

THE STATISTICAL PROGRAM OF THE RAILROAD RETIREMENT BOARD

A. Benjamin, U.S. Railroad Retirement Board

The Railroad Retirement Board administers a retirement-survivor benefit program and a separate unemployment-sickness benefit program under the provisions of the Railroad Retirement and Railroad Unemployment Insurance Acts. The retirement and survivor benefit provisions are similar to those under the social security system but are generally more liberal. Unemployment benefits are higher than those under most State programs; only a few States have comparable sickness benefits. Detailed records are maintained on the operations of the benefit programs and on employment and payrolls in the railroad industry for statistical, actuarial, interagency financial transactions and for administrative purposes. These records are unique because they are the only ones covering a single industry under National laws.

Statistics are published on a universe basis with respect to (1) financial operations, (2) certain employment data, and (3) new awards and terminations of retirement and survivor benefits. Practically all other data are based on samples. Figures on the benefit programs and on employment and payrolls are presented in the Board's Annual Report, Monthly Review, and other publications. The financial data include the number and amount of benefits paid out, the receipts, expenditures and balances in the Railroad Retirement and Railroad Unemployment Insurance Accounts, etc.

Most of the statistical analyses and actuarial estimates are based on sample data. The samples may be called modified systematic samples since they are selected on the basis of specified combinations of digits of the social security account numbers. Since there is no known bias in this method of selection, the resulting samples are treated as random samples for the purpose of testing and inflation of the data. Sample studies are based on information developed from claims for benefits, reports of earnings and other administrative sources and assembled into statistical records which are kept up to date on a regular basis. Except on rare occasions, railroad employees are not asked to complete questionnaires or otherwise respond to inquiries to be used purely for statistical studies. Some of the major studies are discussed briefly below.

Service and Compensation

Beginning with 1937, the Board has published an annual census of all railroad employees who worked in the year. This volume has been used by both railroad labor and management in wage negotiations. The set of tables provides information on taxable earnings and months of service in the year by class of employer and by occupational groupings. Also, for employees of Class I railroads, the service and earnings are shown by individual occupation

(the 128 Interstate Commerce Commission reporting divisions). The statistics on occupation are probably among the most comprehensive available in this field. The compilation also carries less detailed information on new entrants in the industry and other selected data including some historical information beginning with 1937.

4-Percent History Sample

A 4-percent sample is selected annually from the file representing the universe of employees who worked in the year. This file is used to update a permanent 4-percent history file of present or former railroad employees who worked in the industry at any time after 1936. The records contain certain cumulative information, such as total service and total taxable compensation earned after 1936, service months before 1937 and a code identifying each of the years that the employee worked in the railroad industry beginning with 1937. Current data include the employee's railroad occupation and his service months and compensation for each of the last 3 years of employment. (An outline of the major items contained in the record is attached.) One difference between this sample and a similar social security sample is that the Board's sample includes service before 1937 which is not relevant to the social security sample.

In addition to its use in the analysis of employment and payrolls, the 4-percent sample provides data on the basis of which cost factors for the triennial actuarial valuations are developed. Some of the more important of these are as follows:

1. Rates of withdrawal from, and of mortality in, active service, and exposures for developing rates of retirement and disability.
2. Numbers of active and inactive employees alive and not retired on the valuation date by year of entry, age, and length of service.
3. Age distribution of new entrants.
4. Past and future salary scales.

10-Percent of UI-SI Sample

Data on the railroad unemployment and sickness benefit program are developed largely from a 10-percent sample of beneficiaries maintained on a continuing basis. Comprehensive information on the unemployment and sickness experience of railroad workers has been made available in various studies on rates of sickness and unemployment which have contributed substantially to the knowledge in the field. In addition,

comparisons with the various State plans and other studies have been published.

Analysis of the unemployment and sickness benefit program is based entirely on sample data. The size of the sample has varied--in recent years, it has been 10 percent. Because of the relatively small numbers involved, statistics on maternity benefits are on a 100-percent basis. The permanent beneficiary files contain such items of information as daily benefit rate, base-year compensation and service, total service, occupation, reason for unemployment, etc.

Financial Interchange

In 1951, the Railroad Retirement Act was amended to provide for a financial coordination between the railroad retirement and social security systems. The purpose of this legislation was to put the social security system in the same position financially in which it would have been had railroad employment been covered by that system beginning with 1937. This is carried out by joint annual determinations by the two agencies of the amounts to be transferred from one system to the other. Calculation of the amounts of these annual transfers involve two major steps: (1) determining the amount of taxes that would have been collected on railroad payrolls at social security rates, and (2) calculating the amount of benefits that would alternatively have been payable to railroad retirement beneficiaries if railroad service had been covered under the social security system. The resulting annual transfers involve hundreds of millions of dollars, so that the financial interchange is extremely important in the financing of the railroad retirement system.

The tax calculations are based on total taxable railroad payrolls adjusted on the basis of sample data to take into account the difference between the tax bases of the two systems. Under the social security system, there is an annual limit on earnings subject to tax, while railroad earnings are only taxed up to a monthly maximum. Also, under the social security system, if an employee worked for two employers, each is required to pay the taxes on earnings up to the annual limit. In the same situation under the railroad retirement system, each employer would pay taxes only on its share of the earnings up to the monthly maximum. Adjustments to take these differences into account are made on the basis of a special 1-percent sample of employees whose total (taxable and nontaxable) earnings are reported through special arrangements with railroads.

