

The Chartbook of Economic Inequality¹

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Abstract

The Chartbook summarizes the evidence about long-run changes in five different dimensions of economic inequality – overall and top income inequality, poverty, earnings dispersion, and wealth inequality – for 25 countries covering more than one hundred years. The evidence represents an update and extension of the work done by Atkinson and Morelli (2014). The results are presented in 25 charts, one for each country, together with a full description of the method and sources. Series, sources and graphs can be downloaded at www.chartbookofeconomicinequality.com.

Purpose

The purpose of this Chartbook is to present a summary of evidence about long-run changes in five different dimensions of economic inequality for 25 countries covering more than one hundred years. The evidence represents an update of the work done by Atkinson and Morelli (2014). There is a range of countries and they account for more than a third of the world's population: Argentina, Australia, Brazil, Canada, Finland, France, Germany, Iceland, India, Indonesia, Italy, Japan, Malaysia, Mauritius, Netherlands, New Zealand, Norway, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, the UK and the US. The results are presented in 25 charts, one for each country, together with a description of the sources. The underlying figures and original sources are available at www.chartbookofeconomicinequality.com.

We aim to provide for each country five indicators covering on an annual basis:

1. Overall income inequality
2. Top income shares
3. Income (or consumption) based poverty measures;
4. Dispersion of individual earnings;
5. Top wealth shares/ wealth inequality measures.

¹Tony Atkinson sadly passed away in January 2017, before the new version of the paper was finalized. Tony was the primary driver of this project which would not exist without his commitment, passion, and contribution. The assembly of the data for this chartbook has formed part of the Inequality project at the Institute for New Economic Thinking at the Oxford Martin School and has had the financial support of the INET grant (IN01100021). SM acknowledges financial support from the “Guido Cazzavillan Fellowship” at Ca’ Foscari University. An earlier version of the Chartbook was circulated in March 2014 with the title “The Chartbook of Economic Inequality”, ECINEQ working paper - 324. In April 2017 a bound copy of this document was distributed at the INET-Oxford. We thank Anne Brunner-Ellis, Jo Kay, Susan Mousley, and Tanya Vale for their support. For their help and advice, we thank Rolf Aaberge, Facundo Alvaredo, Charlotte Bartels, Hans Baumann, Andrea Brandolini, Jon Epland, Leonardo Gasparini, Markus M. Grabka, Arthur B. Kennickell, Andrew Leigh, René Levy, Stefán Ólafsson, Wiemer Salverda, Moritz Schularick, Ulrike Steins, Giovanni Vecchi, and Daniel Waldenström, but they are not to be held in any way responsible for any errors or omissions.

This is ambitious and our charts fall a long way short of being complete, as is illustrated in Table 1, which shows the dates at which, for each country, the five indicators commence. In the past, more evidence was available about the upper part of the distribution, and our indicators cover the top income shares more fully. For the other indicators, coverage is more limited. In only five of the twenty five countries do the data on overall inequality start before 1945. In many cases data are not always available for every year and there are gaps in the series. These are joined within the graphs but it is worth noting that this may well miss important year-to-year variations. In some cases, particularly for wealth, we have located no time series at all.

Our emphasis is on *change over time*. We have therefore concentrated on comparability over time, and for this reason presented the evidence country by country.

What do the indicators show?

For each of the five indicators, we have a preferred or otherwise standard definition, but we have had to depart from this where no data are available on this basis. To aid the reader, we have in the charts marked by the symbol (*) the series based on the preferred (or standard) definition. In a number of countries, this includes cases where data are available on the preferred definition only for the later part of the period, but where we have nonetheless chosen to piece together a longer series from sources that make use of different definitions.

In the case of *overall income inequality*, our preferred income concept is equivalised (using a scale to allow for differences in household size and composition) household disposable income, defined as income from all sources, including transfer payments, minus direct taxes and social security contributions. The equivalence scale used in most cases is the “modified OECD scale”, which gives a weight of 1 to the first adult, of 0.5 to each additional adult, and of 0.3 to each child. This means that the income of a family of 2 adults and 2 children is divided by 2.1. In some cases, other scales are employed, such as the square root scale, where income is divided by the square root of the household size (2 in the example just given). The distribution is among persons: each individual appears in the distribution with the equivalised income of the household. No allowance is made for within-household inequality. In a number of cases, the definitions in the available statistics depart from this preferred version. For example, income may not be adjusted for household size and composition, or the distribution may relate to gross income, before the deduction of income and social security taxes. Because the income tax is usually progressive, inequality is typically higher for gross income than for disposable income.

The overall distribution is summarised in a single summary statistic, typically the Gini coefficient, most commonly published by statistical agencies. The explanation of the coefficient given by most agencies is made in terms of geometry, but we prefer to describe it in terms of the mean difference. A Gini coefficient of G per cent means that, if we take any two households from the population at random, the expected difference is $2G$ per cent of the mean. So that a rise in the Gini coefficient from 30 to 40 per cent implies that the expected difference has gone up from 60 to 80 per cent of the mean. Another useful way of thinking, suggested by Amartya Sen, is in terms of “distributionally adjusted” national income, which with the Gini coefficient is $(100-G)$ per cent of national income. So that a rise

in the Gini coefficient from 30 to 40 per cent is equivalent to reducing national income by 14 per cent (1/7).

Much of the evidence about *top income shares* is derived from tax records, and our standard – although not necessarily preferred – definition is gross income for tax purposes before deduction of allowable outgoings. Typically, but not exclusively, income here excludes capital gains and losses. Where both including and excluding capital gains data was available (as for the United States and Sweden) we have chosen the latter. Transfer income is covered to varying degrees in different countries. Because the tax system is typically progressive, the top shares in disposable income are smaller: for example, in the UK in 2000 the share of the top 1 per cent in before tax income was 12.7 per cent, whereas the share in after tax income was 10.0 per cent. It is also worth noting that the measuring unit is typically not the household but the unit reporting income for tax purposes (the tax unit is typically formed by married couples and unmarried adults or adults only depending on the taxation regime of each country). The evidence about top shares is presented in terms of the shares of, typically, the top 1 per cent. This is readily interpreted: a share of 10 per cent for the top 1 per cent means that they receive 10 times their proportionate share of income.

Our preferred definition of *poverty* follows that adopted in the European Union (EU) agreed common social indicators: a relative measure set at 60 (or 50) per cent of the median equivalised disposable income in the country in question. In some cases, the figures presented relate to absolute poverty measures based on a poverty line fixed over time in terms of purchasing power. It should be stressed that the relative measure is not simply a measure of inequality. It would be quite possible for the EU measure to be reduced to zero without inequality being eliminated: a situation where no one receives less than 60 per cent of the median is quite consistent with considerable inequality.

Our preferred definition of *earnings dispersion* refers to the wage and salary received by those in employment and whose employment was not affected by absence. The indicator used in most cases is the ratio of earnings at the top decile (the person 10 per cent from the top) to the median earnings expressed as a percentage. This is a measure of how far the distribution of earnings is spread out at the top: a figure of 180 per cent means that those in the top 10 per cent of earnings receive 80 per cent or more in excess of median earnings.

The indicator of *wealth* is taken to be the net worth of either individuals (as in estate data) or of households (as in survey data). “Net” means that all liabilities (debts) have been subtracted from the total assets (real and financial); the figure for some households is negative (for example where the mortgage exceeds the value of the property). The summary indicator used in most cases is the share of the top 1 per cent. A figure of 25 per cent means that the top 1 per cent owns 25 times their proportionate share.

Linking of series over time

Discontinuities in statistical series on inequality are frequent. The US Census Bureau “selected measure of household income dispersion” covers the period from 1967 to the present, but there are no fewer than 19 footnotes indicating changes in the processing method. This is more than one every third year. Dealing with these is a matter for judgment. In constructing the series in the Chartbook, the rules we have followed are (a) to accept in

general continuous published series; (b) to link overlapping series given within a single source by assuming they share a proportional relationship (i.e. if an overlap begins in 1970, the series are linked by multiplying the pre-1970 series by the ratio of the new to the old observation for 1970); (c) to link in the same way overlapping series from different sources where there appears to be a sufficiently close definition (we recognise that this is a matter for judgment); and (d) in some cases, where there is no overlapping year between two series, to join them by linking adjacent years (i.e. implicitly making the additional assumption that there was no change over the intervening period). In a few instances, where a discontinuity is present in very recent years, we have applied the proportional linking, as described above, forward rather than backward. This avoids recent methodological changes affecting observations for the distant past in long-run series.

The proportionate linking means that the reader can rely on the year-to-year percentage changes, but means that the figures graphed here may differ from those in the original sources.

Where the conditions stated above are not satisfied, then we show multiple series without links.

Scaling

In choosing the scaling of the graphs, we preferred the scale that guaranteed the clearest possible visualisation of the series. Therefore, we warn the reader that the scale of the graphs is not always comparable across countries.

Permission to use this work

All data, sources, and graphs are made freely accessible for everyone to use at our web site: www.chartbookofeconomicinequality.com.

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Sources

The sources are described for each country on the page following the chart. We have tried in all cases to check the figures against the original sources. The importance of such checking

may be illustrated by reference to South Africa. In seeking data on the overall distribution, we had identified a series for the Gini coefficient covering the years from 1960 to 1987 in the World Income Inequality Database (WIID). Given the problems of securing long-term distributional data for that country, this appeared too good to be true. This proved to be the case. Investigation of the original source (Lachmann and Bercuson, 1992, Table 2) revealed that the title was “Gini coefficients assuming income equality within racial groups”. The data showed the differences between races, which is an important part, but only part, of the story. These data do not measure overall inequality and are not used here.

In this exercise, we have made use of valuable building blocks. In particular the studies of top incomes, largely resulting from the project organised by Atkinson and Piketty (2007 and 2010), provide an anchor for the empirical analysis of top shares. This project gave rise to the World Top Incomes Database subsequently subsumed into the World Wealth and Income Database (referred to below as ‘WTID’ and ‘WID.world’ respectively). But we wish also to cover, as far as possible, the distribution as a whole, and to follow what happens to poverty as well as riches. The series that we present therefore show not only top income shares but also measures of overall inequality and measures of low incomes. Here we are able to draw on the collection of historical data assembled over the years by Atkinson and Brandolini (see for example, Brandolini, 2002).

The general sources on which we have drawn are:

- (a) Atkinson, A B, 2008, *The changing distribution of earnings in OECD countries*, Oxford University Press, Oxford.
- (b) Atkinson, A B and Piketty, T, editors, 2007, *Top incomes over the twentieth century*, Oxford University Press, Oxford.
- (c) Atkinson, A B and Piketty, T, editors, 2010, *Top incomes: a global perspective*, Oxford University Press, Oxford.
- (d) Brandolini, A, 2002, “A bird’s eye view of long-run changes in income inequality”, Bank of Italy Research Department, Rome.
- (e) Luxembourg Income Study (LIS) *Key Figures*, downloaded from LIS website. In June 2016, the *Key Figures* covered 47 countries, including 19 of those covered by this Chartbook: <http://www.lisdatacenter.org/data-access/key-figures/inequality-and-poverty/>
- (f) World Top Income Database (WTID), by F Alvaredo, A B. Atkinson, T Piketty, and E Saez. Online between January 2011 and November 2015.
- (g) *World Wealth and Income Database (WID.world)*, created by F Alvaredo, A B Atkinson, T Piketty, E Saez and G Zucman, <http://www.wid.world>. The database and the project (managed also with the contribution of Lucas Chancel) is the expansion of a previous version publicly known as World Top Income Database.
- (h) OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios http://www.oecd-ilibrary.org/employment/data/earnings_lfs-ear-data-en
- (i) Eurostat data based on EU-SILC (Statistics on Income and Living Conditions) http://ec.europa.eu/eurostat/web/products-datasets/-/ilc_di12

In the case of the last of these, it should be noted that the results are published on the basis of the *survey year*, whatever the underlying *income year*. The income reference period in EU-SILC is a fixed 12-month period *prior* to the survey year (such as the previous calendar or

tax year). This holds for all countries except the UK, for which the income reference period is the *current* year and Ireland (not included in the Chartbook) for which the survey is continuous and income is collected for the last twelve months. (This may be seen by consulting the Metadata on the website.) The income year has therefore been taken here, for all countries apart from the UK, as the year preceding the survey year.

As for the WID.world data on Top income shares, we mostly refer to data downloaded in December 2016. At the same time, it is worth stressing that not all data on top income shares is taken from the WID.world. This is the case, for instance, of Brazil and Iceland, where estimates are taken from existing literature.

We owe a considerable debt to the many researchers who have contributed to these sources.

What's new in the 2017 version?

It is worth stressing that the 2017 version of the Chartbook of Economic Inequality contains important differences with respect to its preceding versions.

First of all, all series have been updated, extending the coverage in time, both forward and backward whenever possible.

Second, the reliability of all data has been re-assessed leading to the omission of a few series previously included and the replacement of specific data where a more compelling substitute has become available or otherwise brought to our attention. In some cases, amendments have been made in the way different series are linked together, or links to additional series have been introduced in order to provide a more consistent long-run view.

Third, all original sources have been individually verified and provided in a separate sources sheet for each country, from which the Chartbook series are calculated, so as to allow for full replicability. This has led to some modest revisions of some Chartbook series where rounded figures had been used previously.

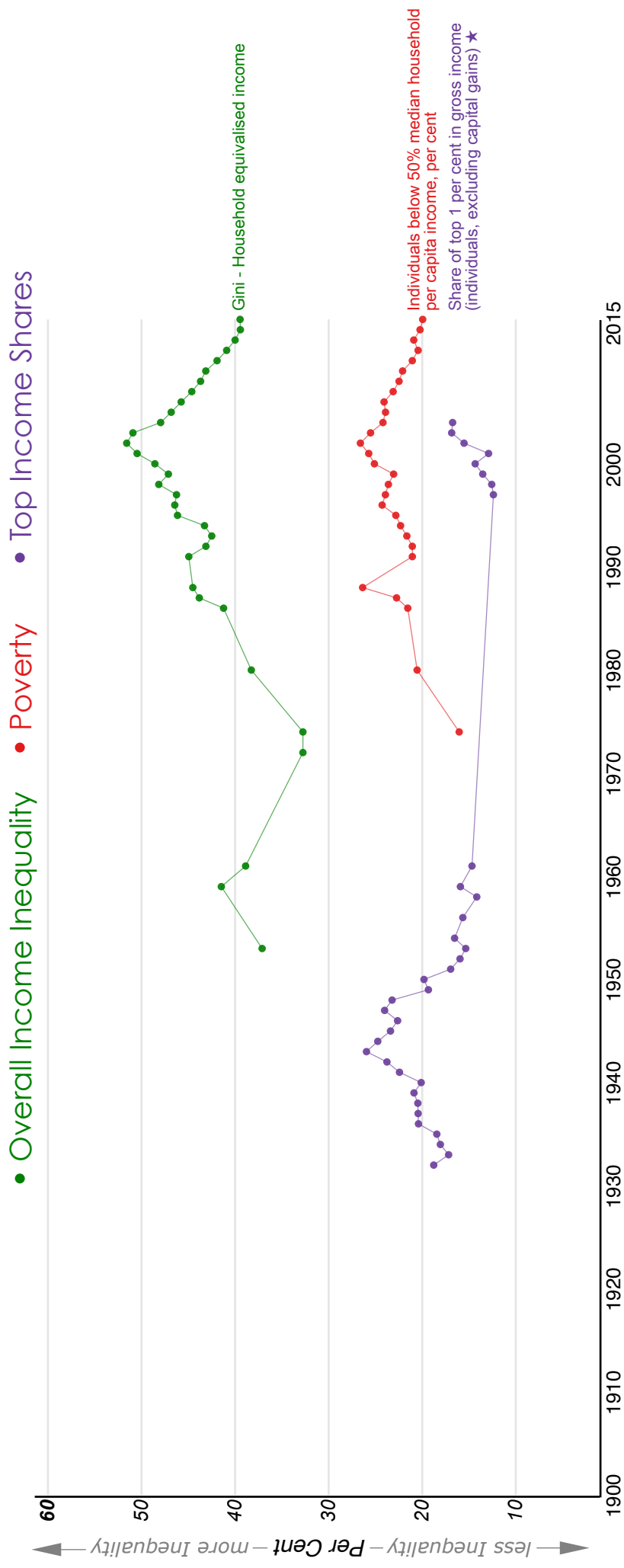
This important additional information can now be found online which, we hope, will increase both the reliability of the Chartbook series and transparency in terms of how they have been constructed. This provision will also allow users to make use of the original sources in alternative ways, should they find anything to question amongst the judgements that have been made when combining series. Note that hyperlinks to original data sources and references are also directly provided, wherever possible, both within the 'sources' sheets of the spreadsheet and the sources description for each country.

Table 1 Coverage of data for the Chartbook (first year of data of the original source)

Country	Overall inequality	Top income shares	Poverty	Earnings	Wealth
Argentina	1953	1932	1974	-	-
Australia	1950	1921	1981	1975	1915
Brazil	1981	1960	1981	2002	-
Canada	1959	1920	1976	1931	-
Finland	1920	1920	1971	1971	1909 (<i>1800</i>)
France	1956	1900	1970	1950	1902 (<i>1807</i>)
Germany	1962	1900 (<i>1891</i>)	1962	1949	1973
Iceland	2003	1992	1986	1986	-
India	1951	1922	1973	1983	-
Indonesia	1964	1920	1970	-	-
Italy	1901 (<i>1861</i>)	1974	1977	1973	1989
Japan	1923	1900 (<i>1886</i>)	1985	1951	1983
Malaysia	1957	1947	1970	-	-
Mauritius	1975	1933	1996	-	-
Netherlands	1959	1914	1994	1977	1905 (<i>1894</i>)
New Zealand	1958	1921	1982	1958	1956
Norway	1900 (<i>1875</i>)	1900 (<i>1875</i>)	1986	1986	1912 (<i>1789</i>)
Portugal	1967	1936	1980	1982	-
Singapore	1966	1947	-	1965	-
South Africa	1975	1914	2006	1997	-
Spain	1964	1933	1985	2004	1901
Sweden	1951	1903	1975	1975	1908 (<i>1800</i>)
Switzerland	1950	1933	1982	1991	1915
UK	1938	1908	1961	1954	1900 (<i>1895</i>)
US	1918	1913	1948	1939	1913

Note: In a few cases the actual initial year of the series (within the original sources) precedes the year 1900 and this is indicated within the table in italics and parenthesis. Series are not always continuous.

Economic Inequality in Argentina



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

1. Argentina

Sources:

Overall inequality: Gini coefficient for household equivalised income from SEDLAC (Source: Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)) (accessed 21 February 2017) EPHC data (averages where multiple observations per year), linked backwards at 2003 to data for 28 main cities from 1998 to 2003, linked at 1998 to data for 15 main cities from 1992 to 1998, linked at 1992 to data for Greater Buenos Aires from 1974 to 1992, linked at 1974 to 1972 estimate in CONADE-CEPAL/Gas del Estado series from Altimir (1986, Cuadro 7).

Top income shares: Shares of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world, based on work of Alvaredo (2010).

