

OXFORD

**TOP**  
**INCOMES**  
OVER THE  
**20TH**  
**CENTURY**

*A Contrast Between Continental European  
and English-Speaking Countries*

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# 10

## Top Incomes in the Netherlands over the Twentieth Century<sup>1</sup>

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### 10.1 INTRODUCTION

As a contrast to the rising income inequality in Anglo-Saxon countries (Chapters 4 to 8), the Netherlands (NL) is of particular interest.<sup>2</sup> After attaining very high levels of unemployment in the early 1980s, it has seen an impressive growth of employment, and its unemployment rate has become closer to that of the US than to the EU average. It is natural to ask how far this change has involved increased inequality in market incomes. The developments of the past two decades have moreover to be seen in the light of the longer run evolution of the personal income distribution in OECD countries. For much of the first three-quarters of the twentieth century the dominant tendency had been for a decline in inequality. Pen (1979) summarized the experience of the Netherlands as ‘a clear case of levelling’. It is interesting to ask how far changes in the 1980s and 1990s have reversed the long-run tendency towards reduced inequality. How different was the end of the twentieth century from the beginning?

Taking a long-run and, in this book as a whole, a cross-country perspective on income distribution is important if we are to understand the underlying determinants, but implementing such an approach poses major problems in terms of data availability. As in the other chapters we draw here on the income tax returns, a source that has been relatively under-utilized. Its pros and cons have been discussed in earlier chapters. We use published tabulations for earlier years and the micro-data from tax records for more recent years. In the Netherlands, Schultz (1968) and Hartog and Veenbergen (1978) (see also Hartog 1983) constructed a long time series of income distribution estimates from 1914–72 using the published income tax statistics. As we will see, the results they present

<sup>1</sup> We are most grateful to Emiel Afman in particular and also to Cees Nierop for carrying out the calculations for the Dutch micro-data and to Statistics Netherlands for making the data available. We thank Joop Hartog, both for valuable comments on an earlier version and for his considerable assistance by supplying working sheets from his earlier study, Emmanuel Saez, Thomas Piketty, and Fabien Dell for their most helpful comments.

<sup>2</sup> See Atkinson and Salverda (2005) for a direct comparison of the Netherlands and the UK.

regarding top shares are less detailed and differ slightly because of a different determination of the population of tax payers that provided the basis for estimating the percentiles at the top.

The first aim of this chapter is to depict the development of the top part of the distribution of income over time. As other European countries, the Netherlands lost its important colonies during the twentieth century; in particular, Indonesia obtained independence quickly after the Second World War. The Netherlands also had significant incomes policies for part of the post-war period, and considerations of income inequality and protection still play a considerable role in present day policy making. The Dutch wartime experience differed because of neutrality in 1914–18 and occupation up to 1945 during the last war. Top shares are considered and compared for two distributions, those of gross incomes and disposable incomes. Second, the chapter aims to inquire into the composition of top income by its two major types: from capital and from labour, distinguishing on the capital side between income from activity in enterprise and pure property income from interest, dividend, etc. Wage moderation can be considered one of the hallmarks of the Dutch economy and it is interesting to find out whether this had any effect on the evolution of top shares. In addition, the chapter discusses the rate of taxation on top shares in gross incomes.

In Section 10.2, we describe the data and methods, building on the work of Schultz, Hartog and Veenbergen, but bringing the series up to date by using the Income Panel Survey micro-data from 1977. Section 10.3 portrays the evolution of the top shares of gross incomes and disposable income including the ‘shares within shares’, which do not rely on control totals for income, and which provide a direct link to the theoretical literature on the Pareto distribution. In Section 10.4, we present the results for the composition of top incomes by source of income that enables the cross-country comparison, but which allows the reader to draw conclusions about the Netherlands separately. In Section 10.5, we summarize the findings regarding the evolution of top incomes over the twentieth century, discuss what seems specific to the Netherlands and suggest questions for further research.

## 10.2 DATA AND METHOD

In this section, we first describe the sources of data on gross and net incomes and types of incomes for the Netherlands. These are (a) the income tax tabulations; (b) the income distributions based on the income tax data published by Statistics Netherlands, that is the *Centraal Bureau voor de Statistiek* (CBS); and (c) the Income Panel Survey (or *Inkomenspanelonderzoek: IPO*), a source of microdata that is also maintained by CBS for the period starting in 1977. All data are based on the administrative records of the tax authorities. Next, we present the method used to approach the data focusing on additions to the general discussion of Chapter 2.

## Data Sources

The income tax was introduced in the Netherlands on 1 May 1915, and the first data relate to the tax year 1915/16, taken as corresponding to incomes in 1914. We make use of the same sources as Hartog and Veenbergen (1978)—see Appendix 10A for a detailed list. The distribution of taxable (gross) incomes was initially published in *Jaarcijfers voor het Koninkrijk der Nederlanden* or (from 1925) *Jaarcijfers voor Nederland* (both referred to as *JC*), and then from 1931 in the annual *Statistiek der Rijksfinanciën* (*SR*). In the latter source, the tabulations are very detailed; in some higher ranges the numbers of incomes are in single figures. Statistics Netherlands published a less detailed distribution in a volume *Statistiek der Inkomens en Vermogens in Nederland* in the 1930s, containing distributional data classified by local communities. Notably, up to 1946 we used the more detailed data that Hartog and Veenbergen had gathered from Statistics Netherlands, in particular for the amount of income tax paid. The data relate to tax units, combining the incomes of husbands and wives, and including the non-labour income of under-age children. The tables show the amounts of tax deducted, enabling the computation of net of tax income by range of gross income (not by range of net income) and therefore the effective tax rate on gross income. Appendix 10C presents the detailed data of Hartog and Veenbergen, which have not been published systematically before.<sup>3</sup>

According to the explanatory notes to the tables in early years, the assessment was based on income sources existing at 1 May of each year, but later the notes refer to income in the preceding year. According to *JC* (1937: 196) ‘in general the figures relate to the preceding year’. The notes to *JC* (1943–46), say (in English) ‘These figures relate in general to the incomes received in the calendar year preceding the fiscal year’ (p. 342). This indicates that the figures for, say, 1938/39 relate to the calendar year 1937. This is the procedure followed by us from 1915/16, taken to represent 1914, to 1940/41, taken to represent 1939. Corroborative evidence is provided by the footnote attached to the figure for 1938/39 (*SR* 1940: table XVI, n. 12) attributing the rise from 1937/38 to the effect of the devaluation of 28 September 1936. It also is consistent with Hartog and Veenbergen (1978). It appears that the timing of the statistical observation then changed with the introduction of a new income tax regime from 1 January 1941. Data for 1941 and 1946 are taken as relating to those years.

From 1950, the income tax data formed the basis for an official analysis of income distribution covering in principle the whole population, published as *Inkomens-en Vermogensverdeling* (*IenV*). Results are also published in *JC*. As described, for example, in *Inkomenverdelings 1959 en vermogensverdeling 1960*, the estimates of the distribution are derived from tax forms (income and property tax) and are based on a sample for incomes below 30,000 guilders

<sup>3</sup> Hartog had gathered this information for Hartog and Veenbergen (1978). We are immensely grateful to him for keeping these data for such a long period, for making them available to us, and allowing us to publish them in Appendix 10C.

and property below 300,000 guilders, with complete coverage above these limits. The CBS, with access to the individual data, was able to carry out detailed analyses. Tabulations are given, for example, by 'total income' (*totaalinkomen*), by 'typical income' (*kerninkomen*), and by 'spendable income' (*besteedbaar inkomen*). Total income is gross income before deduction of tax or social contributions for both primary and secondary incomes, i.e. income from labour, pension, unincorporated enterprise, capital, property as well as social security, including benefits paid to the employee by the employer, minus expenses necessarily incurred in obtaining this income minus losses not already deducted, fiscal deductions (except those related to private houses), and certain personal obligations (but not pension contributions). Information on spendable income by range of spendable income, is available from 1959. Spendable income includes imputed rent on owner occupied houses, with the exception of 1970–79 when no information on housing is available<sup>4</sup>, and deducts income tax and social security contributions, interest paid and deductions for private houses (e.g., the interest on mortgages). The data are taken to refer to the year indicated: i.e., the *Inkomensverdeling 1958* figures relate to 1958. This is again consistent with Hartog and Veenbergen (1978).<sup>5</sup>

The methods of analysis and presentation by CBS have varied over the years. For example, in 1964, there was a change in the treatment of part year incomes (including part year tax units). Whereas part year income had previously been converted to an annual equivalent, the 'assessment to time proportion' was introduced in that year. Subsequently, tax units were allocated to intervals on the basis of their annual income but only actual income was added to the amounts. The treatment of part year incomes affects the distribution as a whole, but has only a modest impact on top shares, so no break is shown in the diagrams<sup>6</sup>. Changes were made in the unit of analysis. The unit of analysis up to 1979 is the tax unit, or '*inkomenstrekker*', as in the tax data. After 1979 the CBS analysis was carried out in terms of households, and the published tables provided less detail at the top, although a special analysis was made for 1980–84 that gave the distribution by disposable income for full year tax units (Kleijn and Van de Stadt 1987: 12). Households are defined in economic terms meaning that people live and spend their incomes together though they may be taxed separately, e.g., old parents or adult children living with the family. For this reason, we have used micro-data from the Income Panel Survey for the period from 1977, since those data, though also primarily aimed at the analysis of households, allowed us to reconstruct the concept of the tax unit for these years. In 1979 the *IenV* data give only full year incomes, so that there is in fact no overlap (the *IenV* series for total income ending in 1975).

<sup>4</sup> Note that the addition of imputed rent goes together with the subtraction of tax-deductible costs related to housing (particularly interest paid on mortgages). Usually the latter is quantitatively much more important than the former resulting in lower incomes where housing is taken into account.

<sup>5</sup> Although they do not give a figure for 1941 (from *JC* 1947–50: 268).

<sup>6</sup> The impact on the top shares was downward and amounted to 0.53, 0.26, 0.06, and 0.02 for the top 10%, 5%, 1%, and 0.5% respectively.

### The Income Panel Survey (IPO)

The *IPO* is a set of micro-data based on the annual income tax files, combined with other administrative sources such as those covering rent subsidies, student grants, and child allowances. The survey comprises detailed personal and demographic information that is combined to form household incomes. Instead of using the household concept of *IPO*, which has the economic rationale of joint spending, we combined the personal data into tax units following our consistent definition over the long period. The dataset does not include information on the educational attainment of individuals, nor on the number of their working hours. The survey was originally set up as a random sample of the population aged 15 and over based on house address leaving out people on boats or in mobile homes. In that form, it covered the years 1977, 1981, and 1985. The legal shifting of student grants from parents to the students in 1986 induced an increase in the number of households with an income. In 1989 the restriction on boats and mobile homes was dropped and since then *IPO* has been available for all individual years and taken the characteristics of a panel survey with some 200,000 respondents, including approximately 75,000 'core persons' who are supplemented by the members of their households (*CBS* 2000: 5). Nevertheless numbers at the very top can become so small that some year-on-year volatility cannot be excluded as substantial individual settlements with the tax inspector will gain more weight (the Dutch data will be more sensitive because of the smaller numbers compared to larger countries). The *IPO* panel has been corrected for immigration flows since 1990. The respondents are re-weighted to make the survey nationally representative in terms of household incomes (this does not necessarily hold for the years preceding 1990). Total income and disposable income are defined as above. Both income concepts exclude realized capital gains or compensation in the form of stock options as these were not subject to income taxation. *IPO* also distinguishes between various sources of income including labour income, income from business activity, from property and from social transfers and pensions.

### Changes in Tax Legislation and Statistical Presentation

The form of tax legislation affects the comparability of the figures both across countries and internally across time in the Netherlands. Hartog and Veenbergen (1978) describe three fiscal regimes: the 1914 Act, the 1941 Act, and 1964 Act. As they note, the 1914 legislation was in effect for a long period, allowing continuity in data collection. The 1941 Act changed, among other aspects, the treatment of 'new sources' of income. Under the initial legislation, existing sources of income were taxed on the basis of income in the preceding year, but a prediction was made of the income from new sources. After 1941 only past income actually received was included. The 1964 Act legally endorsed the changes of 1941 which had been introduced under German occupation.

The tax treatment of households evolved as follows (see Pott-Buter and Tjzens 2002). From the start in 1914–72, the basic principle was to tax the incomes of married persons as one income, although some changes were made to the way they were added together, initially (1941) to influence the level of taxation between couples and singles and later (1962) to also stimulate the employment participation of women<sup>7</sup>. From 1973 on, the income from labour of married women was taxed individually (from 1976 extended to disability benefit) while all other types of income as well as tax deductions not related to labour still had to be declared by the man or, later, the highest earner in the household. During the period 1973–99, several important changes were made to the practice of applying the principle with important effects, on the one hand, on female (part-time) employment participation—which is outside the scope of this contribution—and, on the other hand, also on the demarcation of the household. Under certain conditions, people living together without formal marriage can nowadays opt for ‘fiscal partnership’ and be treated on the same basis as married couples. The number of such new partnerships, however, remained very limited during the period under study and started to increase only after the major revision of the tax system in 2001<sup>8</sup>, which is after the end of the period covered here.

### Summary of Data

The main features of the data are summarized in Table 10.1 and the years of coverage are illustrated in Figure 10.1. The main differences over time may be summarized as follows:

- 1914–46: From tabulated income tax data, published in *JC* and *SR*; information on gross income and net of tax income (by range of gross income), presented in a rather uniform format, with break in continuity in 1941; as we effectively came to use the data provided by Hartog and Veenbergen because of their greater detail, the source is best indicated as *HV*.
- 1950–75: From tabulated data in *IenV* with a slight break in continuity in 1964; information on gross income and, from 1959, on spendable income; various changes in the format of the presentation;
- 1977–99: Information on gross income and spendable income from *IPO* micro-data, apparently with better coverage since 1989.

We have therefore a three-part series, as in the UK but in contrast to the unified series for France constructed by Piketty (2001).

<sup>7</sup> In 1962 a change was made to stimulate female employment participation: a man would still pay the income tax on both incomes but could deduct one-third of his wife’s labour income up to a certain maximum (2000 guilders in 1962) (Pott-Buter and Tjzens 2002: 21).

<sup>8</sup> The new system enables tax optimisation across partners in a household as partners can now decide to spread tax deductions.

