

DISCUSSION PAPER SERIES

No. 4631

**WEALTH CONCENTRATION
IN A DEVELOPING ECONOMY:
PARIS AND FRANCE, 1807-1994**

Thomas Piketty, Gilles Postel-Vinay
and Jean Laurent Rosenthal

***PUBLIC POLICY and ECONOMIC
HISTORY Initiative***



Centre for **E**conomic **P**olicy **R**esearch

www.cepr.org

Available online at:

www.cepr.org/pubs/dps/DP4631.asp

WEALTH CONCENTRATION IN A DEVELOPING ECONOMY: PARIS AND FRANCE, 1807-1994

Thomas Piketty, EHESS, Paris-Jourdan and CEPR
Gilles Postel-Vinay, EHESS, Paris-Jourdan
Jean Laurent Rosenthal, University of California, Los Angeles

Discussion Paper No. 4631
September 2004

Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

This Discussion Paper is issued under the auspices of the Centre's research programme in **PUBLIC POLICY** and **ECONOMIC HISTORY** Initiative. Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as a private educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. Institutional (core) finance for the Centre has been provided through major grants from the Economic and Social Research Council, under which an ESRC Resource Centre operates within CEPR; the Esmée Fairbairn Charitable Trust; and the Bank of England. These organizations do not give prior review to the Centre's publications, nor do they necessarily endorse the views expressed therein.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

Copyright: Thomas Piketty, Gilles Postel-Vinay and Jean Laurent Rosenthal

ABSTRACT

Wealth Concentration in a Developing Economy: Paris and France, 1807-1994*

We use large samples of estate tax returns to construct new series on wealth concentration in Paris and France from 1807 to 1994. Wealth concentration in Paris and in France increased until World War I and then fell abruptly. The rise in inequality prior to WWI accelerated (rather than stabilized) during the 1860-1913 period. This was largely driven by the growth of large industrial and financial estates and coincided with the decline of aristocratic fortunes (until 1857, the share of aristocrats and real estate in top estates was actually rising). The decline in wealth concentration that followed World War I appears to have been prompted by the 1914-1945 shocks rather than by a two-sector, Kuznets-type process. Inequality fell both in Paris and in the rest of France. Finally, the very high levels of wealth concentration observed on the eve of World War I were associated with individuals who lived off capital income rather than active entrepreneurs. In particular, the age profile of wealth looks markedly different around 1900-1913 than in other periods. At that time top wealth holders were in their 70s and 80s, whereas they had been in their 50s at the beginning of the nineteenth century and would be so again at the end of the twentieth century. These results shed new light on the ongoing debate about wealth inequality and growth in the presence of capital constraints.

JEL Classification: J12

Keywords: income distribution

Thomas Piketty
EHESS, Paris-Jourdan
48 Boulevard Jourdan
75014 Paris
FRANCE
Tel: (33 1) 4313 6250
Fax: (33 1) 4313 6259
Email: piketty@ehess.fr

Gilles Postel-Vinay
EHESS, Paris-Jourdan
48 Boulevard Jourdan
75014 Paris
FRANCE
Tel: (33 1) 4313 6364
Fax: (33 1) 4313 6362
Email: gpv@ens.fr

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=119727

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=158086

Jean Laurent Rosenthal
Department of Economics
UCLA
Box 951477, Bunche Hall 9262
Los Angeles, CA 90095-1477
USA
Tel: (1 310) 825-2490
Fax: (1 310) 825-9528
Email: rosenthal@econ.ucla.edu

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=131476

*The authors would like to thank the Archives de Paris for their assistance in data collection. Data collection benefited from support from the Guggenheim Foundation, the McArthur Foundation, the Collins Fund at UCLA, INRA, and EHESS. Special thanks to Alena Lapatniova and Maria Chichtchenkova for extraordinary research assistance. The authors also thank the participants of the All-UC group in Economic History Group's conference on the New History of Inequality for their comments. All comments are welcome.

Submitted 11 August 2004

1. Introduction

This paper presents new series on wealth concentration in Paris and France from 1807 to 1994. These series were constructed using large samples of individual estate tax returns that we collected in the Paris archives for various years between 1807 and 1902, as well as tabulations by size of estate compiled by the French tax administration regularly since 1902.

Our general motivation for constructing such series is the study of the two-way interaction between development and distribution. More specifically, one of our primary goals is to better understand the decline in income and wealth inequality that occurred during the first half of the twentieth century in today's developed countries. Recent research on France suggests that this decline was for the most part an accidental phenomenon associated with the collapse of capital incomes,¹ rather than a spontaneous, two-sector, Kuznets-type process.² In particular, the only reason why top income shares dropped between 1914 and 1945 is that top capital incomes fell, whereas top wage shares remained approximately constant (see Figure 1). The wealth of the very rich was massively reduced by shocks in the first half of the twentieth century—these included war, inflation, and the Great Depression. The very rich have never fully rebuilt their estates, probably because of the dynamic effects of progressive estate and income taxation on capital accumulation and pre-tax income inequality. A central limitation of these top income and wage shares series is they begin late—just before WWI. The modern progressive income tax was created around 1913 in most countries, and there is no systematic data source on incomes prior to this date.³ Although these series strongly suggest that the 1914-1945 shocks played the key role, one cannot fully exclude the possibility of a pre-existing, Kuznets-type downward trend in inequality prior to World War I. Constructing wealth concentration series covering both the nineteenth and the twentieth century allows us to put the 1914-1945 period into a broader historical perspective.

Insert Figure 1

¹ See Piketty (2003). For similar series covering the U.S., see Piketty and Saez (2003).

² According to Kuznets' influential hypothesis (Kuznets (1955)), income inequality should have declined spontaneously in advanced capitalist countries, as more and more workers join the high-paying sectors of the economy.

³ The modern income tax was introduced in 1909 in the U.K in 1913 in the U.S., and 1914 in France.

A second and equally important goal is to understand the origins of the high levels of inequality that we know prevailed on the eve of World War I. One can consider two extreme hypotheses. The first would suggest that these high levels were longstanding—the result of the political structures of societies where the primary form of wealth was land. The second is that capitalism, and in particular the interconnection between financial development and industrial growth created new forms of wealth whose distribution was radically unequal. We thus aim to measure both the level of inequality that prevailed prior to the onset of industrialization and the changes that modernization brought forth. Luckily for us, the 1850s form a convenient turning point since industrialization accelerated under the Second Empire (1852-1870) and the stock market boomed.