Poverty measures: Percentage of individuals below 50 per cent of median household per capita income from SEDLAC (Source: Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)) (accessed 21 February 2017), EPHC data (averages where multiple observations per year), linked backwards at 2003 to data for 28 main cities from 1998 to 2003, linked at 1998 to data for 15 main cities from 1992 to 1998, linked at 1992 to data for Greater Buenos Aires from 1974 to 1992.

Dispersion of earnings: No suitable data were found.

Wealth inequality: No suitable data were found.

References:

Altimir, O, 1986, "Estimaciones de la distribución del ingreso en la Argentina, 1953-1980", *Desarrollo Económico*, vol 25: 521-566.

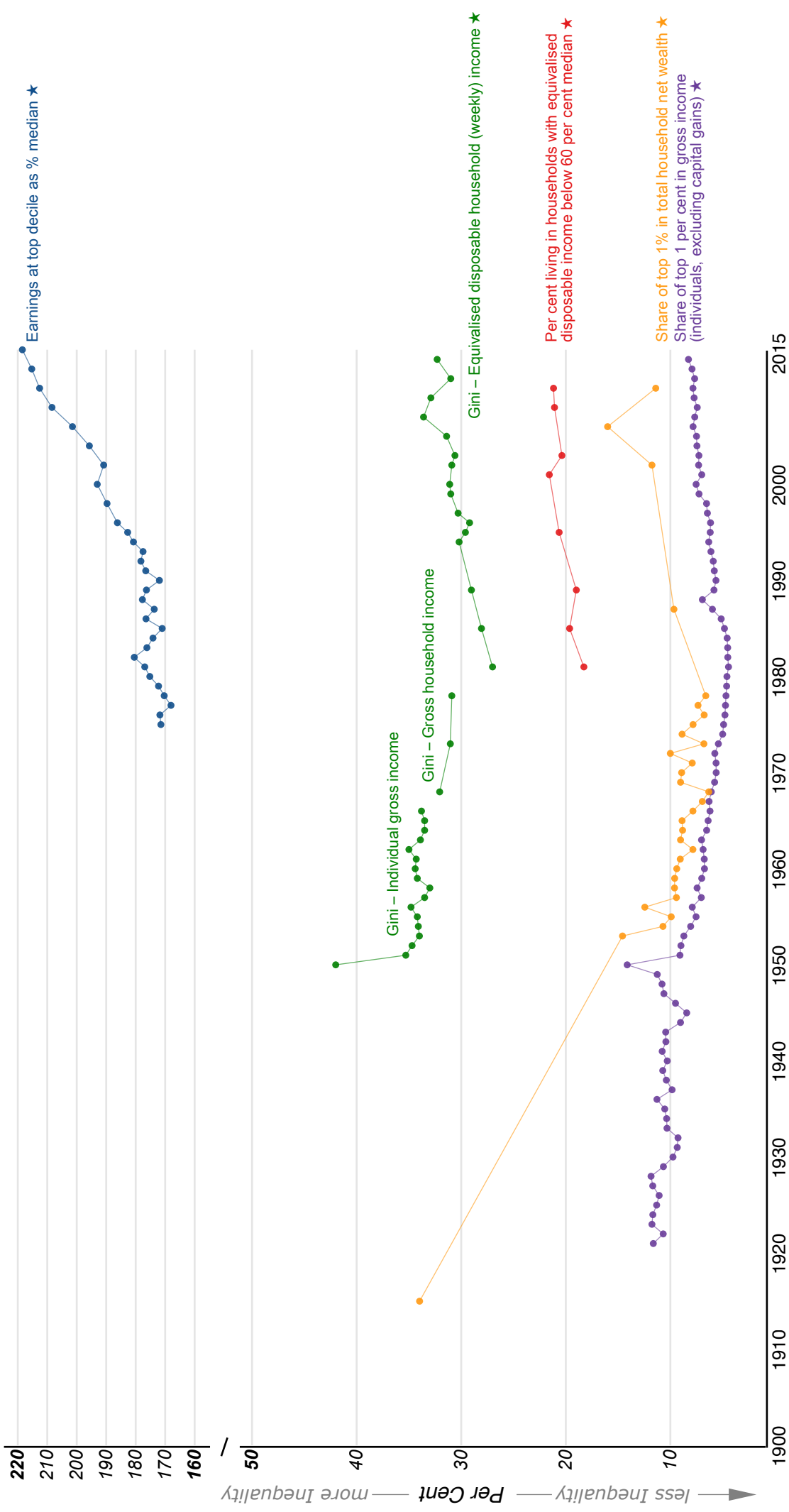
Alvaredo, F, 2010, "The rich in Argentina over the twentieth century 1932-2004" in A B Atkinson and T Piketty, editors, *Top incomes: A global perspective*, Oxford University Press, Oxford.

Gasparini, L and Cruces, G, 2008, "A distribution in motion: The case of Argentina", CEDLAS, Universidad Nacional de La Plata.

Gasparini, L, Cruces, G and Tornarolli, R, 2011, "Recent trends in income inequality in Latin America", *Economía*, vol 11: 147-190.

Economic Inequality in Australia

• Earnings Dispersion
 • Overall Income Inequality
 • Poverty
 • Top Income Shares
 • Wealth Inequality



2. Australia

Sources:

Overall inequality: Series 1: Gini coefficient of equivalised disposable household (weekly) income from Table 1.1 in catalogue 6523.0 (Australian Bureau Statistics –ABS- Household Income and Wealth – Australia 2013-2014) (accessed 21 February 2017). According to the ABS, although the estimates for 2003–04 and 2005–06 have been recompiled to reflect the new measures of income introduced in 2007-2008, “not all components introduced in 2007–08 are available for earlier cycles” (see Wilkins, 2014 for a detailed assessment of such methodological changes for income distribution measures; linked at 1995 to series from LIS Key Figures (accessed 21 February 2017)). Series 2: Gini coefficient for gross household income calculated from Ingles (1981, Table 9). Series 3: Gini coefficient for individual gross income from Hancock (1971, Table 4).

Top income shares: Share of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world, based on work of Atkinson and Leigh (2007), updated and revised by Roger Wilkins of the University of Melbourne. For a critique of the Atkinson/Leigh estimates, and alternative estimates for the period 1970 to 2010, see Burkhauser, Hahn and Wilkins (2015).

Poverty measures: Percentage of individuals in households with equivalised (square root scale) disposable income below 60 per cent of the median from LIS Key Figures (accessed 21 February 2017).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from May survey, *Employee Earnings and Hours* (all employees) taken from Atkinson (2008, Appendix A, Table A.5), updated from reports for 2006 (*Employee Earnings and Hours*, Table 5), 2008 (*Employee Earnings and Hours*, Table 6), 2010 (*Employee Earnings and Hours*, Table 8), 2012 (Data cube: ‘ALL EMPLOYEES, Distribution’, Table 1) and 2014 (Data cube: ‘ALL EMPLOYEES, Distribution’, Table 2) from the Australian Bureau of Statistics website, catalogue 6306.0 (accessed 21 February 2017), linked backwards at 1998 to series back to 1975 given by OECD (Atkinson, 2008, Table A.3).

Wealth inequality: Share of top 1 per cent in total household net wealth from Katic and Leigh (2015, Appendix Tables, Table A1 and A2): 1915 observation based on national wealth survey (tabulations), inheritance tax series used from 1953 to 1978 (when the inheritance tax was abolished), and more recent observations, since 1987, based on national wealth surveys (micro data).

References:

Atkinson, A B, 2008, *The changing distribution of earnings in OECD countries*, Oxford University Press, Oxford.

Atkinson, A B and Leigh, A, 2007, “The distribution of top incomes in Australia”, *Economic Record*, vol 83:247-261.

Burkhauser, R, Hahn, M and Wilkins, R, 2015, “Measuring top incomes using tax record data: A cautionary tale from Australia”, *Journal of Economic Inequality*, vol 13: 181-205.

Hancock, K, 1971, “The economics of social welfare in the 1970s”, in H Weir, editor, *Social welfare in the 1970’s*, Australian Council of Social Science, Sydney.

Ingles, D, 1981, *Statistics on the distribution of income and wealth in Australia*, Research Paper no 14, Department of Social Security, Canberra.

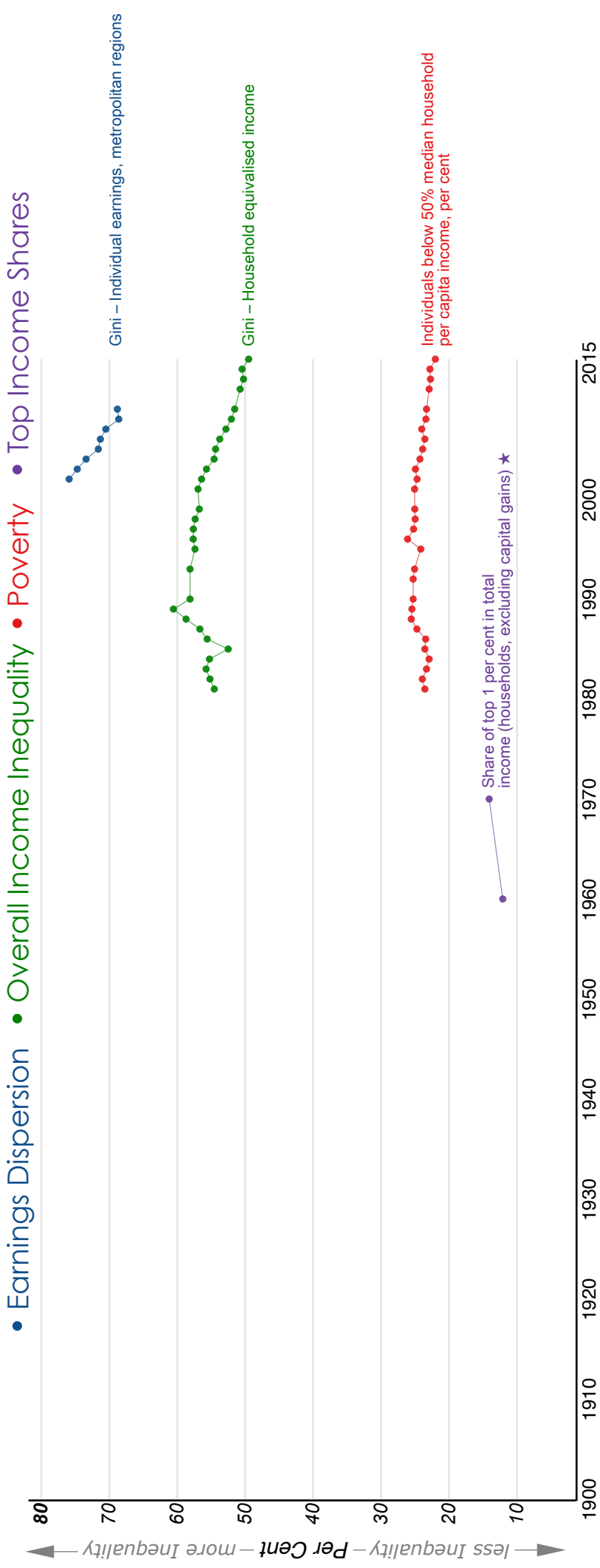
Katic, P and Leigh, A, 2015, “Top Wealth Shares in Australia: 1915-2012”, *Review of Income and Wealth*, vol 62: 209–222, Issue 2, June 2016.

Saunders, P, 1993, “Longer run changes in the distribution of income in Australia”, *Economic Record*, vol 69: 353-366.

Wilkins, R, 2014, “Evaluating the evidence on income inequality in Australia in the 2000s”, *Economic Record*, vol 90: 63-89.

Wilkins, R, 2015, “Measuring income inequality in Australia”, *Australian Economic Review*, vol 48: 93-102, 2015.

Economic Inequality in Brazil



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

3. Brazil

Sources:

Overall inequality: Gini coefficient for household equivalised income from SEDLAC (Source: Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)) (accessed 21 February 2017) – see Gasparini, Cruces and Tornarolli (2011); linked at 2004 to the “New PNAD” data series, linked at 1993 to the earlier “PNAD” series (on the assumption of no change between 1990 and 1993).

Top income shares: Share of top 1 per cent in total income (households, excluding capital gains) for 1960 and 1970 from Langoni (1978, Tabela 1.1 and 3.3).

Poverty measures: Percentage of individuals below 50 per cent of median household per capita income from SEDLAC (Source: Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)) (accessed 21 February 2017), linked at 2004 to the “New PNAD” data series, linked at 1993 to the earlier “PNAD” series (on the assumption of no change between 1990 and 1992).

Dispersion of earnings: Gini coefficient for labour earnings in *six main metropolitan regions*, persons aged 15-60, from Neri (2010, Table 2.3, June figures).

Wealth inequality: No suitable data were found.

References:

Fishlow, A, 1972, “Brazilian size distribution of income”, *American Economic Review, Papers and Proceedings*, vol 62: 391-402.

Gasparini, L, Cruces, G and Tornarolli, R, 2011, “Recent trends in income inequality in Latin America”, *Economia*, vol 11: 147-190.

Langoni, C G, 1978 (first edition 1973), *Distribuição de Renda e Desenvolvimento Econômico do Brasil?*, Expressão e Cultura, Rio de Janeiro.

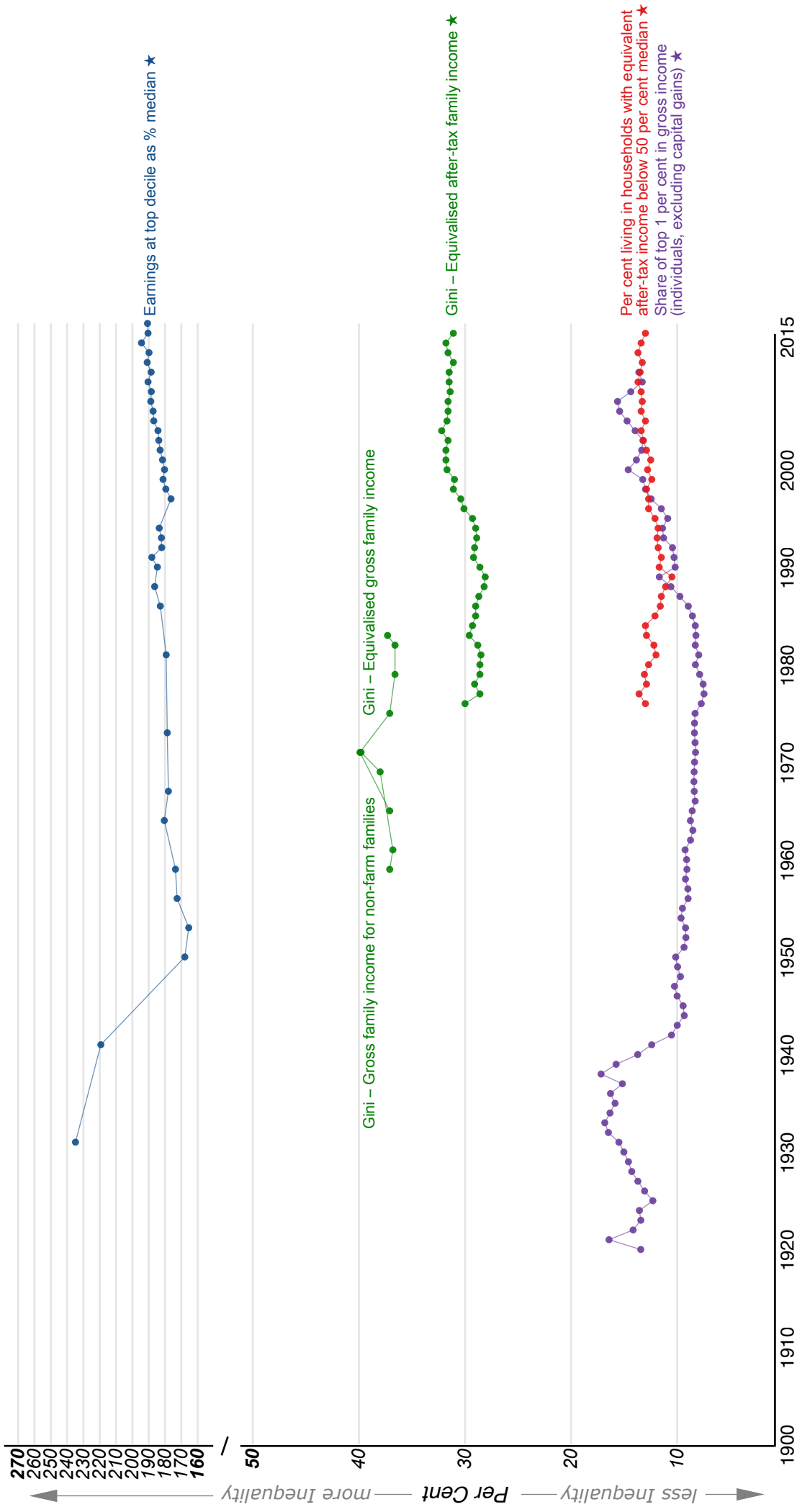
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Langoni, C G, 1975, “Review of income data: Brazil”, Research Program in Economic Development Discussion Paper 60.

Neri, M C, 2010, “The decade of falling income inequality and formal employment generation in Brazil” in *Tackling inequalities in Brazil, China, India and South Africa*, OECD, Paris.

Economic Inequality in Canada

- Earnings Dispersion
- Overall Income Inequality
- Poverty
- Top Income Shares



4. Canada

Sources:

Overall inequality: Series 1: Gini coefficient of equivalised (from 2010 square root scale) after-tax family unit income from Statistics Canada, Table 206-0033 (accessed 22 February 2017). Series 2: Gini coefficient for equivalised *gross* family income for 1965 to 1983 from Wolfson (1986, Table 3, Total Money Income Per Equivalent Adult Unit); Series 3: Gini coefficient for *gross* family income *restricted to non-farm families* for 1959-1971 from Love (1979, Table A.3).

Top income shares: Share of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world, based on work of Saez and Veall (2007) and Veall (2010) (more recent Longitudinal Administrative data LAD) linked in 1982 to earlier series).

Poverty measures: Percentage of individuals in households with equivalised after-tax annual income *below 50 per cent* of the median from Statistics Canada, Table 206-0041 (accessed 22 Feb 2017).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 Feb 2017), joined from 1994 backwards to earlier observations from Atkinson (2008, Appendix C). Break between the two sources indicated within the table. Earlier OECD figures (Table C.3) are linked to a series on earnings in the manufacturing industry (Table C.5), linked in 1950 to census data prior to 1951 (Table C.4).

Wealth inequality: No suitable data were found.

References:

Atkinson, A B, 2008, *The changing distribution of earnings in OECD countries*, Oxford University Press, Oxford.

Love, R, 1979, *Income distribution and inequality in Canada*, Ministry of Supply and Services, Ottawa.