**Table 10.1** Overview of income tax data sources for the Netherlands

Geographical coverage:	Kingdom of the Netherlands; does not include (ex-)colonies, European territory only.
Unit of analysis:	Tax unit, essentially married couple or single adult (though nowadays people may choose 'fiscal partnership' without marriage but this seems quantitatively unimportant up to 1999).
Coverage of population:	Tax data (up to 1946) restricted to taxpayers; <i>IenV</i> and <i>IPO</i> seek to cover whole population
Definition of income:	Total gross income and total disposable income.
Processing delays:	Generally based on final figures as agreed by the tax authorities; publication usually 5–6 years after T.
Number of ranges:	In <i>HV</i> data typically around 27 ranges, increasing to 38 in 1930, in <i>IenV</i> the number of ranges varies from 15 to 44. <i>IPO</i> has micro-data.
Limit on numbers in cell:	No limit in income-tax tabulations, lowest positive number 1 taxpayer. Results from <i>IPO</i> cannot be published for less than 100.
Information on tax unit composition:	Distribution classified by married/single from 1930. The <i>IPO</i> surveys present more detail such as age and other members of the household except the couple.
Information on net incomes:	(1) Distribution of spendable income by range of spendable income available for 1959–1984 in tabulations (based on <i>IenV</i> ) but for full-year incomes only, and for 1977–1999 from <i>IPO</i> ; (2) Net of tax income by range of gross income available from 1914 with few missing years.
Information on source of income:	<i>IenV</i> for the years presented here and <i>IPO</i> .

## Methods

The use of the income tax data to study the distribution of income raises a number of methodological problems, as has been described in Chapter 2. As will be evident below, our approach involves compromises between what would be the best measure of the income distribution at a point in time and the desire to compare with quite distant periods in the past (the beginning of the twentieth century).

The basic limitation is that, for many years, the tax data give only partial coverage of the population. Here we follow two approaches, which we can associate with Kuznets and with Pareto. The approach of Kuznets (1953) was to compare the income tax data with countrywide estimates of the total population and of the total income. In the case of the Netherlands this means that we take the 679,110 tax units in 1914 and express them as a percentage (23%) of the estimated total number of tax units. Similarly we take their total income of f1309 million and express it as a percentage of estimated total income, which gives 60%. The key issue here is then the derivation of the control totals for total tax units and total income. These reference totals are discussed below.

The second method focuses on the distribution within the top group. If we have a control total for population, we can calculate for example the share of the top 1% within the top 10%. This gives a measure of the degree of inequality among the top incomes. As explained in Chapter 2, this method can be associated



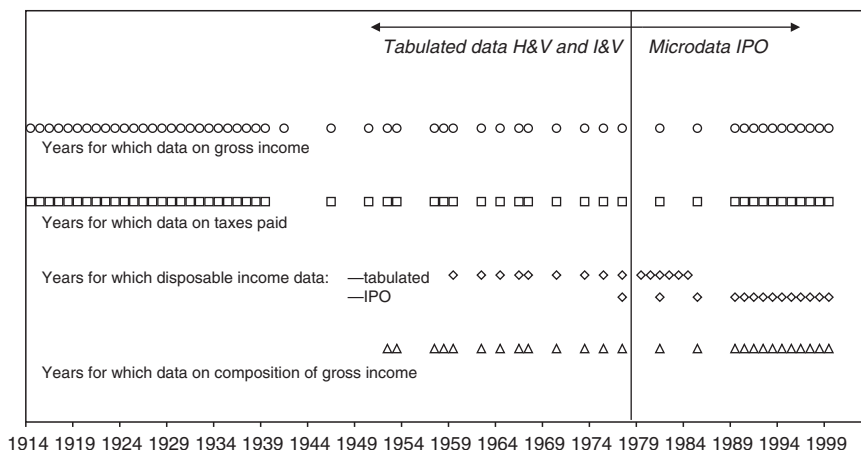


Figure 10.1 Years for which data in the Netherlands, 1914–99

with Pareto. Suppose that the upper tail of the distribution approaches the Pareto form: i.e., that the cumulative distribution  $F$  is such that  $(1-F)$  is proportional to  $y^{-\alpha}$ , where  $I$  is income. If we assume that this holds exactly within the top income group, then this implies (see equation 2.1e in Box 2.1) that the share of the top 1% within the top 10% is  $(0.1)^{(1-1/\alpha)}$ . The same value would be obtained if we took the share of the top 0.1% in the top 1%. By taking the share within the taxpaying population, we do not need to estimate the total income, although we still need a total for the population. This method uses information on all ranges above (via the cumulative income share), in contrast to methods of calculating the Pareto exponent that use adjacent points on the cumulative distribution. For this reason, we shall refer to it as the Pareto-Lorenz coefficient, since it is the Pareto coefficient derived from the Lorenz curve without resort to the income cut-off level.

### Control Totals for Population

The first control total we are seeking is that for the total of tax units in the population. It should be stressed that the total number of tax units should not be confused with the total number of actual taxpayers, which may be considerably smaller. Tax units are defined by two principles: first, the potential of receiving one or more incomes which are in principle subject to taxation, and, second, the way incomes are considered as interrelated in taxation. Consequently, tax units are all married couples, with or without under-age children, and all single 'adult' persons over the age of 15. This differs from households in an economic sense to the extent that adult children living with their parents or old-age single parents living with their married children are considered separate tax units. In 1935 for example there were 1.3 million taxpaying units, whereas our estimated control

**Table 10.2** Top shares in gross income, Netherlands. 1914–99

	Top 10%	2nd vintile	Top 5%	Next 4%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%
1914	45.87	9.36	36.51	15.55	20.96	16.34	8.63	6.34	
1915	51.21	9.14	42.07	16.49	25.58	20.31	11.44	8.58	
1916	53.31	9.13	44.18	16.30	27.88	22.53	13.02	9.84	
1917	52.47	9.69	42.78	16.27	26.51	21.34	12.39	9.53	
1918	48.50	10.30	38.20	16.25	21.95	17.18	9.65	7.40	
1919	49.48	10.14	39.34	15.60	23.74	19.07	10.79	8.17	
1920	46.23	10.30	35.92	15.34	20.59	16.30	8.92	6.65	
1921	44.03	10.69	33.35	15.06	18.29	14.23	7.60	5.65	
1922	43.19	11.05	32.13	15.31	16.82	12.79	6.57	4.83	
1923	43.08	11.15	31.93	15.48	16.45	12.40	6.30	4.61	
1924	43.84	11.01	32.84	15.50	17.34	13.22	6.88	5.09	
1925	43.87	10.83	33.04	15.29	17.75	13.64	7.19	5.37	
1926	43.87	10.69	33.18	15.19	17.99	13.82	7.26	5.39	
1927	44.33	10.61	33.72	15.35	18.37	14.13	7.39	5.47	
1928	44.58	10.57	34.01	15.38	18.63	14.38	7.57	5.64	
1929	43.85	10.51	33.34	15.24	18.09	13.86	7.10	5.21	
1930	43.02	10.62	32.41	15.26	17.15	12.97	6.47	4.69	2.09
1931	42.18	11.07	31.11	15.52	15.59	11.51	5.47	3.90	1.70
1932	41.33	11.29	30.04	15.61	14.43	10.46	4.79	3.37	1.44
1933	41.19	11.28	29.91	15.71	14.20	10.24	4.63	3.24	1.38
1934	40.82	11.21	29.62	15.60	14.02	10.09	4.53	3.17	1.34
1935	40.69	11.15	29.54	15.53	14.00	10.10	4.55	3.18	1.33
1936	41.10	10.92	30.18	15.35	14.83	10.89	5.15	3.70	1.68
1937	41.92	10.69	31.23	15.18	16.05	12.06	6.13	4.57	2.41
1938	41.60	10.67	30.93	15.26	15.68	11.63	5.60	4.02	1.81
1939	42.02	10.73	31.28	15.49	15.79	11.64	5.54	3.93	1.71
1940									
1941	45.07	10.82	34.25	16.61	17.64	13.06	6.36	4.55	
1942									
1943									
1944									
1945									
1946	40.82	11.74	29.08	16.22	12.86	8.93	3.74	2.56	1.03
1947									
1948									
1949									
1950	36.74	10.58	26.16	14.11	12.05	8.59	3.80	2.65	
1951									
1952	36.95	10.50	26.45	13.83	12.61	9.13	4.22	2.94	
1953	36.76	10.62	26.14	14.15	11.99	8.44	3.69	2.57	
1954									
1955									
1956									
1957	33.98	10.23	23.75	13.36	10.39	7.20	2.98		
1958	34.88	10.27	24.61	13.32	11.29	8.03	3.62		
1959	34.20	10.31	23.89	13.46	10.43	7.23	3.05		
1960									
1961									
1962	34.12	10.18	23.93	13.36	10.58	7.39			

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1963									
1964	33.25	10.12	23.13	13.09	10.07	7.00			
1965									
1966	33.05	10.36	22.69	13.24	9.46	6.44			
1967	32.64	10.34	22.30	13.04	9.26	6.29			
1968									
1969									
1970	31.34	10.09	21.25	12.61	8.64	5.76	2.12	1.39	0.57
1971									
1972									
1973	28.37	9.97	18.40	11.49	6.90	4.48	1.59	1.02	0.36
1974									
1975	27.47	10.16	17.40	11.37	6.12	3.95	1.38	0.88	0.33
1976									
1977	27.81	10.46	17.35	11.34	6.01	3.81	1.26	0.77	
1978									
1979									
1980									
1981	28.46	10.89	17.57	11.73	5.85	3.66	1.28	0.81	
1982									
1983									
1984									
1985	29.10	11.09	18.00	12.09	5.92	3.65	1.21	0.77	
1986									
1987									
1988									
1989	28.48	10.86	17.62	11.92	5.70	3.52	1.19	0.78	
1990	28.20	10.87	17.33	11.76	5.56	3.42	1.09	0.68	
1991	28.11	10.85	17.25	11.71	5.54	3.41	1.14	0.73	
1992	27.99	10.86	17.13	11.62	5.50	3.39	1.14	0.73	
1993	27.96	10.98	16.97	11.73	5.24	3.15	0.98	0.60	
1994	28.28	11.10	17.18	11.85	5.33	3.21	1.00	0.63	
1995	28.45	11.13	17.32	11.95	5.37	3.23	1.00	0.61	
1996	28.24	11.02	17.22	11.83	5.39	3.28	1.06	0.69	
1997	28.21	10.98	17.23	11.77	5.46	3.34	1.11	0.72	
1998	28.03	10.97	17.06	11.76	5.29	3.21	1.00	0.61	
1999	28.09	10.96	17.13	11.75	5.38	3.28	1.08	0.69	

Note: Shading indicates violation of non-increasing density assumption.

total is some 4 million. To calculate total tax units, treating husbands and wives as a unit, we take the total population aged 15+ at a specified date and subtract the number of married females or the number of married men where this is smaller. (See Appendix 10B for the details.) This 'constructed total' would be a correct control total for tax units if all children under the age of 15 were dependent and all children aged 15+ and all adults (e.g. parents) living with a married couple formed separate tax units. This total is then compared with official estimates available for certain years. The total for tax units is typically less than the constructed total. Among the reasons for the difference is that the number of children under the age of 15 with their own income (for example from investments) is smaller than the number of children aged 15+ who have no independent income. Though independent taxation of income from labour was

introduced for husbands and wives, the married household has been the basic unit of income taxation until the very end of the period considered here.

We show in Table 10B.1 the constructed total and the number of income units recorded in the *HV*, *IenV*, and *IPO* estimates. *IenV* is systematically closer to the control total than *HV*, and while in the early years of *IPO* we notice a substantial shortfall, the total converged towards 95% of the constructed total at a time that the coverage was believed to be virtually complete. We have therefore taken as our *control total* a fixed proportion (95%) of the constructed total for all years (including *IPO*)—see Appendix 10B.

It should be noted that this approach does not allow for the existence in the tax data of part year incomes. Part year units (not to be confounded with part-time units comprising persons working less than full-time working hours) may arise for several reasons. People reach the age of 15 or die in the course of the tax year, people marry in the course of the tax year and cease to be separate units, or they may emigrate or immigrate. Official studies using the tax data often make corrections for such units. The *IenV* studies in a number of years converted part year incomes into annual equivalents.<sup>9</sup> A comparison of all incomes covered here with full-year incomes from the *IPO* data for 1999 shows a reduction of the number of tax units by no less than 10%, and of total gross income of f18 billion or 3%. Between the two distributions the top-decile share shifts downward by 1.4 percentage points from 28.1 to 26.7.

### Control Totals for Income

There are a number of reasons why the definition of income in the tax data does not coincide with that preferred for distributional analysis. Typical tax laws do not allow full deduction of all interest paid; on the other hand, social security payments may not be taxable in all countries—they are, however, in the Netherlands. The taxable income may refer to an earlier time period (which is why national account figures may include a reference period adjustment). The recorded taxable income may, moreover, differ from the true value on account of understatement. Finally, as already stressed, there are people not included ('non-filers').

The income tax statistics in the Netherlands have been relatively extensive in their coverage of the population for most of the period. Starting at about one-quarter of the control total in 1914, the percentage of taxpayers is about half for 1920–30, when a decline to one-third sets in. Since 1945 the coverage has increased from three-quarters to more than 90% from 1957 on. For the pre-Second World War period, the *CBS* has made estimates of the income of non-filers (*CBS* 1941: 14, 1948: 21), and these have been used directly. We are following here

<sup>9</sup> This may be done in at least two ways: we could treat a person present with an income of  $Y$  for half the year as 1 person with income  $2Y$  or as half a person with income  $Y$ . *CBS* applied both methods in different years.

Hartog and Veenbergen (1978). For the interim period (1946–75), we allocate to each non-filing tax unit a percentage (20%) of the mean income of filers, a method used by Piketty and Saez (Chapter 5) in the US. We continue this use for the *IPO* period though admittedly it applies to small numbers only. The resulting totals are shown in Table 10B.2.

### Composition of Income

The composition of income in the top shares refers to the source of income. Various sources can be distinguished in principle, though not always in the actual practice of income statistics. First, income can be earned as a wage or salary in exchange for the efforts of labour, as income from own enterprise as a self-employed owner or as a professional. It can also be property income arising as rent, interest or dividend from the ownership of houses, savings or shares, or it can be based on a social benefit.<sup>10</sup> Pensions and life insurance receipts have a complicated position in this respect, as they could be considered proceeds from property, which when put in a collective pension fund they are not in a formal sense. In the Dutch tax system such savings as well as their proceeds are tax deductible and often not even observed by the tax authorities; the receipts as pensions at later age are taxed as income. Ideally, one would focus on at least four types: labour, enterprise, property, and transfers (including pensions) as these relate directly to clear economic functions. It should be noted that the distinction by source of income is not identical to that by socio-economic category of the person receiving the income though they overlap to a large extent. For example, employees can have income from property or the self-employed can have some income from dependent labour, and both can receive a transfer.

No information on sources is available before *IenV*, starting 1946. Moreover, data are not available for all individual years; presentations vary and are more or less detailed. Importantly, for a long time dependent labour and (occupational) pensions were taken together in one category, both formally being proceeds from labour as far as income taxation is concerned. The distinction of pensioners as a socioeconomic category, offers some help but only very incidentally. It is no problem, however, to distinguish all sources in *IPO*. Consequently, we cover the post-war period incompletely up to 1977 but virtually completely since—naturally, as far as the observations of the tax system go.

