937 death claims all but 1,900 (Categories C and F) resulted from tabulations so that 97.4% of the estimate is precise. Similarly, for the 1937 attainment claims 89.5% of the estimate is based on tabulations. For 1938 death and attainment claims the corresponding figures are 96.6% and 99.2%, respectively. It may thus be seen that the 1937 and 1938 figures are far more accurate than most estimates can be made since a 50% error in the estimated portions would produce only 1-5% errors in the total figures.<sup>i/</sup>

Table 7 compares the estimated "actual claims data" of Table 6 with the potential claims estimated by the Committee on Economic Security. These two sets of figures, unlike those in Table 4, are completely comparable since both are based on year of eligibility. The ratio of actual death claims paid to estimated potential claims increased from slightly less than 40% for 1937 eligibilities to over 60% for 1939 eligibilities. For attainment claims there was no such increasing trend but rather a ratio of 55% for both 1937 and 1938 and only 40% for 1939 (despite adjustment in the estimated potential claims for the fact that no such claims were paid after August 10, 1939, due to the 1939 Amendments). The lower ratio for 1939 is probably due to the fact that many eligible individuals did not file because of the pending amendments which would subsequently give them life annuities rather than lump-sum payments. The increasing trend for death claims indicates that relatively more persons were filing for claims due both to the larger payments involved as more wage credits accumulated and to the increasing knowledge of the program on the part of the public.

Table 8 shows an estimate of the total payments certified according to the year in which the claim arose rather than according to the year in which it was paid just as Table 6 did in regard to number of claims. The next to last column of Table 8 shows the proportion of the total estimate which is actual data from tabulations and is thus some indication of the relative accuracy of the estimates given in the last column. Thus, for example, for 1937 death claims only about 13% of the total estimate is really "estimated" so that the range of error is probably quite small.

Table 9 uses the figures of Table 8 to compared estimated "actual average payments" and "actual total payments" based on year of eligibility with the original estimates. For both types of claims and in all years

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<sup>i/</sup> e.g. for 1937 attainment claims 89.5% of the total figure comes from tabulations with only 10.5% actually being estimated. A 50% error in the latter portion would only amount to 5.3% of the total figure. For other categories the total error produced by a 50% error in the estimated portion would be appreciably less than 5%.

Table 7

COMPARISON OF ESTIMATED NUMBER OF POTENTIAL CLAIMS<sup>a/</sup> WITH ACTUAL CLAIMS EXPERIENCE  
 BASED ON YEAR OF ELIGIBILITY<sup>b/</sup>

<u>Calendar Year</u>	<u>Estimated Claims<sup>a/</sup></u>	<u>Actual Claims<sup>b/</sup></u>	<u>Ratio</u>
Death Claims			
1937	191,300	73,200	38%
1938	194,400	105,600	54
1939	197,500	119,500	61
Attainment Claims			
1937	123,000	67,300	55%
1938	136,000	74,800	55
1939	92,000 <sup>c/</sup>	36,500	40
Total Claims			
1937	314,300	140,500	45%
1938	330,400	180,400	55
1939	289,500 <sup>c/</sup>	156,000	54

a/ Number of claims arising in the given year due to death or attainment in that period.

b/ Data based on year of certification for payment broken down according to year of eligibility (i.e. year in which death or attainment occurred). Figures taken from Table 6.

c/ Adjusted for the fact that the 1939 amendments eliminated attainment benefits as of August 10, 1939.

Table 8

ESTIMATE OF TOTAL PAYMENTS CERTIFIED ACCORDING TO CALENDAR YEAR IN WHICH CLAIM AROSE<sup>a/</sup>

Calendar Year	Claims for Which Data is Available <sup>b/</sup>		Estimated Number of Claims <sup>d/</sup>	Col.1 as % of Col.3	Estimated Total Payments <sup>e/</sup>
	Number	Total Payments <sup>c/</sup>			
Death Claims					
1937	63,555	1,627	73,200	86.8%	1,870
1938	102,001	5,936	105,600	96.6	6,140
1939	---	---	119,500	--	11,200
Attainment Claims					
1937	60,233	1,517	67,300	89.5%	1,690
1938	74,210	4,824	74,800	99.2	4,860
1939	---	---	36,500	--	3,380

<sup>a/</sup> i. e. year in which death or attainment occurred.

<sup>b/</sup> Data available for 1937 claims is that for claims certified in 1937 plus that for 1937 claims filed in 1938-39 and certified before July 1939 (see Categories A and E, Table 6). Data available for 1938 claims is that for such claims certified before July 1939 (see Category H, Table 6).