For the benefit computations, a 1-percent sample is used drawn from both retired and nonretired groups of employees in order to

cover every possible situation in which benefits could have been paid by the social security system. At the present time, the sample consists of some 9,000 active cases. For the most part, these cases are processed individually on the basis of the actual record. In a few cases in which the actual record is not complete, actuarial techniques are used to estimate the amounts of benefits that would be payable under social security.

For purposes of testing and inflation of the sample results after the benefit calculations are completed, the sample cases are grouped into some 25 to 30 strata according to the age of the beneficiary, the composition of the beneficiary family, and the beginning date of the benefit, with the latter grouping reflecting the effective dates of changes in the tax base and benefit provisions in the Social Security Act.

Military Service Study

Under the Railroad Retirement Act, transfers are required to be made from general funds in the U.S. Treasury to the railroad retirement account to reimburse the account for the cost of crediting military service towards benefits. The amount to be transferred for creditable military service performed in the period from January 1937 through June 1963 consists of the railroad retirement taxes that would have been collected on imputed earnings of \$160 a month. This amount (plus interest) was estimated on the basis of successive samples covering different periods. A sample of about one-fourth of 1 percent was selected from employees with railroad service through 1947; this was supplemented by 1-percent samples of new entrants in each of the subsequent years. These groups were refined by the elimination of employees who could not qualify for military service credit or for whom the probability of service in the armed forces was extremely low.

Questionnaires were sent to the remaining employees in the groups. If they had been or were still in military service, they were asked to supply information which could be used to verify their actual military service in the records of the Department of Defense. Appropriate employer and employee tax rates were applied to the creditable military service developed. The estimate was obtained by stratifying the sample results by period of military service and inflating the data for each stratum.

The additional cost to the retirement system of military service performed after June 1963 is based on the value of the additional benefits due to military service actually paid to beneficiaries. This cost is determined by actuarial techniques.

Retirement and Survivor Benefits

A complete statistical record is maintained of every benefit ever awarded by the Board. The file of benefits currently being paid is maintained and updated each month on a 100-percent basis. At the present time, this file includes records pertaining to about 1 million beneficiaries. Each record contains the amount of benefit, type of benefit, date of birth, railroad service and average earnings used in the computation of benefits, last railroad occupation, etc. Although most of the analytical tables on the retirement-survivor program are based on samples, the complete file is used for certain administrative operations.

The use of statistical records for administrative operations has greatly lightened the Board's workload over the years. This has been particularly true in connection with amendments involving changes in benefit rates for all or most beneficiaries since the Board's staff is small in relation to the number of beneficiaries on the rolls. The use of statistical records for this purpose began in 1946 when the Act was amended to provide a new system of survivor benefit. At that time, the statistical records provided the best source of information for carrying out the provisions of the new legislation. Since then the statistical records have been expanded to carry additional information designed to expedite administrative operations. This includes the identification of cases which must be checked for continuance of entitlement, and suspension and recertification actions, as well as the recomputation of benefits to reflect legislative changes.

April 1966

References

Robt. J. Myers, "Social Insurance and Allied Government Programs," (1965).

Benjamin Mandell, "The Continuous Work History Samples Under the Old Age and Survivors Insurance in the United States," International Social Security Association, (1957), "The Actuarial and Statistical Problems of Social Security," (1957), Vol. 2, 179-202.

Samuel A. Block, "The Railroad Social Insurance System," The Proceedings of the Conference of Actuaries in Public Practice, Vol. VI, (Feb. 1957).

U.S. Railroad Retirement Board and Department of Health, Education and Welfare, "RRB-SSA Financial Interchange," Summary and Documentation.

W. Matscheck and A. M. Niessen, "Sampling as a

Solution to Certain Unusual Social Insurance Problems," First International Conference of Social Security Actuaries and Statisticians, (Nov. 1956).

Outline of 4-Percent Wage History Record

1. Social security account number.
2. Date of birth.
3. Sex.
4. Year last worked (or current year if employee is in active service).
5. Indication that employee has social security earnings at any time after 1936.
6. Year of original entry into railroad service (including years before 1937).
7. First year worked for a railroad after 1936.
8. Total prior service months (service before 1937).
9. Total subsequent service (service after 1936).
10. Indication of continuous service since year of entry.
11. Prior service average compensation.
12. Total subsequent compensation.
13. Number of calendar years in which employee worked after 1936.
14. Year of death or retirement.
15. Identification of death or retirement.
16. Indication that employee had more than one employer in current year.
17. Last railroad employer.
18. Occupation code (128 ICC reporting divisions)
19. Service months in current year or year last worked.
20. Taxable compensation in current year or year last worked.
21. Service months in first preceding year.
22. Taxable compensation in first preceding year.
23. Service months in second preceding year.
24. Service months in third preceding year.
25. Service months in fourth preceding year.
26. Codes indicating changes in occupation in last 4 years.
27. Identification of individual years in which service performed after 1936.
28. Creditable compensation in current year or year last worked under Railroad Unemployment Insurance Act.
29. Indication of military service.