### Gross and Disposable Income Distributions and the Tax Rate

We are interested in both gross and disposable income distributions, in the sense that the former embodies the implications of the market economy for individuals and that the latter represents disposable resources. Official statistics

<sup>10</sup> Some social transfers are tax exempt, e.g., student grants.

of 'spendable' income start in 1959, the concept referring to income after deduction of income tax and social security contributions, interest paid and mostly excluding additions and deductions related to owner-occupied houses. It should be stressed that we will focus on spendable income by ranges of that type of income, not by gross income. Consequently, when comparing gross and disposable incomes, we will be considering two different distributions and persons found in the top shares in one are not necessarily found in the top shares of the other.

In addition, we will consider income tax paid. For virtually all years since the start in 1914 information is available on the amount of tax paid by ranges of gross income. This enables us to estimate the effective tax rate paid by the top shares. Here we consistently compare for the same type of distribution total gross income on the one hand and taxes paid on the other. This disregards contributions to social security, which were non-existent before 1939. We focus on the tax rate because of its possible economic significance and do not consider after tax income shares, as the concept of income differs greatly from disposable income for most of the period. The calculated tax rate is the ratio of the tax paid to the income received by those in the top X%, and therefore corresponds to the average for the tax units found in the share disregarding the evolution within the share.

### Interpolation Methods

Where the basic data on which we are drawing are in the form of grouped tabulations, then, since the intervals do not in general coincide with the percentage groups of the population with which we are concerned (such as the top 0.1%), we have to interpolate in order to arrive at values for summary statistics such as the percentiles and shares of total income. The distributions typically show the number of tax units, and the total amount of income, or tax, in each of a number of specified ranges of income (e.g., 1000–1500 guilders), with an open-ended top interval. The standard practice, adopted by Piketty (2001), is to assume that the distribution is Pareto in form. This method has however the problem that, as discussed in Chapter 2, the information described above allows us to obtain more than one value for the exponent of the Pareto distribution, and hence different interpolated values. An alternative approach is based on placing upper and lower bounds. Gross upper and lower bounds on the Lorenz curve can be obtained by joining the observed points linearly or by forming the envelope of lines drawn through the observed points with slopes equal to the interval endpoints divided by the mean (see Chapter 2). Where there are detailed ranges, as in much of the early Dutch data, the results for the lower bound (linearized Lorenz curve) are normally very close to the upper bound (indistinguishable on the graphs drawn), but in other cases the differences can be more marked, depending on where the ranges fall in relation to the shares in which we are interested. In order to give a single estimate, we have used the

mean-split histogram. The rationale is as follows. Assuming, as seems reasonable in the case of top incomes, that the frequency distribution is non-increasing, then tighter, restricted bounds can be calculated (Gastwirth 1972). These bounds are limiting forms of the split histogram, with one of the two densities tending to zero or infinity—see Atkinson (2005). Guaranteed to lie between these is the histogram split at the interval mean with sections of positive density on either side, and this is the method applied in this chapter.<sup>11</sup>

This above approach has been applied to both gross and disposable income. For determining compositional shares or tax rates, however, this approach could not be applied. Though tax rates usually increase with income they do so in discontinuous steps following from the rules of the tax system and at each level they are linear in principle. Also deviations can happen because tax units will differ with respect to tax deductible amounts. Also, for composition not all types of income can show increasing importance with rising incomes; instead they have to sum up to 100%. As the best way to deal with this we simply choose a linear interpolation within the boundary class. The result may slightly underestimate the tax rate and the compositional shares of the types of income that tend to increase with income.

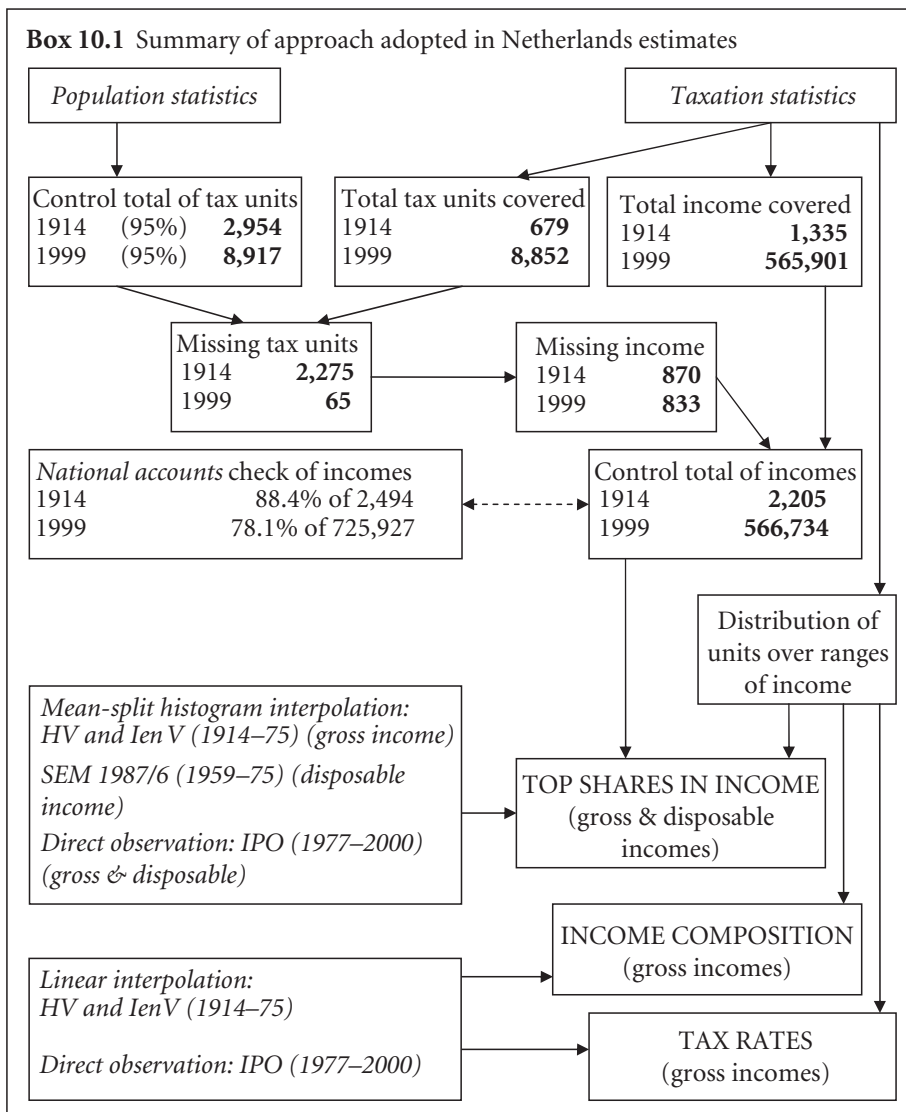
### Summary of Methods

Box 10.1 summarizes the approach adopted in this chapter, illustrating it with the first and last year of the period covered (Tax units are measured in thousands, incomes are measured in millions of guilders).

## 10.3 THE EVOLUTION OF TOP SHARES

In this section, we present the main findings for the top shares in the distributions of gross income and disposable income respectively. To provide a proper background to the developments at the very top of the income distribution Figure 10.2 depicts the evolution of the average income of all tax units on the basis of the same data. The income was deflated and the figure also shows the development of consumer prices. Real income declined during the two wars but more surprisingly it also showed a strong decline during the first half of the 1980s which was followed by an equally strong increase during the second half and a stagnation in the 1990s.

<sup>11</sup> We show by shading the (very small) number of cases where the mean for the relevant range exceeded the midpoint, thus contradicting the non-increasing density assumption. Only a few years (of the 1960s) seem to pose a problem



### Gross Income

Table 10.2 and Figures 10.3A and B summarise the results for the percentile shares of gross income covering the following groups: top 10%, top 5%, top 1%, 0.5%, and 0.1% (for the sake of clarity we show the top 0.05% in the table only). For the



## Top Incomes in the Netherlands

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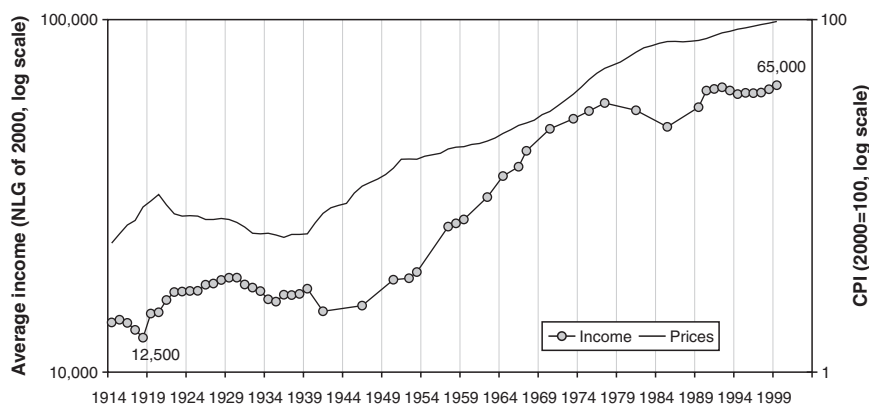


Figure 10.2 Real gross average tax unit income and consumer prices Netherlands, 1914–99

first three-quarters of the century, the share of top income groups fell sharply. The top 1% began with some 20% of total gross income, but by 1981 this share had fallen to under 6%. The share of the top 0.1% fell from around 10% to 1.3%. The two world wars seem to play a role, with initial upward movements followed by a steep decline. The country was fully involved in the second war while during the first war it was caught between the belligerent countries, which led to strong and continuous inflation (tripling of wholesale prices) and an initial surge of unemployment that was followed by an adaptation process (Lubbers 1926: 175–9). Exorbitant profits were an important issue at the time and may have contributed to the initial increase in the top shares and relatively high level of the Dutch top shares compared to other countries.

There is considerable similarity in the rate of fall compared to the UK (see Chapter 4), even the annual movements mirror each other to a remarkable degree and the levels reached in the 1970s are virtually identical. In the interwar period, for instance, the very top shares recovered during the 1920s, fell sharply in 1929–31, and then began to recover after the mid-1930s. Turning to the shares of the top 5% and top 10%, we see that the shares for the Netherlands tended to be relatively high compared to other countries, but it should be noted that the statistical coverage was already much more extensive from the start. It also appears that the fall in the 1950s and early 1960s was less, but sharper from 1970. The parallel movements found in Figure 10.3A suggest that the fall was concentrated particularly in the top 1% and above, a point which is illustrated by Figure 10.3C. This makes it all the more interesting that from 1977 to 1999 the *IPO*-based estimates show a remarkable stability in the share of the top 10%.

How far are these conclusions likely to be sensitive to data problems? The break for 1964 mentioned above appears to have a small effect only: 0.56% for the share of the top 10%, which was some 34%. The switch from the *IenV* to *IPO* estimates does not allow any overlap year, but the first *IPO* figures, for 1977, are mostly

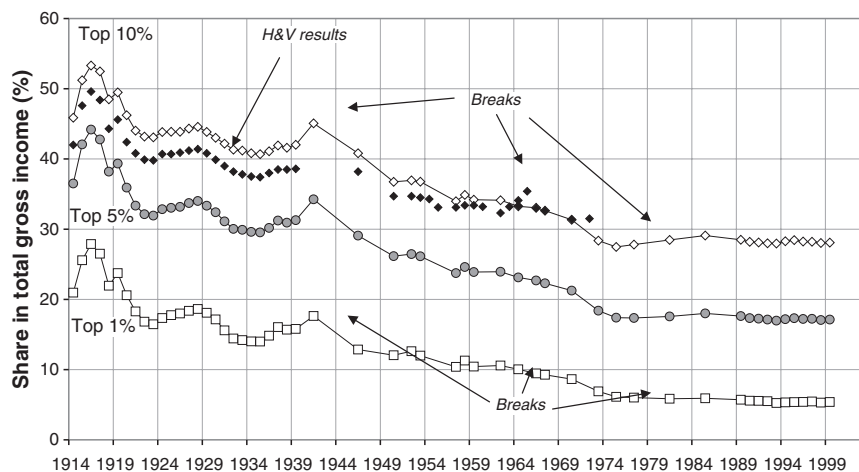


Figure 10.3A Gross income shares of top 10%, 5%, and 1%, Netherlands 1914–99

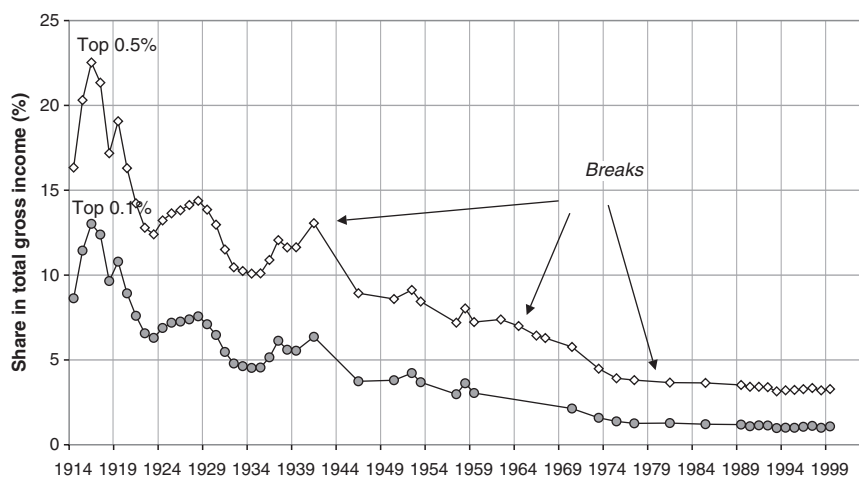


Figure 10.3B Gross income shares of top 0.5% and 0.1%, Netherlands 1914–99

closer to the *IenV* figures for 1975 than the latter are to the *IenV* figures for 1973. The estimates of the shares of the top 10% for the Netherlands differ from those of Hartog and Veenbergen (1978), shown by separate dots in Figure 3A, in that, to maintain comparability with the other chapters, we have used our own control totals and a different method of interpolation. The two series do, however, move closely together. Their estimates cover the period 1914–72. At the end of the period, the estimates are very close (less than half a percentage point apart).