Our series can also be used to address the on-going debate about the impact of inequality on growth. Economists now realize that cross-country regressions of inequality on growth are unlikely to deliver robust conclusions, due to poor data quality and serious identification problems (Banerjee and Duflo 2001, Atkinson and Brandolini 2001). Existing cross-country data sets on inequality suffer from serious limitations: they typically do not distinguish between income and wealth distribution, they are not homogenous across countries, and they are generally only available for a small number of isolated years for each country. We believe that one first needs to construct homogenous, long run series for individual countries before the general issue can be properly re-addressed. In the meantime, careful case studies with good data are probably more informative than cross country regressions with bad data. Our micro samples of estate tax returns also allow us to investigate the efficiency implications of inequality in a different way, by looking at how the age and gender profile of wealth varies with the level of asset concentration.

Finally, French historical sources on wealth distribution are perhaps the richest in the world and ideal to investigate long term changes in inequality. As early as 1791 the French National Assembly introduced a universal estate tax, and this tax (and the corresponding returns) has remained virtually unchanged since then. This estate tax was universal because it applied at any level of wealth and for nearly all types of property (both real and estate).⁴ The successors of all decedents with positive wealth were required to file an estate tax return. The estate tax was made progressive in

⁴ The one glaring exception was government bonds, which were exempted until 1850.

1902 (it was strictly proportional from 1791 to 1902), which prompted the French tax administration to start compiling summary tabulations of all individual estate tax returns.⁵ These tabulations provide information about the number and value of estates in given wealth ranges. No such tabulations were compiled prior to 1902. However the tax authorities transcribed individual returns in register that have been preserved. We used these registers to collect large samples of individual returns between 1807 and 1902. We then constructed homogenous estimates of wealth concentration in Paris and France from 1807 to 1994 (see below for more details on the data and methodology).

Other scholars have attempted to use these sources to examine the evolution of inequality in France and in Paris.⁶ In particular, Daumard led a research group that examined a few cross sections of estate returns (1821, 1847, and 1911) in a small number of cities in France. Although the data collected was extraordinarily detailed, the intervals between samples were very long. Hence her work does not uncover the evolution of inequality prior to WWI. Another project follows the descendants of all couples marrying in France between 1800 and 1830 and whose family name started with the letters “TRA” up to 1940. While this approach yields critical information about the intergenerational transmission of wealth within the broad population, the sample size is too small to study the very wealthy. In fact, the TRA survey contains too few observations to deliver reliable estimates above the 95th percentile of the distribution (which is unfortunate, because this is where most of the wealth lies).⁷

In other countries direct and homogeneous evidence on the evolution of inequality is even scarcer than in France. For instance, the U.K. did not see a universal estate tax before 1894, and the U.S waited until 1916. As a result, homogenous wealth concentration series based upon estate tax returns can only

⁵ Prior to 1902 the tax on estates that devolved to children was a flat 1%. In 1902 when the tax became progressive the top marginal rate was 5%, by mid 1930s it was 35%, it remains today at 40% (see Piketty 2001a, appendix J).

⁶ Many have relied on indirect information. For instance, Morisson and Snyder (2000) produced income inequality estimates for in France over the long run that are rather problematic (see also Morisson 2000). Their Old Regime fiscal sources stop in 1789. They construct a measure of inequality for the nineteenth century out of a macro-economic argument about payments to factors which has little empirical ground; and they have no way of connecting the Old Regime series to the nineteenth century estimates. Finally their nineteenth century estimates are completely at variance with the direct evidence we present here.

⁷ The TRA survey can be used for other purposes, however. For instance, Bourdieu, Postel-Vinay and Suwa-Eisenmann (2003) use the TRA survey to measure the evolution of the fraction of poor decedents (i.e. decedents with zero or near-zero wealth), and they find that this fraction has been increasing in nineteenth century France (see below).

cover the twentieth century in those two countries.⁸ There do exist various alternative sources for wealth at death prior to 1894/1916 in the U.K. and in the U.S., in particular probate records. The information provided by probate records, however, is neither as rich nor as systematic as that contained in estate tax returns (in particular, probate records were purely voluntary, and all types of property were not covered).⁹ Consequently, it is very difficult to compare in a precise manner the probate-based estimates of wealth concentration available for the 18th-nineteenth centuries and the modern estimates available for the twentieth century. All available estimates confirm that wealth concentration rose during the nineteenth century and dropped during the first half of the twentieth century. In contrast, there is little evidence as to the course of inequality in the late nineteenth century. Had it started to decline as Kutznets would have thought? Did it stabilize? Did it keep increasing until World War I?¹⁰ Our French series allow us to cast new light on this central issue because they are homogenous over the 1807-1994 period.

Our main conclusions are the following. First, wealth concentration in Paris and in France increased up to World War I, with an acceleration (rather than a stabilization) of the trend at the end of the period. The bulk of the rise in inequality actually took place during the 1860-1913 period. This was largely driven by the growth of large industrial and financial estates and coincided with the decline of aristocratic fortunes. During the first half of the nineteenth century, the share of aristocrats in top estates actually rose. Next, the decline in wealth concentration observed after World War I appears to have been driven by the 1914-1945 shocks rather than by a two-sector, Kuznets-type process. The decline in inequality was not due to a reduction in the gap between Paris and the provinces since it occurred both in Paris and in the rest of France. Finally, and perhaps most importantly, the very high levels of wealth concentration observed at the eve of World War I seem to have

⁸ The standard references are Atkinson and Harrison (1978) for the U.K. and Lampman (1962) for the U.S.. Atkinson and Harrison use estate tax returns tabulations covering the 1923-1972 period to compute top wealth share series (the tabulations compiled by the U.K. tax administration over the 1894-1914 period are less rich and do not allow for the same computations as the post-1923 tables). Lampman uses estate tax returns tabulations covering the 1922-1956 period to compute top wealth share series (these series have been updated by various authors). See Lindert (2000) for a recent survey.

⁹ In particular, real estate was not probated in the U.K. before 1898 (realty and personalty were also treated differently in U.S. probate records). For estimates of wealth concentration in the U.K. based on eighteenth and nineteenth century probate records, see Lindert (1986). For corresponding estimates for Colonial America, see Jones (1977).