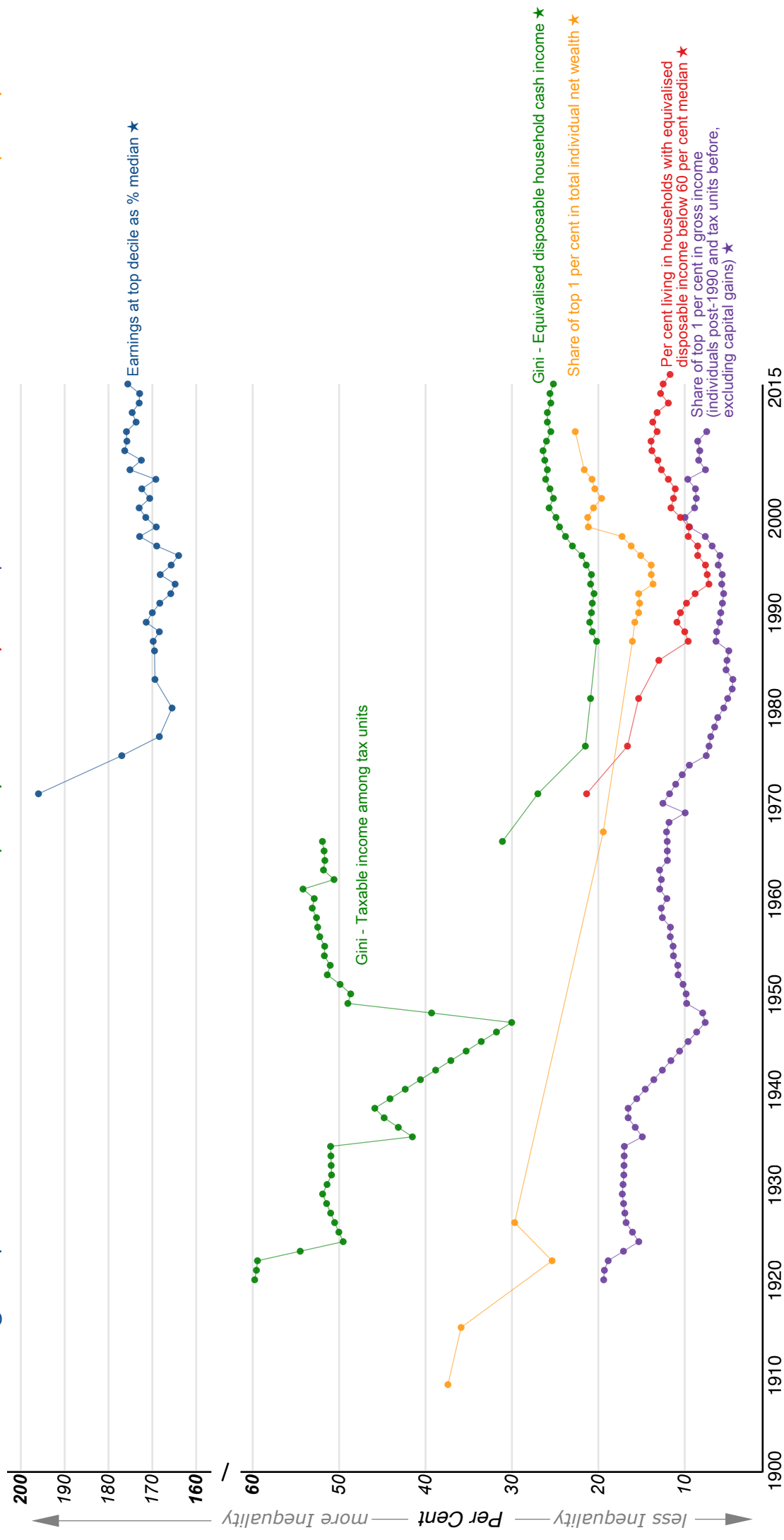
Saez, E and Veall, M R, 2007, "The evolution of high incomes in Canada: 1920-2000" in A B Atkinson and T Piketty, editors, *Top incomes over the twentieth century*, Oxford University Press, Oxford.

Veall, M R, 2010, "Top income shares in Canada: Updates and extensions", working paper, McMaster University.

Wolfson, M C, 1986, "Stasis Amid Change – Income Inequality in Canada 1965-1983", *Review of Income and Wealth*, vol 32: 337-369.

Economic Inequality in Finland

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

5. Finland

Sources:

Overall inequality: Series 1: Gini coefficient of equivalised (EU scale) household disposable cash income from 1966 from Statistics Finland – Income and Consumption, Income Distribution Statistics (PX-Web StatFin, Table 4b; accessed 22 February 2017); it should be noted that the figures for 1966-1981, 1987-1992, and from 1993 are not fully comparable and that the figures prior to 2002 use the OECD equivalence scale; earlier series 2 for distribution *among tax units* based on tax records from 1920 to 1966 from Jäntti et al (2010, Table 8A.1), see also Berglund et al (1998) and Eriksson and Jäntti (1998). From 2011 onwards Statistics Finland uses households' disposable money income as the main concept (imputed income from owner-occupied dwellings and taxable realized capital gains are excluded).

Top income shares: Share of top 1 per cent in total gross income (individuals post-1990 and tax units before, excluding capital gains) from WID.world based on work of Jäntti et al (2010) based on the Income Distribution Survey, linked at 1990 to the earlier series based on income tax records.

Poverty measures: Percentage of individuals in households with equivalised (modified OECD scale) disposable income below 60 per cent of the median from website of Statistics Finland – Income and Consumption, Income Distribution Statistics (PX-Web StatFin, Table 5a; accessed 22 February 2017), linked backwards at 1990 to estimates by Riihelä, Sullström and Tuomala (2003, Table A.4.1) using OECD equivalence scale.

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017), linked at 1980 to earlier series from Atkinson (2008, Appendix F, Table F.3).

Wealth inequality: Share of top 1 per cent in total individual net wealth from Roine and Waldenström (2015). Figures are based on estate data between 1907 and 1915; wealth tax assessments 1922-67; wealth tax tabulations from 1987-2005 using net marketable wealth.

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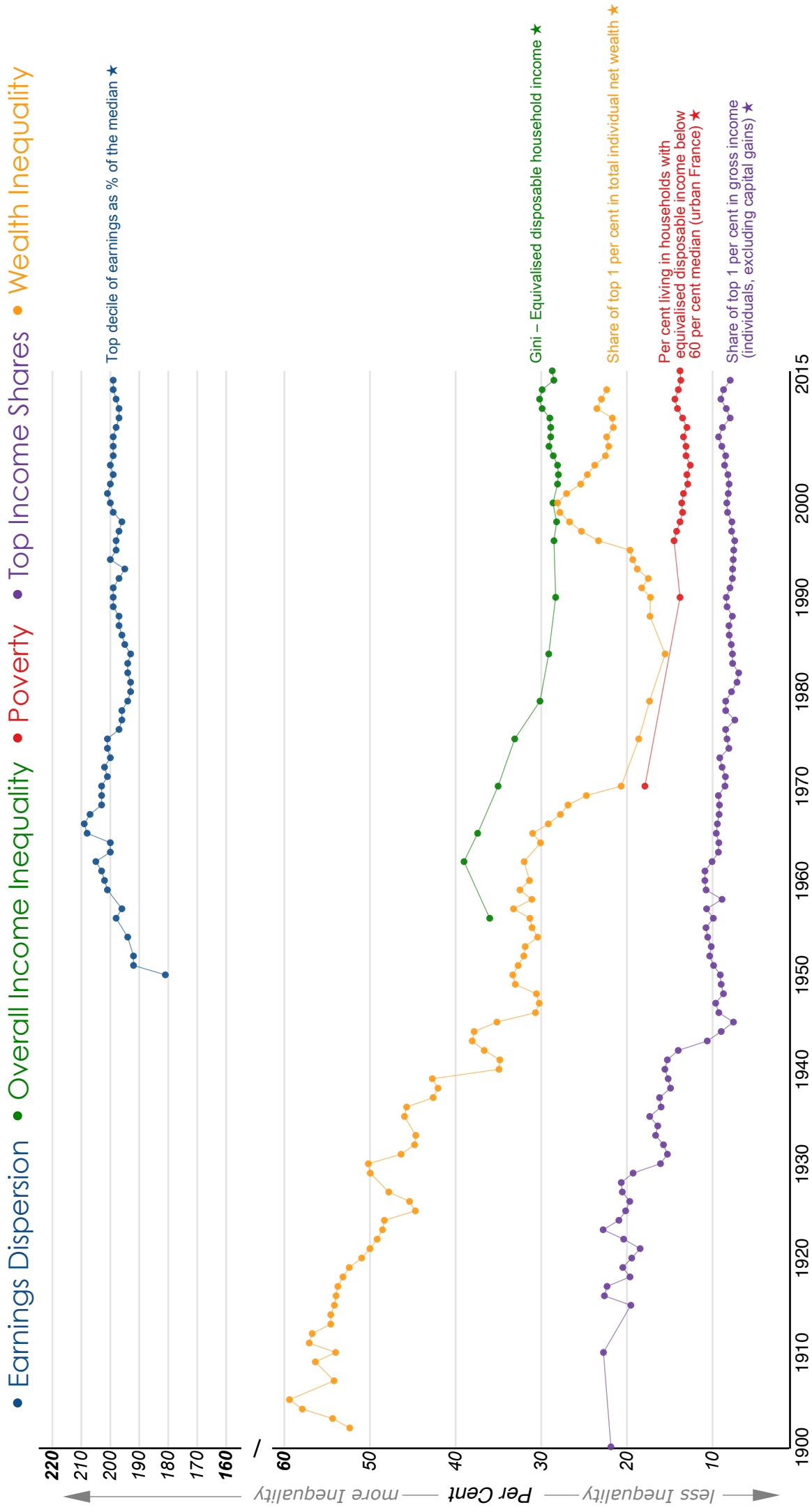
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Economic Inequality in France



6. France

Sources:

Overall inequality: 2002-2014: earlier figures for Gini coefficient of equivalised (modified OECD scale) disposable household income from website of INSEE, Les niveaux de vie en 2010, Tableau 1; the most recent observations, from Les niveaux de vie en 2014, Figure 2, being adjusted downward using a forward proportional link at 2010 and 2012 to deal with a change in methodology; linked at 2002 to earlier figures from Godefroy et al (2009, Table 1); linked again at 1996 to earlier INSEE figures in Revenu et Patrimoine des Ménages, édition 1999, p32, Table 10), linked backwards at 1970 to series on gross income (excluding certain categories of income) from Concialdi (1997, Table 11.11), and finally linked again to earlier years at 1962 to figures retrieved from WIID data referring to UN-ECE-1967 source (household taxable income).

Top income shares: Share of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world. Based on the work of Garbinti, Goupille-Lebret, and Piketty, 2016a. The series is based on micro-files of income tax returns for years post 1970 years and on income tax tabulations for earlier years (non-taxable income sources are accounted for). Figures replace tax record series from Piketty (2001) up to 1997 (updated from 1998 to 2006, in Landais (2007) and from 2007 onwards by F. Alvaredo and T. Piketty). The base unit is the individual but resources are split equally within couples. See also Garbinti, Goupille-Lebret, and Piketty, 2016a for a comparison of results based on pre-tax national income (the sum of all pretax personal income flows accruing to the owners of the production factors, labor and capital, after taking into account the distribution of pension income but before any other tax or transfer).

Poverty measures: Percentage of individuals living in households with equivalised (EU scale) disposable income below 60 per cent of the median (urban France) from INSEE, *Tableaux de l'économie française édition 2017*, section 5.5 Niveaux de vie – Pauvreté, p65, *Taux de pauvreté* table, with additional observations taken from *Revenu, niveaux de vie, et pauvreté en 2012*, ERF5 – INSEE Résultats No. 164, *Taux de pauvreté – Séries longues 1996-2012*, table TPA60_01. ; Similarly to what done for the Gini coefficient, the most recent observations were adjusted downward using a forward proportional link at 2010 and 2012 (when the method of calculation was revised).

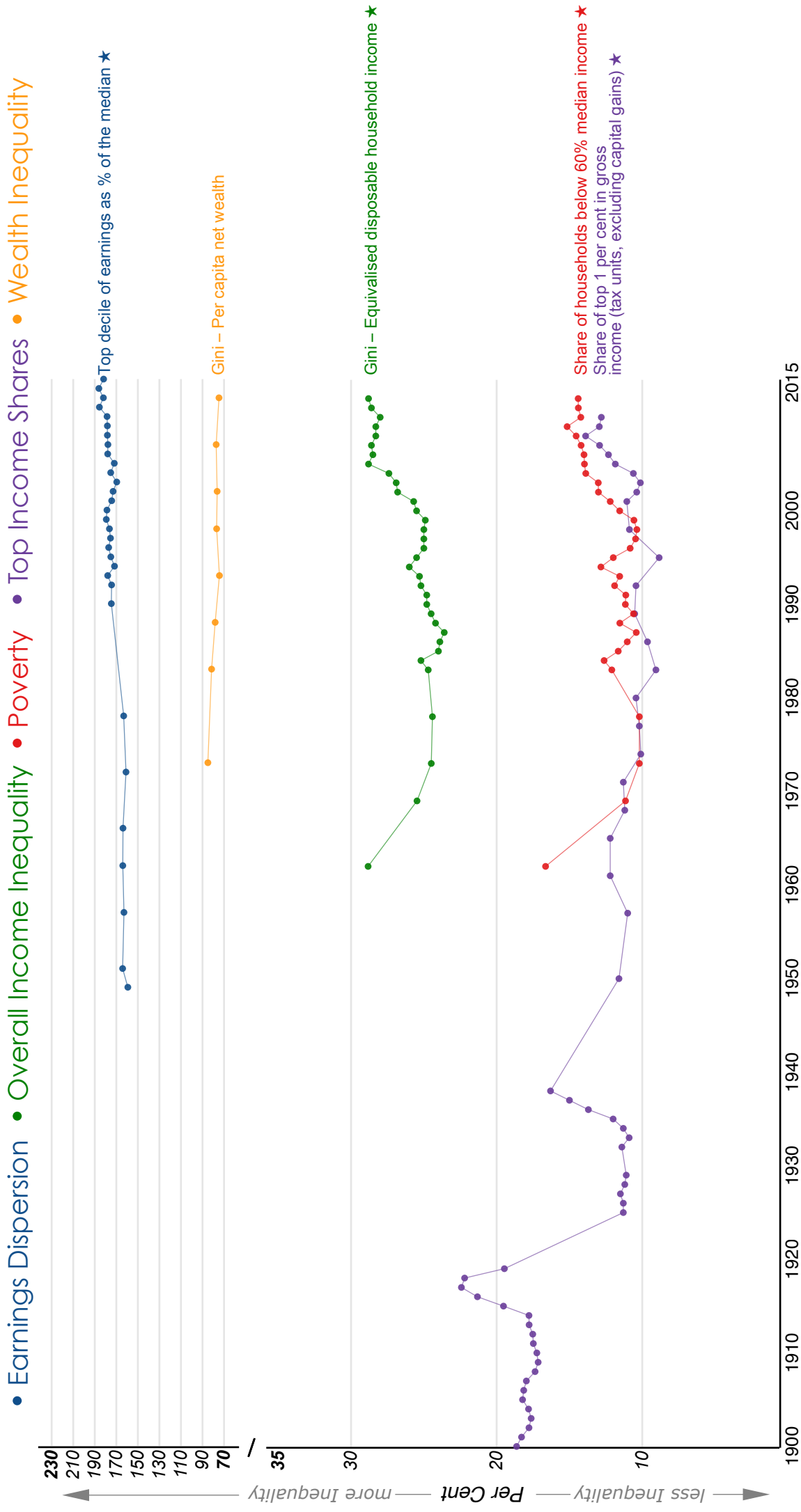
Dispersion of earnings: Earnings at top decile as percentage of median earnings, from the *Annual wages: distributions and evolutions* time series available at the INSEE website (D9/D5 interdecile ratio of the *Distribution of salaries for full-time jobs by gender* section, downloaded 27 February 2017).

Wealth inequality: Share of top 1 per cent in total individual net wealth from WID.world, (see Garbinti, Goupille-Lebret, and Piketty, 2016b). The series, is based on estate multiplier method based on inheritance tax data for pre-1970 period and on "a mixed capitalization method based on income tax data and household surveys" (p. 3) for the period following 1970. The series replaces the share of top 1 per cent in total *estates* at death from Piketty, Postel-Vinay and Rosenthal (2004, Table A7).

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Economic Inequality in Germany



7. Germany

Sources:

Overall inequality: Gini coefficient of equivalised (modified OECD scale) disposable household income for all persons in private households for all Germany (West Germany from 1984 to 1990) from SOEPmonitor 1984-2013, SOEP Survey Paper 284, page 83, note that the data are based on information collected in the German Socio-Economic Panel on annual income (preceding year, so that the 2012 data are from the 2013 survey), linked backwards at 1983 to data from the EVS (Income and Expenditure Survey) for West Germany from Becker (1997, Tabelle 1) and Hauser and Becker (2001, page 89).

Top income shares: Share of top 1 per cent in total gross income (tax units, excluding capital gains) from WID.world, covering West Germany from 1950 to 1990 and thereafter unified Germany; earlier series covering Prussia before 1919 and the German Reich from 1925 to 1938 (including capital gains), based on the work of Dell (2007) and Bartels and Jenderny (2015).

Poverty measures: Percentage of individuals in households with equivalised (modified OECD scale) disposable income below 60 per cent of the median for all persons in private households for all Germany (West Germany from 1984 to 1990) from SOEP Group (2015), SOEP2013-SOEPmonitor 1984-2013, SOEP Survey Paper 284, page 91, FGT=0 column (e.g. when Foster–Greer–Thorbecke poverty index reduces to the headcount ratio) - note that the data are based on information collected in the German Socio-Economic Panel on annual income (preceding year, so that the 2012 data are from the 2013 survey)-; linked at 1983 to series for percentage of individuals in households with equivalised (original OECD scale) disposable household income below *50 per cent of the mean* for all persons of German nationality in private households for West Germany, from Becker (1997, Tabelle 2).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017), linked (via 1995) to earlier series covering West Germany from 1949 to 1991 and Germany till 1995 from Atkinson (2008, Appendix H, Table H.4).

Wealth inequality: Gini coefficient per-capita net wealth covering Germany taken from Frick, Grabka and Hauser (2010, Tabelle 2.6), using SOEP data – updated figures for 2002, 2007, and 2012 provided by Markus Grabka; linked at 2002 on the assumption of no change to 2003 using the earlier series based on the income and expenditure survey - EVS; further linked at 1998 to earlier EVS 1973-1993 series related to West Germany.