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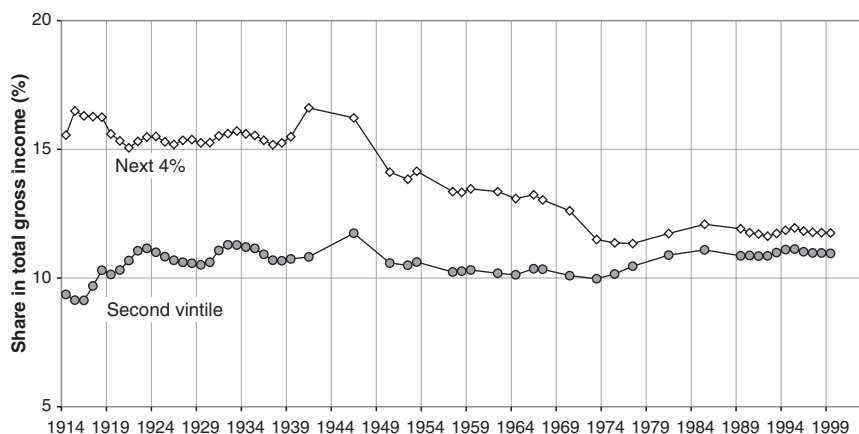


Figure 10.3C shares of next 4% and second vintile group, Netherlands 1914–99

Initially our estimates are about 3.5 percentage points higher, with the difference declining between 1939 and 1950 to around 2 percentage points and then narrowing. On this basis, we show a modestly larger fall in the share of the top 10% over the period as a whole. Hartog and Veenbergen did not disaggregate the top 10%, but they show (Table 2) the percentage of income recipients per income decile. For 1914 they show 1% of tax units receiving 20% of total income, which is very close to our figure; for 1972 they show 1% receiving 10% of total income, which is again very close to our figure.

### The 'Next' Groups

The changing distribution within the top 10% can be looked at another way: in terms of the shares of the 'next 4%' (of those in the top vintile group but not in the top percentile) and of the second vintile (those in the top 10% but not in the top 5%). Piketty (2001: 146) has emphasized that the income of these groups is largely derived from salaries rather than from capital income; different economic forces may therefore have been in operation. He shows that in France the share of the next 4%, which he labels the 'upper middle class', was around 15% at the beginning of the century and around 13–13.5% in the 1990s—a relatively modest reduction. The share of the second vintile was, if anything, higher at the end of the century than at the beginning. The evidence of Piketty and Saez for the US (Chapter 5) shows that the rise of the 1980s and 1990s was concentrated at the top. Whereas the share of the top 10% increased by some 10 percentage points, that of the second vintile was essentially stable.

In Figure 10.3C we show the shares of the 'next 4%' and the second vintile (here, and in subsequent graphs, we do not show series breaks explicitly). The share of

the next 4% started off around 16%, was around 14% in the period after the Second World War, but fell in the late 1960s and early 1970s, and is currently around 12%. The share of the second vintile group is remarkably stable, leaving aside a rise during the first ten years. Apparently, most of the inter-war decline of the top 10% is restricted to the top-1%, while its post-war decline is broader and covers the upper vintile as a whole.

### Shares Within Shares

Clearly, changes in the shares of top income groups can come about in part because of redistribution between them and the rest of the population and in part on account of alterations in the distribution within the top income groups. The within-distribution is shown in Figure 10.4A; and the corresponding Pareto-Lorenz coefficient in Figure 10.4B. We should note again that these ‘shares within shares’ do not depend on the control totals for income; they are therefore not affected by errors in the derivation of these totals. The movements for the two groups are strikingly similar, with a steady decline that levels off after the mid-1970s, continuing very slowly (better visible in Figure 10.4B). The early 1920s, the Depression years and the Second World War can be recognized as clear dips in the movement—these were also years with decreasing total income in the country. Examination of the shares within shares shows that what we are observing is not just redistribution from the top income groups to the rest of the population. The upper tail is changing in shape. The rise in the Pareto-Lorenz coefficient from around 1.5 in 1914 to around 3.5 in 1999 provides a direct link to the theoretical models that contain predictions about the evolution of this coefficient (see Chapter 2).

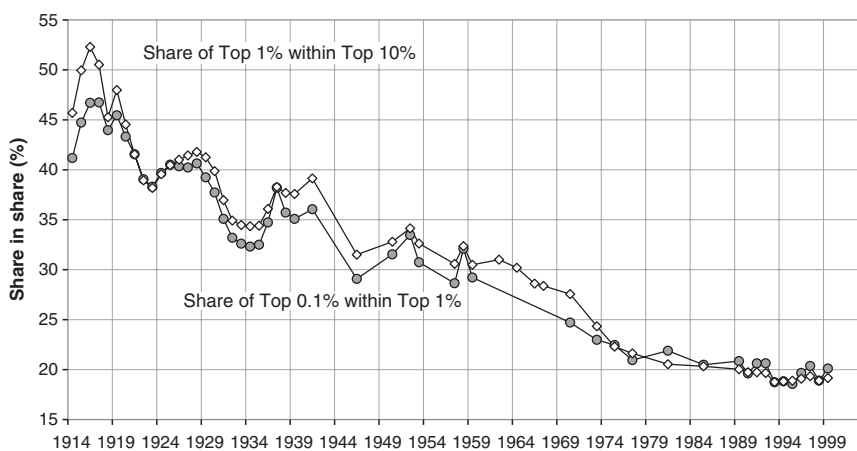


Figure 10.4A Gross income shares within shares, Netherlands 1914–99

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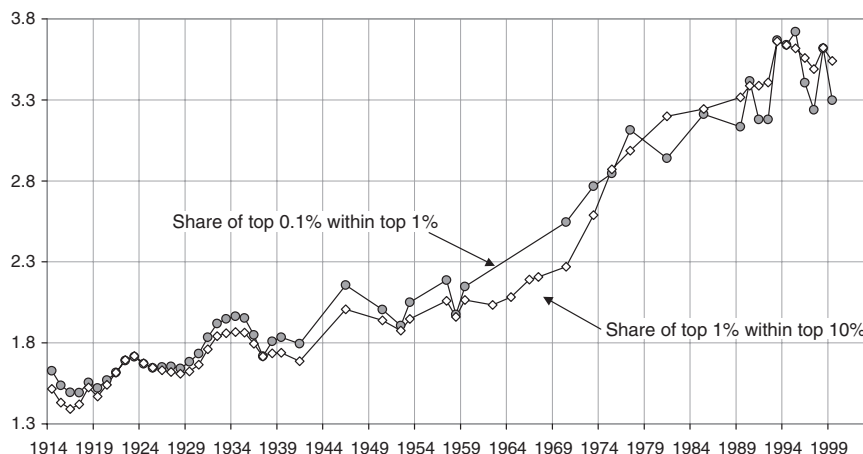


Figure 10.4B Gross income Pareto-Lorenz coefficients of gross incomes, Netherlands 1914–99

### Disposable Income

Evidence about the distribution of disposable income is more limited in time and detail. We focus on what Statistics Netherlands calls disposable or ‘spendable’ income. It represents income after deducting tax and social security contributions paid by the employee and adding social benefits including the public pension. It should be noted, however, that the above concept of gross incomes already includes social transfers, implying a higher level compared to spendable income than would be found in a comparison to primary or market incomes only, which do not comprise transfers. A ranking of disposable income by ranges of disposable income is available from 1959 on. It has been revisited by CBS in the 1980s to enhance consistency of the approach (Kleijn and Van de Stadt 1987)

Top shares in the distribution of disposable incomes are shown in Table 10.3, based on *IenV* and *IPO* with a clear break between the two, which is apparent in 1977 and 1981. The *CBS* figures relate only to full year incomes and as a consequence the same selection was chosen for *IPO* but applying the same shares of the control total of the population to arrive at similar groups for gross and disposable income.<sup>12</sup> There are two smaller breaks in comparability in the *IenV* period because of exclusion or inclusion of owner-occupied housing incomes and costs. From the start of the period a decline is found until the mid-1970s, followed by stable levels for each of the top shares. Figure 10.5 depicts the two shares within shares. Again both change very closely together, but now the decline

<sup>12</sup> Likewise the total of disposable income was complemented with missing incomes in the same way as was used for for non-filers of gross incomes. For *IenV* this was done on the basis of full year incomes, thus including part year incomes in the non-filers, while for *IPO* the basis was all incomes.

**Table 10.3** Top shares in disposable income by range of disposable income, Netherlands 1959–99

	Top 10%	2nd vintile	Top 5%	Next 4%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%
1959 (incl)*	30.20	10.78	19.42	12.79	6.63	4.12	1.35	0.84
1960								
1961								
1962 (incl.)	30.03	10.60	19.43	12.62	6.81	4.27	1.44	0.92
1963								
1964 (incl.)	29.50	10.73	18.77	12.39	6.38	3.97	1.31	0.83
1965								
1966								
1967 (incl.)	28.52	10.46	18.06	11.94	6.12	3.81	1.28	0.81
1968								
1969								
1970 (excl.)	27.45	10.20	17.25	11.48	5.77	3.58	1.19	0.76
1971								
1972								
1973 (excl.)	25.34	9.96	15.38	10.65	4.73	2.84	0.92	0.59
1974								
1975 (excl.)	24.54	9.87	14.67	10.29	4.38	2.61	0.81	0.50
1976								
1977 (excl.)	24.77	9.97	14.80	10.35	4.45	2.65	0.79	0.47
1977 IPO	24,56	9,98	14,58	10,33	4,26	2,49	0,71	0,42
1978								
1979 (excl.)	25.32	10.06	15.26	10.54	4.72	2.85		
1979 (incl.)	24.38	9.74	14.64	10.10	4.54	2.75	0.85	0.51
1980 (incl.)	23.99	9.73	14.26	9.98	4.28	2.55	0.61	0.31
1981 (incl.)	24.18	9.82	14.36	10.05	4.31	2.60	0.86	0.55
1981 IPO	24,68	10,13	14,55	10,40	4,14	2,41	0,71	0,43
1982 (incl.)	24.00	9.85	14.15	10.09	4.06	2.34		
1983 (incl.)	23.59	9.60	13.99	9.87	4.12	2.42	0.72	0.43
1984 (incl.)	23.87	9.67	14.20	10.02	4.18	2.47		
1985 IPO	25,16	10,24	14,92	10,63	4,29	2,49	0,72	0,44
1986								
1987								
1988								
1989	24,96	10,22	14,74	10,56	4,18	2,43	0,73	0,45
1990	25,57	10,59	14,98	10,42	4,57	2,74	0,88	0,56
1991	25,36	10,24	15,11	10,60	4,51	2,70	0,87	0,56
1992	24,97	10,18	14,79	10,46	4,33	2,56	0,78	0,48
1993	24,84	10,25	14,59	10,43	4,16	2,42	0,70	0,43
1994	24,95	10,28	14,67	10,46	4,22	2,47	0,74	0,45
1995	24,95	10,23	14,72	10,45	4,27	2,51	0,77	0,48
1996	24,99	10,28	14,72	10,47	4,25	2,50	0,76	0,48
1997	24,78	10,17	14,61	10,31	4,30	2,58	0,86	0,58
1998	24,58	10,19	14,39	10,30	4,09	2,38	0,71	0,43
1999	24,73	10,22	14,51	10,33	4,18	2,48	0,78	0,49
full-year incomes only								

Notes: These figures include full year incomes only,\* excluding and including income and costs from self-owned housing.

Top Incomes in the Netherlands

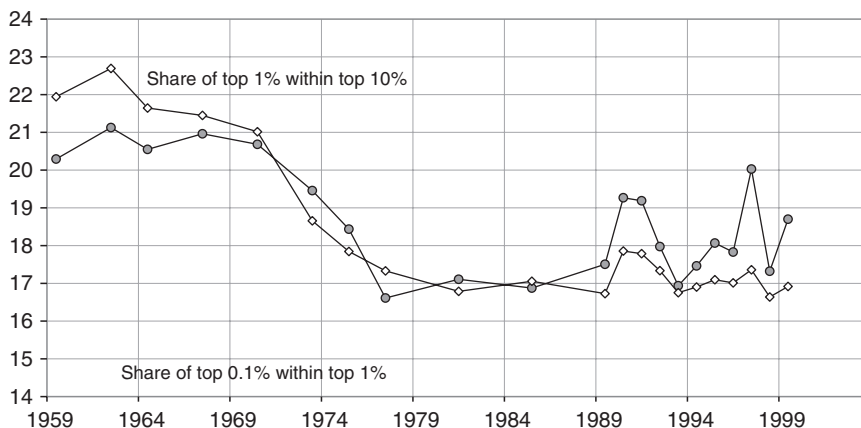


Figure 10.5 Disposable income shares within shares, Netherlands 1959–99

stops at the end of the 1970s while before for gross incomes it continued at a slow pace until the end of the period. The level breaks between *IenV* and *IPO* do not seem to affect the within-shares.

By dividing the top shares in the disposable distribution by those in the gross or before tax distribution, we get a ratio that measures the arithmetic impact of taxation (and social contributions) on inequality as measured by top shares—see Figure 10.6. It can be referred to as the ‘implicit tax rate’ relative to the overall situation though it should be clear that the persons involved are not necessarily identical. The ratios for the higher shares tend to move upward at a very slow pace during most of the period; those for the top 10% remain basically unchanged. We come back to the tax issue in the next section.

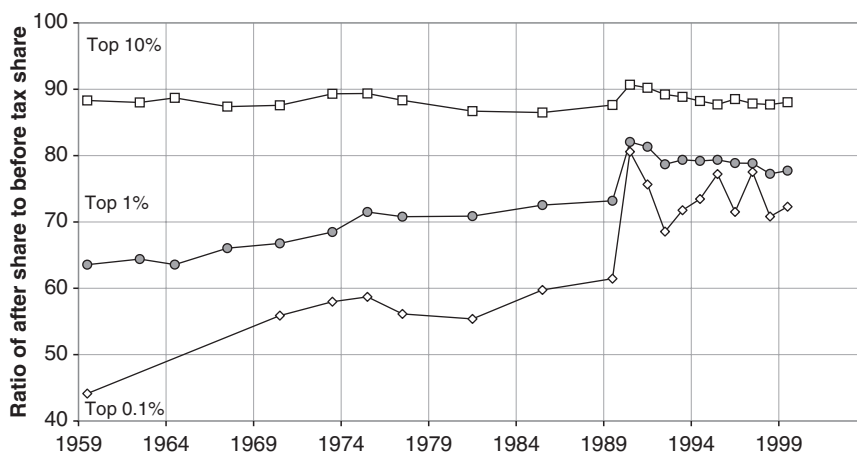


Figure 10.6 Ratio of disposable income to gross income top shares, Netherlands 1959–99

### Summary

Summarizing the section as a whole, we can say that gross income top shares shrunk very substantially up to the mid-1970s and have largely remained at a stable level since. The two world wars seem to have acted as turning points in this evolution. No recent increase is found for the Netherlands as in the Anglo-Saxon countries. Disposable income top shares show a similar movement over the shorter period since 1959 for which information is available.

## 10.4 COMPOSITION AND TAXATION

Now we turn to the income composition of the top shares and the incidence of taxation.

