

TOP INCOMES IN GERMANY, 1871-2013

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Estimation of income concentration

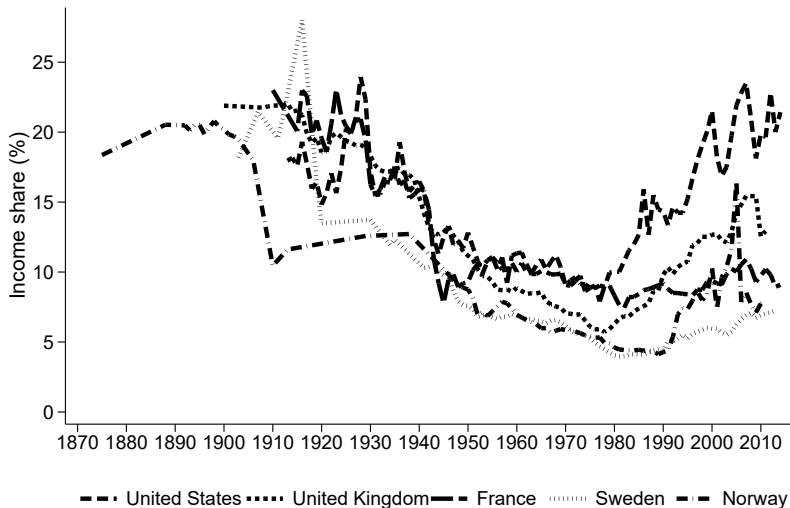
- ▶ International effort among inequality researchers to produce comparable estimates of income concentration collected in **World Wealth and Income Database (WID)** initiated by A. Atkinson, T. Piketty and E. Saez
- ▶ The share of income accruing to the top x% is computed using **personal income tax (PIT)** statistics and external population and income aggregates
- ▶ Income concept: **taxable income**
- ▶ Problem: **tax reforms often change the definition of taxable income**
- ▶ Challenge: make series **comparable** over time and across countries

Datasource: Personal income tax statistics

Einkommensgruppen	Zahl der Pflichtigen		Einkommen		Festgesetzte Steuer		
	über- haupt	v. H. der Reichs- summe	in 1 000 <i>R.M.</i>	v. H. der Reichs- summe	in 1 000 <i>R.M.</i>	v. H. der Reichs- summe	v. H. der Spalte 4
1	2	3	4	5	6	7	8
a bis l insgesamt	3 907 554	100,00	12 779 964	100,00	1 353 093	100,00	10,43
a) bis 1 500 <i>R.M.</i>	1 863 765	47,70	1 614 222	12,63	107 264	8,05	6,64
b) über 1 500 <i>R.M.</i> bis 3 000 <i>R.M.</i>	1 054 087	26,98	2 243 742	17,56	118 395	8,88	5,28
c) » 3 000 » » 5 000 »	453 806	11,61	1 742 536	13,63	101 511	7,61	5,82
d) » 5 000 » » 8 000 »	219 760	5,62	1 375 872	10,77	91 418	6,86	6,64
e) » 8 000 » » 12 000 »	152 660	3,91	1 496 423	11,71	114 922	8,62	7,68
f) » 12 000 » » 16 000 »	65 234	1,67	898 900	7,03	87 155	6,54	9,69
g) » 16 000 » » 25 000 »	54 191	1,39	1 063 231	8,32	131 220	9,84	12,34
h) » 25 000 » » 50 000 »	31 686	0,81	1 068 645	8,36	195 830	14,69	18,32
i) » 50 000 » » 100 000 »	9 108	0,23	611 476	4,78	156 448	11,73	25,59
k) » 100 000 » » 200 000 »	2 428	0,06	325 417	2,55	104 228	7,82	32,03
l) » 200 000 <i>R.M.</i>	889	0,02	339 500	2,66	124 702	9,36	36,73