¹⁰ See e.g. the survey by Lindert (2000).

been associated with retired individuals who had lived off capital income (henceforth *rentiers*) rather than with active entrepreneurs. In particular, the age wealth profile of decedents is markedly steeper around 1900-1913 than in other periods. Top wealth holders were very old at the turn of the last century (their 70s and 80s), whereas they are usually in their 50s in other periods, both at the beginning of the nineteenth century and at the end of the twentieth century. Although our data does not allow us to evaluate the inefficiency of wealth concentration directly, these results shed new light on the ongoing debate about inequality and growth. That is, to the extent that credit constraints were important in 1900 France (which we cannot prove directly with our data), our findings about the changing age profile of wealth suggest that high wealth concentration might have been associated with lower growth.¹¹

The rest of this paper is organized as follows. Section 2 describes our data sources and outlines our methodology. Section 3 presents our estimates of wealth concentration and composition at death in Paris. Section 4 discusses how the nineteenth century Paris estimates can be extended to the rest of France and presents preliminary results for wealth concentration at death in France from 1807 to 1994. Section 5 shows how our data on wealth and age at death can be used to estimate series on wealth concentration among the living, using the estate multiplier method. Section 6 examines age-wealth profiles and discusses the efficiency implications of high wealth concentration.

2. Data Sources

All of our estimates are based upon estate tax returns. As noted above, the estate tax was created in 1791, and it became a progressive tax in 1902. Since then the tax administration has periodically compiled tables indicating the number of decedents and the value of their estate for a large number of estate brackets. These tables were already used by Piketty (2001a, 2003), and they are available over the 1902-1994 period.¹² They were compiled and published by *département*

¹¹ One way to test directly for the efficiency impact of high wealth concentration would be to look at investment patterns across wealth fractiles and age groups (i.e. to which extent older wealth holders invest their wealth in low-yield assets, etc.). Unfortunately we do not observe asset returns in our data set.

¹² These tabulations were published in the official statistical publications of the French Finance Ministry (for exact references and page numbers see Piketty (2001a, Appendix J)). The basic national tabulation indicating the number of decedents and amount of their estate for a large number of estate

(*départements* are middle level administrative jurisdictions; there are about 90 of them in France, including Paris).¹³ These tables can be used to study the evolution of wealth concentration both in France and in Paris during the twentieth century, using standard Pareto interpolation techniques.

Prior to 1902, the tax administration only published the aggregate amount of wealth reported on estate tax returns, broken down by real (structures and buildings) and personal (furniture, businesses, stocks, bonds, etc.) assets. Studying concentration thus required collecting our own samples of individual returns. Collecting information on every individual return from every *département* for a given year was impossible. It would have required going to the archives of each *département* to access the tax registers and then dealing with hundreds of thousands of declarations a year. We therefore had to devise a sampling strategy. One option was to randomly select (e.g. on the basis of birth dates or family names) a nationally representative sample of decedents for various years during the nineteenth century. The problem is that the sample would need to be extremely large if it is to include enough large estates (given that wealth is extremely concentrated, it is critical to observe many of the very wealthy).

Therefore we decided to pursue a completely different strategy. We collected estate tax return information for all decedents in Paris for selected years (1807, 1817, 1827, 1837, 1847, 1857, 1867, 1877, 1887, and 1902). We chose Paris because a disproportionate share of the very rich lived there. As one can see from Table 1, the annual number of decedents (aged 20-years-old and over) in Paris was about 12,000 around 1800-1810 (2.5% of the French total) and nearly tripled during the nineteenth century, up to about 35,000 around 1900-1910 (6.5% of the French total). However only 30% of decedents in Paris had a positive estate during the nineteenth century (about twice as small as for the rest of France),¹⁴ so we only needed to collect

brackets is available for the following years: 1902-1913 (except 1906 and 1908), 1925-1960 (except 1928 and 1934), 1962 and 1964. The French tax administration stopped compiling such tables in 1964, but micro-files including large national samples of estate tax returns are available for 1984 and 1994 (in the present paper, we only used the 1994 micro-file).

¹³ Tables by estate brackets are available at the *département* level for the following years: 1902-1913 (except 1906 and 1908), and 1925-1958 (except 1928 and 1934); for other years tables by estate brackets are only available at the national level. In addition, national tables broken down by estate brackets and age of decedents are available for years 1943-1954. The 1994 micro-file also allows us to break down the data by *département* and age for year 1994.

¹⁴ In 1902 (when the first administrative tabulations start), the fraction of decedents with positive wealth was about 30% in Paris and 60% for the all of France. Estimates from the TRA survey suggest that the fraction of decedents with positive wealth in France declined from about 70% at the beginning

detailed information on 3,500 decedents or so per year at the beginning of the nineteenth century and 10,000 or so decedents per year at the end. Although Paris had more decedents with zero wealth than the rest of the country, the average estate was about 4.5 times larger in Paris than elsewhere in France during the nineteenth century.¹⁵ It is particularly striking to notice that this ratio actually increased over time, in spite of the fact that Paris nearly tripled in population.¹⁶ On the eve of World War I, the estates of Paris decedents made up over 26% of the French total (see Table 1 and Figure 2).

Insert Table 1

Insert Figure 2

A second problem that we had to overcome is that the registers provide information on tax returns rather than estates. Hence to reconstruct estates we had to aggregate returns.¹⁷ The very high levels of inequality in Paris again came to our assistance. By collecting nominal information on the top 10% of returns we were able to successfully attribute 92% of movable assets and 97% of real assets to specific individuals. The remaining returns were treated as individuals—thus biasing downwards our inequality estimates.

Our 1902 Paris sample is fully consistent with the table compiled for the same year for Paris by the tax administration. Therefore we can link up our 1807-1902 Paris files with the 1902-1994 Paris tables to construct homogenous 1807-1994 series for inequality in Paris. The more difficult part is the construction of estimates for wealth concentration for France from 1807 to 1902 from the Paris data. To do so we must estimate how the relative importance of Paris in each top estate class

of the nineteenth century to about 60% at the beginning of the twentieth century (see Bourdieu et al (2003)).

¹⁵ Average estates, as well as top estate fractiles, are always defined in this paper over the set of all decedents aged 20-year-old and over, including those with zero wealth.

¹⁶ Note that there is a discontinuity in the growth of Paris during the nineteenth century, as new districts (“*arrondissements*”) previously registered in the suburb were integrated into the city of Paris in 1860. The results reported here do not make any correction for this discontinuity, which explains the discontinuity observed on some of the figures around 1860.