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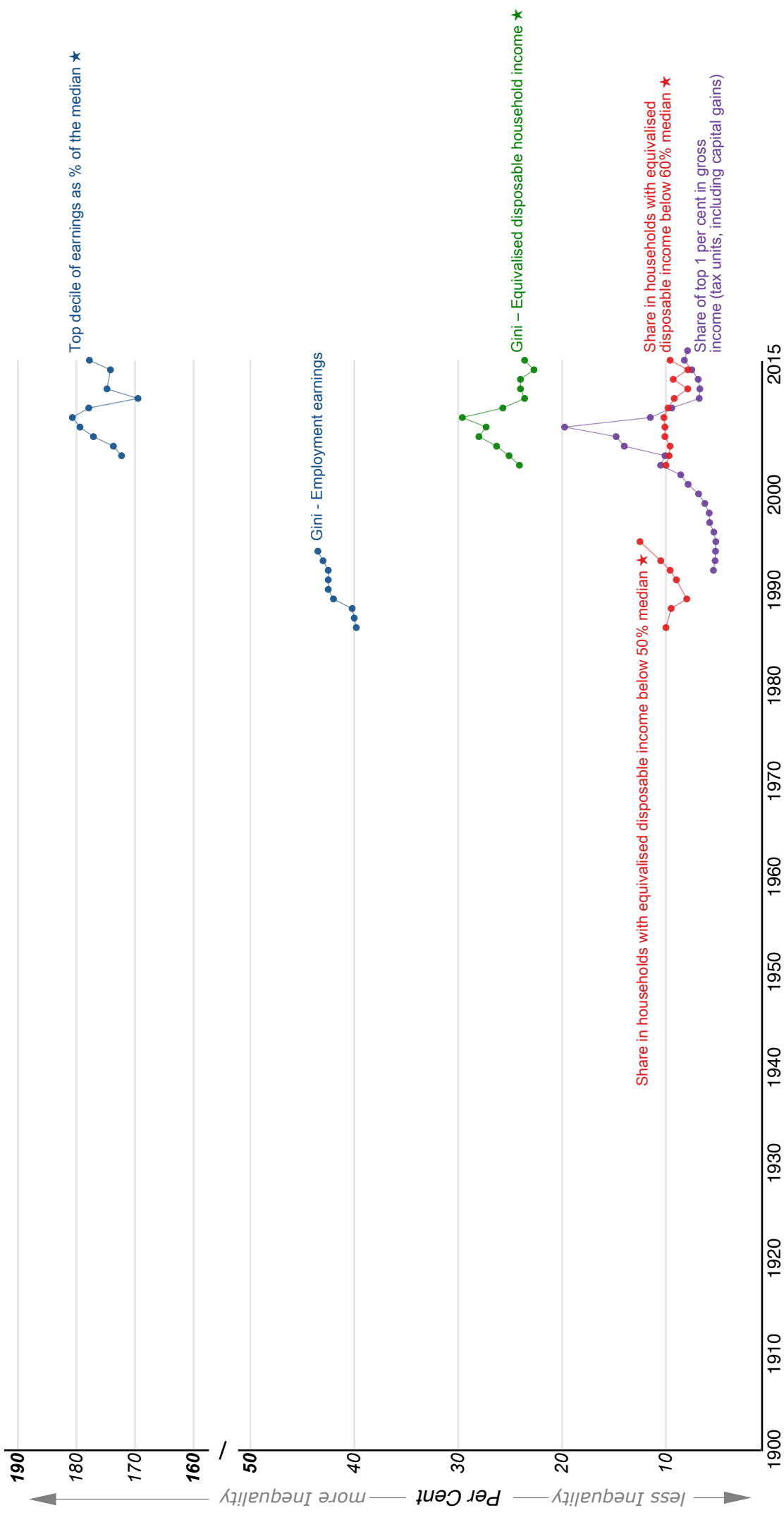
Frick, J R, Grabka, M M and Hauser, R, 2010, *Die Verteilung der Vermögen in Deutschland*, Edition Sigma, Berlin.

Hauser, R and Becker, I, 2001, *Einkommensverteilung im Querschnitt und im Zeitverlauf 1973-1998*, Bundesministerium für Arbeit und Sozialordnung, Bonn.

SOEP Group, 2015, SOEP2013-SOEPmonitor 1984-2013, SOEP Survey Paper 284: Series E. Berlin: DIW/SOEP

Economic Inequality in Iceland

- Earnings Dispersion
- Overall Income Inequality
- Poverty
- Top Income Shares



8. Iceland

Sources:

Overall inequality: Gini coefficient for equivalised household disposable income from EU-SILC (ilc_di12 series), Eurostat website (accessed 27 February 2017).

Top income shares: Share of top 1 per cent in total market income before direct tax and benefits (tax units, including capital gains). They cover all taxable incomes (except benefits, i.e. child benefits and tax rebates on mortgage interest costs). Pension earnings and capital gains are included. Figures are provided by Stefan Ólafsson, based on the work of Ólafsson and Kristjánsson (2012) and Ólafsson and Kristjánsson (2013).

Poverty measures: series 1: Percentage of individuals living in households with equivalised (EU scale) disposable income below 60 per cent of the median from EU-SILC (*People at risk of poverty after social transfers* table), Eurostat website (accessed 27 Feb 2017); series 2: for 1986-1995 (with 50 per cent of the median) from Ólafsson and Sigurðsson (1996, Figure 2).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017); Gini coefficient for employment earnings from Ólafsson, S and Sigurðsson (1996, Figure 2).

Wealth inequality: No suitable data were found.

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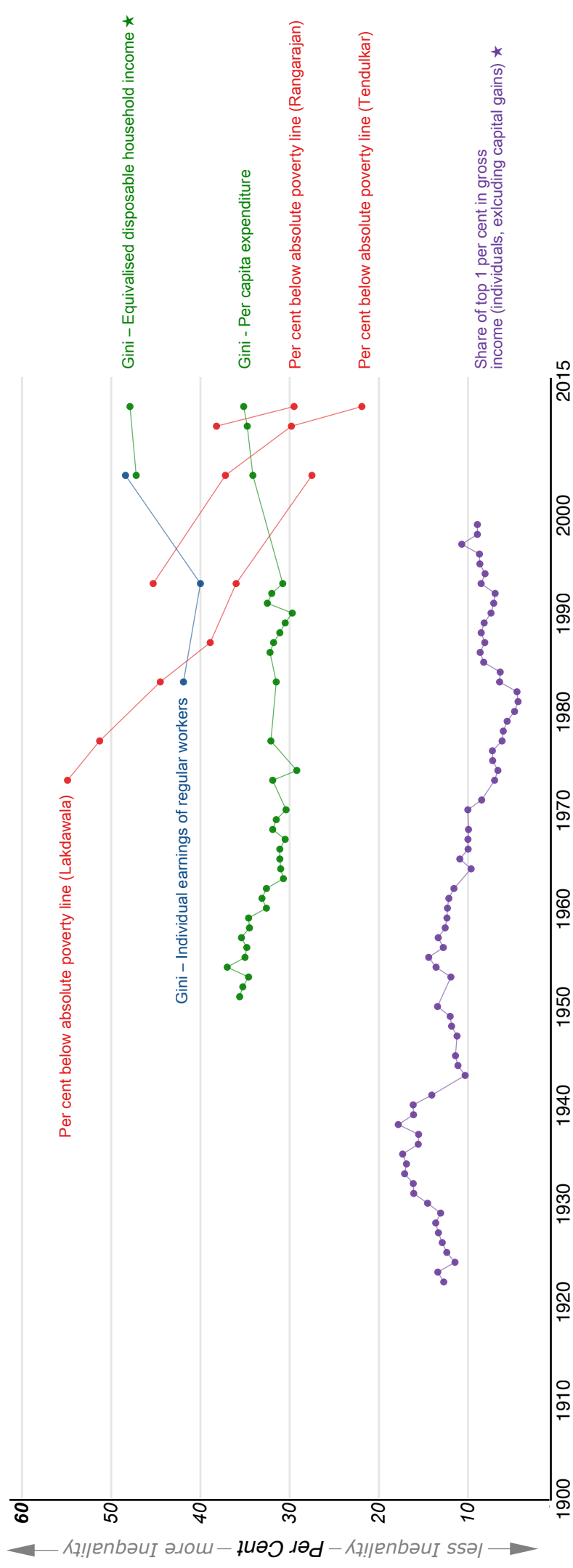
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Economic Inequality in India

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

9. India

Sources:

Overall inequality: Series 1: Gini coefficient for equivalised disposable household income from LIS Key Figures (see Vanneman and Dubey, 2013), accessed 21 February 2017; Series 2: Gini coefficient for *per capita expenditure* from World Bank India Database and World Bank 2016 database as listed in World Income Inequality Database version 3.4, January 2017 (accessed 28 February 2017), all India data. Figures for 1952, 1953 and 1956 are averages of the two available estimates. The 1993 figure is calculated as weighted average of the urban and rural estimates, using the weighting implied by the 1992 figures; similarly for the 2004 and 2009 observations, using the weighting implied by the 2011 figures.

Top income shares: Share of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world, based on work of Banerjee and Piketty (2010).

Poverty measures: Three series from Rangarajan (2014): series 1 (Expert Group Rangarajan) from Table 4.7; series 2 (Expert Group Tendulkar) from Table 2.2; and series 3 (Expert Group Lakdawala) from Table 2.1. The changes in methodology over time were implemented in order to better capture the changes in the composition and price of the consumption basket of the poor as well as the changing norms and expectations about living conditions (see More and Singh, 2014 for an account).

Dispersion of earnings: *Gini coefficient* for daily earnings of regular workers from Majumdar (2010, Table 4.4).

Wealth inequality: No suitable data were found.

References:

Asian Development Bank, 2007, *Key Indicators 2007*, Asian Development Bank, Manila.

Banerjee, A and Piketty, T, 2010, "Top Indian incomes, 1922-2000" in A B Atkinson and T Piketty, editors, *Top incomes: A global perspective*, Oxford University Press, Oxford.

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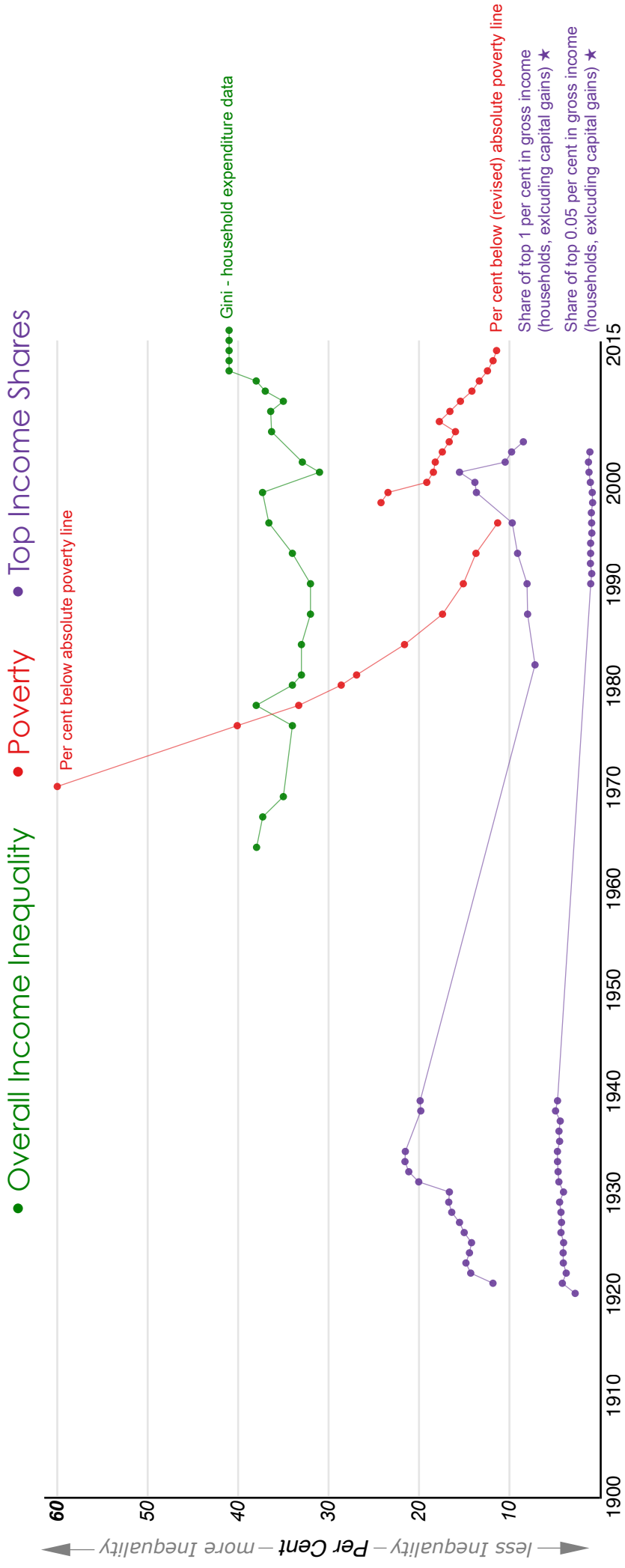
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Economic Inequality in Indonesia



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

10. Indonesia

Sources:

Overall inequality: Gini coefficient for *household per capita expenditure* from the website of Badan Pusat Statistik (Statistics Indonesia), consumption and expenditure/ Distribution of Expenditure per Capita and Gini Index, 2010-2015 (earlier figures for 2002 to 2009 had been downloaded previously, but appear to be no longer available on the website); earlier observations from Asra (2000, Table 4) and Rao (1988) taken from Krongkaew and Ragayah (2006, Table 2); linked at 1970 (with the assumption of no change since 1969) using Gini coefficient for *per capita consumption* from Fields1989 series as listed in World Income Inequality Database version 3.4, January 2017 (accessed 28 February 2017), all Indonesia excl. West Irian, East Timor and Maluku.

Top income shares: Share of top 1 per cent and 0.05 per cent in total gross income (households, excluding capital gains) from WID.world, based on work of Leigh and van der Eng (2010).

Poverty measures: Percentage with expenditure below *official absolute poverty line* (see Asra, 2000) for total population (rural and urban) from Statistics Indonesia, *Poverty, Number Of Poor People, Percentage of Poor People and The Poverty Line, 1970-2013*; the poverty line was revised upwards in 1998 (series 2 before 1998; series 1 from 1998). Averages taken of multiple annual observations from 2011.

Dispersion of earnings: No suitable data were found.

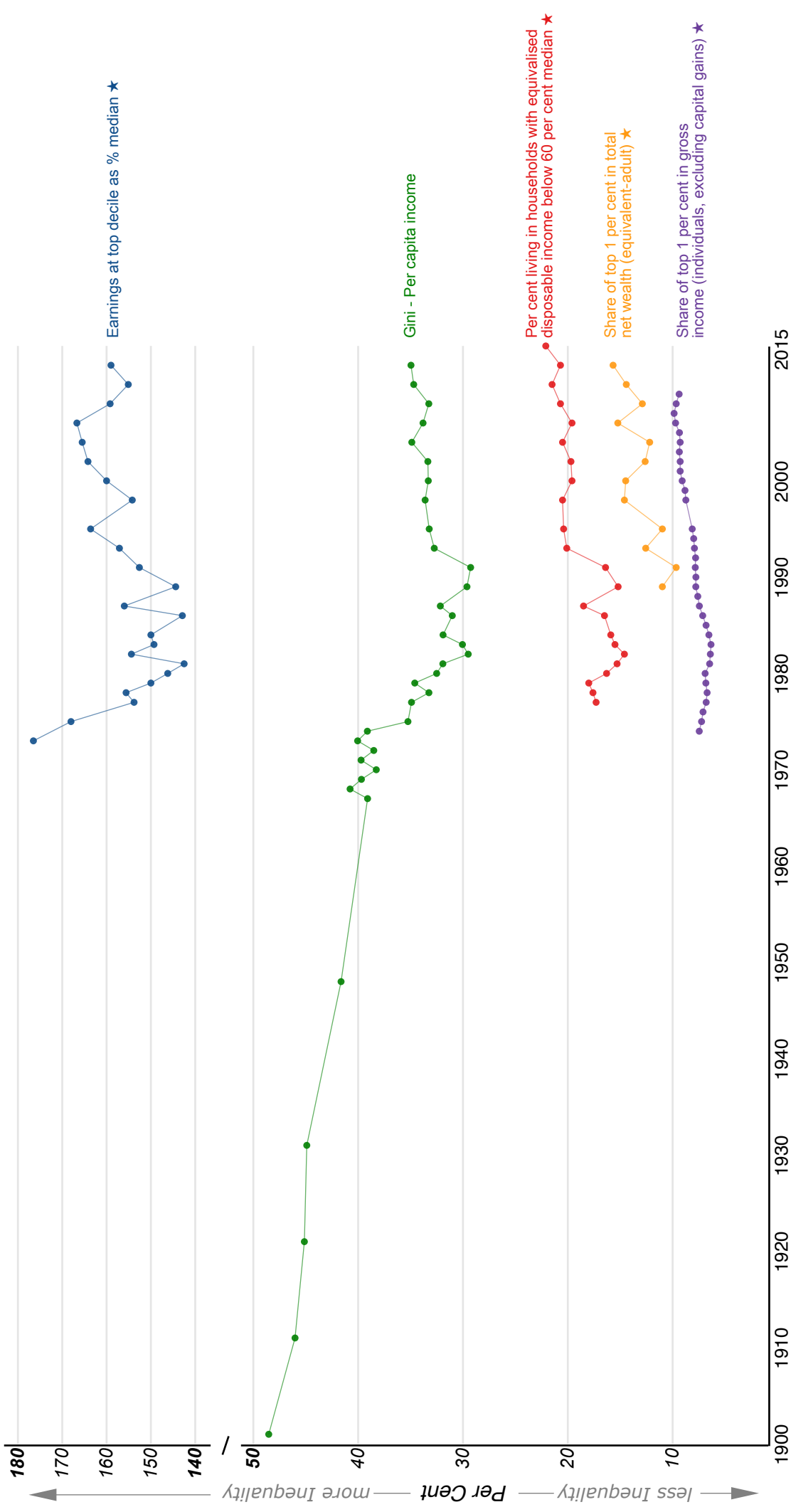
Wealth inequality: No suitable data were found.

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Economic Inequality in Italy

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



11. Italy

Sources:

Overall inequality: Gini coefficient of per-capita income computed by N. Amendola, A. Brandolini and G. Vecchi and taken from Vecchi (forthcoming) based on work from Brandolini (1999) and Brandolini and Vecchi (2011) and Vecchi (2011); figures provided by Giovanni Vecchi; income is deflated using a spatial index of the cost of living at the regional level based on the work of Amendola, Kiswani and Vecchi (2009).

Top income shares: Share of top 1 per cent in total gross income (individuals, excluding capital gains) from WID.world, based on work of Alvaredo and Pisano (2010).

Poverty measures: Percentage of individuals in households with equivalised (modified OECD scale) disposable income below 60 per cent of the median from Bank of Italy, Statistics, Surveys of households and firms, Household Income and Wealth, Tables of main results (table B3A2).

Dispersion of earnings: From Atkinson (2008, Appendix K, Tables K.4 from 1977 on and K.5 up to 1975). Later figures provided by Andrea Brandolini.

Wealth inequality: Share of top 1 per cent in wealth (equivalent net wealth – modified OECD scale, person weights) from Brandolini et al (2004, Table 6, adjusted figures) and Brandolini (2014).

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Alvaredo, F and Pisano, E, 2010, "Top incomes in Italy 1974-2004" in A B Atkinson and T Piketty, editors, *Top incomes: A global perspective*, Oxford University Press, Oxford.