### Contributions of Capital and Labour Incomes

Compositional data by source of income are available since 1952. For the period since 1977 we could use the micro-data from *IPO*, for the earlier years most but not all *IenV* publications contain relevant information. Table 10.4 details the changing composition for four types of income: from labour, enterprise, other property (rents, dividends, and interest), and other incomes (pensions, transfers). It should be noted that definitions of types of income are not entirely unchanged over the period. Particularly, pensions were not distinguished from labour income initially and shifted to other incomes from 1967 onward. Wages are defined as much as possible as including the income from labour received as a director, professional or freelance worker.

Figure 10.7 presents the most striking finding: the evolution for the total and the three top shares of the contribution of capital income, which comprises income from enterprise as well as from property—labour income, pensions, and transfers complement this. Capital shares are much higher for the top shares but a dramatic decline is found, as in other countries studied in this volume. Over a period of almost 50 years the capital share in total income plummeted from 34% to 8%. The decline affected all top shares though the time pattern shows interesting differences. For the total as well as the top decile and top vintile the decline is concentrated in the first 25 years and it is relatively limited during the second half. The pattern is different for the very top shares. They do show some decline during the first half of the period but most of it seems to occur in the second half.

Figure 10.8 shows the shifting composition at the very top in more detail. Apparently, first property income was squeezed and then income from enterprise and wages traded places; other incomes managed to maintain their share. At the turn of the century wage earnings are the predominant category of income in



**Table 10.4** Composition of gross income top shares by source of income, Netherlands 1952–99

	1952	1953	1957	1958	1959	1962	1964	1966	1967	1970	1973	1975	1977	1981	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
<b>Top 0.1%</b>																											
Wages*	26.1	27.8	33.7	25.8	29.7					21.4	25.7	28.4	25.9	33.7	33.8	36.9	38.4	32.8	37.7	53.0	56.9	60.9	63.8	65.8	60.0	62.2	
Enterprise	40.9	47.4	42.5	37.0	44.3					47.5	53.3	53.5	54.9	40.5	37.7	37.0	38.9	40.4	36.9	25.0	26.0	25.3	22.8	19.1	28.8	25.3	
Property**	30.1	22.5	21.2	34.6	23.3					18.5	14.3	15.0	12.5	20.7	20.3	21.7	13.1	12.0	14.3	13.1	9.0	9.3	9.0	11.8	7.1	4.0	
Other***	2.9	2.3	2.6	2.6	2.7					12.5	6.6	3.1	6.7	5.1	8.2	4.4	9.6	14.8	11.1	8.9	8.1	4.5	4.3	3.2	4.1	8.5	
<b>Top 0.5%</b>																											
Wages*	25.9	27.4	30.8	26.1	27.9	26.2	24.8	26.7	24.0	23.1	30.6	36.1	36.4	42.5	46.1	45.6	48.5	48.0	49.4	59.2	62.5	64.0	62.5	62.7	65.2	66.1	
Enterprise	47.0	51.6	48.7	44.2	50.6	56.6	59.7	54.7	53.4	51.6	51.8	47.6	48.5	36.3	35.1	36.9	33.6	33.1	31.5	24.0	23.6	24.4	25.3	25.4	25.1	24.0	
Property	24.8	18.3	17.9	27.0	18.7	16.2	14.4	12.9	15.8	15.6	10.5	11.4	9.5	15.0	11.7	12.3	9.6	9.1	10.7	9.1	6.4	6.4	6.8	7.2	5.1	4.2	
Other	2.3	2.7	2.5	2.7	2.8	0.9	1.1	5.8	6.8	9.7	7.1	4.9	5.6	6.2	7.1	5.2	8.3	9.9	8.4	7.7	7.5	5.2	5.5	4.6	4.6	5.8	
<b>Top 1%</b>																											
Wages*	26.1	27.8	31.1	27.6	28.5	27.9	27.7	29.8	27.3	26.8	35.8	41.8	45.0	49.7	51.5	50.6	53.4	53.2	55.9	64.0	65.6	65.7	65.9	67.0	66.7	69.0	
Enterprise	49.2	52.9	50.1	46.2	51.7	56.6	58.7	53.9	51.7	49.3	47.1	41.7	40.8	31.5	31.5	33.5	30.7	29.6	26.7	21.4	21.8	22.8	22.9	22.6	24.2	21.5	
Property	22.3	16.6	16.2	23.5	16.7	14.7	13.0	11.7	15.2	14.7	9.1	10.3	8.2	12.3	10.0	10.0	8.1	8.1	8.8	7.5	5.7	5.6	5.7	5.7	4.6	3.9	
Other	2.4	2.7	2.5	2.7	3.0	0.9	0.6	4.6	5.9	9.2	8.0	6.2	6.0	6.5	6.9	5.9	7.7	9.1	8.6	7.1	7.0	5.9	5.5	4.7	4.6	5.7	
<b>Top 5%</b>																											
Wages*	32.8	35.3	39.0	37.3	37.0	39.2	40.7	43.6	40.6	40.3	49.6	54.8	63.0	65.2	64.5	63.7	65.8	66.9	68.8	72.6	74.0	73.2	73.8	75.1	74.9	76.4	
Enterprise	49.1	50.3	47.2	45.2	48.4	49.2	48.6	44.8	41.3	37.7	34.8	28.5	24.3	19.3	20.5	22.5	20.4	19.3	16.8	14.3	14.4	15.7	15.5	14.6	15.3	14.4	
Property	15.7	12.1	11.6	15.1	11.8	10.9	9.4	8.4	12.0	11.9	5.8	7.1	5.4	7.6	6.3	6.1	5.7	5.5	5.9	5.0	3.7	4.1	3.9	3.9	3.6	3.3	
Other	2.4	2.3	2.2	2.4	2.8	0.7	1.3	3.2	6.1	10.0	9.8	9.7	7.4	7.9	8.6	7.7	8.2	8.2	8.6	8.0	7.9	7.0	6.8	6.4	6.2	5.9	
<b>Top 10%</b>																											
Wages*	39.0	41.3	45.2	44.4	43.7	46.6	48.5	51.2	48.0	47.7	56.2	60.8	69.6	70.8	69.8	69.2	70.9	71.8	73.0	76.1	77.2	76.5	77.1	77.9	77.8	78.8	
Enterprise	45.9	46.7	43.2	41.9	44.0	43.7	42.2	38.8	35.3	31.7	28.6	22.8	18.4	14.7	15.7	17.2	15.7	14.6	12.8	11.0	11.1	12.3	11.9	11.5	12.1	11.6	
Property	12.8	10.0	9.5	11.9	9.7	9.1	7.7	7.0	10.3	10.0	4.2	5.8	4.1	6.0	5.0	4.9	4.6	4.7	4.9	4.2	3.2	3.6	3.3	3.3	3.1	2.9	
Other	2.4	2.0	2.1	1.7	2.7	0.7	1.6	3.0	6.5	10.6	11.0	10.8	7.9	8.6	9.4	8.7	8.7	8.8	9.3	8.7	8.6	7.6	7.7	7.3	7.0	6.7	
<b>Total</b>																											
Wages*	61.3	62.0	68.2	66.9	67.4	70.9	70.2	72.3	66.5	60.4	63.3	62.6	67.5	65.8	63.5	63.8	64.7	65.0	64.8	65.9	66.4	66.9	67.6	68.1	69.1	70.3	
Enterprise	26.9	27.2	23.6	23.5	23.6	22.1	21.2	19.0	16.9	15.0	12.5	10.3	8.6	6.9	7.1	7.4	7.1	6.8	6.1	5.5	5.9	6.4	5.9	5.9	5.7	5.6	
Property	6.6	5.7	4.8	6.0	5.2	4.7	4.1	3.7	5.8	5.9	1.9	2.9	2.5	3.6	3.2	3.3	3.3	3.3	3.5	3.2	2.8	2.9	2.8	2.7	2.5	2.4	
Other	5.2	5.1	3.4	3.7	3.8	2.2	4.5	5.0	10.7	18.7	22.3	24.2	21.4	23.6	26.3	25.5	25.0	24.9	25.6	25.3	25.0	23.8	23.4	22.7	21.6		

\* Wages include occupational pensions in 1953–1966 (estimated at 4% in 1952 and 6% in 1966), later these are included in other incomes ('Other'). In 1952–1975 and 1989–1991 and 1993–1999 directors' incomes are included in wages; this type of income shows great annual volatility. \*\* Property income includes income from interest, real estate etc.; these incomes are extremely volatile at the very top. \*\*\* Other incomes balance wages, enterprise and property income to arrive at 100%. Sources: 1952–1975: *IenV*; 1977–1999: *IPO*

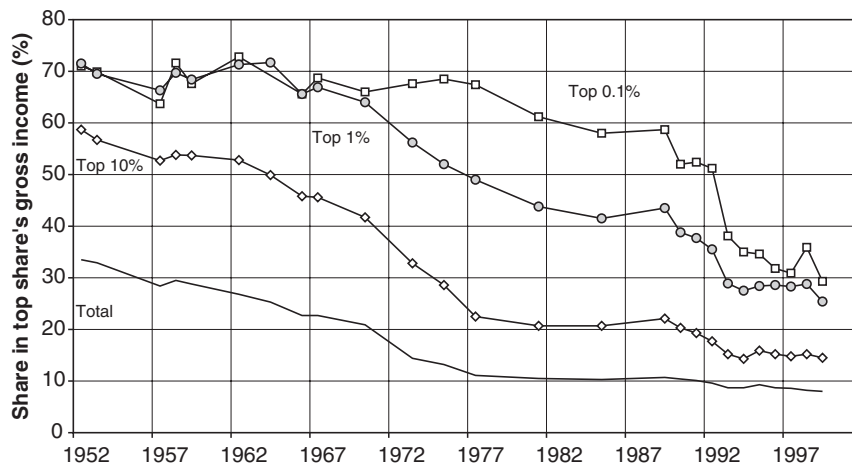


Figure 10.7 Capital income shares within gross income of top 10%, 1%, and 0.1%, Netherlands 1952–99

each and every top share. As changes in the rest of the distribution were much less extensive, the compositional disparity of the top shares compared to the rest of the distribution is greatly reduced. The divergence in wage shares between the total and the top 1% declined from 35 percentage points in 1952 via 23% in 1977 to no more than 2% in 1999. Evidently, the steep compositional gradient within the top 10% largely disappeared at the same time.

It is important to note again that the composition by source of income is not identical to that by socio-economic category. The former puts together all

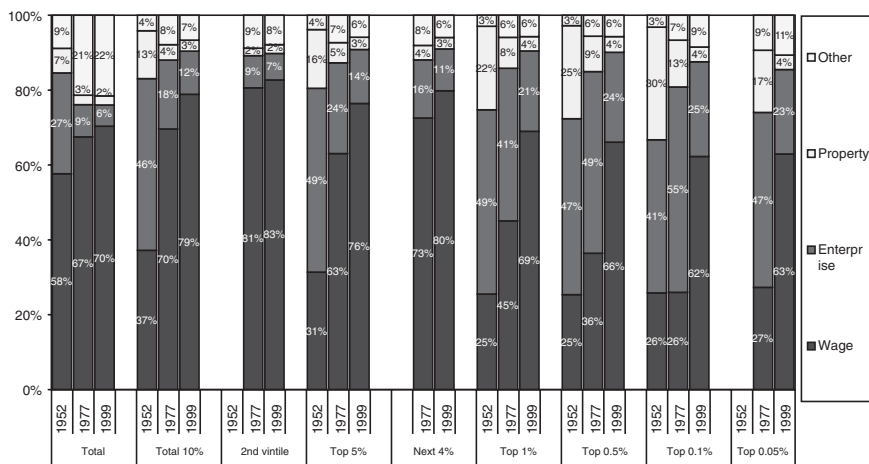


Figure 10.8 Composition of top shares by source of income, Netherlands 1952, 1977, and 1999

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incomes for one type of source irrespective of the nature of the recipient. The composition by socio-economic category, however, starts from the latter. It focuses on tax units and categorises them by the most important source of income. The essential difference<sup>13</sup> is that the tax units, and individual persons for that matter, may have income from other sources than the typifying one. Persons characterized as employees because wage earnings are their most important income, may also receive income from property, e.g., interest or dividend. Table 10.5 indicates that over the period, particularly for the self-employed, these other incomes have become more important.<sup>14</sup> For the self-employed tax units this concerns primarily wages, which grew from 3% to 26% of their tax unit's total income. The table also shows the impact of the initial categorization of pensions as labour income and the shift away from property income to other incomes, as the main income from the 'other' socio-economic category.

The switch between the two types of income up to the very top seems very striking. It certainly seems important, particularly if it helps explain the near stability of the Dutch top shares since 1977. Various candidates for an explanation suggest themselves. An important potential explanation for the shift between both may be the strong decline in self-employment which will have taken away income from enterprise. Self-employment fell from 18% of tax units in 1952 via

**Table 10.5** Composition of aggregate gross income by socio-economic category of receiving tax unit, Netherlands 1952, 1977, and 1999

	Self-employed	Employees	Pensioners	Other	Total
<b>1952</b>					
profits from enterprise	90	1	0	0	28
income from labour	3	95	74	0	64
income from property	5	4	22	83	7
other income	1	0	3	17	1
total	100	100	100	100	100
<b>1977</b>					
profits from enterprise	73	0	0	-2	9
income from labour	13	93	4	7	67
income from property	4	1	9	3	3
other income	79	6	88	92	21
total	100	100	100	100	100
<b>1999</b>					
profits from enterprise	62	0	0	-2	6
income from labour	26	94	6	16	70
income from property	3	1	6	4	2
other income	9	4	88	82	22
total	100	100	100	100	100

<sup>13</sup> Another difference is that for a tax unit comprising more than one person, the categorization depends on the person with the most important income.

<sup>14</sup> In the *lenV* period, the total income concepts may sometimes differ from that used for sources of income.

8% in 1977 to 6% in 1999, and their income share fell from 30% via 12% to 9%. This may be more relevant during the first half of the period.

Though capital and wage incomes have traded places within the top shares, the increased role of the latter has not been able to prevent the decline or the stability of the top shares. Figure 10.9 shows the share of top share wages in total income: i.e., the lines show what the shares of the different groups would have been if they had received only wage income. The impact of wages remained largely unchanged at the very top. It did increase, however, for the top decile as a whole. The well known moderation of wages in the Netherlands, which extended over much of the last decades, and the corresponding limited increase in wage inequality may have contributed. The growing role of wages that remains may partly rest on the strong growth of two-income households (as a consequence of increased female employment participation). The dotted line in Figures 10.9 A, B, and C serves to illustrate this for the top 10%. It shows the wage share if we take only the wages of the first earner. It indicates the share of top 10% wages when the second wage income is not taken into account. Unfortunately the information is not systematically available before the *IPO* period, but the growing difference after 1977 brings out the impact of second earners. The second income seems to explain the rise of the 1990s.<sup>15</sup> For the top 1% the effect (not shown) is also substantial but does not take away the full increase over the 1990s. For the top 0.1% the effect is negligible.