<sup>c/</sup> In thousands of dollars.

<sup>d/</sup> From Table 6.

<sup>e/</sup> In thousands of dollars. 1937 and 1938 values obtained by dividing column 2 by column 4. 1939 values obtained by subtracting estimates for 1937 and 1938 claims from total amount certified up to December 1939 (Social Security Bulletin, February 1940, p. 75); for 1939 death claims there was also added \$3,500,000 for such claims certified in 1940 (in January-May, 1940 the actual certifications were \$2,403,000).

Table 9

COMPARISON OF ESTIMATED AVERAGE PAYMENT AND TOTAL PAYMENTS<sup>a/</sup> WITH ACTUAL CLAIMS EXPERIENCE  
 BASED ON YEAR OF ELIGIBILITY<sup>b/</sup>

Calendar Year	Average Payment			Total Payments <sup>c/</sup>		
	Estimated <sup>d/</sup>	Actual <sup>d/</sup>	Ratio	Estimated <sup>d/</sup>	Actual <sup>d/</sup>	Ratio
Death Claims						
1937	\$19.25	\$25.50	132%	3,700	1,870	51%
1938	55.50	58.00	105	10,700	6,140	57
1939	91.75	93.75	102	18,200	11,200	62
Attainment Claims						
1937	\$19.25	\$25.00	130%	2,300	1,690	73%
1938	57.75	65.00	113	7,900	4,860	62
1939	83.50 <sup>e/</sup>	92.50	111	7,700 <sup>e/</sup>	3,380	44
Total Claims						
1937	\$19.25	\$25.25	131%	6,000	3,560	59%
1938	56.50	61.00	108	18,600	11,000	59
1939	89.50 <sup>e/</sup>	93.50	104	25,900 <sup>e/</sup>	14,580	56

a/ Based on claims arising in the given year due to death or attainment in that period.

b/ Data based on year of certification for payment broken down according to year of eligibility (i.e. year in which death or attainment occurred). Figures taken from Table 8.

c/ In thousands of dollars.

d/ Based on data in Table 8 (Average payment obtained by dividing column 5 by column 3 and rounding to the nearest twenty-five cents).

e/ Adjusted for the fact that the 1939 amendments eliminated attainment benefits as of August 10, 1939.

the actual payment made in respect to eligibilities of the given year is higher than the estimate, thus indicating that there was less non-filing for the larger claims. The relative difference decreased from about 30% in 1937 to only 2% in 1939 for death claims and 11% for attainment claims. This trend indicates clearly the element of non-filing of smaller claims. Since non-filing is probably almost entirely among claims for very small absolute amounts and since the proportion that these small claims are of the total decreased quite rapidly, it would be expected that the error due to non-filing would also decline. The size of claims which arose in the various years may have been even smaller than the estimate even though the size of the certified claims was larger.

The total payments which were incurred for death claims represented only 50% of the estimate in 1937, increasing to more than 60% by 1939. For attainment claims there was the opposite trend with the ratio decreasing from 73% in 1937 to 62% in 1938 and only 44% for 1939 (the latter probably due to the effect of the pending amendments as mentioned previously).

The previous analyses have eliminated the element of lag from the actual experience data. If the element of non-filing could be removed, it would be possible to make a completely valid comparison with the estimates of the Committee on Economic Security. In other words, there would have to be known for each of the various years the number of deaths and attainments of persons with wage credits. Unfortunately, such data is not available in regard to deaths, but a fairly accurate estimate of the total eligible attainments in 1937 can be made from the 1937 wage data. Here there were shown to be about 89,300 persons who were born in 1872 and who thus must have attained age 65 in 1937 unless they died during 1937 prior to their birthday. Except for the latter category, all of these individuals would have been eligible to file attainment claims. Deducting an estimated 1700 persons to allow for such deaths would indicate 87,600 individuals who could have filed attainment claims in 1937 (Table 10). This figure represents 71% of the original estimate which was thus in error by only 29% as compared to the apparent error of 78% when only claims certified in 1937 are considered, 72% when only claims filed in 1937 are considered, or 45% when claims certified in 1937 and thereafter (as estimated in Table 6) are considered.<sup>1/</sup>

Similarly, the 1937 wage data gives an indication of the eligible attainments in 1938-39 since there may readily be estimated the number of individuals with 1937 credits who attained age 65 in those years. This will tend to be a minimum figure since it excludes all such individuals who first obtained credited wages after 1937 but prior to their 65th birthday. However, it is believed that the latter category is relatively negligible since employment among those at the older ages is usually steady. From the two groups of individuals in the 1937 wage tabulations

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<sup>1/</sup> In the first year of operation the fact that the claims filed were only 20% of the estimate (on an incurred basis) was pointed out to show the great inaccuracy of the estimates. This analysis indicates that the estimates were only about 30% in error instead of 80% when their nature is considered.

who will attain age 65 in 1938 and in 1939 prior to August 10 there must be deducted the number of deaths just as was done in the case of the 1937 potential claims. The results thereof are shown in Table 10.