¹⁷ An individual estate may lead to multiple returns for two broad reasons. First, prior to 1902 real estate was assessed in the bureau where it was located. Hence descendants owners of real estate in multiple fiscal bureaus filed multiple declarations. Second, any adjustment to the first return leads to another return—adjustments are sometime substantial.

evolved over the nineteenth century. To achieve this goal, we used other estate surveys,¹⁸ as well as non-estate fiscal sources (see section 4 below).

3. Wealth Concentration at Death in Paris, 1807-1994

Figure 3 shows the evolution of wealth concentration at death in Paris over the from 1807 to 1994. Given that the richest decile accounts for at least 95% of the value of all assets during the nineteenth century (see Table 2), we focus on the top 1%. The richest one percent of Parisians appears to have held a stable and very high fraction of all assets during the first half of the nineteenth century (better than half). The 1817 spike was short-lived and was due not to a large increase in the size of top estates, but rather to a large decline in modest estates (which apparently suffered the most from Napoleonic wars).¹⁹ Inequality in Paris increased substantially after 1867 with the top one percent's share of wealth at death climbing from about 52% to over 72% in 1913. World War I and the ensuing shocks then prompted an abrupt decline. The top 1% share dropped by almost 40 percentage points between 1913 and 1947-1956, and by about 10 percentage points between 1947-1956 and 1994. Converting these wealth-at-death concentration estimates into wealth-of-the-living concentration estimates (using the estate multiplier method) leaves this general picture unchanged (see Section 5 below).

Insert Table 2

Insert Figure 3

Who were the individuals who enjoyed such a substantial increase in their relative wealth between 1867 and 1913? For the most part, their fortunes derived from large industrial and financial estates. As Figure 4 illustrates, the share of

¹⁸ In addition to the TRA survey (which gives a reliable picture of the national distribution up to the 90th-95th percentile), we should mention the study by Daumard (1973), which relied on samples of estate tax returns collected in five French cities at the beginning and at the end of the nineteenth century (we shall come back on this important work below).

¹⁹ Other spikes in the top 1% share are due for the most part to the volatility of the very top estates (the top 0,1% share, and mostly the top 0,01% share – note that with about 20 000 decedents per year in Paris, the top 0,1% fractile includes only 20 decedents, and the top 0,01% only 2 decedents, so that the estimates for these fractiles are unstable. They depend on the identity the very wealthy individuals who happened to die in a specific year). The figures reported here are the raw figures, with no adjustment whatsoever for this top wealth volatility. Note however that the 1867-1913 upward trend is highly significant and does not rely on a small number of very top wealth holders.

personal (non-real) estate has always been a U-shaped function of wealth. This reflects the well-known fact that real estate is a middle class asset: the poor are too poor to own land or buildings; what little they have is in furniture, cash, or other moveables. In contrast, the rich hold most of their wealth in stocks and bonds. What is more interesting is that during the nineteenth century the relative importance of personal wealth in Parisian estates also followed a U-shaped curve over time. This was especially true for the very wealthy (see Figures 4 and 5) where real assets became more and more important from 1807 to 1837. Real estate then entered a relative decline after 1837 that accelerated after 1867.

The ebb and flow of the relative importance of real estate was linked to Paris' recovery from the Revolution. Prior to the Revolution, the peripheral parts of the city had been a maze of convents, monasteries and educational institutions all belonging to the Church. When the wealth of the Church was nationalized these real estate assets were abruptly put on the private market, creating a glut of buildings and low prices. As building and land values recovered, the relative importance of real estate grew, before being overshadowed by the financial boom of the last part of the century.

The share of aristocratic decedents among the very rich follows an inverted U over the nineteenth century (see Figure 6).²⁰ That is, nobles became more and more numerous in top wealth fractiles from 1807 to 1837-1847, and then the trend reversed during the second half of the nineteenth century. Note that the number of aristocrats remains high throughout the period, including in 1902 (about 13% of nobles in the top 1% estates, over 25% in the top 0.1%, vs. about 0.5-1% in the population as a whole). The inverted-U pattern is yet another of the Revolution's legacies. In 1807, when we first observe it, aristocratic wealth was at a temporary nadir. On the one hand, the nobility was impoverished by the Revolution's inflation and by the sharp decline of the value of Parisian real estate. On the other hand, part of the Old Regime nobility was in exile and thus, if they died, we do not observe their movable wealth. Aristocrats were able to recoup part of their losses during the first half of the nineteenth century. Napoleon provided some assistance by ennobling his chief military officers and endowing them with wealth. Later, the Restoration

²⁰ We take a very broad view of aristocrats, they include the Old-Regime nobility, the members of the elite who were given titles by Napoleon and anyone who had the fortune to create an aristocratic entail under the Bourbons (1815-1830).

government (1815-1830) compensated individuals who had chosen exile during the Revolution for the losses they suffered when their property was confiscated. The government distributed nearly one billion francs in the famous “milliard des Emigrés” (Gain 1928). The beneficiaries of Napoleon’s and the Restoration’s largess appear among the very rich until mid-century. Presumably such redistribution did not contribute to accelerate French industrialization.

Insert Figure 4

Insert Figure 5

Insert Figure 6

4. From Paris to France

We can use the Paris data to construct wealth concentration at death estimates for all of France from 1807 to 1902. To do so we need to know the evolution of the share of Paris estates in top estates. Between 1902 and 1994, the evolution of top estate shares in France has been parallel to that of top estate shares in Paris: the levels of concentration have always been lower for the country as a whole, but the trends are similar (see Figure 7). It is also striking to note that the fraction of Paris estates in the top 1% estates has remained fairly stable over the twentieth century (it fluctuates between 20% and 25%, with no trend), even though Paris’ share of all decedents has been dwindling over time, reflecting the population decline of the capital (see Table 3). In 1902, Paris decedents were 4 times more likely to belong to the national top 1% estates than average decedents ($26.6/6.5=4.1$); in 1994, Paris decedents were 7 times more likely to belong to the national top 1% estates than average decedents ($25.2/3.6=7.0$). If anything, the geographic concentration of fortunes was larger at the end of the twentieth century than at the beginning of the twentieth century. The decline of wealth concentration that took place during the twentieth century was not due to redistribution between Paris and the provinces.