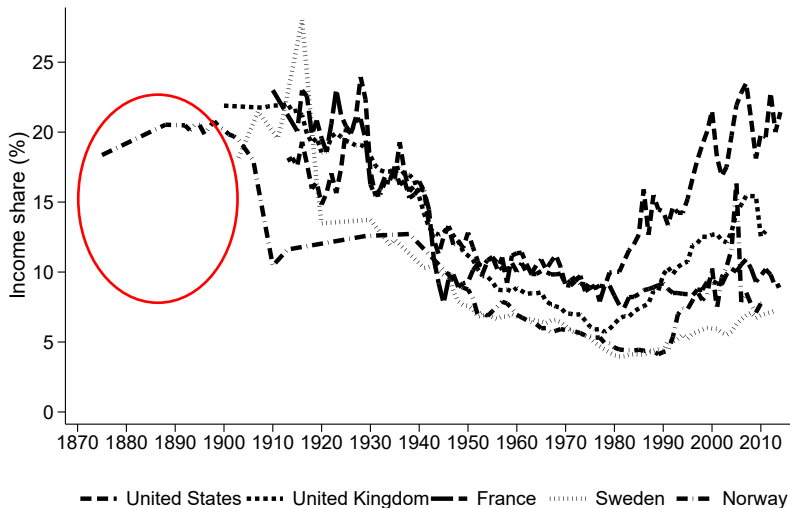
Source: Statistik des Deutschen Reichs, Einkommen- und Körperschaftsteuerveranlagung 1925