The potential eligibilities according to the wage data were only about 20-25% lower than the estimates of the Committee on Economic Security for the two years under consideration. However, the actual claims certified in respect to 1938 eligibilities were 45% smaller than the original estimate of potential claims, while for 1939 the corresponding figure was 60% (due to the effect of the 1939 Amendments). Of the actual potential eligibilities according to the wage data, only 77% were filed in respect to 1937 claims, while for 1938 and 1939 the corresponding figures were 72% and 52%, respectively (again the decreasing trend of filing is probably due to the effect of the 1939 Amendments).

The analysis in Table 10 indicates quantitatively the great difficulty in making actuarial estimates for the early years of operation; first, because of the natural lag in filing claims (only 51% of those who received attainment claims based on 1937 eligibilities filed for claims in 1937); second, because of the newness of the program which resulted in many individuals not filing claims at all (only 77% of those who attained age 65 in 1937 and had wage credits actually did receive an attainment benefit at some time in or after 1937); third, because of the natural administrative lag in adjudicating claims (only 79% of the attainment claims filed in 1937 were certified in that year); and fourth, because of the natural errors arising in any estimates (those who attained age 65 in 1937 and had wage credits were 29% less than estimated).

Turning back to Table 2 there will next be considered a comparison of the actual interest earned by the Old-Age Reserve Account with the estimates of the Committee on Economic Security. Here again it was necessary for the Committee to make certain assumptions as to the method of payment of interest. Subsequently these assumed procedures have not been followed exactly in actual practice. It was presupposed that interest would be credited at the end of each calendar year only on the balance in the fund at the beginning of the year so that there would be no earnings the first year. Actually, the Treasury credits interest at the end of each fiscal year based, in effect, on the average balance in the Account during the given period. As a result, about 2 million dollars was received during 1937 as compared to none in the estimate. For 1938 the actual interest was almost exactly the same as the estimate, but for 1939 it was about 12% lower due to the smaller size of the Account than had been estimated.

Finally considering the balances in the Old-Age Reserve Account (as of December 31), there was very little difference between the actual and estimated figures for 1937. However, in 1938 the actual Account was 15% lower than estimated, while in 1939 the deficiency was only 6%. The sharp drop during 1938 resulted from the change in method of making

Table 10

COMPARISON OF ACTUAL DATA FOR ATTAINMENT CLAIMS WITH ESTIMATES

	<u>Number</u>	<u>Percent of Estimate</u>	<u>Percent "Error"</u>
1937 Claims			
Estimate	123,000	100%	--
Certified in 1937 <sup>a/</sup>	27,406	22	78%
Filed in 1937 <sup>a/</sup>	34,473	28	72
Certified in 1937 and thereafter <sup>b/</sup>	67,300	55	45
Potential according to wage data <sup>c/</sup>	87,600	71	29
1938 Claims			
Estimate	136,000	100%	--
Certified in 1938 and thereafter <sup>b/</sup>	74,800	55	45%
Potential according to wage data <sup>c/</sup>	103,500	76	24
1939 Claims			
Estimated <sup>d/</sup>	92,000	100%	--
Certified in 1939 <sup>b/</sup>	36,500	40	60%
Potential according to wage data <sup>c/d/</sup>	76,600	77	23

<sup>a/</sup> From Table 4.

<sup>b/</sup> From Table 6.

<sup>c/</sup> Persons in the 1937 wage tabulation who were born in 1872, 1873, and 1874, respectively, for 1937, 1938, and 1939 claims (i.e. their 65th birthday would occur in the given year) less estimated deaths after 1936 and before their 65th birthday.