Amendola, N, Al Kiswani, B and Vecchi, G, 2009, "Il costo della vita al Nord e al Sud d'Italia, dal dopoguerra a oggi. Stime di prima generazione", *Rivista di Politica Economica*, vol IV-VI, 3-34.

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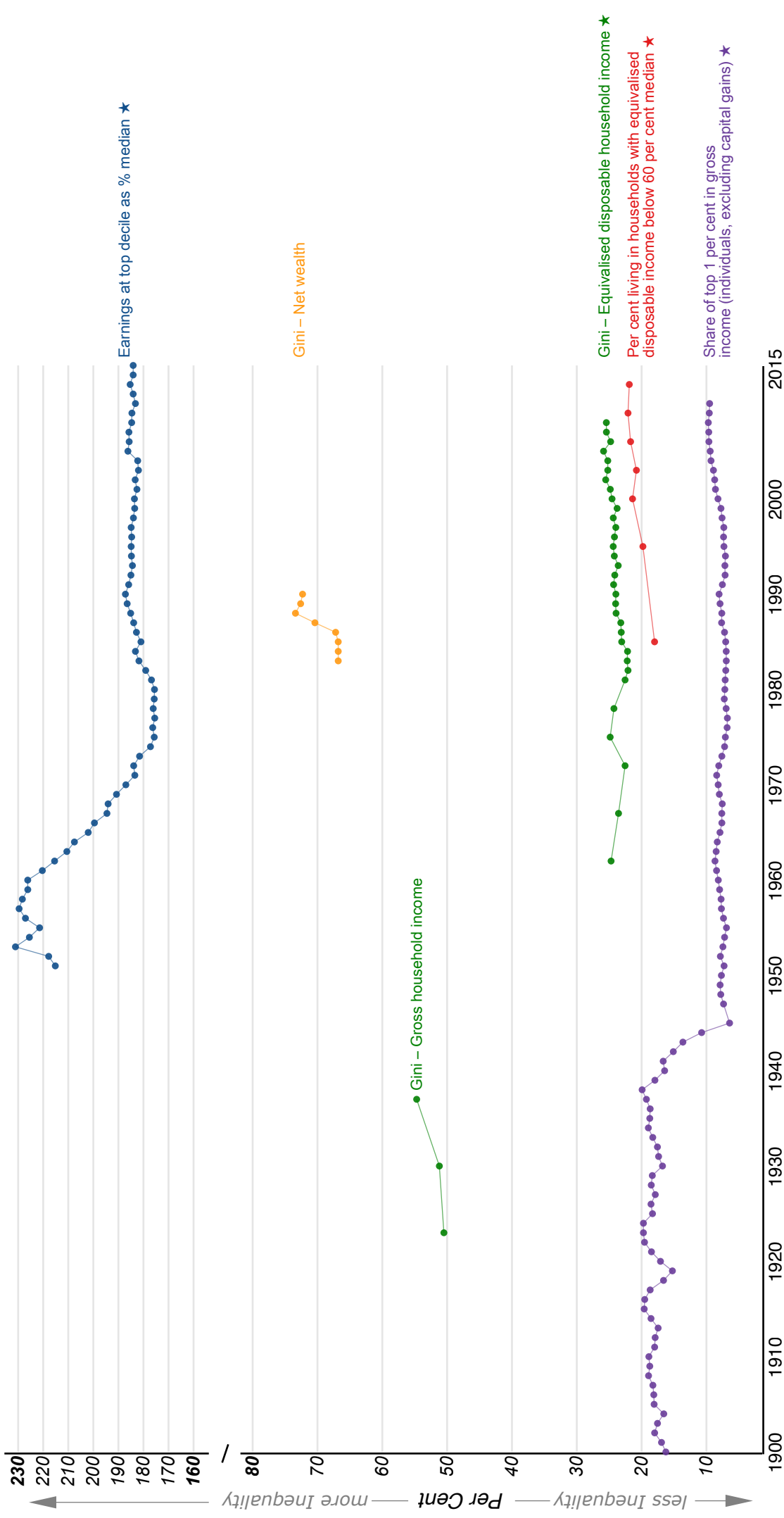
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Economic Inequality in Japan

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



12. Japan

Sources:

Overall inequality: series 1: Gini coefficient for equivalised disposable household income taken from Lise et al. (2014) - supplementary material - using data from the Family Income and Expenditure Survey (FIES), linked at 1981 to series from Tachibanaki (2005, Table 1.1) based on the Income Redistribution Survey; series 2: Gini coefficient for *household income (pre-tax and transfers and not equivalised)* for the pre-second World War period from Minami (1998, Table 4, case (2)) (source also cited by Hayami (1997, Table 7.2) and Moriguchi and Saez (2010, Figure 3.2)).

Top income shares: Share of top 1 per cent in total gross income from WID.world (individuals, excluding capital gains), based on work of Moriguchi and Saez (2010).

Poverty measures: Percentage of individuals in households with equivalised (modified OECD scale) disposable income below 60 per cent of the median from Income Distribution Database in OECD.Stat (accessed 10 April 2017).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017); linked at 1975 to series computed by Facundo Alvaredo based on work by Moriguchi and Saez (2010), Appendix 3C, covering all employees in the private sector who worked for the same employee throughout a calendar year, excluding temporary workers with job durations below one year, regular employees hired mid-year, government employees and retirees.

Wealth inequality: *Gini coefficient* for net worth for all population (home-owners and tenants) from Tachibanaki (2005, Table 1.10).

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Hayami, Y, 1997, *Development economics*, Clarendon Press, Oxford.

Lise, J, Sudo, N, Suzuki, M, Yamada, K and Yamada, T, 2014, "Wage, income and consumption inequality in Japan, 1981–2008 : From boom to lost decades", *Review of Economic Dynamics*, vol 17: 582-612. Supplementary materials.

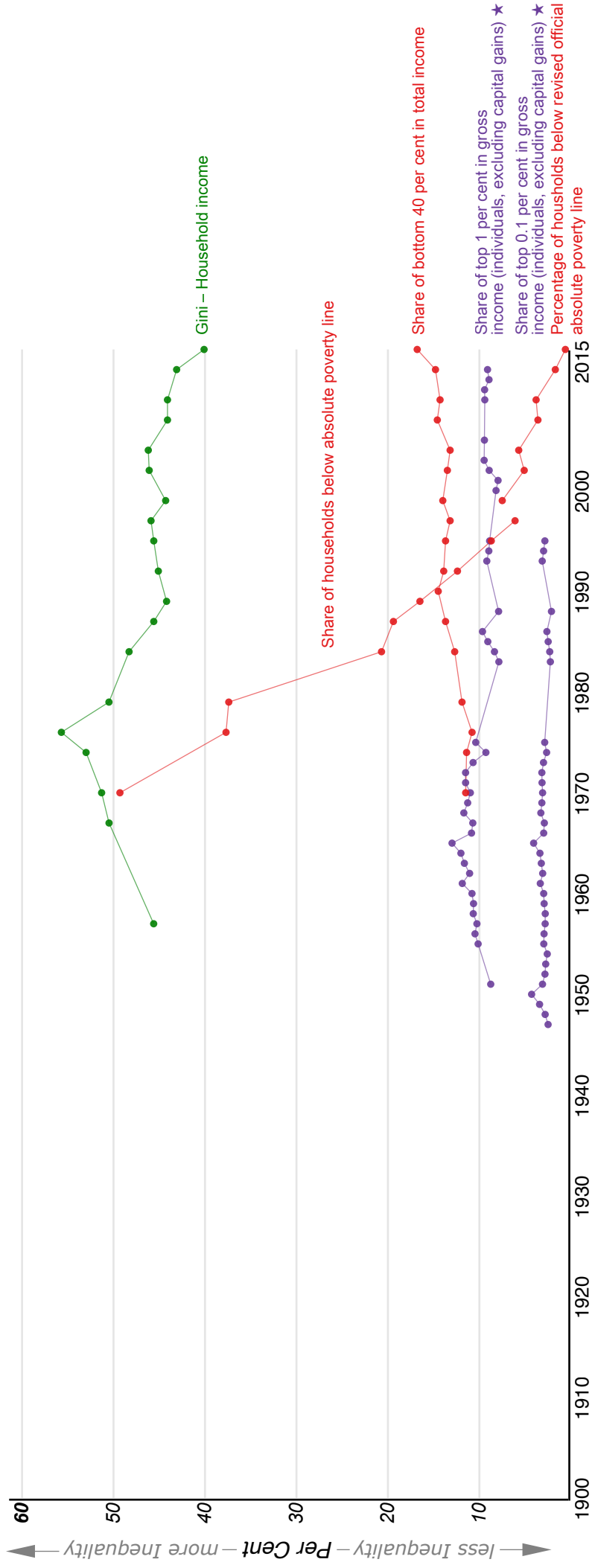
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Economic Inequality in Malaysia

● Overall Income Inequality ● Poverty ● Top Income Shares



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13. Malaysia

Sources:

Overall inequality: Gini coefficient for household income (not equivalised) from Department of Statistics Malaysia, *Household Income and Basic Amenities Survey Report 2014* (accessed via the eStatistik data request service) (see also Ragayah, 2008, Table 1); linked at 1970 back to 1967 using the observation from Rao (1988) taken from Krongkaew and Ragayah (2006, Table 2); linked in 1970 again back to 1957 using the Gini coefficient from household income from Ikemoto (1985) Table III, p. 353.

Top income shares: Shares of top 1 and top 0.1 per cent in total gross income from WID.world (individuals, excluding capital gains).

Poverty measures: *Share of bottom 40 per cent in total household income* (not equivalised) from Department of Statistics Malaysia, *Household Income and Basic Amenities Survey Report 2014* (Table 5.4). See also Ragayah (2008, Table 1).

Percentage of households below official absolute poverty line from Department of Statistics Malaysia, *Household Income and Basic Amenities Survey Report 2014* (Table 5.6); see also Snodgrass (2002, Table 2-1). The series is shown in two parts because the poverty line was revised upwards when the 2005 methodology was introduced in place of the earlier 1977 methodology (see UNDP, 2007).

Dispersion of earnings: No suitable data were found.

Wealth inequality: No suitable data were found.

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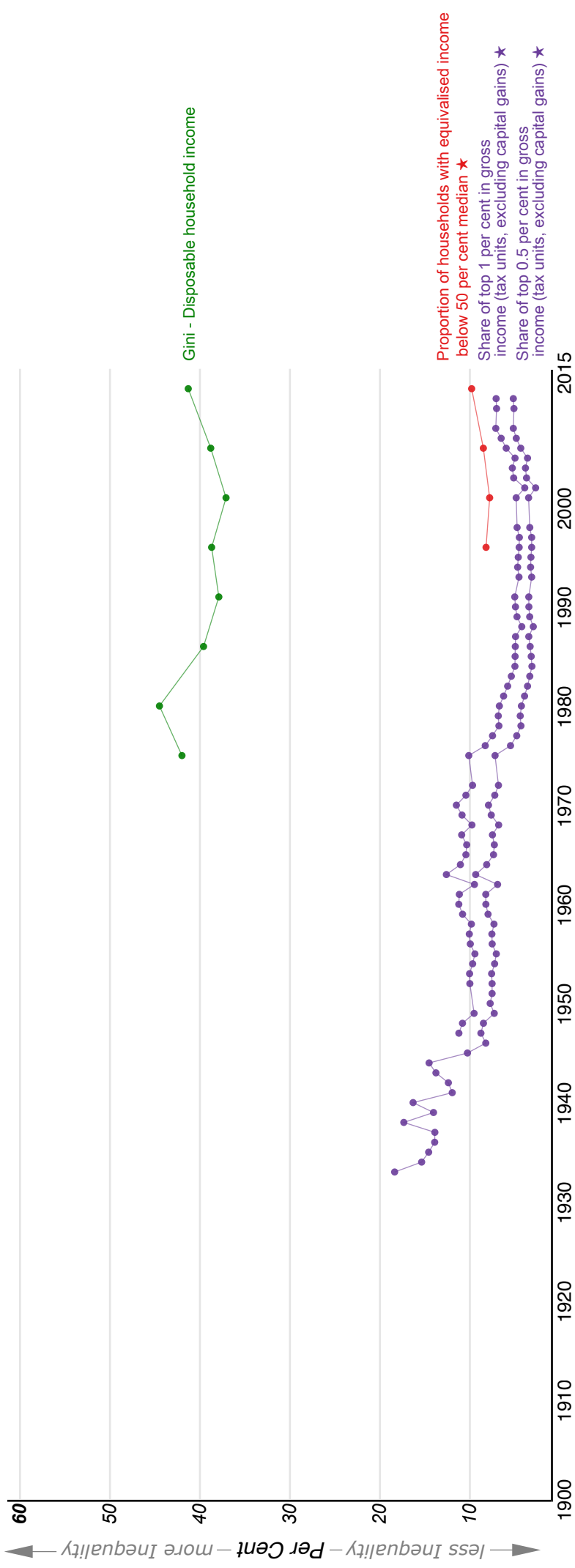
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Economic Inequality in Mauritius

- Overall Income Inequality
- Poverty
- Top Income Shares



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14. Mauritius

Sources:

Overall inequality: Gini coefficient for monthly household disposable income (*not equivalised*) from report on the Household Budget Survey (HBS) 2012, Table 3, report on HBS 2006/07, Table 3, and report on HBS 2001/02, (Table 4.2).

Top income shares: Shares of top 1 and 0.5 per cent in total gross income from WID.world (tax units, excluding capital gains) based on Atkinson (2011).

Poverty measures: Proportion of households with equivalised income below *50 per cent* of the median from report on HBS 2012, Table 7 and report on HBS 2006/07, Table 7.

Dispersion of earnings: No suitable data were found.

Wealth inequality: No suitable data were found.

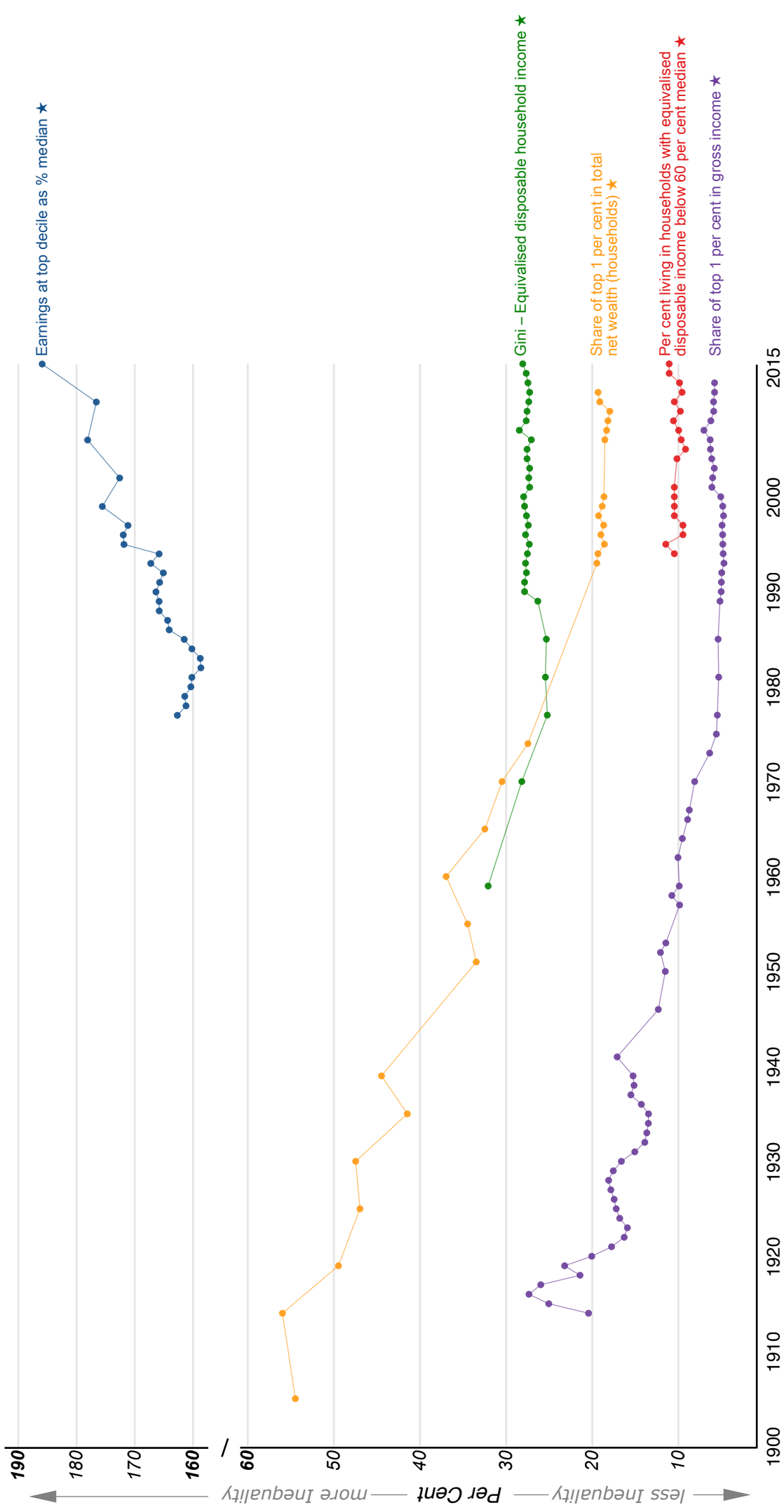
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Economic Inequality in Netherlands

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



15. Netherlands

Sources:

Overall inequality: Gini coefficient for equivalised (CBS scale) disposable household income from Centraal Bureau voor de Statistiek (CBS) website; linked at 2000 to series from 1977 to 2000 supplied by the CBS; inked at 1977 to series for disposable income, not equivalised, among tax units, from Trimp (1996, Staat 2).

Top income shares: Share of top 1 per cent in total gross income from WID.world (tax units, excluding capital gains), based on work of Salverda and Atkinson (2007) and updates from Salverda (2013).

Poverty measures: Percentage of individuals living in households with equivalised (EU scale) disposable income below 60 per cent of the median from EU-SILC (*People at risk of poverty after social transfers* table), Eurostat website (accessed 27 Feb 2017).

Dispersion of earnings: Earnings at top decile as percentage of median earnings. Series from Atkinson (2008, Appendix L, Table L.3) based on OECD (LMS) data up to 1999; latest figures from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017). Break between the two sources indicated within the table.

Wealth inequality: Share of top 1 per cent of households in total personal net wealth from Roine and Waldenström (2015), drawing on the work of Wilterdink (1984, page 269).