How did the fraction of Paris estates in top estates evolve over the course of the nineteenth century? Our benchmark estimates rely on a simple and very conservative assumption: from 1807 to 1902 Paris’ share of estates in the top percentile increased at the same rate as Paris’ share of French adult deaths (see

Table 3). Using this approximation and our Paris samples of individual tax returns we compute the threshold wealth levels for the top percentiles of the national wealth distribution (e.g. P99, P99.5, P99.9 and P99.99).²¹ We also calculate the average wealth levels for the relevant wealth classes (e.g. P99-99.5, P99.5-99.9, P99.9-99.99 and P99.99-100). These are then weighted by the number of individuals in France in that wealth class in order to compute the average wealth levels for top fractiles (P99-100, P99.5-100, P99.9-100 and P99.99-100). Lower thresholds of the national wealth distribution (P90 and P95) were computed using the national TRA survey.²²

The national top estate shares estimates reported on Table 4 were computed using this methodology. They suggest that wealth concentration (as measured by the top 1% estate share) rose throughout the nineteenth century in France, both during the 1807-1867 and 1867-1902 periods, although less sharply than in Paris during the latter period (see Figure 7). These estimates are conservative in the sense that it is almost certain that they underestimate the rise of wealth concentration that took place during the nineteenth century. First, we know that the bulk of population growth in Paris during the nineteenth century was due to the annexation of suburbs in 1860 and to population growth in these peripheral *arrondissements*. Because the outskirts of the city were poor, the annexation added few top estates. Thus, Paris' share of top estates in France increased less than its share of the total population. This hypothesis is confirmed by nineteenth century housing tax tabulations showing that the fraction of Paris taxpayers in national top 1% taxpayers was substantially larger than 10% at the beginning of the nineteenth century.²³ Giving Paris a larger (and more realistic) share of top estates in 1807 would both reduce the share of wealth of the top 1% in France at that date and lead to more rapid rise in inequality over time.

²¹ For instance, the number of decedents (aged 20 years old and over) in France was 583,976 in 1887 (see Appendix Table A1), so that the top 1% of the estate distribution at death consists of the top 5,840 estates. If the share of Paris among French top 1% estates was 24.1% in 1887 (see Table 3), then the national P99 threshold for 1887 corresponds to the top 1,410 Parisian estates ($0.241 \times 5,840 = 1,410$) (the national P99 threshold reported on Appendix Table A3 for 1887 was computed using this formula).

²² See Bourdieu et al. (2003) for full details about the TRA survey. The P90 and P95 thresholds reported on Appendix Table A3 were computed using 10-year moving averages around the target years in order to make sure that the TRA sample includes sufficiently many observations. The P90-95 and P95-99 intermediate wealth levels were computed using standard Pareto interpolation techniques.

²³ These tabulations were published in the same Finance Ministry official publications as the estate tabulations. We chose not to use them in our formal computations because the tax base of the housing tax (namely, the rental value of the real estate property where the household lives) is only loosely connected to the estate tax base (in particular, one cannot rule out the possibility that the housing tax base over-represents Paris-based taxpayers).

Next, and most importantly, other estate surveys are consistent with the view that our benchmark estimates provide are conservative. Our estimates are in fact a lower bound for the increase in wealth concentration that took place in France during the nineteenth century. The important study by Daumard (1973), which relied on samples of estate tax returns collected in Paris, Lyon, Toulouse, Lille, and Bordeaux found that wealth concentration rose in each of these five cities during the nineteenth century.²⁴ The TRA survey, although it is ill-suited for the study of top estates, is also consistent with our view. Wealth dispersion was on the rise in nineteenth century France according to the TRA survey, both in the sense that the fraction of decedents with positive estates declined over time (in spite of the sharp increase in the value of the average estate) and that ratios such as the P90/P50 ratio increased.²⁵ We also compared our benchmark national P99 series, extrapolated from our Paris samples, and the national P99 series computed using the TRA survey. We found that both series display the same overall upward trend in concentration (which is reassuring regarding the general validity of our Paris-France extrapolation technique), except that the increase in inequality from 1807 to 1902 period is even larger with the TRA series than with our series. (This again suggests that the latter provide a conservative lower bound for the upward trend in wealth concentration.)²⁶

Insert Table 3

Insert Table 4

Insert Figure 7

5. From the Wealth of the Decedents to the Wealth of the Living

The estimates reported so far refer to the distribution of wealth among decedents, as described in the tax returns filled by their heirs. However, the evolution of wealth distribution among the living might possibly have followed a different pattern. In order to convert wealth-at-death concentration estimates into

²⁴ Unfortunately, Daumard's samples are not available in machine-readable format, she has only two or three years of data for each city, and she did not try to compute homogenous inequality indicators (top fractiles shares, etc.) with her data. Thus her results, though fully consistent and complementary with our results, cannot be directly compared to ours.

²⁵ See Bourdieu et al (2004).

²⁶ See Appendix Figure A1.

wealth-of-the-living concentration estimates, the standard technique is the so-called “estate multiplier” method.²⁷ It consists of weighting each observation of an estate at death by the inverse of the mortality rate for this age group. That is, if the mortality rate of living individuals aged 20 to 24 year-old is 0.68% in Paris in 1902, then each decedent aged 20-24 represents about 147 living individuals aged 20-24 ($1/0.0068=147$). Conversely, if the mortality rate of living individuals 80 or more years old is 21.43% in Paris in 1902, each decedent in that group represents about 4.7 living individuals aged 80+ ($1/0.2143=4.7$). This method requires mortality tables (these are easily available) and estate tabulations broken down by estate size and age at death (these are scarcer). Fortunately, our 1807-1902 micro samples of Parisian estates include age at death, the city’s statistical bureau published annual death by age totals, and the French censuses report the age distribution for the capital every five years. These data allowed us to compute the estimates of wealth concentration among the living over the period 1807-1902 (see Figure 8). The base population for the living is the set of all individuals aged 20 and over.