Top 1% in international comparison



Source: WID

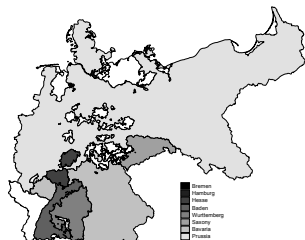
Top 1% in international comparison



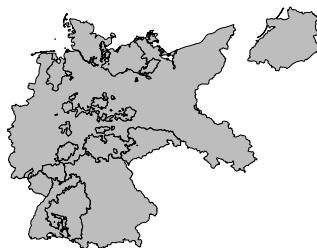
Source: WID

German territory covered by new series

1871-1919



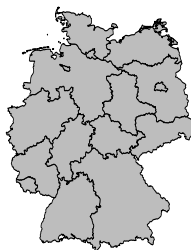
1925-1938



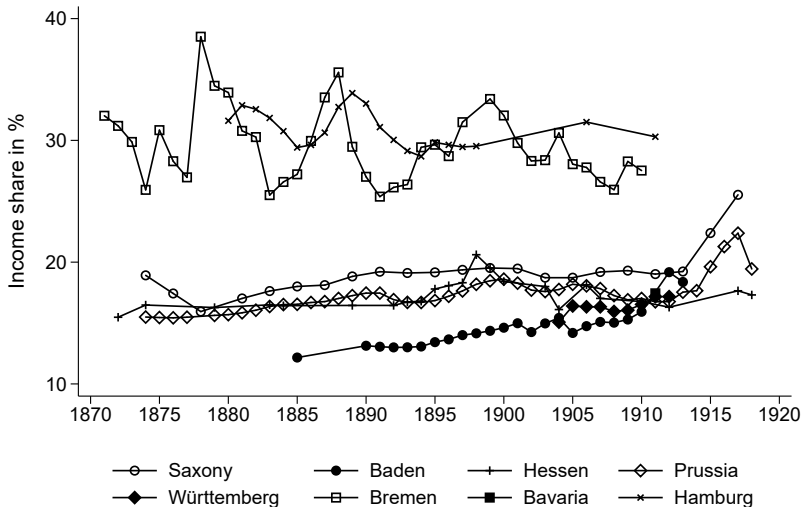
1949-1989



1992-2013

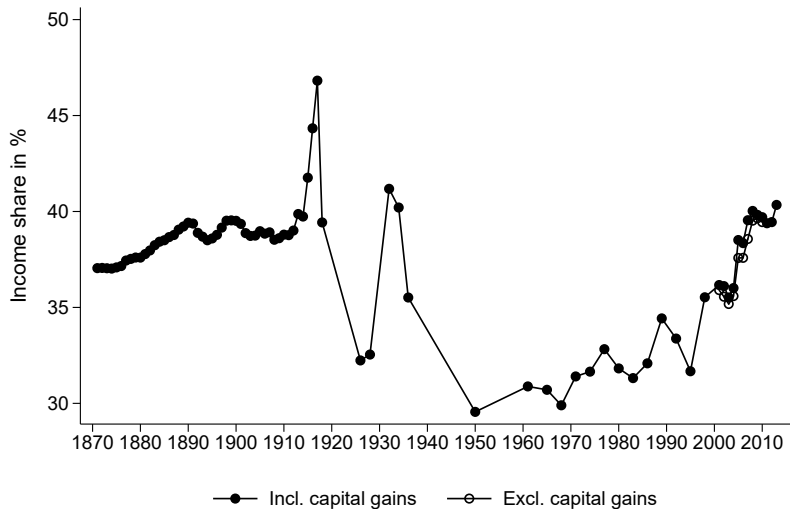


German states, 1871-1919 - Top 1%



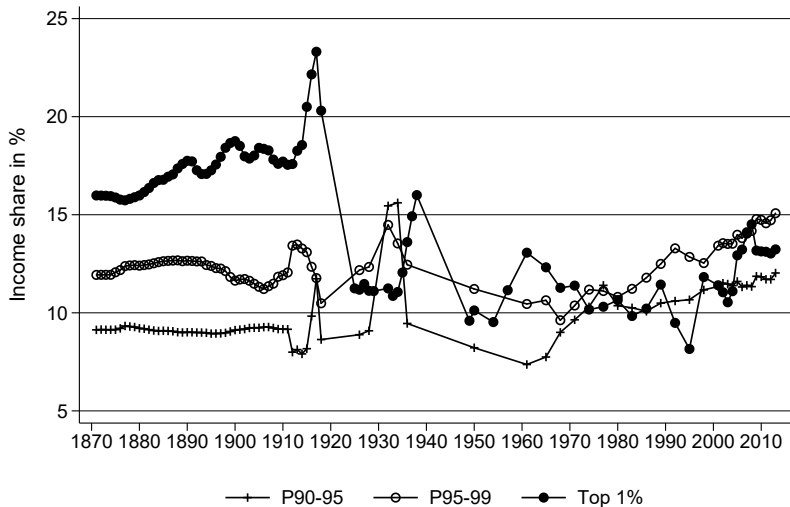
Source: Own calculations, PIT statistics

Germany, 1871-2013 - Top decile



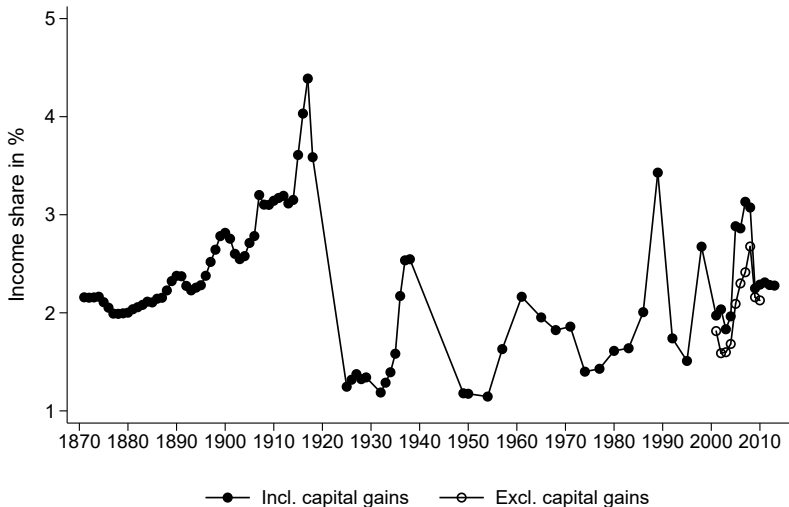
Source: Own calculations, PIT microdata and statistics

Germany, 1871-2013 - Top decile disjoint



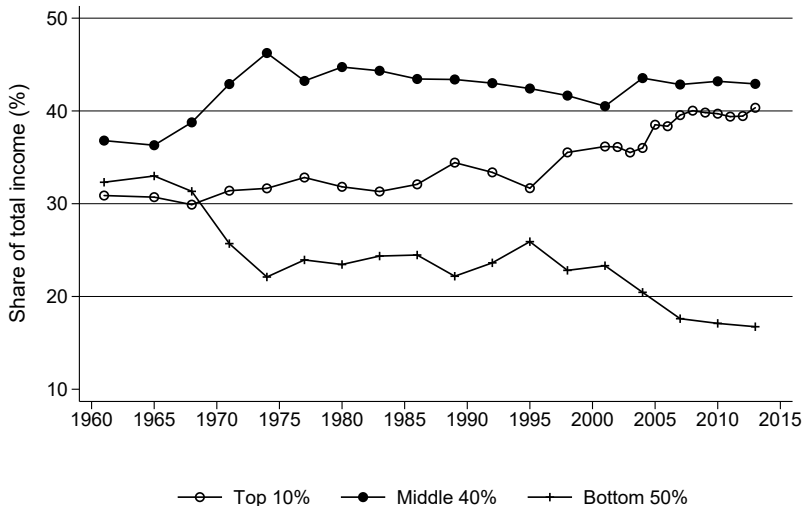
Source: Own calculations, PIT microdata and statistics