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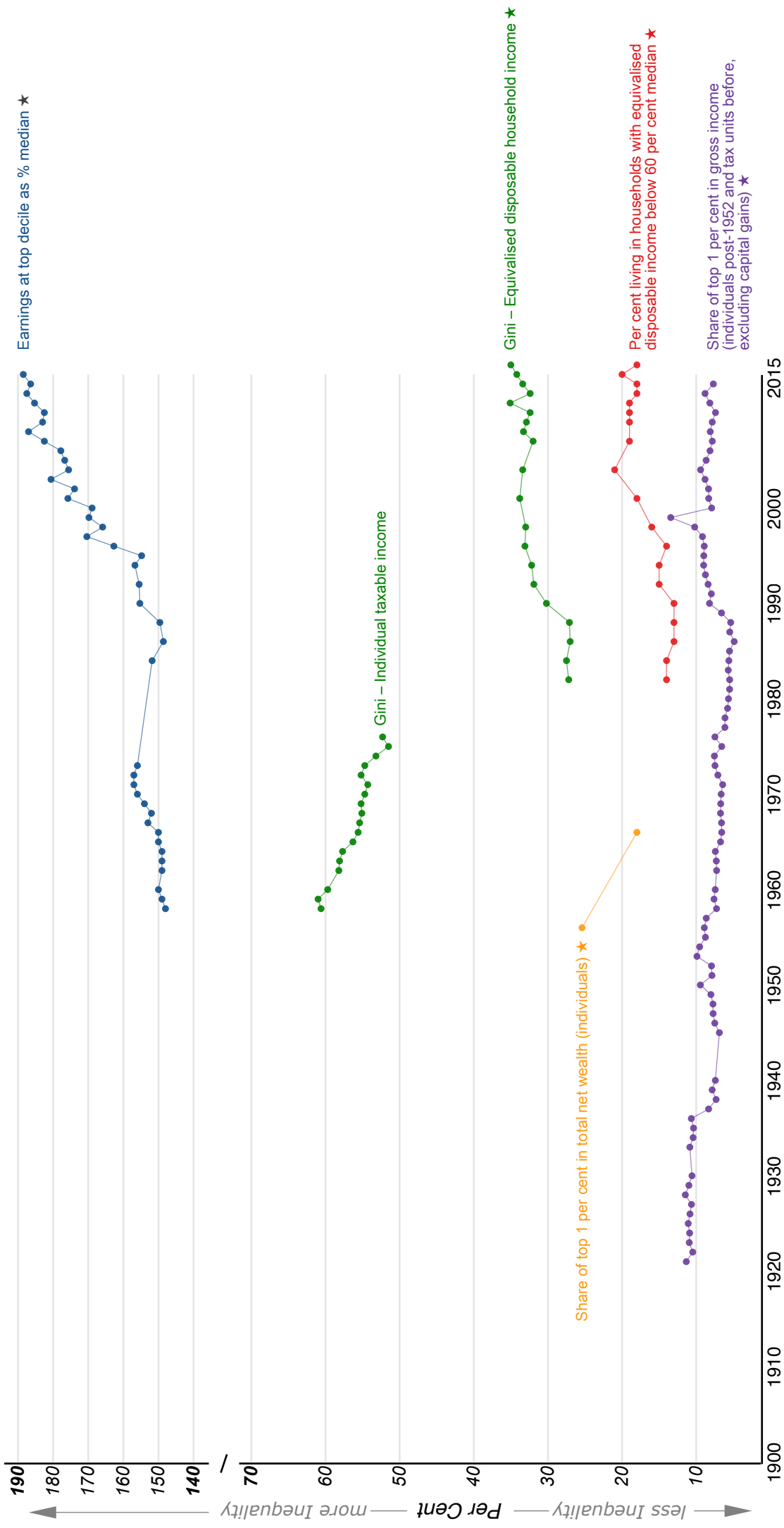
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Economic Inequality in New Zealand

- Earnings Dispersion
- Overall Income Inequality
- Poverty
- Top Income Shares
- Wealth Inequality



16. New Zealand

Sources:

Overall inequality: Series 1: Gini coefficient for equivalised (using square root scale) disposable household annual income before deduction of housing costs from Perry (2016, Table D.8) from 1982 to 2015; series 2: Gini coefficient for *individual taxable income* from Easton (1983, Table 10.7 after the introduction of PAYE).

Top income shares: The top income shares are from WID.world, based on work of Atkinson and Leigh (2008), updated by Alvaredo and Atkinson (2014). Note that top income series have a break in 1952. Data refer to tax units before 1953 and to individuals from 1953 onwards.

Poverty measures: Percentage of individuals in households with equivalised (applying 1988 revised Jensen scale, described as close to the modified OECD scale) disposable income before housing costs below 60 per cent of the contemporary median from Perry (2016, Table F.3).

Dispersion of earnings: Earnings at top decile as percentage of median earnings from Atkinson (2008, Appendix M, Table M.3), based on the work of Easton (1983); continued from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017).

Wealth inequality: Share of top 1 per cent of individuals in total net wealth from Easton (1983, Table 7.3).

References:

Atkinson, A B, 2008, *The changing distribution of earnings in OECD countries*, Oxford University Press, Oxford.

Atkinson, A B and Leigh, A, 2008, "Top Incomes in New Zealand 1921-2005: Understanding the Effects of Marginal Tax Rates, Migration Threat, and the Macroeconomy", *Review of Income and Wealth*, series 54(2): 149-165.

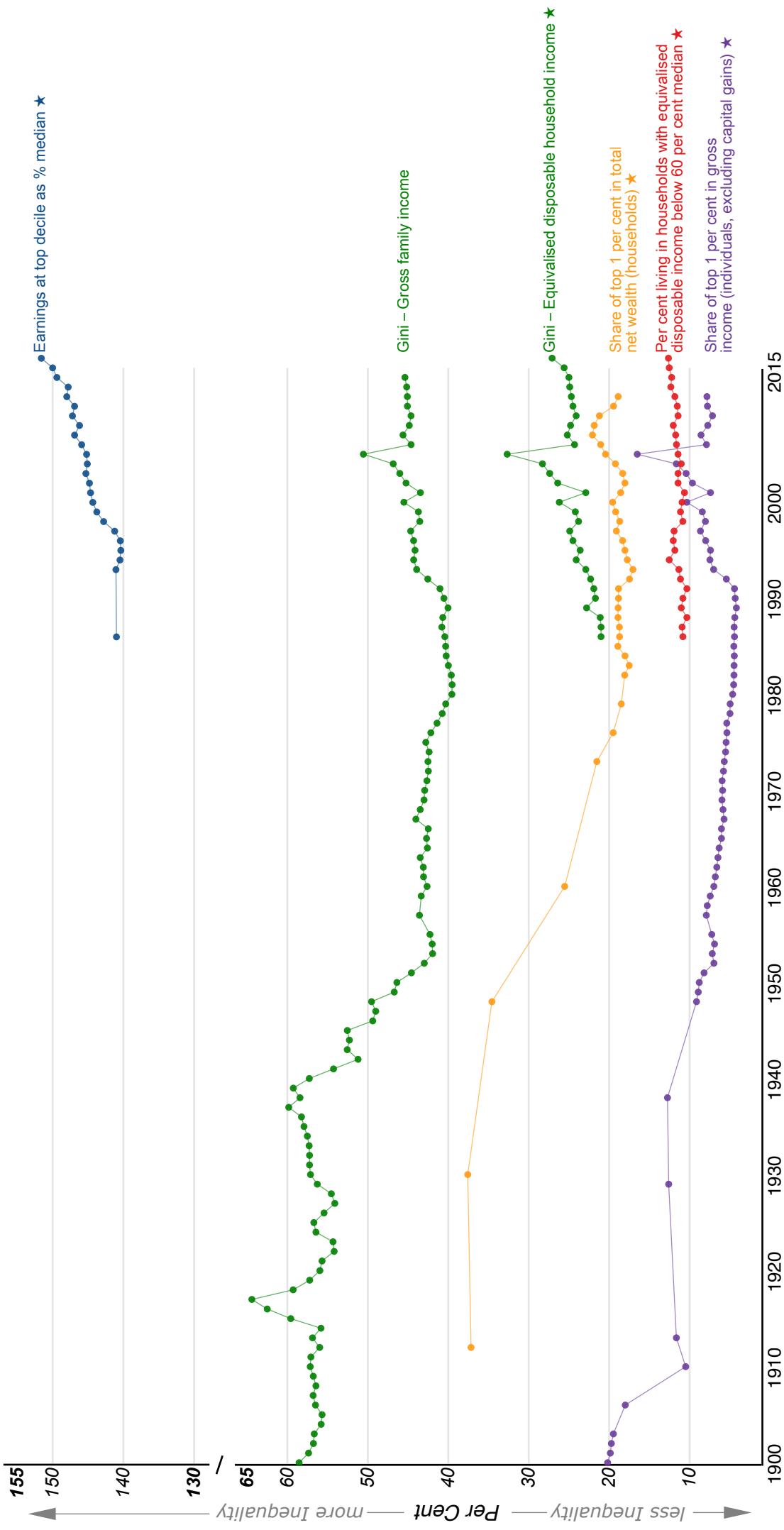
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Economic Inequality in Norway

• Earnings Dispersion
 • Overall Income Inequality
 • Poverty
 • Top Income Shares
 • Wealth Inequality



17. Norway

Sources:

Overall inequality: Series 1: Gini coefficient of gross family income not equivalised from Aaberge, Atkinson and Modalsli (2016, Table A1, average of upper and lower bounds; see also Table A5); Series 2: Gini coefficient of equivalised (EU scale) disposable household income from StatBank within the website of Statistics Norway, Income and Wealth Statistics for Households, Income, Table 07756 (*Measures of income dispersion*), total population.

Top income shares: Share of top 1 in total gross income from WID.world (individuals, excluding capital gains), based on work of Aaberge and Atkinson (2010) updated by Aaberge, Atkinson and Modalsli (2013).

Poverty measures: Percentage of individuals in households with equivalised (EU-scale) disposable income below 60 per cent of the contemporary median (including student households), from Statistics Norway (2016), Figure 3.1 (p. 21). A subset of figures can also be found at StatBank within the website of Statistics Norway, Income and Wealth Statistics for Households, Income, Table 06801 (*Percentage of people in households with annual after-tax income below different distances to the median*). Note that data before 2004 are based on the Income Distribution Survey (Inntekts- og formuesundersøkelsen for husholdninger - IF). Data series provided by Jon Epland at Statistics Norway.

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017); linked at 2002 to a series of the authors' own calculations extrapolating from income shares data in Atkinson (2008, Appendix N, Table N.3).

Wealth inequality: Share of top 1 per cent of households in total personal net wealth from Roine and Waldenström (2015), downloaded from Waldenström's webpage, drawing from Ohlsson, Roine and Waldenström (2008, Table 1).

References:

Aaberge, R and Atkinson, A B, 2010, "Top incomes in Norway" in A B Atkinson and T Piketty, editors, *Top incomes: A global perspective*, Oxford University Press, Oxford.

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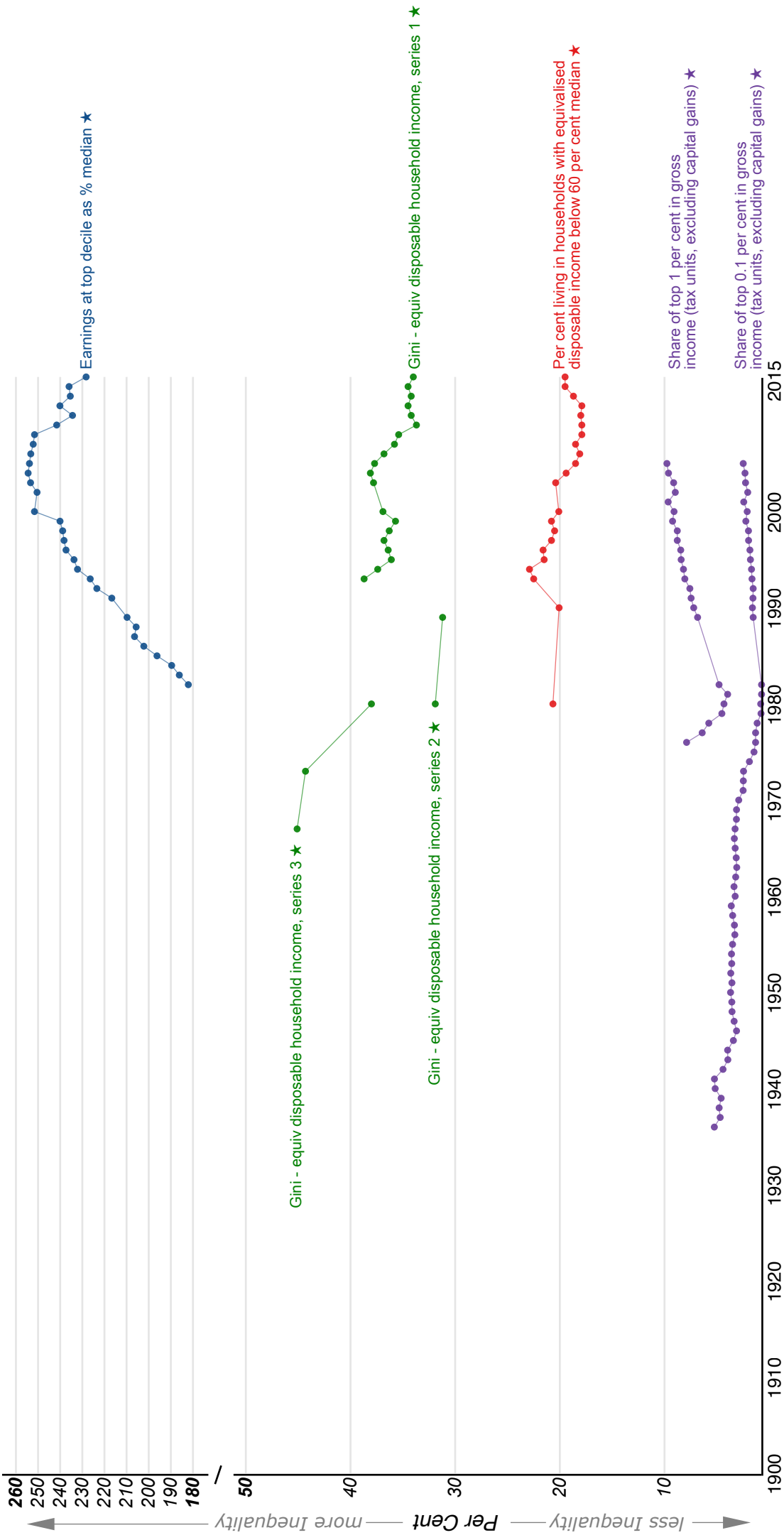
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Economic Inequality in Portugal

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares



18. Portugal

Sources:

Overall inequality: Gini coefficient of equivalised (modified OECD-scale) disposable household income from Rodrigues, Figueiras, and Junqueira, 2012 Quadro 18 (series 1), Quadro 16 (series 2), and Quadro 14 (series 3). Series 1 is based on data from the European Community Household Panel and EU-SILC. Data from 2009 are from EU-SILC, downloaded from EU-SILC (ilc_di12 series), Eurostat website (accessed 27 February 2017).

Top income shares: Share of top 1 and top 0.1 per cent in total gross income from WID.world (tax units, excluding capital gains), based on work of Alvaredo (2010).

Poverty measures: Percentage of individuals living in households with equivalised (EU scale) disposable income below 60 per cent of the median, from Rodrigues, Figueiras and Junqueira, 2011, Quadro 10, up to 2000; from 2002 data taken from EU-SILC (*People at risk of poverty after social transfers* table), Eurostat website (accessed 27 Feb 2017); linked at 1995 to estimates for 1980 and 1990 from Rodrigues (2005).

Dispersion of earnings: Earnings at top decile as percentage of median earning. Series 1 from Atkinson (2008, Appendix P, Table P.3) with updated figures supplied by C F Rodrigues (2003 onwards), linked at 2008 to series from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017).

Wealth inequality: No suitable data were found.

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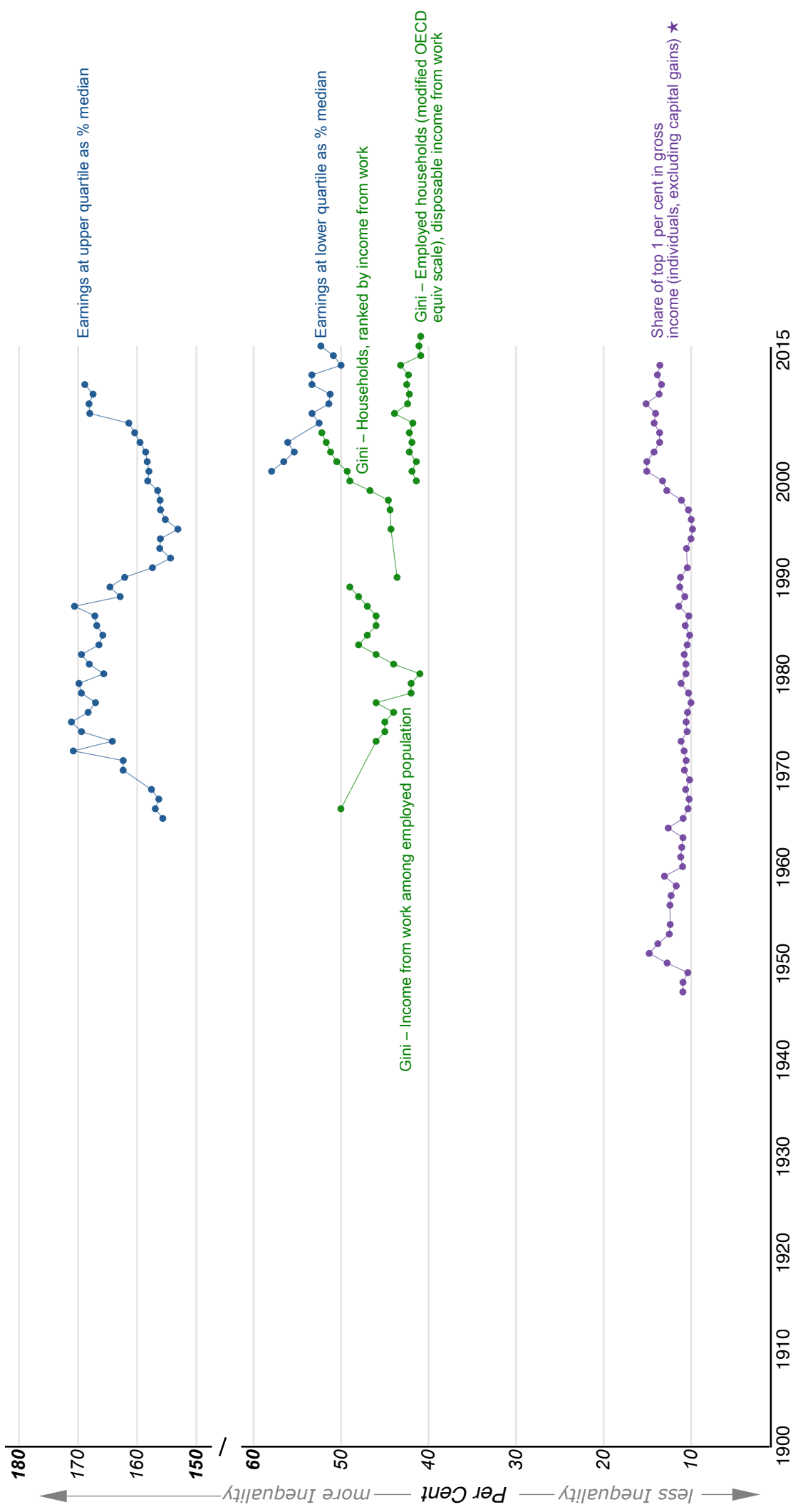
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Economic Inequality in Singapore

- Earnings Dispersion
- Overall Income Inequality
- Top Income Shares



19. Singapore

Sources:

Overall inequality: Series 1 household *income from work* per household member (based on modified OECD scale) including employer Central Provident Fund -CPF- contributions and after accounting for government transfers and taxes, from Statistics Singapore, Household Income, Table 15. Series 2 per capita *monthly income from work* for all households from Krongkaew and Ragayah (2006, Table 2); Series 3 per capita *monthly income from work for employed population only* from Krongkaew and Ragayah (2006, Table 2); linked at 1974 to Rao (1988) cited in the same source.