These are real economic phenomena, but the shift may also relate to tax shifting, which means that capital incomes may increasingly be moved outside the reach of income taxation. Apart from voluntary re-arrangement by individual

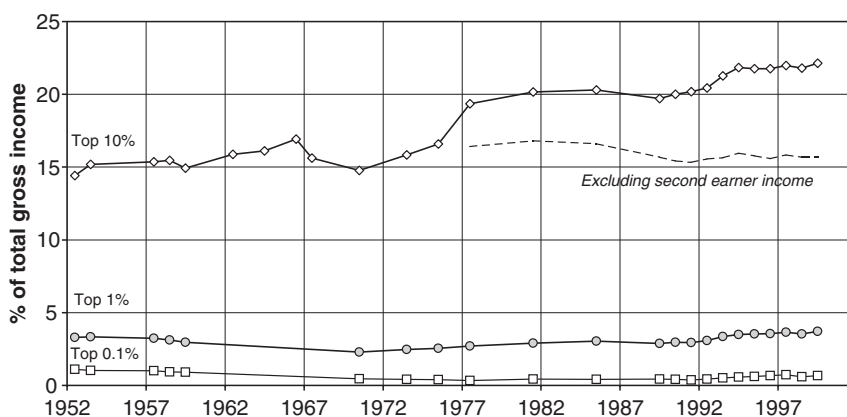


Figure 10.9A Wage income contributions to gross income of top 10%, 1%, and 0.1%, Netherlands 1952–99

<sup>15</sup> Between 1977 and 1999 the number of two-earners almost doubled and their share among tax units increased from 14% to 17%. In the top decile their population share grew more strongly from 33% to 58%. The rise of second incomes does not apply to the top 0.1%.

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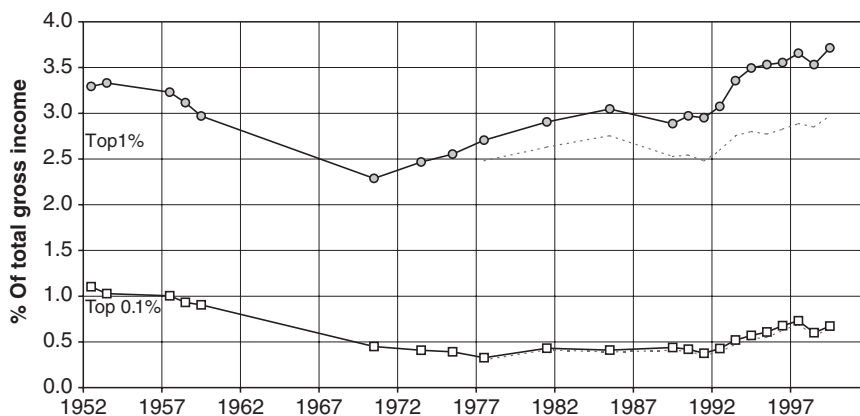


Figure 10.9B Wage income contributions to gross income of top 1% and 0.1%, Netherlands 1952–99

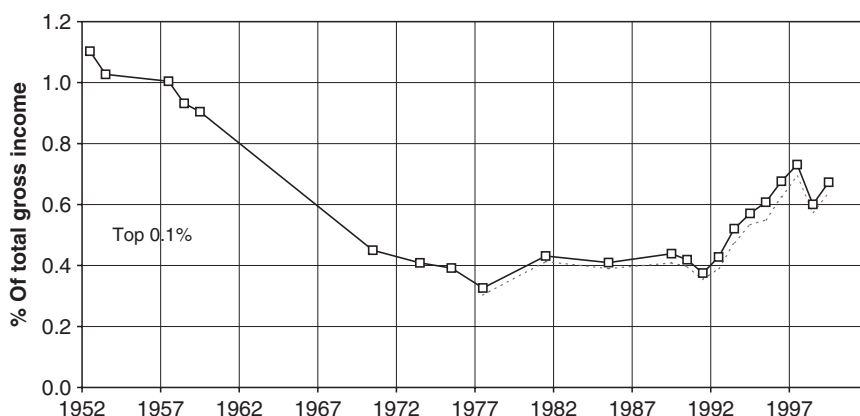


Figure 10.9C Wage income contributions to gross income of top 0.1%, Netherlands 1952–99

tax units it is important to realise that savings via pensions funds or life insurance companies are tax exempt including the income from property received by these institutions.<sup>16</sup> Occupational-pension fund savings in the Netherlands grew from 19% of GDP in 1952 via 50% in 1981 to 119% in 1999, a much higher level than in other countries.<sup>17</sup> Counting those proceeds as capital income would uplift the

<sup>16</sup> The pension payments, however, are subject to income taxation. Normally, they will be received at a later stage in life when incomes are lower and tax progression is less (the so-called ‘reversal rule’).

<sup>17</sup> Only Switzerland has larger savings. The UK has 75%, US and Canada have around 50%, and many other EU countries are below 10% (OECD 2004: 734)

share of capital incomes and mitigate its decline (1981–99: 14.1–13.3 as against 10.1–8.1 in Table 10.4). However, this would not necessarily increase the top shares.<sup>18</sup> Both issues, real economic factors and tax shifting, need further scrutiny beyond what will be said about taxation below.

### Taxation of Income

The Dutch data also allow estimation of the actual amounts of tax paid by the top shares and therefore the average effective rates of taxation on gross incomes across the tax units comprised in the top shares. From the start in 1914 to the end in 1999 the amounts of tax paid—i.e., income tax to national government—are available with the exception of some of the interwar years and some years in the *IenV* period. In Section 10.3 we discussed disposable income, but this is a second way to approach after tax income. It differs in two respects from the first: only tax is deducted and not social contributions, and tax payments are now specified by ranges of gross income and can therefore be related directly to the top shares in gross incomes, thus we remain within the same type of distribution.

Table 10.6 gives the results and Figure 10.10 presents the effective tax rates for the three top shares and the national average.<sup>19</sup> We find very low levels of taxation at the start of the observation period, of between 3% and 6% of income, which soon—at the end of the First World War—increase to a range of 5–13%. This was followed by a significant decline during the Depression years. A huge leap upward is found subsequent to the Second World War: in 1946 effective tax rates range from 21% for the top 10% to 50% for the top 0.1%. The figure also shows that the national average of taxation followed a rather similar pattern to the top shares with a substantial increase in 1946.

After a further increase a maximum rate was reached in the mid-1960s at 27% for the top 10% as a whole and 64% for the top 0.1%. A gradual decline followed between the mid-1970s and 1990, which was the year of the *Oort*-revision of income taxation, named after the preparatory Government Commission's chair *Oort*. The revision brought down formal marginal rates and clearly also effective taxation for the highest top shares but not for the top decile as a whole, as a nine-band tax rate structure ranging from 14% to 72% was replaced with a three-band structure ranging from 13% to 60%. In 1994 tax rates fell across the board, including the top 10% which now came to a level below 20%, the lowest for the post-war period. However, behind this was a change in the structure of the tax system which may lead us astray. The compulsory contributions to social insurance,<sup>20</sup> which used to be levied separately, were integrated into the structure of

<sup>18</sup> This is shown by a tentative estimation using annual pension contributions of tax units in *IPO* to allocate the proceeds.

<sup>19</sup> Assuming that all tax payments are recorded in the income statistics; the total is related to the control total of income to find the average tax rate.

<sup>20</sup> Old age: AOW; surviving relatives: AWW; and exceptional health expenditures: AWBZ.

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**Table 10.6** Effective top share tax rates, Netherlands 1914–99

	Average	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%
1914	1.1	2.4	2.7	3.5	3.8	4.5	4.6	
1915	1.4	2.7	3.1	3.8	4.1	4.6	4.7	
1916	1.6	2.8	3.1	3.8	4.1	4.4	4.8	
1917	1.5	2.7	3.1	3.9	4.2	4.7	4.8	
1918	2.3	4.4	5.2	7.3	8.4	11.2	12.4	
1919	2.8	5.2	6.0	8.3	9.4	12.2	13.1	
1920	2.7	4.9	5.7	8.0	9.1	11.9	12.9	
1921	2.4	4.4	5.2	7.3	8.5	11.3	12.4	
1922	2.1	4.0	4.7	6.7	7.8	10.5	11.7	
1923	2.1	3.9	4.6	6.5	7.6	10.3	11.6	
1924	2.1	4.0	4.8	6.7	7.8	10.5	11.7	
1925	2.2	4.1	4.9	6.9	8.0	10.7	11.9	
1926	2.2	4.1	4.9	6.9	8.0	10.7	11.9	
1927	1.8	3.4	4.0	5.6	6.4	8.7	9.6	
1928	1.8	3.4	4.1	5.7	6.6	8.8	9.7	
1929	1.8	3.5	4.1	5.9	6.9	9.4	10.6	
1930	1.7	3.3	3.9	5.6	6.5	9.4	11.0	
1931	1.4	2.9	3.4	4.9	5.7	8.1	9.4	11.9
1932	1.2	2.5	3.0	4.4	5.1	7.2	8.3	10.7
1933	1.2	2.5	3.0	4.3	5.0	7.2	8.4	11.2
1934	1.1	2.4	2.9	4.2	4.9	6.9	8.1	11.0
1935	1.1	2.3	2.8	4.1	4.8	6.8	7.9	10.8
1936	1.2	2.5	3.0	4.4	5.2	7.5	8.8	12.1
1937	1.3	2.8	3.4	5.1	6.0	8.8	10.4	14.9
1938	1.2	2.7	3.2	4.7	5.5	8.0	9.5	14.2
1939	1.3	2.7	3.3	4.8	5.6	8.0	9.4	12.5
1940								
1941								
1942								
1943								
1944								
1945								
1946	12.6	21.2	24.7	34.8	39.7	50.0	53.0	56.2
1947								
1948								
1949								
1950	13.8	25.5	30.8	43.5	48.6	58.6	61.7	67.4
1951								
1952	12.4	23.9	29.2	42.0	46.4	55.2	59.6	
1953	12.5	23.7	28.8	41.5	46.0	55.6	60.3	
1954								
1955								
1956								
1957	11.8	22.8	27.9	40.1	45.2	54.5	57.5	
1958	12.0	22.8	27.5	37.7	41.4	46.7	48.0	
1959	12.4	23.5	28.5	40.0	44.7	52.5	54.7	
1960								
1961								
1962	13.2	24.8	30.2	42.7	44.0	49.7		
1963								

*(contd.)*

Table 10.6 (Contd.)

	Average	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%
1964	14.1	25.9	31.1	41.6	44.6	46.9		
1965								
1966	14.6	27.1	32.5	44.0	48.1	51.8		
1967	14.4	25.3	30.3	41.3	44.9			
1968								
1969								
1970	13.9	26.0	30.9	41.6	45.2	50.7	53.3	54.9
1971								
1972								
1973	15.9	27.7	33.0	44.6	49.0	56.8	58.7	60.8
1974								
1975	16.0	27.8	33.1	45.4	50.0	58.7		
1976								
1977	14.9	24.7	29.4	40.8	45.1	52.6	55.6	
1978								
1979								
1980								
1981	13.8	21.9	26.1	37.0	41.6	50.6	53.0	
1982								
1983								
1984								
1985	12.1	20.0	24.1	35.1	39.9	50.2	54.4	
1986								
1987								
1988								
1989	12.2	20.9	25.0	35.4	39.7	49.6	54.0	
1990	13.7	22.1	25.8	34.2	37.4	41.5	42.6	
1991	14.0	22.5	26.3	35.1	38.4	44.1	44.9	
1992	14.2	22.8	26.7	35.3	38.9	44.7	46.1	
1993	14.0	22.4	26.2	34.5	37.8	43.1	45.5	
1994	10.3	19.4	23.4	32.2	35.8	41.9	45.0	
1995	9.7	18.9	22.8	31.4	34.6	38.6	38.1	
1996	9.2	18.2	22.2	31.2	34.6	39.8	42.1	
1997	8.6	17.8	21.8	30.8	34.3	39.0	40.1	
1998	8.4	17.0	20.9	29.8	33.1	36.6	38.1	
1999	8.7	17.8	21.9	31.7	35.5	42.1	45.6	

Notes: Calculated by linear interpolation in boundary ranges. Income in 1946 and 1950 is called 'fiscal income' by CBS.

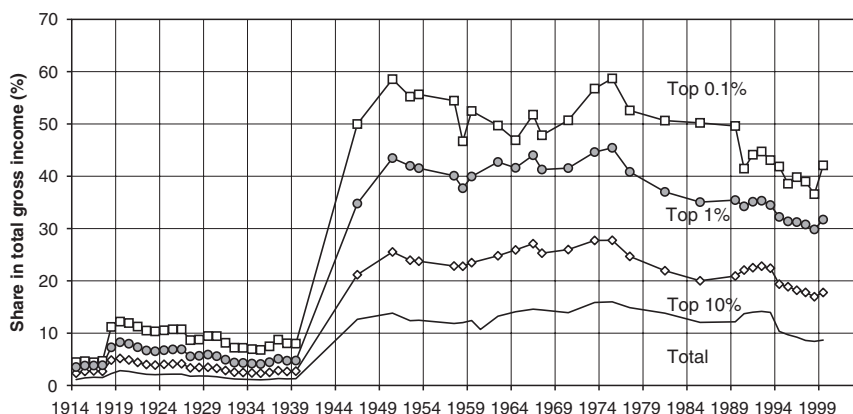
income taxation to facilitate the levying process whilst social security remained legally independent. Contributions (levied at a flat rate up to a given level of income—about the modal wage) and entitlements were unchanged. To enable the integration the tax rate for the first band of income taxation (applying to all tax units) was roughly halved, from 13% to 7%. With stronger declines at the top over the last two decades the picture seems slightly more favourable to after tax income than the (inverse) ratio that was found above for the ratio of disposable to gross income (Figure 10.6).

The drastic post-war increase in the tax rates will likely overestimate the increase in actual taxation experienced by households, to the extent that local



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**Figure 10.10** Effective tax rates on gross income of top 10%, 1%, and 0.1%, Netherlands 1914–99

taxes (municipalities, provinces) which were levied separately before became integrated into national taxation.<sup>21</sup> The rise of tax rates looks impressive, particularly at the high end of the distribution. However, when comparing top share rates relative to the average rate (total taxation of the control total of gross income), the evolution is strikingly different, see Figure 10.11. Soon after the introduction of income taxation in 1914 levels of relative taxation were reached for the top 10% which were basically kept unchanged for the rest of the century. The upsurge of 1946 previously found in Figure 10.11 leaves no trace at all; apparently, it touched tax units across the distribution in equal measure. During the 1930s, relative tax rates of the top 1% and 0.1% were actually higher than in the post-war period.