Germany, 1871-2013 - Top 0.01%



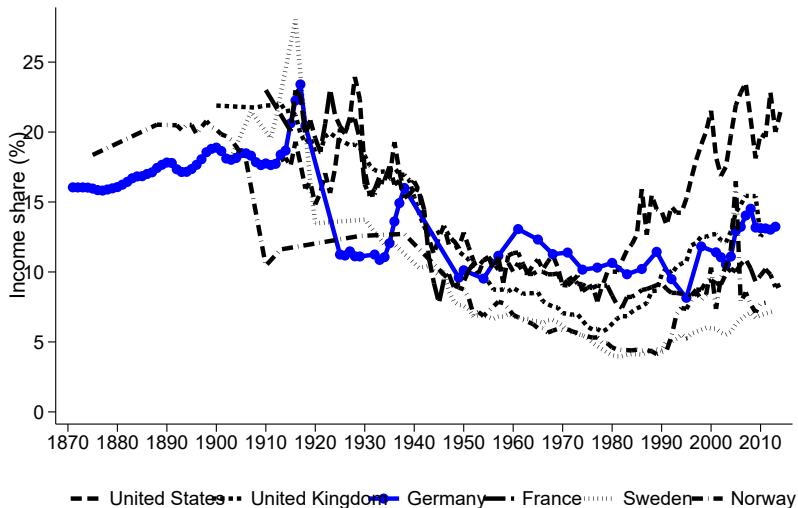
Source: Own calculations, PIT microdata and statistics

Germany, 1871-2013 - Bottom 50%, middle 40% and top 10%



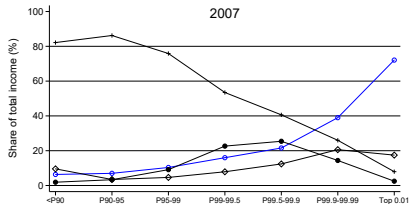
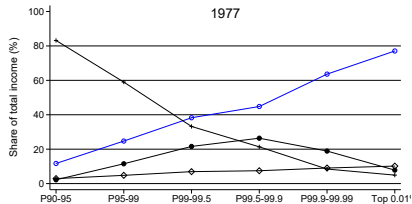
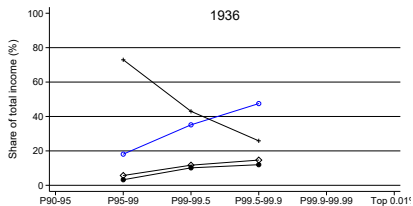
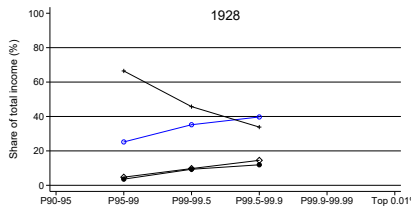
Source: Own calculations, PIT microdata and statistics

Germany in international comparison - top 1%



Source: WID and own calculations, PIT microdata and statistics

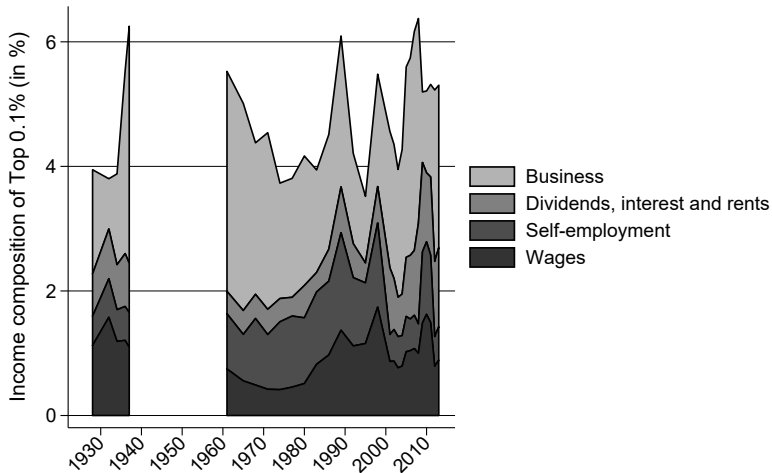
Composition of top incomes



—○— Business
 —●— Self-employment
—▲— Wages
 —◇— Dividends, interest and rents

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Composition of top incomes - Top 0.1%



What drives top income shares?