Top income shares: Shares of top 1 per cent in total gross income from WID.world (individuals, excluding capital gains), based on work of Atkinson (2010) and updated by the author using the Annual Reports of the Inland Revenue Authority, Appendix 5. The data from tax income refer to 'year of assessment'. Estimates for 1980 to 1986 are based on 12 month rather than 24 month assessments.

Poverty measures: No suitable data were found.

Dispersion of earnings: *Earnings at upper quintile as percentage of median* from Central Pension Fund earnings data, as described in Atkinson (2010), updated for 2010 from *Yearbook of Singapore Statistics*, Table 4.10. This source no longer contains earnings figures. *Earnings at bottom quintile* from Statistics Singapore, Labour, Employment, Wages and Industry Tables; the source notes that the year-on-year changes tend to be volatile.

Wealth inequality: No suitable data were found.

References:

Atkinson, A B, 2010, "Top incomes in a rapidly growing economy: Singapore", in A B Atkinson and T Piketty, editors, *Top incomes: A global perspective*, Oxford University Press.

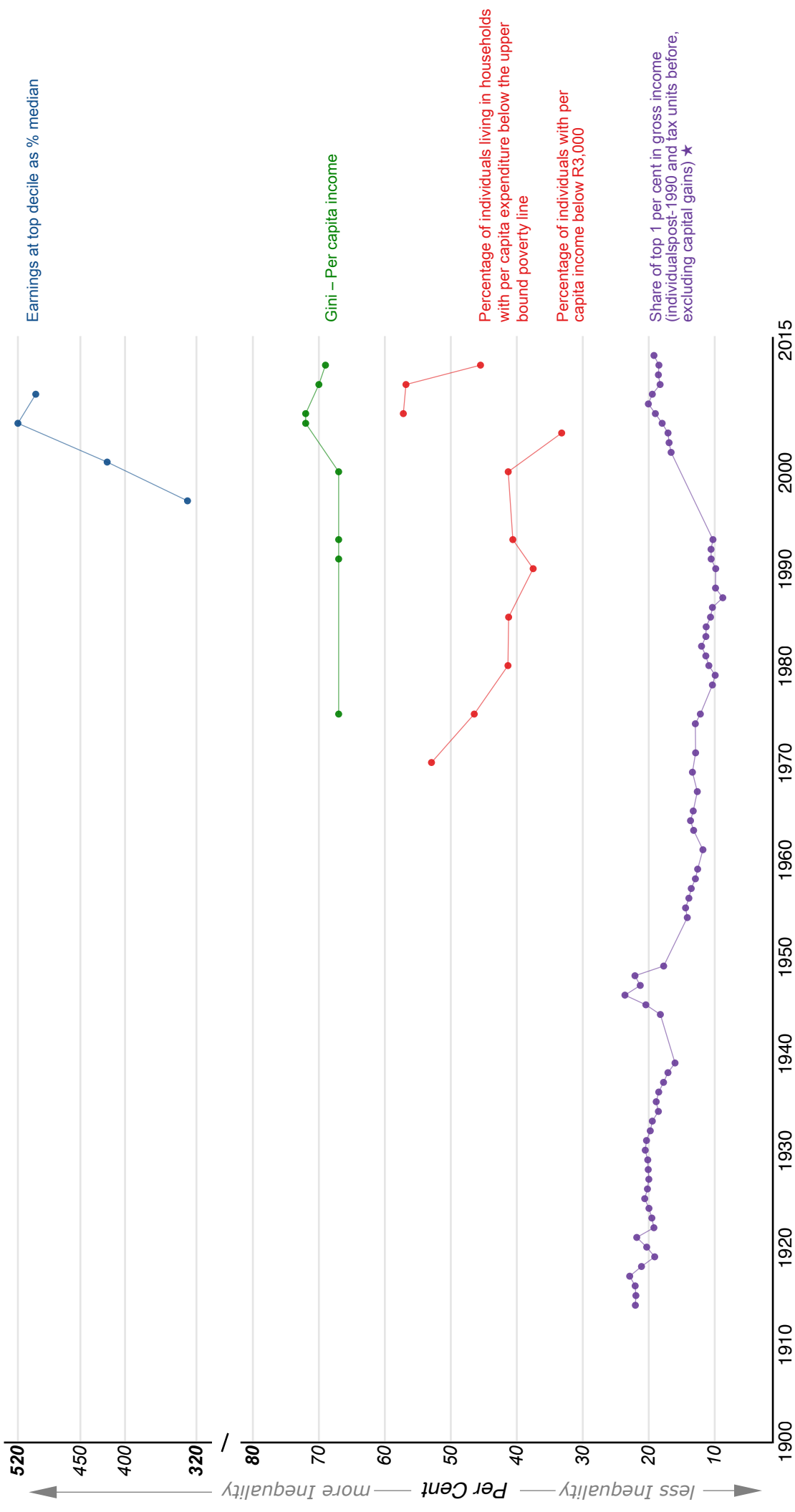
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Economic Inequality in South Africa

- Earnings Dispersion
- Overall Income Inequality
- Poverty
- Top Income Shares



20. South Africa

Sources:

Overall inequality: Gini coefficient of *per capita* income from Statistics South Africa, 2014, Table 5, linked at 2005/2006 to series from 1993 from Leibbrandt et al (2010a, Table 5.17), linked at 1991/1993 to estimates for 1975, 1991 and 1996 of Whiteford and van Seventer (2000).

Top income shares: Shares of top 1 per cent in total gross income from WID.world (excluding capital gains), based on work of Alvaredo and Atkinson (2011) updated by the same authors for latest figures. It is worth noting that the top shares series have a break in 1990. Data refer to married couple and single adults before 1990 and to individuals from 1990.

Poverty measures: There is no official poverty line. A variety of poverty standards have been employed – see Budlender, Leibbrandt and Woolard (2015). Series 1 taken from Statistics South Africa (2014, Table 3) based on the Income and Expenditure Survey (IES) and Living Conditions Survey (LCS), relating to percentage of individuals living in households with per capita expenditure below the “upper bound” poverty line. Series 2 relates to the percentage of individuals (all races) living in households with per capita income *below R 3,000* (at 2000 prices) by Leibbrandt et al (2010, Table 1.3); linked at 2000 back to 1970 using data from van der Berg and Louw (2004, Table 5) (average of pessimistic and optimistic estimates taken for 2000).

Dispersion of earnings: Earnings at top decile as percentage of median earning from Leibbrandt et al (2010a, Table 5.19).

Wealth inequality: No suitable data were found.

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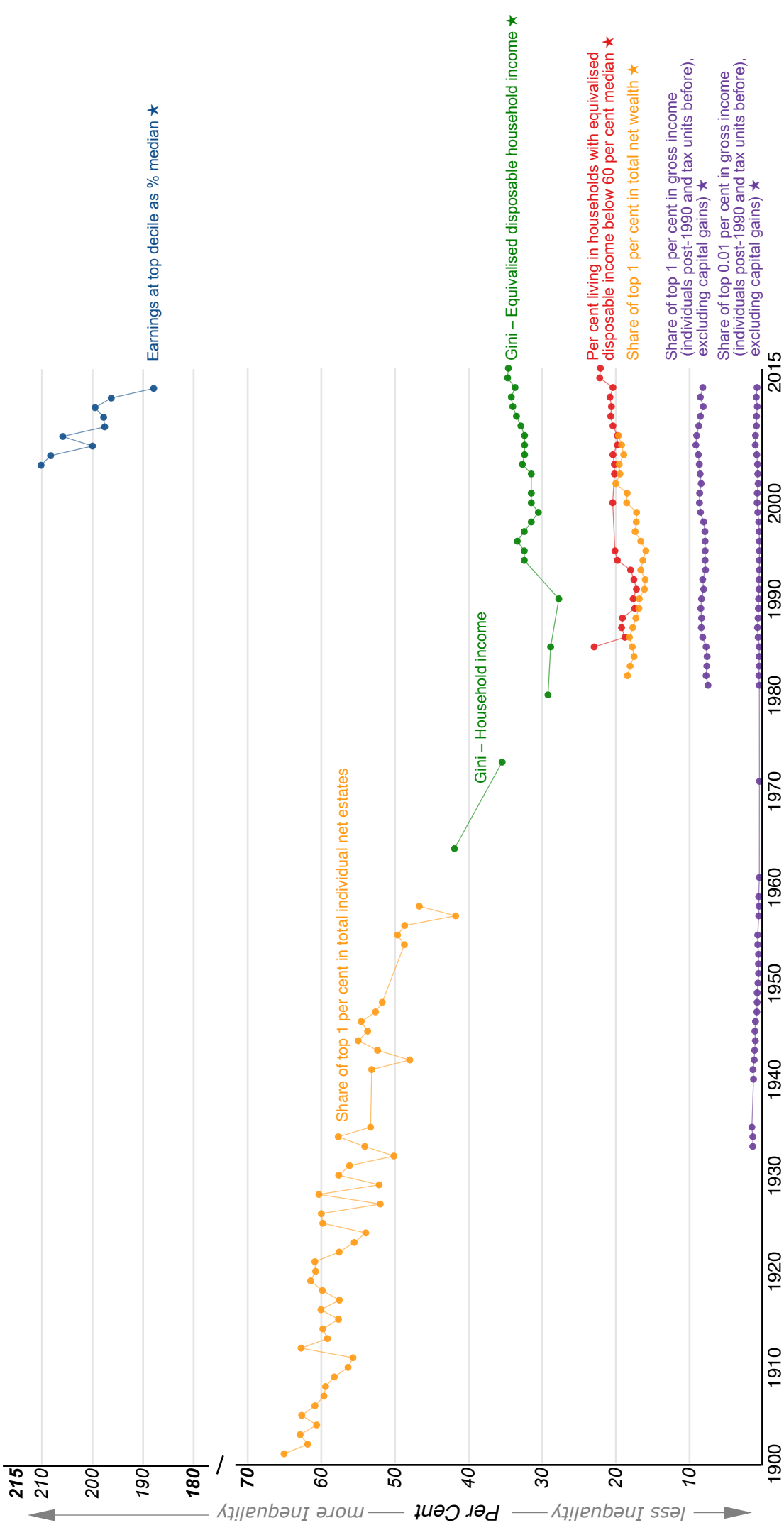
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Economic Inequality in Spain

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



21. Spain

Sources:

Overall inequality: Series 1 relates to household equivalised disposable income from EU-SILC (ilc_di12 series), Eurostat website, accessed 27 February 2017 (there are breaks in the series in 2000, 2003 and 2007, which have been treated by assuming that there was no change in the intervening year); linked at 1995 to the series related to equivalised (square root scale) disposable household income among individuals from Luxembourg Income Study (LIS) Key Figures website; series 2 relates to household income from Family Budget surveys from United Nations (1981, page 297).

Top income shares: Share of top 1 and 0.01 per cent in total gross income from WID.world (excluding capital gains), based on work of Alvaredo and Saez (2010) updated by the same authors for recent estimates. The series refers to individuals aged 15+ minus married women until 1989 and to individuals aged 15+ from 1990.

Poverty measures: Percentage of individuals living in households with equivalised (EU scale) disposable income less than 60 per cent of the median from EU-SILC (*People at risk of poverty after social transfers* table), Eurostat website (accessed 27 Feb 2017) (there is a break in the series at 2007, which have been treated by assuming that there was no change in the intervening year); data are linked at 2003 to the series related to those with equivalised (square root scale) disposable income less than 60 per cent of the median from Luxembourg Income Study (LIS) Key Figures; the data are further linked back at 1995 to the series related to those with equivalised (OECD scale) disposable income less than 60 per cent of the median from Cantó, del Rio and Gradin (2003, Tabla 2).

Dispersion of earnings: Earnings at top decile as percentage of median earnings, from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017).

Wealth inequality: Series 1: Share of top 1 per cent in total individual net wealth including real estate from Alvaredo and Saez (2010, Table 10D.8), based on wealth tax data, updated to 2007; Series 2 share of top 1 per cent in total individual estates from Alvaredo and Artola Blanco, forthcoming, Figure 6. (For estimates based on the investment income method, see Martínez-Toledano, 2016.)

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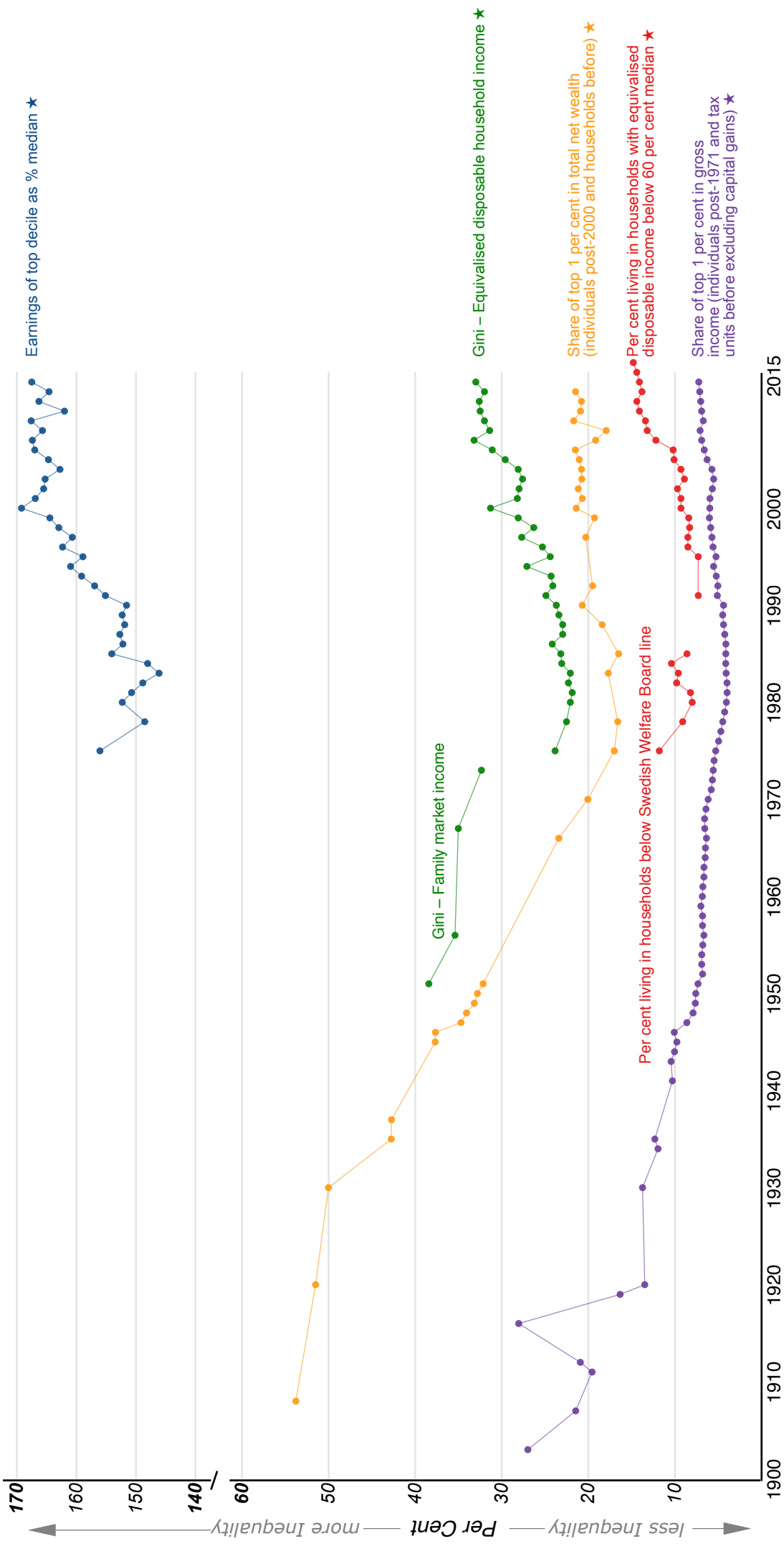
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Economic Inequality in Sweden

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



22. Sweden

Sources:

Overall inequality: Series 1: Gini coefficient of equivalised disposable income from 1975 from the website of Statistics Sweden, Income Distribution 1975-2013, linked backwards at 1988 using ratio of 1989-rev to 1989 values; series 2: earlier series from 1951 to 1973 for *family market income* from Björklund and Palme (2000, Table 2) linking tax register data for 1951 and 1956 to data from the Swedish Level of Living Survey for 1967 and 1973.

Top income shares: Share of top 1 per cent in total gross income from WID.world (tax units, excluding capital gains), based on work of Roine and Waldenström (2010). Note that the concept of tax unit changed from married couples (filing a joint tax return) to individuals (whether married or not filing tax returns separately) in 1971 (although there was an option to file separate returns from 1966).

Poverty measures: Percentage of individuals living in households with equivalised disposable income less than 60 per cent of the median from Statistics Sweden website, Household Finances; earlier figures for percentage of individuals living in households *below Swedish Welfare Board line*, Table 2.

Dispersion of earnings: Earnings at top decile as percentage of median earnings, based on series given in Atkinson (2008, Appendix Q, Table Q.5); from 2005 onwards, taken from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017).

Wealth inequality: Share of top 1 per cent of households in total net marketable wealth at market values based on wealth tax assessments from Roine and Waldenström (2015), downloaded from Waldenström's webpage, drawing from Roine and Waldenström (2009, Table A1), joined at 2000 to estimates of top 1 per cent of individuals in total capitalized wealth based on income and property tax registers from Lundberg and Waldenström (2016, Table A1).

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Björklund, A and Palme, M, 2000, "The evolution of income inequality during the rise of the Swedish welfare state 1951 to 1973", *Nordic Journal of Political Economy*, vol 26: 115-128.