The favourable change that the *Oort* revision of 1990 made to the top rates is clearly visible, as is the effect of the 1994 integration of social contributions change that we just discussed. It seems to have a larger effect for those on lower incomes with an increase in relative taxation of the top shares as a consequence. However, the net effect of relative income taxation taken together with relative social security contributions, which affect lower incomes more,<sup>22</sup> remained basically unchanged.

In a *ceteris paribus* world the declining tax rates would give little reason to expect increasing tax shifting or evasion but there is also little reason to assume that the world has not changed, e.g., because of the liberalisation of capital movements in recent decades.

<sup>21</sup> An indication of their importance is, e.g., that in 1920/21, depending on the municipality, a family with an annual income of 5000 guilders would pay a total tax rate including local taxes of between 4% and 19% (about 8% in the median municipality). At the same level of income the average national tax rate in our estimations would amount to no more than 1.3%. At an income level of 2000 guilders the total would range from 2% to 10% as against our national estimation of 2.6%. (*CBS* 1925: 1).

<sup>22</sup> Notably, the rate of taxation including social contributions for the top 0.1% is only about twice as high as the average during the 1990s.

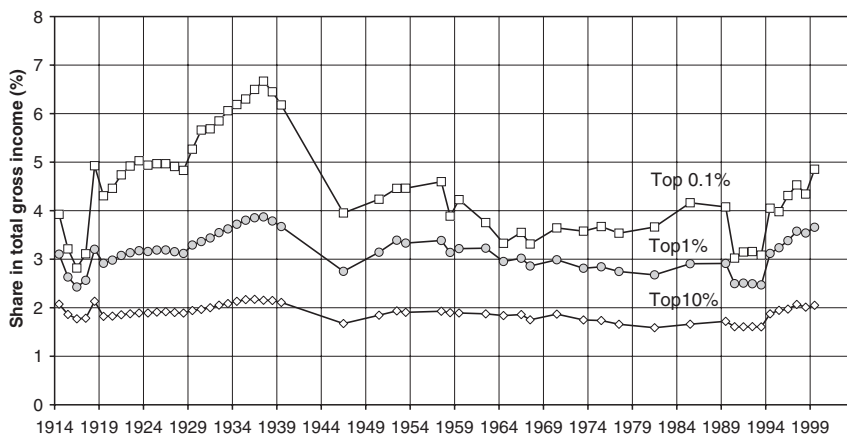


Figure 10.11 Relative effective tax rates on gross income of top 10%, 1%, and 0.1% (average = 1), Netherlands 1914–99

## 10.5 CONCLUSIONS

The aim of this chapter is to detail the evidence from income tax data about the distribution of top incomes in the Netherlands over the twentieth century. For reasons given in the text, the estimates may not be fully comparable over time, or to other countries for that matter. Nevertheless, we feel confident that the main conclusions are sufficiently robust to be taken as a starting point for a search for explanations.

The main findings relate to:

- the top shares in the distribution of all gross incomes over the full period (1914–99);
- the composition by income source of these shares for part of the period (1952–99);
- the income-tax rates of these top shares, again for the full period; and
- the top shares in the distribution of disposable income (after tax and social contributions), for full year incomes only, also for part of the period only (1959–99).

The results first mentioned show a strong decline in the gross income top shares, influenced by the aftermath of the two world wars, down to a low point in the mid-1970s. At the start nearly half of all incomes were concentrated in the top 10% and around one-quarter in the top 1%; since the 1970s these shares have been around 28% and 6% respectively. Within the top decile it is the upper groups that fell, while the second quintile remained roughly stable. There was a change in the shape of the distribution: the Pareto-Lorenz coefficient rose from around 1.5 to 3.5. A long and steady decline runs parallel to other countries but, strikingly, the Dutch top shares have remained virtually flat since the 1970s and

do not show the U-turn of a new rise that is found for Britain, the US, or other Anglo-Saxon countries. A major question for further research it is what can explain this near stability of the last 25 years.

The compositional results provide an equally intriguing picture as during the last decades incomes from capital and labour have rapidly traded places within the top shares and wage earnings now are the predominant source of income up to the very top, while previously this role was played by capital incomes. Capital income shares fell from one-third of all incomes in the early 1950s to well below 10%. In terms of shares in total income, wage earnings roughly made for the decline of capital incomes in the top shares with their virtual stability as a result. A major question for research is whether the change in composition, particularly the decline in capital incomes, hangs together with the stability of the top shares.

It exceeded our expectation that we were able to estimate income tax rates for the top shares for the entire period. They show a quick development after the start and a huge level upswing after the Second World War, reaching unprecedented levels as in many other countries, followed by some decline over the last two decades. However, the increase was so general, touching the entire population, that *relative* tax rates at the top appear to have remained largely unchanged since the 1920s, apart from a higher intermezzo during the Depression years. The evolution of the tax rates as such provides no clear motive for a possible tax shifting that could help to explain the first two observations. Nevertheless, in a changing world top income units may have migrated their income to other forms of taxation or to other countries, e.g., Luxembourg, or they may even have migrated themselves, e.g, to just across the Belgian border. The small geographical size of the country may facilitate this and given the small absolute numbers in the top share brackets the effects may be considerable.<sup>23</sup>

Fourth, the top shares in disposable income distribution mirror the development of gross top shares albeit with a smaller amplitude. Disposable top shares have essentially also been flat since the 1970s. Interestingly, the ratio of disposable to gross shares remained stable for the top decile as a whole but increased for the higher top shares.

#### APPENDIX 10A: SOURCES OF TABULATED INCOME TAX DATA FOR THE NETHERLANDS

The tabulated income data come from a variety of sources. The first is the series of annual statistical yearbooks: *JC* denotes *JaarCijfers voor het Koninkrijk der*

<sup>23</sup> At first sight, however, the published income tax data for Belgium do not suggest a marked increase in top income shares: the share of the top 1% in 1998 was 6.7%, compared with 6.3% in 1990, but the data warrant closer examination. These figures relate only to those covered by the income tax statistics, and need to be adjusted using control totals. The sources are Institut National de Statistique (1992: tableau 1 and 2000: tableau 1).

*Nederlanden* and *SY* denotes *Statistical Yearbook of the Netherlands* (in English). The second main source is the series of publications on the public finances: *SR* denotes *Statistiek der Rijksfinancien*. All pre-war data were found in more detail in the base material of Hartog and Veenbergen (1978)—see Appendix 10C. This was then replaced for this purpose by the regular studies of income distribution referred to in the text as *IenV: Inkomens- en Vermogensverdeling* (sometimes *Inkomens T en Vermogensverdeling T+1*). (See Tables 10A.1 and 10A.2.)

**Table 10A.1** Sources for data on total gross income and summary statistics, Netherlands 1915–99

Tax year	Assumed income year (if different)	Lower limit (NLG)	Number of taxpayers (x 1000)	Total income (Million NLG)	Source	Notes
1915/16	1914	650	679.1	1334.5	JC 1921, p 147	Tax introduced 1 May 1915
1916/17	1915	650	757.5	1724.7	JC 1918, p 154	
1917/18	1916	650	876.0	2064.8	JC 1921, p 147	Including payments in arrears
1918/19	1917	650	897.2	2140.2	JC 1920, p 145	Suspension of interest payments on Russian national debt; including payments in arrears
1919/20	1918	800	966.0	2431.9	JC 1921, p 147	Increase in tax threshold; Including payments in arrears
1920/21	1919	800	1368.3	3638.9	JC 1921, p 147	Large increase in prices; 1 May 1919 considerable increase in tax introduced
1921/22	1920	800	1638.5	4291.7	JC 1923, p 139	
1922/23	1921	800	1690.2	4138.3	JC 1923, p 139	Influence of fall in prices and economic crisis
1923/24	1922	800	1632.0	3848.3	JC 1925, p 141	Influence of fall in prices and economic crisis
1924/25	1923	800	1624.6	3761.3	JC 1925, p 141	Influence of fall in prices and economic crisis
1925/26	1924	800	1657.9	3863.9	JC 1927, p 145	
1926/27	1925	800	1694.0	3902.8	JC 1929, p 150	
1927/28	1926	800	1719.4	3932.3	JC 1929, p 150	
1928/29	1927	800	1746.1	4028.6	SR 1933, p 18	1 May 1928 tax rate reduced (SR 1933, note 11)
1929/30	1928	800	1830.9	4284.9	SR 1933, p 18	1929 economic crisis had little effect on the figures for 1929/30 (SR 1929–1931, p 25, note 16)

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1930/31	1929	800	1892.6	4367.2	SR 1933, p 18	
1931/32	1930	800	1867.2	4206,4	SR 1933, p 18	First year when married/single split given; expansion of number of income brackets from 28 to 39.
1932/33	1931	800	1668.2	3657.2	SR 1936, p 22	
1933/34	1932	800	1484.6	3156.8	SR 1936, p 22	
1934/35	1933	800	1445.0	3042.0	SR 1936, p 22	
1935/36	1934	800	1355.1	2828.0	SR 1938, p 22	
1936/37	1935	800	1284.6	2666.0	SR 1938, p 22	
1937/38	1936	800	1304.2	2738.1	SR 1939, p 22	
1938/39	1937	800	1364.4	2933.8	SR 1940, Table XVI	Reference to effect of devaluation of 28 September 1936
1939/40	1938	800	1409.2	3009.9	SR 1941	
1940/41	1939	800	1536.4	3295.9	JC 1943–1946, p 342	Refers to timing
1941		—	2838.4	4645.3	JC 1947–1950, p 268	No figures available for 1942–1945
1946		—	3605.4	7696.2	JC 1951–1952, p 270	New tax law: all income is now total past nominal income, whereas in earlier years the notion ‘income source’ still played a minor role (Hartog and Veenbergen, 1978. p.547). Further increase in number of brackets from 39 to 44. Very detailed at top.
1950		—	3994.4	12100.0	JC 1963–1964, p 308; see also JC 1953–1954, p 272 where slightly different figures for total (also given in <i>IenV</i> 1952, p 10)	= income after revisions, also for following years (Inkomensverdeling 1950, Table 4, p.35 gives NLG 12102.3 as total income.)
1952		—	4011.8	13878.3	<i>IenV</i> 1952, p 10	Reduction in number of income classes from 44 to 15.
1953		—	4078.6	14539.3	<i>IenV</i> 1955, p 9	
1957		—	4566.9	23565.2	<i>IenV</i> 1957, Table 3	
1958		—	4606.2	24933.8	<i>IenV</i> 1958, Table 3	
1959		—	4689.9	26136.6	<i>IenV</i> 1959, Table 3	
1962		—	5099.6	34699.3	<i>IenV</i> 1962, Table 3	Change in method of allocating to income classes; increase in number of classes from 15 to 30.
1964		—	5316.6	42780.2	<i>IenV</i> 1964, Table 3	

(contd.)

Table 10A.1 (Contd.)

Tax year	Assumed income year (if different)	Lower limit (NLG)	Number of taxpayers (x 1000)	Total income (Million NLG)	Source	Notes
1964 new basis		—	5316.6	45495.5	<i>IenV</i> 1966, p 18	
1966		—	5776.3	56002.1	<i>IenV</i> 1966, p 28	
1967		—	5734.6	64478.1	<i>IenV</i> 1967, p 20	
1970		—	5631,0	88821.2	<i>IenV</i> 1970, Table 3	
1973		—	5889.4	123814.3	<i>IenV</i> 1973, part 2, p 77	
1975		—	5679.9	160741.2	Personele Inkomensverdeling 1975, part 1, p. 29 and part 2, p. 199–200	Part-year tax units fully counted
1977			6352,03	206683,9	Inkomens-panel- onderzoek <i>IPO</i>	Change to microdata
1981			6842,26	262741,1		
1985			7461,44	291083,3		
1989			7961,685	351414,1		
1990			8105,432	407289,2		
1991			8221,719	431711,3		
1992			8308,599	456141,5		
1993			8401,439	460075,3		
1994			8484,282	464977,2		
1995			8538,224	480660,2		
1996			8613,567	493609,2		
1997			8698,122	510375,6		
1998			8757,897	535214		
1999			8851,797	565900,6		

#### APPENDIX 10B: TOTAL POPULATION AND INCOME DATA FOR THE NETHERLANDS

The initial total number of tax units is calculated from *CBS* population statistics by age and gender (*Maandstatistiek Bevolking* and data specially provided by *CBS* from its archives) for the total population aged 15 and over. From this has been subtracted the minimum of the number of men and women married. For 1950–99 this is obtained directly from the above *CBS* population statistics. For 1920 and 1930 it is obtained from the census data (specially provided by *CBS*) and for other years from 1914 to 1946 it is obtained by linear inter- and extra-polation of the percentages of married persons for 1920 and 1930 applying this to the absolute numbers from the population statistics.

Table 10B.1 shows the resulting figures in the first column. The third and fourth columns show the reported totals in the tax statistics. As may be seen, over

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Table 10A.2 Sources for data on disposable income, Netherlands 1959–99

Year	Total tax units	Total disposable income	Source	Notes
1959	4,257.7	20,166.3	SEM 1987: 6, table 1.1	Full year incomes
1962	4,567.4	26,977.7	SEM, 1987: 6, table 1.2	Full year incomes
1964	4,678.6	34,559.3	SEM, 1987: 6, table 1.3	Full year incomes
1967	4,972.0	45,362.9	SEM, 1987: 6, table 1.4, <i>IenV</i> 1967: 20	Full year incomes
1970	5,240.6	62,271.0	SEM 1987: 6, table 1.5	Full year incomes; excludes imputed rent and costs of owner-occupied housing
1973	5,573.4	89,144.5	SEM 1987: 6, table 1.6	Full year incomes; excludes imputed rent on owner-occupied housing
1975	5,699.2	115,636	SEM 1987: 6, table 1.7	Full year incomes; excludes imputed rent on owner
1977	5,771.4	138,694.4	SEM 1987: 6, table 1.8	Full year incomes; excludes imputed rent on owner
1979	5,877.2	162,192.8	SEM 1987: 6, table 1.9	Full year incomes; excludes imputed rent on owner
1979	5,877.2	155,587.2	SEM 1987: 6, table 1.10	Full year incomes
1980	5,977.5	165,611	SEM 1987: 6, table 1.11	Full year incomes
1981	6,014.8	171,033.3	SEM 1987: 6, table 1.12	Full year incomes
1982	6,025.6	175,816.8	SEM 1987: 6, table 1.13	Full year incomes
1983	6,399.3	184,717.2	SEM 1987: 6, table 1.14	Full year incomes
1984	6,553.5	187,949.9	SEM 1987: 6, table 1.15	Full year incomes
1977	6352,03	134,923	<i>Inkomenspanelonderzoek (IPO)</i>	Includes imputed rent for owner-occupied housing. All incomes.
1981	6842,26	171,365		
1985	7461,44	192,620		
1989	7961,685	231,484		
1990	8105,432	251,742		
1991	8221,719	264,665		
1992	8308,599	274,318		
1993	8401,439	281,968		
1994	8484,282	292,009		
1995	8538,224	305,420		
1996	8613,567	314,998		
1997	8698,122	328,803		
1998	8757,897	343,465		
1999	8851,797	358,009		

Notes: Data on disposable (*besteedbaar*) income is published in *IenV* (see Table A1) and the monthly *SEM* (*Sociaal Economische Maandstatistiek*).

time the total has converged towards the constructed total—see Figure 10B.1. By 1999 the *IPO* total was fairly stable at around 95% of the constructed total, and the coverage was believed to be complete. We have therefore taken a fixed proportion (95%) of the constructed total for all years. The difference between the reported figure and the 95% figure (the estimated number of ‘non-filers’) is shown in the final column.