- ▶ Importance of capital income as income source
- ▶ Globalization/Trade
- ▶ Technological change
- ▶ Institutions of the modern welfare state
i.e. progressive income taxation, top marginal tax rates
- ▶ Bargaining power of trade unions

See, e.g., Atkinson et al., JEL, 2011; Roine et al., JPubE, 2009;
Foerster/Toth, 2015

Correlation matrix, 1871-2013

All	Top 1%	Cap.share	ATR	Trade	Union	Patents
Top 1%	1					
Cap.share	0.219*	1				
ATR	-0.848***	-0.002	1			
Trade	-0.375***	0.428***	0.581***	1		
Unions	-0.779***	-0.129	0.820***	0.414***	1	
Patents	-0.494***	0.426***	0.418***	0.126	0.455***	1

Correlation matrix by period

	1871	1925	1949	1992
Top 1%	-1919	-1938	-1989	-2013
Cap.share	0.818***	0.836***	0.529***	0.897***
ATR	0.683***	0.885***	-0.0474	-0.781***
Trade	-0.385**	-0.629*	-0.148	0.899***
Unions	0.609***	-0.587*	-0.202	-0.890***
Patents	0.529***	-0.449	-0.153	0.881***

Conclusion

- ▶ Prussian pre-WWI series overestimates income concentration at the very top compared to entire Germany.
- ▶ Top 10% share today is as high as in pre-WWI-Germany.
- ▶ Top 1% share today is at post-WWII high, but still lower than in pre-WWI-Germany.
- ▶ Growth in income concentration at the top in Germany seems to be related to
 - ▶ increasing profits from unincorporated firms
 - ▶ an increasing capital share.
 - ▶ decreasing average tax rates for the top 1%
 - ▶ decreasing union density
 - ▶ pro-rich international trade

Thank you for your attention!

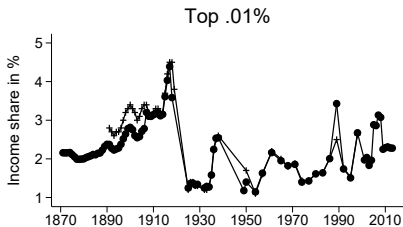
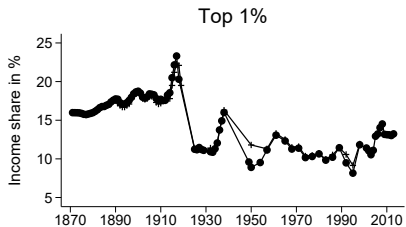
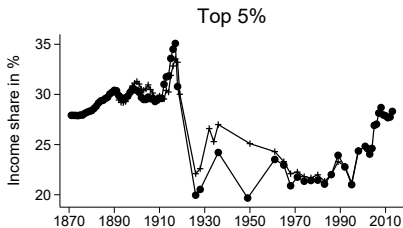
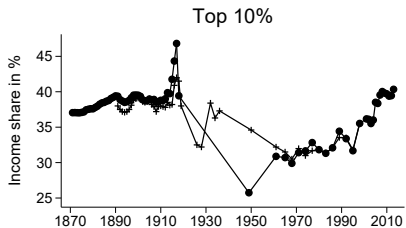
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Method: Pareto interpolation

1. **Pareto interpolation** to assess Pareto parameter a and **income threshold of top $x\%$** from PIT statistics
2. Total tax units and total income from **external data sources**
 - ▶ **total tax units**: married couples + singles aged 20+
Source: Statistical Yearbook [▶ Details](#)
 - ▶ **total income**: 90% of total household income
Source: National Accounts [▶ Details](#)
3. Income share of top $x\%$ =

