

REDISTRIBUTION OF INCOMES IN NORWAY

Note by Odd Aukrust

(Central Bureau of Statistics, Norway)

THE Research department of the Central Bureau of Statistics has completed a statistical tax incidence investigation for Norway 1960. The department is now preparing a publication (probably in English). This will contain (I) a discussion of the theoretical aspects of such investigations, (II) a survey of the practical difficulties that had to be overcome, (III) an analysis of the results.

I. Discussion of theoretical problems

The investigation is based upon the view set forth by Prof. Musgrave¹ that 'absolute incidence' is a meaningless concept; one has to measure 'differential incidence'. A comparison is made between the actual tax system of 1960 and a hypothetical tax system. The hypothetical system differs from the actual one by having only one tax on personal income and expenditures; this tax is a proportional income tax. 'Taxes' are here to be taken in a wide sense and include compulsory social insurance premiums, price subsidies (negative tax) and cash payments from social insurance. Prof. Musgrave thinks it will be convenient that the two tax systems compared should give the same total revenue. The author of this study thinks that the two systems rather should have equally contractionary effects on demand; but this difference in opinion has had no practical consequences for the actual calculations.²

When calculating how much a household 'pays' in indirect taxes this is seen from the consumer's point of view. That is – one tries to find out what (additional) amount of direct taxes would give the same disutility as the indirect taxes actually do.

When taking taxes 'paid' in this sense the total amount of taxes 'paid' by all consumers will be equal under the actual and

¹ 'Distribution of Tax Payments by Income Groups: A Case Study for 1948', *National Tax Journal*, March 1954.

² Calculations indicate that a hypothetical tax system that gives the same revenue as the actual one also is as contractionary on demand as the actual tax system.

the hypothetical tax system,¹ although governmental tax revenues might not have been so.

As a consequence of the viewpoint just mentioned, calculations concerning indirect taxes are based upon consumption data referring to the hypothetical tax system rather than the actual one. Also the calculations imply that the real value of savings is reduced by indirect taxes. In the forthcoming publication these problems will be dealt with in more detail.

The forthcoming publication will also discuss the shifting assumptions on which the investigation is based. These assumptions correspond to the traditional ones: income gross of direct taxes and prices net of indirect taxes will not be influenced by the change in tax system that is considered. One thinks it is possible to demonstrate that although these assumptions only can be considered an approximation, they are not as nonsensical as some critics have implied, at least not in connection with the present study.

II. Practical difficulties

Income data for this study were supplied from an investigation of the incomes of about 7,000 households. The data used were obtained from tax assessment material and are practically identical with 'adjusted gross income' according to American terminology. These data are undoubtedly somewhat dubious. Consumption data were supplied from a recent investigation of household expenditures covering 4,500 households for one month. (These households were all included in the above-mentioned income investigation.) An effort was made to compare expenditures, item by item, with national account data. This comparison shows that also the consumption data are somewhat dubious. On some items where the household data obviously were wrong (alcohol, tobacco, chocolate) rough corrections were made.

Savings were determined by subtracting the total consumption of each group of households from that groups income.

As mentioned above, consumption data referring to the hypothetical tax system were used. To get these a matrix of income and price elasticities was applied. (The same one for all

¹ This is only so within a simplified theoretical model, but the whole investigation is based upon this model. The less this model 'corresponds to actual life' the less significant our result will be.

household groups.) This matrix was arrived at by employing a method suggested by Prof. Frisch¹ to national account figures. The technique employed for these estimations involves some arbitrary choices by the man in charge of the calculations. The practical importance of this arbitrariness is not really known, but is believed to be negligible.

III. Results

The following table gives the main results of the investigation:

*Differential tax (actual tax less tax under hypothetical system) in per cent of income gross of tax**

Yearly income (in Norwegian kroner)	Single	Married couple without children	Married couple with one child	Married couple with two children	Married couple with three children	Married couple with four or more children	Other house- holds	All house- holds
1. 100-3,999	- 18.6	- 55.6	- 41.4	—	—	—	- 31.8	- 26.0
2. 4,000-7,999	5.6	- 21.2	- 13.0	- 18.6	- 24.0	—	- 5.9	- 2.3
3. 8,000-11,999	13.5	- 1.7	- 0.1	- 8.1	- 15.0	- 27.0	- 2.8	2.2
4. 12,000-15,999	15.1	6.7	2.1	- 4.8	- 8.3	- 22.5	- 0.9	2.1
5. 16,000-19,999	16.4	0.5	5.2	- 2.8	- 7.0	- 17.4	5.4	4.3
6. 20,000-23,999	19.1	14.3	7.4	0.9	- 4.4	—	3.7	6.6
7. 24,000-31,999	17.5	14.4	10.5	5.5	0.7	—	8.0	8.9
8. 32,000-39,999	—	14.3	9.9	10.6	10.2	—	12.0	11.7
9. Over 40,000	33.9	38.0	—	21.4	24.7	—	31.3	30.9
All	13.8	10.4	4.8	- 0.1	- 2.3	- 12.5	10.1	7.1

* Farmers' households, fishermen's households and old age pensioners' households are not included in this table.

¹ *Econometrica*, April 1959.