Table 10B.1 Population totals (thousands), Netherlands 1914–99

	Tax Units calculated from population 15+ 1 minus married	TOTAL USED (95% of column 1) 1	Reported taxpayers in JC and SR 2	Numbers reported in IenV 3	Numbers reported in IPO 4	Difference between column 2 and reported numbers 5
1914	3,109	2,954	679			2,274
1915	3,159	3,001	758			2,244
1916	3,209	3,048	876			2,172
1917	3,259	3,096	897			2,199
1918	3,297	3,132	966			2,166
1919	3,348	3,181	1,368			1,812
1920	3,400	3,230	1,638			1,591
1921	3,456	3,283	1,690			1,593
1922	3,509	3,334	1,632			1,702
1923	3,570	3,391	1,625			1,766
1924	3,631	3,450	1,658			1,792
1925	3,690	3,506	1,694			1,812
1926	3,747	3,560	1,719			1,841
1927	3,808	3,617	1,746			1,871
1928	3,871	3,677	1,831			1,846
1929	3,929	3,733	1,893			1,840
1930	3,987	3,788	1,867			1,921
1931	4,062	3,859	1,668			2,190
1932	4,130	3,923	1,485			2,438
1933	4,187	3,978	1,445			2,533
1934	4,245	4,033	1,355			2,678
1935	4,308	4,093	1,285			2,808
1936	4,368	4,149	1,304			2,845
1937	4,426	4,204	1,364			2,840
1938	4,485	4,261	1,409			2,852
1939	4,536	4,309	1,536			2,773
1940						
1941	4,637	4,405	2,838			1,567
1942						
1943						
1944						
1945						
1946	4,890	4,646	3,605			1,040
1947	4,925	4,679				
1948	4,965	4,717				
1949	4,994	4,745				
1950	5,041	4,789		3,994		
1951	5,071	4,817				
1952	5,090	4,836		4,012		
1953	5,123	4,867		4,079		789
1954	5,164	4,906				
1955	5,213	4,952				
1956	5,253	4,990				
1957	5,301	5,036		4,567		469
1958	5,376	5,107		4,606		501



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1959	5,446	5,174	4,750	484
1960	5,505	5,229		
1961	5,646	5,364		
1962	5,776	5,487	5,100	387
1963	5,880	5,586	,	
1964	5,966	5,667	5,317	357
1965	6,066	5,763		
1966	6,151	5,843	5,776	67
1967	6,210	5,900	5,735	165
1968	6,278	5,964		
1969	6,359	6,041		
1970	6,442	6,120	5,631	489
1971	6,524	6,198		
1972	6,604	6,274		
1973	6,702	6,367	5,889	478
1974	6,812	6,471		
1975	6,950	6,603	#5,680	839
1976	7,070	6,716		
1977	7,198	6,838	6,352	486
1978	7,336	6,969		
1979	7,492	7,117		
1980	7,642	7,260		
1981	7,778	7,389	6,842	547
1982	7,892	7,497		
1983	8,028	7,626		
1984	8,173	7,764		
1985	8,315	7,899	7,461	438
1986	8,430	8,008		
1987	8,552	8,124		
1988	8,641	8,209		
1989	8,661	8,228	7,962	266
1990	8,780	8,341	8,105	236
1991	8,852	8,410	8,222	188
1992	8,921	8,475	8,309	166
1993	8,992	8,542	8,401	141
1994	9,049	8,597	8,484	113
1995	9,119	8,663	8,538	125
1996	9,185	8,726	8,614	112
1997	9,252	8,789	8,698	91
1998	9,319	8,853	8,758	95
1999	9,386	8,917	8,852	65

Note: #) full-year incomes only, consequently the control total of incomes may be somewhat overestimated and the top shares underestimated.

Source: Population (column 1) from *CBS, Bevolkingsstatistiek*, other numbers (columns 3 and 4) from income distribution sources mentioned in text.

The starting point for the total income series is provided by the tax statistics. As explained in the text, for the period from 1977 we take the *IPO* totals, shown in column 3 of Table 10B.2. In order to determine the top income shares, we have enlarged the population share of the top groups correcting for the difference between our constructed total of population and the *IPO* total of tax units. For

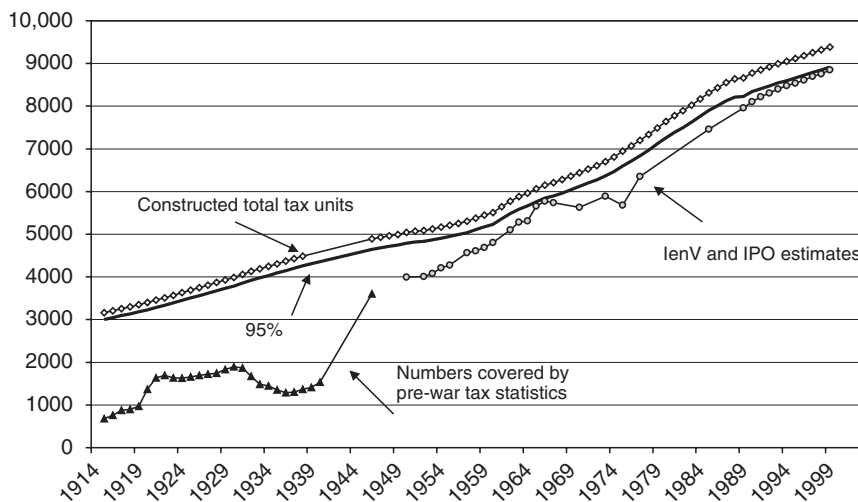


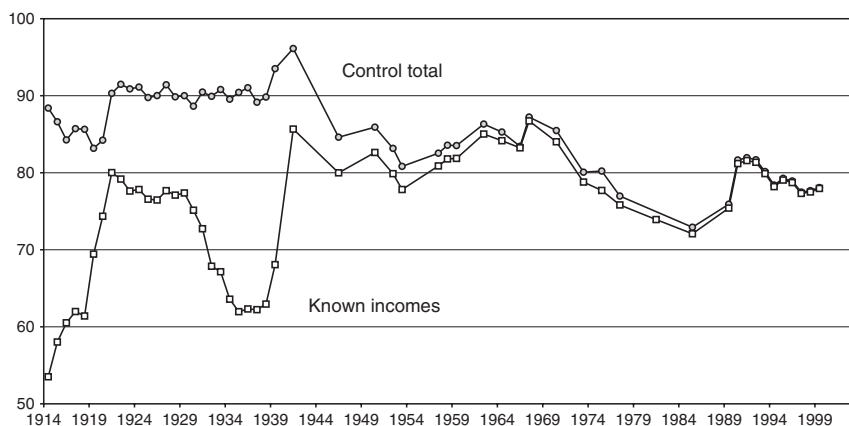
Figure 10B.1 Tax units (x 1000), Netherlands 1914–99

the period 1941 and earlier, we take the totals reported in *JC/SR* (see Table 10A.1) and add the estimated income of those below the tax threshold, shown in column 4. The sources of the latter are 1914–20 from *CBS* (1941: 14), 1921–39 from *CBS* (1948: 21), 1941 from *CBS* (1950: 41). The missing income is divided by the estimated number of non-filers (column 5 in Table 10B.1) to give the mean income of non-filers. This is expressed in column 4 as a percentage of the mean income of filers (obtained by dividing column 1 in Table 10B.2 by column 3 in Table 10B.1). This percentage appears to be close to 20% in the 1930s, and this proportion is assumed to apply in the period 1946–99 as well. Multiplying the resulting mean income by the estimated number of non-filers yields the estimates in column 6 of Table 10B.2. In 1968, the data only cover people with incomes above 15,000 guilders, a percentage of the national accounts figure (see below) has therefore been assumed.

The resulting estimates may be compared with the personal sector gross income totals in the national accounts. (These figures are close to those for the ‘current receipts of households and non-profit institutions’ contained in the *United Nations Yearbook of National Accounts Statistics*.) The sources are 1914–20 from *CBS* (1941: 14), 1921–39 from *CBS* (1948: 21), 1941 from *CBS* (1950: 41), and years up to 1977 from the national accounts (*NR*), various years (for example, 1950–59 from *NR* 1960, published by *CBS* in 1961). Data for 1977–99 are from *CPB* Netherlands Bureau of Economic Policy Analysis, or *Centraal Plan Bureau* (*CPB*) (1999) that was the last publication presenting the data according to the pre-1993 *SNA*, which serves to improve consistency with the previous data. *CPB* data follow *CBS* as closely as possible and offer the advantage of including the data for 1977–86 that has been revised in 1995 (although the data for 1998

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**Figure 10B.2** Control totals of gross income and known gross income as % of national accounts personal income total, Netherlands 1914–99

and 1999 are provisional). Thus the series in column 8 of Table 10B.2 comes as close as possible to standardization on a pre-1977 basis, but a precise linking for that year has not been pursued here as the tax-based income data changed at the same time with the use of *IPO* as a source. The totals used here are compared with the national accounts totals for personal income in Figure 10B.2.

The series for disposable income is obtained by subtracting from the gross income totals described above the difference between the gross and disposable income in the *IenV* estimates, shown in the penultimate column of Table 10B.2. Column 10 shows the *IPO* totals for disposable income.

## DATA SOURCES

*Jaarcijfers voor het Koninkrijk der Nederlanden*, from 1925 *Jaarcijfers voor Nederland* (both referred to as *JC*), Statistical Yearbook of Netherlands, published by the Central Bureau of Statistics (Centraal Bureau voor de Statistiek, Statistics Netherlands), referred to as CBS.

*Statistiek der Rijksfinanciën* (referred to as *SR*), Statistics of Public Finances.

*IenV: Inkomens- en Vermogensverdeling* (sometimes *Inkomens T en Vermogensverdeling T+1*), Income and Wealth Distribution, published by CBS.

*Inkomenspanelonderzoek*, referred to as *IPO*, Income Panel Study conducted by CBS.

*Nationale Rekeningen* (referred to as *NR*), National Accounts, published by the CBS.

**Table 10B.2** Reference income totals (million guilders) and prices, Netherlands 1914–99

1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	Assumed						
																											JC and SR 1	IenV 2	IPO gross incomes 3	Missing income: below threshold 4	Income of non-filers as % filers' income 5	Assumed missing income (based on 20% of filers' mean) 6	TOTAL GROSS INCOME USED 7
1334	1725	2065	2140	2432	3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116
1725	2065	2140	2432	3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116	
2065	2140	2432	3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116		
2140	2432	3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116			
2432	3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116				
3639	4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116					
4292	4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116						
4138	3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116							
3848	3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116								
3761	3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116									
3864	3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116										
3903	3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116											
3932	4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116												
4029	4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116													
4285	4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116														
4367	4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116															
4206	3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																
3657	3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																	
3157	3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																		
3042	2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																			
2828	2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																				
2666	2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																					
2738	2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																						
2934	3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																							
3010	3296	1334	870	19.5	2205	2494	88.4	2494	116																								
3296	1334	870	19.5	2205	2494	88.4	2494	116																									
1334	870	19.5	2205	2494	88.4	2494	116																										

1941	4645	567							171
1942									184
1943									190
1944									195
1945									223
1946	7696		444	8141	9621	84.6			244
1947									256
1948									268
1949									284
1950		12100	481	12581	14644	85.9			309
1951									347
1952		13878	570	14448	17374	83.2			348
1953		14539	562	15101	18684	80.8			347
1954									361
1955									368
1956									375
1957		23565	485	24050	29136	82.5			397
1958		24934	541	25475	30482	83.6			406
1959		26137	540	26677	31930	83.5	21034		409
1960		\	491	28176	35327	79.8			421
1961									426
1962		34699	528	35227	40809	86.3	28064		440
1963									458
1964		45495	612	46108	54062	85.3	36020		486
1965									510
1966		56002	130	56132	67279	83.4			540
1967		64478	370	64848	74345	87.2	47056		557
1968									578
1969									621
1970		88821	1542	90363	105714	85.5	64360		648
1971									697
1972									752
1973		123814	2008	125822	157140	80.1	91684		812
1974									890
1975		#160741	5222	165963	206870	80.2	119302		982
1976									1067

(contd.)

Table 10B.2 (Contd.)

	JC and SR	IenV	IPO gross incomes	Missing income: below threshold	Income of non- filers as % filers' income	Assumed missing income (based on 20% of filers' mean)	TOTAL GROSS INCOME USED	National accounts figure	Total as % national account	TOTAL DISPOSABLE INCOME USED	Consumer price index
	1	2	3	4	5	6	7	8	9	10	11
1977			206684			3160	209844	272610	77.0	136987	1138
1978											1185
1979											1235
1979inc											
1980			262741			4200	266,941	355441	75.1	174104	1316
1981											1405
1982											1488
1983											1529
1984											1579
1985			291083			3420	294504	403856	72.9	194880	1615
1986											1617
1987											1609
1988											1621
1989			351414			2344	353758	466034	75.9	233032	1638
1990			407289			2376	409665	501681	81.7	253205	1679
1991			431711			1970	433681	529167	82.0	265877	1744
1992			456142			1822	457963	560641	81.7	275417	1808
1993			460075			1546	461621	575904	80.2	282911	1846
1994			464977			1234	466212	594675	78.4	292785	1897
1995			480660			1403	482064	608087	79.3	306313	1931
1996			493609			1283	494892	627018	78.9	315820	1972
1997			510376			1071	511447	660097	77.5	329490	2015
1998			535214			1160	536373	690592	77.7	344211	2053
1999			565901			833	566734	725927	78.1	358537	2098

Sources: National accounts incomes (col. 8) from UN, *National Accounts* (1914–75) and CPB, *Macro-economische Verkenning* 1999; Table A.12 (1977–99). Consumer price index numbers (col. 11) communication from CBS, *Prijnsindexcijfer voor werknemersgezin met een laag inkomen* 1900=100 (CPI for employees' families with a low income). This is the only price index available with sufficient detail for this long period. (#) Full-year incomes only, consequently the control total of incomes may be somewhat over-estimated and the top shares under-estimated.

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