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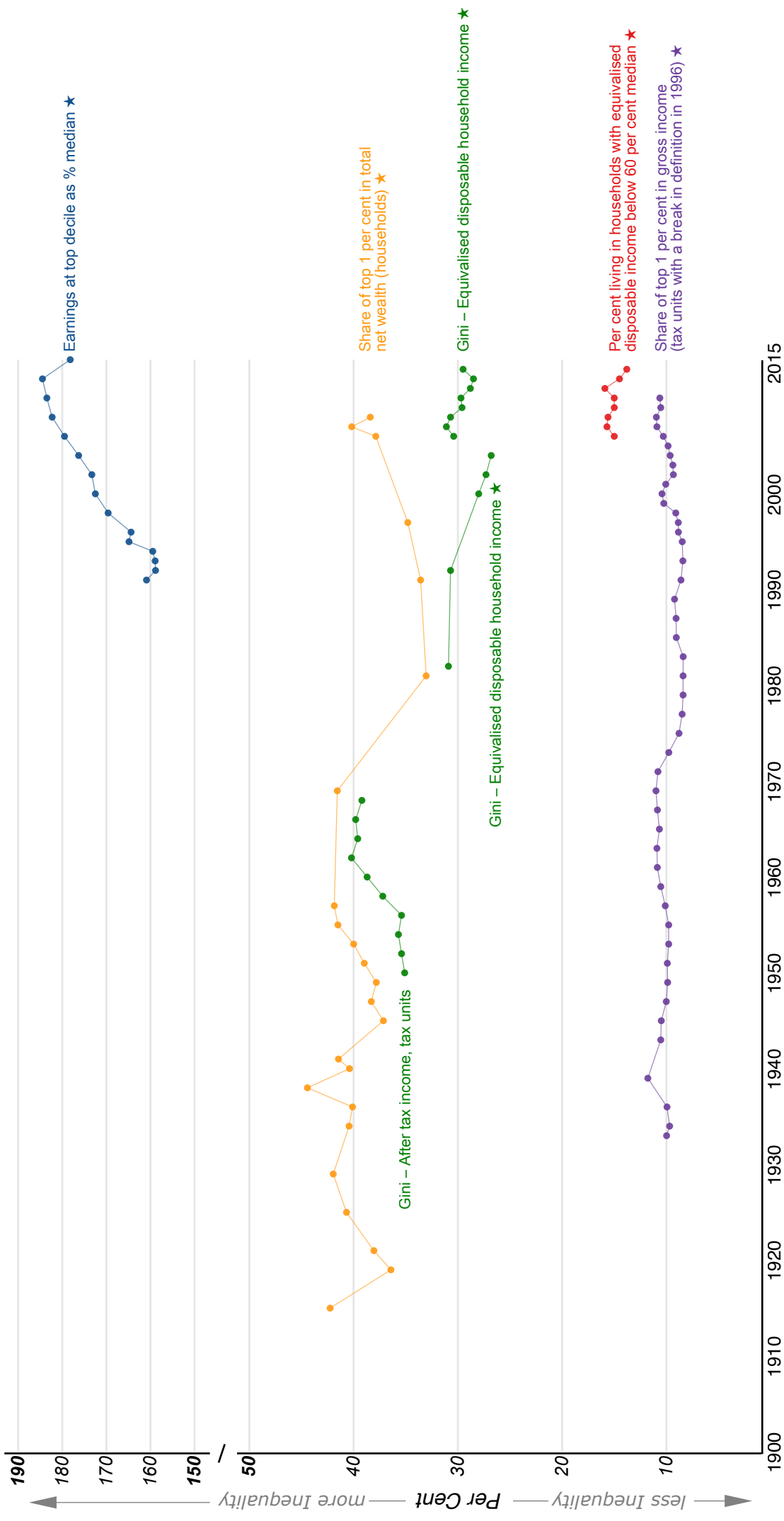
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Economic Inequality in Switzerland

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



23. Switzerland

Sources:

Overall inequality: Series 1: since 2006, data on Gini coefficient of disposable equivalised household income are taken from EU-SILC, Eurostat website. Eurostat points out that there is a break in the series in 2013; Series 2: Gini coefficient of disposable equivalised household income taken from LIS website, starting in 1982 and ending in 2004; Series 3: Gini coefficient of after tax incomes *averaged over 2 years of tax units* from Abele and Lüthi, 1977, Tableau 10) based on the estimates including non-taxpayers by Noth (1975, Tabelle 19), where the year identified is second of 2 year period.

Top income shares: Share of top 1 per cent in total gross income from WID.world (tax units, excluding capital gains), based on work of Dell, Piketty and Saez (2007). Updated by Foellmi and Martínez (2016). Tax units refers to individuals (adults) minus one half of married men and women; from 1996, the definition of adults changes from aged 20 and above to aged 18 and above, creating a break.

Poverty measures: Percentage of individuals living in households with equivalised (EU scale) disposable income less than 60 per cent of the median from EU-SILC (*People at risk of poverty after social transfers* table), Eurostat website (accessed 13 April 2017).

Dispersion of earnings: Earnings at top decile as percentage of median earnings from OECD iLibrary, Employment and Labour Market Statistics, Gross earnings decile ratios (accessed 22 February 2017); linked at 1996 to Atkinson (2008, Appendix R, Table R.2).

Wealth inequality: Share of top 1 per cent of households in total personal net wealth from Roine and Waldenström (2015) updated to 2008, downloaded from Waldenström's webpage.

References:

Abele, H A and Lüthi, A P, 1977, "La repartition personnelle des revenus en Suisse entre 1941 et 1972" in G Gaudard, H Kleinewerfers and J Pasquier, editors, *La politique économique de la Suisse*, Editions Universitaires, Fribourg.

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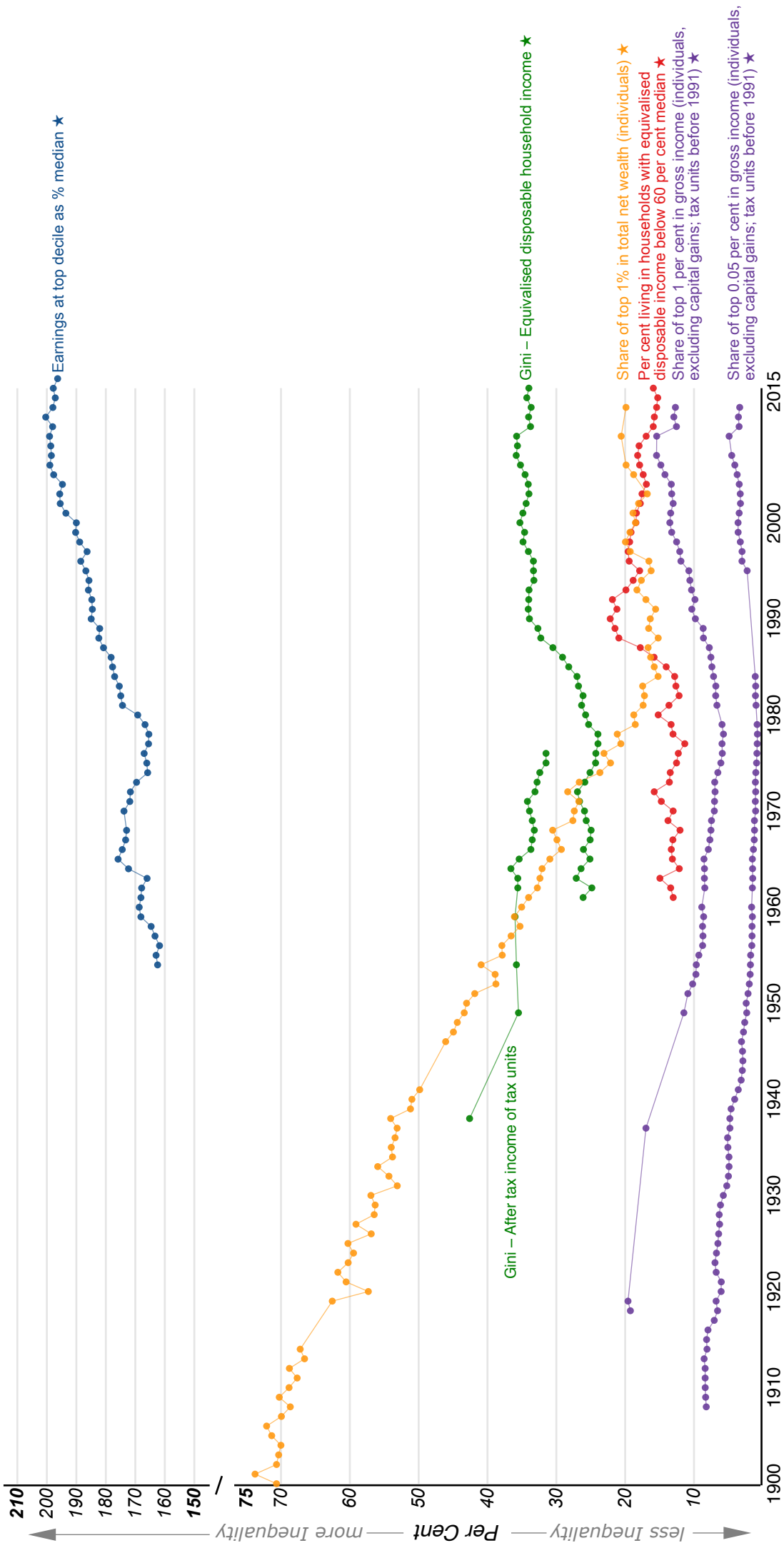
Noth, A, 1975, *Die personelle Einkommensverteilung in der Schweiz 1949 bis 1968*, Dissertation, Universität Freiburg, Freiburg.

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Economic Inequality in the United Kingdom

• Earnings Dispersion • Overall Income Inequality • Poverty • Top Income Shares • Wealth Inequality



A. B. Atkinson, J. Hasell, S. Morelli and M. Roser (2017) – 'The Chartbook of Economic Inequality' at www.ChartbookOfEconomicInequality.com

24. United Kingdom

Sources:

Overall inequality: Series 1: Gini coefficient of equivalised (modified OECD scale) disposable household income for all persons in the United Kingdom (Great Britain up to 2001/2) from Institute for Fiscal Studies: Living Standards, Inequality and Poverty Spreadsheet (before housing costs deducted data (BHC)), downloaded 19 March 2017; the data are from the Family Expenditure Survey from 1961 up to financial year 1993/4 (calendar years up to 1992), thereafter from the Family Resources Survey. Series 2: Gini coefficient of after tax income, *not equivalised, among tax units* ("Blue Book series") from Atkinson and Micklewright, 1992, Table B11 (figure for 1938 from Royal Commission on the Distribution of Income and Wealth, 1979, page 23);

Top income shares: Share of top 1 per cent and top 0.05 per cent in total gross income from the WID.world (excluding capital gains), based on the work of Atkinson (2007) and updated by the same author. Note that the UK experienced a change in the tax base as the taxation system moved from family to individual base in 1990.

Poverty measures: Percentage of individuals in households with equivalised (modified OECD-scale) disposable income below 60 per cent of the median in the United Kingdom (Great Britain up to 2001/2) from Institute for Fiscal Studies: Living Standards, Inequality and Poverty Spreadsheet (before housing costs deducted data (BHC)), downloaded 19 March 2017; the data are from the Family Expenditure Survey from 1961 up to financial year 1993/4 (calendar years up to 1992), thereafter from the Family Resources Survey.

Dispersion of earnings: Earnings at top decile as percentage of median earnings from Annual Survey of Hours and Earnings, *ASHE 1997 to 2016 selected estimates*, Table 5, ONS (downloaded 19 March 2017), covering all full-time workers on adult rates whose pay for the survey period was not affected by absence, linked backwards to take account of changes in methodology in 2011, 2006 and 2004, linked at 1997 to the data from the New Earnings Survey (NES) from Atkinson (2008, Table S.4), taking the series back to 1968 (when the NES began); again linked at 1968 backwards to the income tax data (Schedule E earnings) from Atkinson (2008, Table S.7).

Wealth inequality: Share of top 1 per cent of individuals in total personal net wealth from WID.world based on the work of Alvaredo, Atkinson and Morelli (2016), which makes allowance for wealth of the excluded population; series interpolated where no wealth estimates using share of top 1 per cent of estates as interpolating variable based on estimated relationship.

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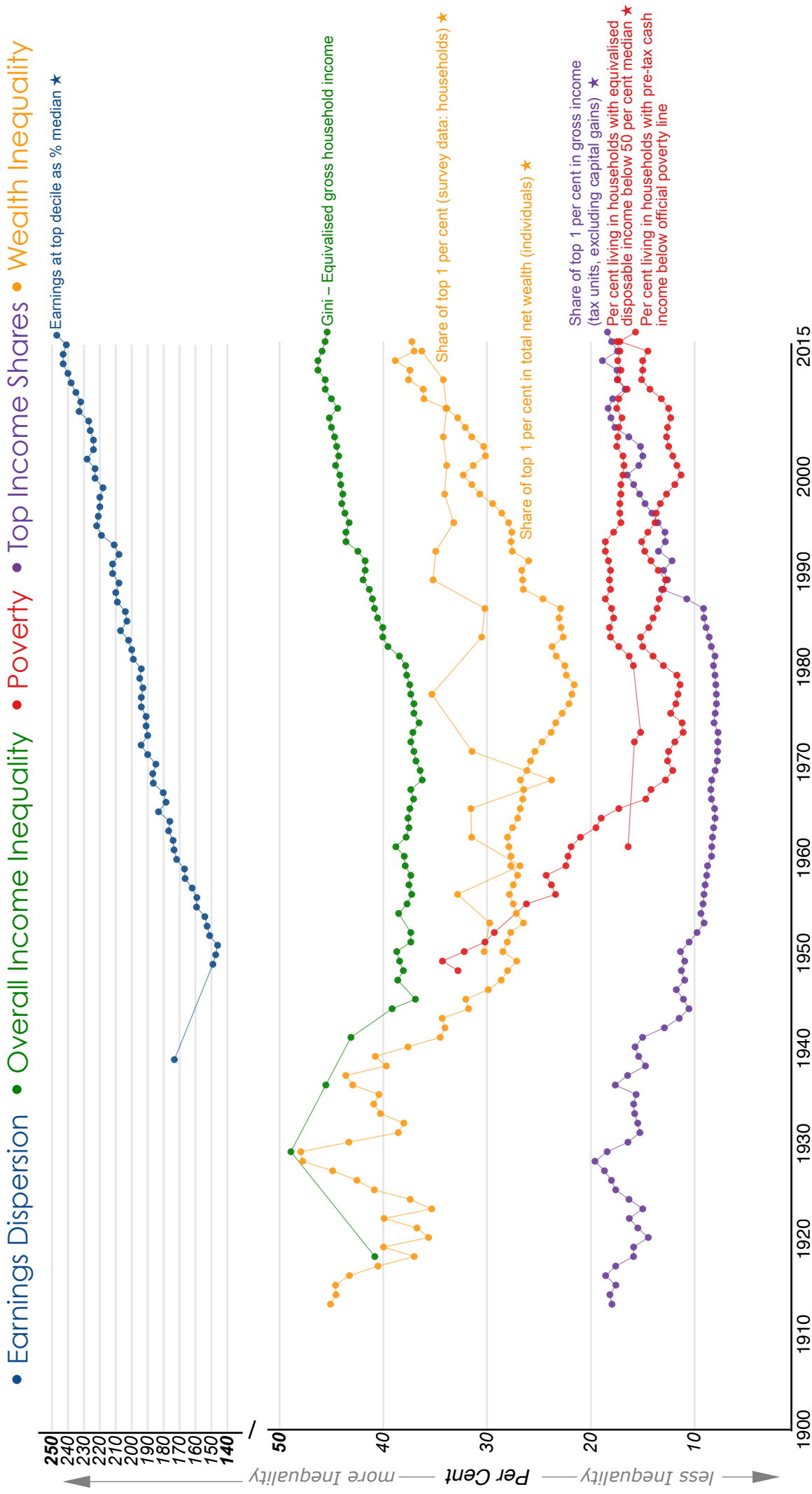
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Economic Inequality in the USA



25. United States

Sources:

Overall inequality: The Gini coefficient for *gross* equivalised household income is from the U.S. Bureau of the Census, *Income, Poverty, and Health Insurance Coverage in the United States: 2015*, (Table A-3, Selected measures of equivalence-adjusted income dispersion), where we have assumed that half of the recorded change between 1992 and 1993 was due to the change in methods (and therefore added 1.15 percentage points to the values from 1992 back to 1967; post-2013 figures being adjusted downward using a forward proportional link at 2013 to deal with a change in methodology; the series is linked backwards at 1967 to the series from 1944 given by Budd (1970, Table 6, column 9) related to money income before tax for consumer units (families plus unrelated individuals); linked at 1944 to the BEA synthetic series for *gross family* incomes from Brandolini (2002, Table A1), who calculated the Gini coefficients from the original tabulations; and linked at 1929 to a series for *gross income of income recipients* based on the NBER/Brookings synthetic estimates, calculated from the tabulations in Mitchell et al (1921, Table 25) and Leven, Moulton and Warburton (1934, Tables 27 and 29, excluding capital gains).

Top income shares: Share of top 1 per cent in total gross income from the WID.world (tax units, excluding capital gains) are based on the work of Piketty and Saez (2003) and regularly updated by Emmanuel Saez. See also Piketty, Saez and Zucman, 2016 for a comparison of results based on pre-tax national income split equally within couples (the sum of all pretax personal income flows accruing to the owners of the production factors, labor and capital, after taking into account the distribution of pension income but before any other tax or transfer).

Poverty measures: Series 1: the proportion of the population living in households with pre-tax cash income below *the official poverty line* from 1959 taken from the U.S. Bureau of the Census website, Historical Poverty Tables, Table 2 and (also presented in Table B1 from the U.S. Bureau of the Census, *Income, Poverty, and Health Insurance Coverage in the United States: 2015*); post-2013 figures being adjusted downward using a forward proportional link at 2013 to deal with a change in methodology; before 1959 data taken from Fisher (1986), marked with a break as no linking is used; Series 2: Proportion living in households with after-tax income *below 50 per cent* of the median from Meyer and Sullivan (2010, Appendix Table 7), updated by linking forward to the same series from OECD iLibrary (OECD Social Issues/Migration/Health Statistics, Income Distribution Database).

Dispersion of earnings: The series is based on State of Working America Data Library (Economic Policy Institute, 2017, wages by percentile series) based on the Current Population Survey (CPS) Outgoing Rotation Group microdata, linked at 1973 to the estimates of Karoly (1992, Table 2B.2), linked at 1963 to the estimates of Atkinson (2008, Table T.10) from the CPS tabulations, linked at 1949 to the estimates of Goldin and Margo (1992, Table 2) based on Census of Population data.

Wealth inequality: Series 1: Share of top 1 per cent of individuals (equal-split adults) in total personal net wealth from WID.world based on the work of Saez and Zucman (2016) who capitalised total investment incomes of US tax units. Series 2: Share of top 1 per cent of households in total personal net wealth from the Survey of Consumer Finances back to 1989 and from early waves of the Survey of Consumer Finances (SCF) going back to 1949 assembled by Khun, Schularick and Steins (2017) into the *harmonized historical Survey of Consumer Finances* (HHSCF). For recent comparable estimates see also Kennickell (2009, Table 4, and 2011, Table 5) and Bricker et al. (2015). An alternative series based on the estate tax data is given in Kopczuk and Saez (2004, Table B1) and was updated from Saez and Zucman (2016, Online Appendix), Table C4.

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All data, all sources, full replication files, and all visuals are freely accessible at our web site:
www.chartbookofeconomicinequality.com.