Insert Figure 8

The upward trend in wealth concentration among decedents is also found among the living (Figure 8). Inequality was slightly higher among the living than among decedents. Indeed, survivors were on average younger than those who die, and the young were on average poorer. Changes over time, however, are similar. Increased life expectancy over the course of the nineteenth century has only a small effect on the trends. In order to make the estate multiplier method more reliable, one would prefer to take into account differential mortality by wealth. Doing so would require having access to mortality schedules based both on wealth and age; unfortunately these are not available. We have nonetheless re-estimated wealth of the living using various assumptions about differential mortality. Although adding differential mortality produces different levels of inequality it does not affect the upward trend in concentration that appears on Figure 8. Finally, we have applied the

²⁷ This method was widely used in Britain and France in the late nineteenth and early twentieth centuries to compute the stock of total national wealth on the basis of estate tax data regarding the flow of wealth transmitted at death. Standard references using this technique in order to estimate the wealth distribution of the living on the basis of estate tax data tabulated by estate size and age at death include Atkinson and Harrison (1978) and Lampman (1962). For a more recent application of this technique, see Kopczuk and Saez (2004).

estate multiplier method to available data for 1947 and 1994. Overall the sharp decline in wealth concentration observed during the twentieth century (and especially between 1914 and 1945) is very robust. If anything, the decline appears to be even larger when one looks at wealth concentration among the living rather than among decedents.²⁸

6. The Age Profile of Wealth and the Efficiency Costs of Wealth Concentration

Can our data tell us something about the efficiency consequences of wealth concentration? One could look directly at the correlation between inequality and growth rates as done in the cross-country regression literature. Our French series (and other similar series for developed countries) show a striking long-run pattern. Annual per capita growth rates were relatively low (1.1%) during the 1800-1914 period, when wealth concentration was enormous (around 50% of total wealth for the top 1%), and they have been much higher (3.1%) during the 1945-2000 period, when wealth concentration has been more moderate (around 25% of total wealth for the top 1%). Needless to say, this does not prove that high wealth concentration had a negative causal impact on growth. After all, post-1945 growth might have been higher had wealth concentration remained the same as in 1914. The most one can conclude is that the very high levels of wealth concentration that prevailed before World War I were not necessary for long-run growth or development. One can not derive any further conclusions from such aggregate comparisons (although this is what the cross-country literature routinely does, using inequality data sets that are of much lower quality and comparability than the series used for the present case study).

Another way to test for the efficiency implications of wealth concentration is to examine who is rich. With perfect credit markets, high levels of wealth concentration can be bad from a social justice viewpoint, but they entail no efficiency loss. With

²⁸ See Appendix Table A4. It is unfortunately not possible to construct complete series for wealth concentration among the living for the twentieth century, due to data limitations: tables broken down by estate brackets and age of decedents are available solely for years 1943-1954 and at the national level (no table broken down by estate brackets and age of decedents has ever been compiled at the *département* level, except in 1931 for Seine *département*: see *Bulletin de la Statistique Générale de France* octobre-décembre 1934), and the 1994 micro sample is not large enough to allow for a reliable application of the estate multiplier method at the Paris level. Thus the only wealth-of-the-living concentration estimates we provide for the twentieth century are national estimates for 1947 and 1994.

first-best credit, money flows towards the best entrepreneurs and investment projects. Because the return on capital does not depend on who owns it, the distribution of wealth has no effect on growth. When credit constraints bind, however, initial wealth matters, and high levels of inequality can hurt growth. Whether the loss is large or small depends on who owns the assets. If the rich are efficient investors (they know which projects to fund, etc.), then wealth concentration may even be useful. For instance, if inequality is high because a small group of talented and active entrepreneurs has accumulated a lot of capital and keeps re-investing it in profitable activities, then credit constraints entail little efficiency loss. Suppose, however, that credit constraints are severe and thus the rich tend to invest in their own activities. Because of diminishing returns these projects will have low marginal returns (relative to some of the unfunded projects of the poor). In this case increasing wealth concentration is likely to be bad. Indeed as capital becomes more closely held, fewer projects will be started and aggregate returns will be low. With lower levels of inequality more projects are started and both the marginal rate and average rate of return rise.

On a second level, the existence of severe credit constraints implies that wealth transfers between the generations will have different efficiency consequences depending on the age of the recipients. If individuals receive bequests or inter-vivos transfers when they are young, they can earn high returns by starting new enterprises. If, however, they receive them when they are old they are likely to park them in low return activities. Hence we can learn about the efficiency of wealth concentration by considering the age profile of wealth. To do so, we must move up one generation and consider the age profile of wealth at death, because we do not observe the age of recipients of bequests only that of the decedent.

We assume that individuals save to make bequests and, in the absence of credit constraints, the size of bequests increases as a function of age at a constant rate. In this setting, increasing inequality has two consequences. Both tend to make the observed age wealth profile at death steeper. First, the ratio of health expenses to wealth will decline because the number of wealthy who are spending on health falls (this effect is likely to matter only when comparing relatively egalitarian with very unequal societies). More importantly, as inequality increases, bequests themselves are likely to become an important part of rich individuals' wealth. That is, for the very rich, a large fraction of the inheritance passed on by a parent to a child will be

composed of wealth the parent received from the grandparents. To the extent that wealth prolongs life, increasing inequality will lead to bequests that are made by older and older decedents. Hence age wealth profiles will become steeper as inequality increases even in the absence of credit constraints.

Credit constraints would tend to put a kink in age wealth profiles. Young wealthy individuals invest their wealth in enterprises that are high return. But when they are older and can no longer actively manage their capital, they invest in lower return activities. In a society where wealth is equally distributed, we would thus expect age-wealth profiles to flatten out with age (the proportion of retirees increases with age). When there are high levels of inequality, however this effect is offset by the multi-generational bequests that tend to be made by older individuals. The key questions are thus: who owns the wealth when wealth concentration is high? Were the rich active entrepreneurs or retired rentiers? What assets did they own?

A first pass at the data considers the gender breakdown of wealth. In the nineteenth century, at low or even middling levels of wealth, individuals were quite likely to participate in the economy as wage earners, in a family enterprise, or even in household production. Among the rich, as wealth increased however, participation in the economy declined for both sexes but it declined more rapidly for women than for men. Hence, the share of women in the top fractiles of wealth can serve as a proxy for the importance of rentiers in the economy. It is an imperfect proxy because qualitative sources, at least, suggest that women stepped in to run family businesses when their husbands died, and did not necessarily surrender control when their children grew up; they also suggest that some businesses were run jointly by both spouses. In our micro data the share of women in top estates takes its highest value on the eve of World War I. This in turn is consistent with the view that when inequality reached its apex in France the share of wealth held by active agents (as opposed to rentiers and successors) was low.