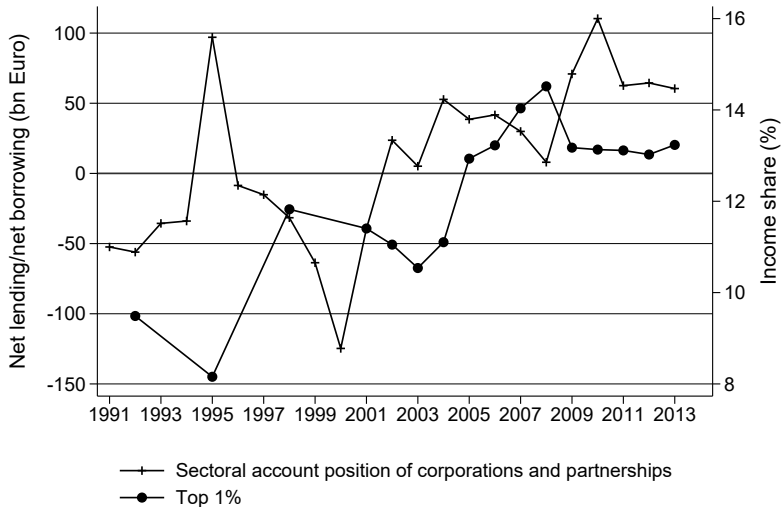
$$\frac{a}{(a - 1)} \cdot \text{income threshold of top } x\% \cdot \frac{x\% \text{ of total tax units}}{\text{total income}}$$

Shares compared to Dell (2007)



● This paper + Dell (2007)

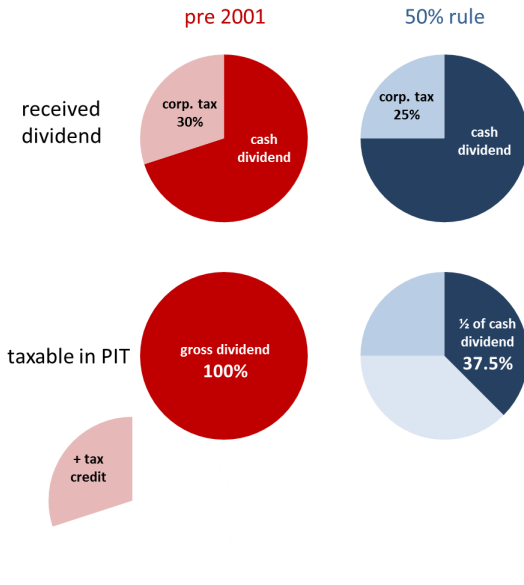
Retained earnings in corporate sector?



Source: Statistical Office, national accounts

50% rule for dividends

▶ Back



Tabulated data Germany 2010

Tabelle 3: Einkommensteuerpflichtige 2010 nach dem Gesamtbetrag der Einkünfte

Gesamtbetrag der Einkünfte von ... bis unter ... €	Gesamtbetrag der Einkünfte				Festgesetzte Einkommensteuer			
	Stpfl.	%	1 000 €	%	Stpfl.	%	1 000 €	%
30 000 - 37 500	3 155 047	11,9	106 009 181	9,6	3 117 919	14,6	11 763 235	6,3
37 500 - 50 000	3 676 976	13,9	158 998 127	14,4	3 659 554	17,1	21 424 496	11,4
50 000 - 75 000	3 638 457	13,8	220 258 865	20,0	3 628 756	17,0	36 399 615	19,4
75 000 - 100 000	1 416 853	5,4	121 314 902	11,0	1 413 349	6,6	24 254 614	12,9
100 000 - 125 000	590 847	2,2	65 471 156	5,9	589 104	2,8	14 977 938	8,0
125 000 - 175 000	435 332	1,6	63 168 196	5,7	433 545	2,0	16 546 893	8,8
175 000 - 250 000	206 186	0,8	42 379 646	3,8	204 969	1,0	12 549 445	6,7
250 000 - 375 000	102 960	0,4	30 818 652	2,8	102 107	0,5	9 935 408	5,3
375 000 - 500 000	35 238	0,1	15 100 367	1,4	34 879	0,2	5 103 953	2,7
500 000 - 1 000 000	34 243	0,1	22 842 890	2,1	33 788	0,2	7 965 146	4,3
1 000 000 - 2 500 000	11 025	0,0	16 100 077	1,5	10 835	0,1	5 521 704	2,9
2 500 000 - 5 000 000	2 230	0,0	7 564 253	0,7	2 221	0,0	2 494 523	1,3
5 000 000 oder mehr	1 314	0,0	17 386 712	1,6	1 307	0,0	5 188 878	2,8
zusammen	26 410 869	100	1 101 833 215	100	21 397 017	100	187 385 847	100
insgesamt	26 686 765		1 096 573 402		21 397 017		187 385 847	