<sup>d/</sup> Adjusted for the fact that the 1939 amendments eliminated attainment benefits.

appropriations as described previously. Although actual benefit payments were lower than estimated, the amounts involved were relatively small as compared to the appropriations. As a result the "savings" in benefit payments had much less effect in increasing the reserve than the "deficiency" in appropriations had in decreasing it. Thus, over the three year period the actual appropriations were about 125 million dollars lower than the Committee on Economic Security estimated, a relative difference of only 8%. On the other hand, the actual benefit payments were lower than the estimates by about 30 million dollars, or over 55%. However, the 30 million dollar "savings" in benefits represented only 25% of the "deficiency" in appropriations, leaving a "net deficiency" between income and outgo of about 100 million dollars as compared to the original estimate.

#### D. Cost Estimates for the Tax Programs

The Social Security Act of 1935 provided for two tax programs. Title VIII (now the Federal Insurance Contributions Act) instituted a graded tax schedule (starting at 2% for the period 1937-39) on identically the same wages as those for which credit is given under the old-age insurance program. Title IX (now the Federal Unemployment Tax Act) provided for a tax at the rate of 1% for 1936, 2% for 1937, and 3% for 1938 and thereafter on a somewhat different coverage than the previous tax. However, only 10% of this tax actually had to be paid to the Federal Government if contributions at least equal to the other 90% were paid into an approved State unemployment compensation fund. As in the case of the previous estimates, those for the tax yield under these titles were prepared on an incurred basis; i.e. the amounts payable in respect to each of the given calendar years rather than the amounts received into the Treasury during the given period.<sup>k/</sup> Since it was impossible to forecast exactly how many states would have approved unemployment compensation laws, the estimates for the Title IX taxes were on the basis of making no allowance for the 90% credit.

Table 11 compares the actual tax receipts in respect to particular calendar years with the estimates of the Committee on Economic Security. Due to the lag in collection of taxes, it is necessary to make certain assumptions as to what the actual incurred taxes are; in other words, some estimation is involved. This has been done on two bases as follows: first, the actual tax collections with a two month lag (i.e. taxes in respect to 1937 are those received prior to March 1938; taxes in respect to 1938 are those received in the period March 1938 to February 1939; and taxes in respect to 1939 are those received in the period March 1939 to February

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<sup>k/</sup> Senate Committee on Finance, Report on the Social Security Bill, Report No. 628, 74th Congress, First Session, Tables X and XII, p. 26 & 27. The figures for Title VIII used here differ from those in the Senate Report in that they are on a calendar year rather than a fiscal year basis. The figures for Title IX used here differ in that an adjustment has been made for the fact that firms of nine or less were excluded in the bill as considered in the Report as compared to an exclusion of seven or less in the Act as finally enacted.

Table 11

**COMPARISON OF ACTUAL TAX RECEIPTS UNDER TITLE VIII<sup>a/</sup> IN RESPECT TO PARTICULAR CALENDAR YEARS<sup>b/</sup> WITH ESTIMATES OF THE COMMITTEE ON ECONOMIC SECURITY**

(Figures in millions of dollars)

<u>Calendar Year</u>	<u>Actual Tax Receipts Estimated from</u>		<u>C.E.S. Estimates</u>	<u>Ratio to C.E.S. Estimates</u>	
	<u>Tax Collections<sup>c/</sup></u>	<u>Wage Recorded<sup>d/</sup></u>		<u>Column 1</u>	<u>Column 2</u>
1937	576	586	557	103%	105%
1938	522	524	563	93	93
1939	582	592	568	102	104
1937-39	1,680	1,702	1,688	100	101

a/ Now the Federal Insurance Contributions Act.

b/ i.e. taxes collected in various years in respect to wages earned in the specified calendar year.

c/ Based on tax collections by Internal Revenue Collection Districts, as reported in various issues of the Social Security Bulletin. A two month lag in tax collection is assumed; i.e. taxes in respect to 1937 are those received prior to March 1938, taxes in respect to 1938 are those received in the period March 1938 to February 1939, etc.

d/ Based on estimates of total taxable wages for each calendar year as contained in O.A.S.I. Operating Statistics Review, February 1940, p. 10. These estimates are based mainly on tabulations from the wage records but include supplementary estimates.

1940); and second, 2% of the total taxable wages for each calendar year based on the tabulations from the wage records plus a small supplementary estimate to allow for lag in filing reports and processing the data.

For all three years the actual tax receipts as estimated from the wage records are slightly higher than those based on the tax collections, the largest deviation being 10 million dollars which is less than 2% relatively. For 1937 and 1939 the original estimate was about 4% less than the actual receipts, while for 1938 it was about 7% too high. These fluctuations of the actual experience from the Committee's estimates appear to arise primarily from the business cycle which was obviously impossible to incorporate into the computations. Thus, over the three year period the actual tax receipts were almost identical with the original estimates since the latter lay within the narrow range of the two estimates of the former.