The data also reveal striking changes in the age profile of wealth over the 1807-1994 period (see Table 5 and Figures 9 and 10). During the nineteenth century, at a time of high and rising wealth concentration, the very rich were getting older and older. At the beginning of the nineteenth century, in the aftermath of the French Revolution, the richest individuals were those in their 50s: they were 100% richer on average than people in their 40s, 25% richer than those in their 60s, and 40% richer than those in their 70s and 80s. Little by little, this inverted-U shaped age-wealth

pattern became a strongly monotonic pattern over the course of the nineteenth century. In the middle of the nineteenth century, people in their 60s, 70s and 80s were as rich (or a bit richer) as those in their 50s. By the end of the nineteenth century, the richest individuals were the oldest individuals. In 1902, people in their 60s bequeathed 70% more than those in their 50s, and those in their 70s and 80s 140% more. On the eve of World War I, top wealth holders were old and likely to be retired. Unsurprisingly, they lost heavily from the shocks of the 1914-1945 period. In 1947 as well as in 1994, we are back to a pattern where the richest individuals are those in their 50s.

Insert Table 5

Insert Figure 9

Insert Figure 10

Another way to analyze the changing age-wealth relationship is to look at the profile of average age by top estate fractile (see Table 6). In 1807 and 1817, average age was virtually the same within the top 10% and the top 1% of estates (or even slightly declining). The average-age-per-fractile relationship becomes upward sloping during the nineteenth century, and by 1902 average age within the top 1% is almost 6 years more than for the top 10%. The relationship becomes flat again in 1947 and downward-sloping in 1994.

Insert Table 6

Finally, one can apply the estate multiplier method (see Section 5 above) and analyze how wealth concentration by age group among the living has changed over the course of the nineteenth century. The general population in Paris did not become older during the nineteenth century: those aged 60 or more were about 15% of the population in 1817, and after 1847 they were about 10-11% (see Table 7 and Figure 11). However the share of total wealth owned by the elderly rose significantly as wealth distribution worsened. The wealth belonging to those aged 60 or more rose from about 25-30% of the total at the beginning of the nineteenth century to about 40-45% by the end of the century (see Figure 11). The wealth share of those aged 70 or more doubled, from less than 10% to about 20% (see Figure 12).

Insert Table 7

Insert Figure 11

Insert Figure 12

Our evidence is rather preliminary, but it is consistent with dividing the last two centuries into three periods that each corresponds to a different setting for age-wealth profiles. The decedents who died prior to 1837 had themselves inherited relatively little wealth, because the Revolution and subsequent disruptions had been very hard on the older generations. Further, the flat age wealth profile for individuals 50 years old or more is consistent with the existence of credit constraints. By the mid-nineteenth century the standard pattern of an increasing age wealth profile begins to reassert itself. The growth of the financial sector did lead to a decline in credit constraints, but the rate of growth of estates by age is simply too high to be explained by such a phenomenon. By 1877, estates were getting larger faster at older ages than at younger ones—something that just eliminating credit constraints is unlikely to produce. Rather multi-generational wealth transmission at older ages among the very rich is a likely explanation. After 1947 we seem to have returned to a situation quite like that of 1817. The persistence of a flat age wealth profile to 1994 is likely to be associated with two factors. First, in societies where income growth is rapid, absolute wealth accumulation is faster by younger cohorts than by older ones because their incomes are higher at every age. This is an important distinction between the nineteenth century and the twentieth. Further, high rates of estate taxation have no doubt discouraged bequests in favour of consumption or inter-vivos transfer both of which would flatten the observed age wealth profile.

Clearly more information would be gained by examining wealth accumulation by cohorts and by seeking evidence about the extent to which large estates were formed as a result of inheritance or entrepreneurial activity. The evidence we have presented so far emphasizes the importance of considering these issues over a long span of time.

7. Conclusion

Evidence from wealth at death in Paris and in France over the last two centuries reveals three key patterns. First wealth concentration has changed dramatically overtime. In 1807 the top one percent's share of wealth (40% in France,

50% in Paris) was twice as high as it would be in 1994 but substantially less than in 1913 when it peaked above 55% in France and 70% in Paris. Some of these changes were due to economic phenomena that have long been emphasized as creating inequality, namely industrialization and financial centralization. Yet the decline comes largely from adverse shocks, rather than economic convergence. These changes are of such magnitude that they are not sensitive to whether one examines wealth at death in Paris or in France, or whether one examines it directly rather than converting it to wealth of the living by an estate multiplier method.

Our second key result is that there was a significant transition during the nineteenth century from an important role for real estate as a form of wealth to moveable assets as the key form of wealth for the very rich. Similarly, the share of wealth held by aristocrats first rose and then was eclipsed by that of financiers and industrialists in the second half of the nineteenth century. Hence mobility within this highly unequal society might have been quite high. Yet this conjecture is tempered by our third finding, the wealthy were getting older over time, and older relative to less wealthy decedents. Such aging among the very wealthy would have had negative consequences for growth if financial markets were imperfect. This issue requires further investigation because an alternative hypothesis is that steeper age-wealth profiles were the consequence of the growth of financial markets: as their children faced fewer credit constraints, parents decided to hold on to more of their wealth.

Statistical Appendix

This statistical appendix reports our detailed series in seven tables. The tables also reference the data sources and should be self-explanatory.

Table A1 reports basic summary statistics.

Table A2 reports our series for top estate fractiles at death in Paris. These series were computed by using the data sources reported on Table A1.

Table A3 reports our series for top estate fractiles at death in France. These series were computed by applying the methodology described in Section 4. The 1902-1994 series originate from the national tabulations by estate brackets published by the Finance Ministry (and the Finance Ministry micro sample for 1994) and are identical to the complete set of twentieth century series reproduced on Tables A5 to A7. The 1807-1887 series were computed by using TRA survey estimates (thresholds P90 and P95),²⁹ and using our Paris survey samples along with the assumption that the fraction of Paris estates in national top 1% estates has increased during the 1807-1902 period in the same proportion as the fraction of Paris decedents in all decedents (thresholds P99 and above).