Source: Annual PIT Statistics (*jährliche Einkommensteuerstatistik*), Destatis

Control total for income, 1871-1918

▶ back

Until 1918, income tax statistics are the most reliable source for national income (Helfferich, 1917) until German national accounts were first published. Two components taken from Hoffmann/Müller (1959) are added to taxable income recorded in the tax statistics to arrive at total household income:

taxable income recorded in tax statistics

+ tax exempt income

+ income of non-filers with income beneath the tax allowance

Control total for income, 1925-1938

1925-1938, income controls for German states result from the state's income share in total German income documented in tax statistics, i.e.,

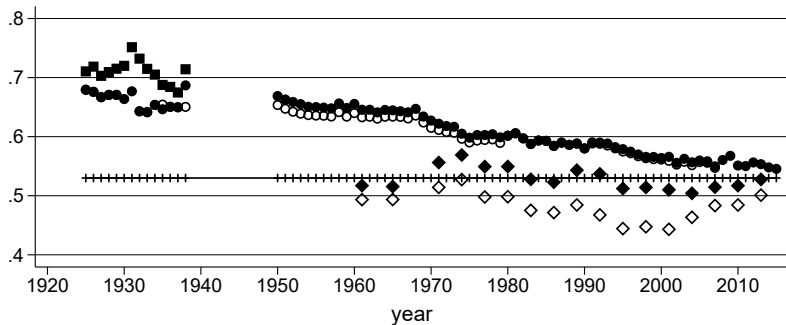
$$\text{Income Control}_s = (\text{Tax Income}_s / \text{Tax Income}) \cdot \text{Income Control}$$

Control total for income, 1950-2011

The income total is based on the national accounts published in *Fachserie 18 Reihe 1.5 Volkswirtschaftliche Gesamtrechnungen. Inlandsproduktberechnung, Lange Reihen ab 1970*. Total household income is the sum of

- Compensation of employees (Residents)
(*Arbeitnehmerentgelt (Inländer)*) (Table 1.3)
- + Operation surplus (*Betriebsüberschuss*) (Table 1.10)
- + Income of self-employed (*Selbständigeneinkommen*)
(Table 1.10)
- + Property income (*Vermögenseinkommen*) (Table 1.10)
- Employers' actual social contributions (*Sozialbeiträge der Arbeitgeber*) (Table 1.8).
- = Total household income

Control total for income



- (0.9 x totpersinc from Statistical Office)/GDP
- Pref RefTotInc = (0.9 x totpersinc)/GDP
- Dell (2007)
- +— 0.53 x GDP
- ◆ (TaxStatInc + 0.25 x avgtaxpayerinc)/GDP
- ◇ (TaxStatInc + 0.8 x threshold)/GDP

Control total for population

▶ back

Until 1918, population control is build on tax statistics:

tax units recorded in tax statistics

+ non-filers/tax exempt (*estimated by Hoffmann/Müller, 1959, and given in the tax statistics for Hesse (until 1883), Prussia and Saxony*)

From 1925 to the present, the population control for **Germany** is given by

Married Couples/2

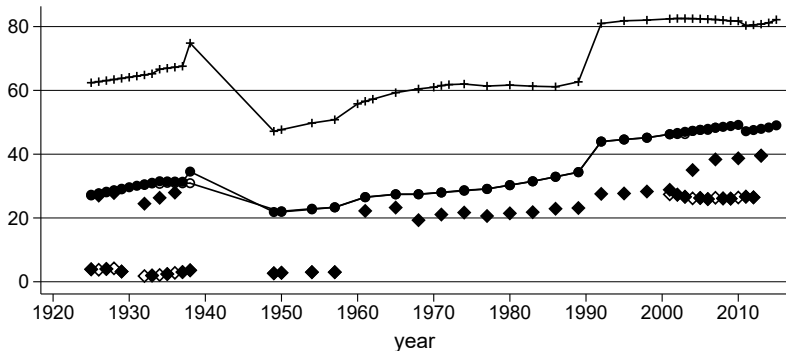
+ Bachelors

- Children (up to 19 years)

1925-1938, population controls for **German state** s result from its tax units' share in German tax units, i.e.,

Population Control_s = (Tax Units_s/Tax Units)·Population Control

Control total for population



- +— Total adult population
- Total reference population (tax units)
- Dell (2007)
- ◆ Total population recorded in income and payroll tax statistics
- ◇ Total population recorded in income tax statistics