Table 11 indicates that the estimates in regard to tax receipts under Title VIII were remarkably good since they were so close to the actual experience. On the basis of actual experience many individuals have criticized the estimates of the Committee on Economic Security on the grounds that the \$1100 wage and the 25½ million coverage were incorrect since the former should have been lower and the latter higher. Thus, in 1937 about 32 million workers received credited wages totalling roughly 29.3 billion dollars or \$916 per capita, while 36.7 million persons had obtained account numbers. The latter item is, of course, a false indication of coverage (although it is sometimes used in that respect) since any of the 130 million persons in the United States could obtain account numbers regardless of coverage status.

However, such critics did not realize that the 25½ million figure was assumed to represent the number of full-time jobs, while \$1100 was taken to be the full-time average wage. Actually, in 1937 there were roughly 32 million persons who worked either part or full-time, which may be taken as equivalent to about 25½ million full-time jobs. The \$1100 full-time average wage when spread out among this larger group amounted to only about \$900 per capita. The main purpose of the Committee's estimates was not to predict the number of individuals covered nor their average wage, but rather the amounts of money involved. From this viewpoint the tax estimates of the Committee on Economic Security have been phenomenally accurate.

As stated previously, the estimates for the Title IX taxes were made on the artificial basis that no state would have an approved unemployment compensation law so that no employer would obtain the 90% credit given. Since all states now have such laws, the actual receipts under this title have been only about 10% of what they would be under the basis considered in the original estimates. The actual experience may only be obtained by estimating the actual "theoretical tax yield." This somewhat academic figure can be estimated from various state reports and other tax data which give some indication of the taxable payroll. Once the total

taxable payroll is known, the "theoretical tax yield" may be readily obtained by applying the pertinent tax rate (1% for 1936, 2% for 1937, and 3% for 1938-39).

Two estimates of the actual total taxable payroll have been made-- one by the Bureau of Employment Security and the other by the Bureau of Research and Statistics. The latter was made on the basis of estimated compensation of employees in various industrial groups with various modifications being made to allow for difference in coverage, with the resulting figures being presented as a range. The former estimate is based on total payrolls as reported by various state agencies with suitable adjustments for differences in coverage between Title IX and the state laws.

The resulting "theoretical tax yields" based on these estimates are shown in Table 12 and as may be seen there, the estimate of the Bureau of Employment Security tends to be near the upper limit of the estimate range of the Bureau of Research and Statistics. The estimates of the Committee on Economic Security were lower in all years than the "theoretical tax yield" with an average difference of about 10%, although in some years as great as 25% while in others as little as 2%.

Table 12

COMPARISON OF ACTUAL "THEORETICAL TAX YIELD" UNDER TITLE IX<sup>a/</sup> IN RESPECT TO PARTICULAR CALENDAR YEARS<sup>b/</sup> WITH ESTIMATES OF THE COMMITTEE ON ECONOMIC SECURITY<sup>c/</sup>

(Figures in millions of dollars)

Calendar Year	Actual "Theoretical Yield," <sup>b/</sup> Based on Estimates of		C.E.S. Estimates <sup>c/</sup>	Ratio to C.E.S. Estimates	
	Employment Security <sup>d/</sup>	Research and Statistics <sup>e/</sup>		Column 1	Column 2 <sup>f/</sup>
1936	287	256-287	234	123%	116%
1937	667	576-642	533	125	114
1938	816	768-852	799	102	101
1939	908	828-915	812	112	107
1936-39	2,678	2,428-2,696	2,378	113	108

a/ Now the Federal Unemployment Tax Act.

b/ The actual "theoretical tax yield" represents the resulting revenues if no states enact approved unemployment compensation laws (which have the effect of giving a 90% credit against the Title IX tax). Since all states by now have enacted such laws, this figure is purely theoretical. It can be estimated from various state reports and tax data which indicate the taxable payroll. To this is applied the pertinent tax rate (1% for 1936, 2% for 1937, and 3% for 1938-39).

c/ No allowance is made for the 90% credit in states with approved unemployment compensation laws.

d/ E. Clague to W. R. Williamson, "Taxable Payroll under Title IX for 1936-39," April 9, 1940. A slight adjustment has been made to include railroad payrolls.

e/ M. M. Wofsey to Ruth Reticker, "Taxable Wage Bases," February 29, 1940. Adjustment has been made for 1939 so as to include railroad payrolls for the full year since this was the original basis of the Act.

f/ Based on the arithmetic mean of the range shown in the second column.