Table A4 reports our series for top estate fractiles among the living in Paris (1807-1902) and in France (1947 and 1994). The 1807-1902 series were computed by applying the estate multiplier methodology to our Paris samples of estate tax returns, while the 1947 and 1994 estimates were computed by applying the estate multiplier methodology to the national tabulations broken down by estate bracket and age of decedents compiled by the Finance Ministry (1947) and extracted from the 1994 Finance Ministry micro sample (1994).³⁰

²⁹ The TRA survey estimates are available only starting in 1827, and the 1807-1817 figures reported on Table A3 for P90 and P95 were computed by assuming the same 1827/1817 and 1817/1807 growth rates as for the Paris P90 and P95 thresholds reported on Table A2.

³⁰ Note that the 1994 top estates estimates for the living reported on Table A4 are approximately consistent with the 1994 top wealth fractiles reported by wealth tax taxpayers (a wealth tax ("*impôt sur la fortune*" (ISF) was instituted in France in 1989 and currently requires all households with net wealth above 720 000 euros to file a wealth tax return, i.e. around 0,5-1% of all households; see Piketty (2001b, pp.202-203) for 1990-2000 annual series on top wealth fractiles computed from wealth tax returns micro files). The thresholds P99,5 and P99,9 thresholds reported on Table A4 are slightly below the ISF P99,5 and P99,9 thresholds, but this seems largely driven by the fact that estate tax returns refer to individual wealth whereas ISF returns refer to household wealth. This suggests that the estate multiplier methodology does a pretty good job (at least up to threshold P99,9; thresholds P99,99 seem to be underestimated by estate tax returns, but this might be due to the limited size of the 1994 sample, and/or to the large increase of inter vivos gifts).

Tables A5 to A7 report corrected complete 1902-1994 series for top estate fractiles at death in France. These series were computed using the national tabulations of estate tax returns by estate brackets published by the Finance Ministry (and the 1984-1994 micro samples released by the Finance Ministry). The corrections explaining why the current series reported on Tables A5 to A7 differ slightly from the series already published in Piketty (2001a, Appendix J, Tables J5 (p.759), J7 (p.761) and J11 (p.765)) are the following: (1) the series reported in Piketty (2001a) were computed by assuming that the base population was permanently equal to 500 000, whereas the current series were computed by taking the exact number of decedents aged 20-year-old and over for each year (in practice this number fluctuates around 500 000, as one can see from Table A5); (2) estimates for 1984 and 1994 were corrected upwards in order to take into account the growth of inter vivos gifts during the 1980s-1990s; (3) finally, and most importantly, a correction was introduced in order to correct for the fact that a base exemption for low estates was introduced in 1956, so that a number of positive small estates disappear from the Finance Ministry tabulations in the 1956-1994 data (the level of the base exemption was adjusted less than inflation since 1956, so that the number of missing estates is small in 1984-1994, but large in 1956-1964); no such correction was made in the Piketty (2001) series, which explains why top estate shares suddenly increased in 1956.

Insert Tables A1 to A7

Insert Figure A1

References

Atkinson, A.B., "Top Incomes in the United Kingdom over the Twentieth Century", mimeo, Nuffield College (2003)

Atkinson, A.B. and A.J. Harrison, *Distribution of personal wealth in Britain*, Cambridge University Press (1978)

Atkinson, A.B. and A. Brandolini, "Promises and pitfalls of the Use of "secondary" data sets: Income inequality in OECD countries as a case Study." *Journal of Economic Literature*. September 2001; 39(3): 771-99.

Banerjee, A., and E. Duflo, "Inequality and Growth: What Can the Data Say?" NBER Working Paper. 2001

Bourdieu, J., G. Postel-Vinay and A. Suwa-Eisenmann, "Pourquoi la richesse ne s'est-elle pas diffusée avec la croissance? Le degré zéro de l'inégalité et son évolution en France, 1800-1940", *Histoire et Mesure*, vol XVIII, n° 1-2, 2003, pp. 147-198.

Bourdieu, J., G. Postel-Vinay and A. Suwa-Eisenmann, "Défense et illustration de l'enquête des 3000 familles: L'exemple de son volet patrimonial" *Annales de Démographie Historique* (2004)

Daumard, A., *Les fortunes françaises au XIXe siècle*, Mouton (1973).

Gain, A., *La Restauration et les biens des émigrés*. Nancy, 1928, 2 vol.

Jones, A.H., *American Colonial Wealth: Documents and Methods*, Arno (1977).

W. Kopczuk and E. Saez, « Top Wealth Shares in the United States, 1916-2000 – Evidence from Estate Tax Returns », NBER Working Paper 10399 (2004).

Kuznets, S., « Economic Growth and Economic Inequality », *American Economic Review* 45-1 (mars 1955), pp.1-28.

Lampman, R.J. , *The share of top wealth-holders in national wealth, 1922-1956*, Princeton University Press (1962)

Lindert, P.H., "Unequal English Wealth since 1670", *Journal of Political Economy* 94 (1986), 1127-1162.

Lindert, P.H., "Three Centuries of Inequality in Britain and America", in *Handbook of Income Distribution*, edited by A. Atkinson and F. Bourguignon, pp.167-216, North-Holland (2000).

Morrisson, C. (2000), «Historical perspectives on income distribution: the case of Europe», in *Handbook of Income Distribution*, A. Atkinson et F. Bourguignon, eds. pp. 217-260, North-Holland.

Morrisson, C. and W. Snyder (2000), «Les inégalités de revenus en France du début du XVIIIème siècle à 1985», *Revue Economique* vol.51, n°1 (janvier 2000), pp.119-154.

Piketty, T., *Les Hauts revenus en France au XXe siècle – Inégalités et redistributions, 1901-1998*, Paris : Grasset (2001a).

Piketty T., «Les inégalités dans le long terme», in *Inégalités économiques*, Rapport du Conseil d'Analyse Economique n°33, pp.137-204, Paris : La documentation française (2001b).

Piketty, T., "Income Inequality in France, 1901-1998", *Journal of Political Economy* 111 (2003), 1004-1042

Piketty, T. and E. Saez, "Income Inequality in the United States, 1913-1998", *Quarterly Journal of Economics* 118 (2003), 1-39

Table 1: Estate Tax Returns in Paris, 1807-1994 - Summary Statistics

	N. decedents 20-yr +	N. estate>0	N. estate>0 (% N.deced. 20+)	N.deced. 20-yr + (% Paris/France)	Total Estate (% Paris/France)	Average Estate (Ratio Paris/rest of France)
1807	11 622	3 691	31,8	2,5	8,3	3,60
1817	11 925	3 104	26,0	2,5	8,5	3,60
1827	14 151	3 817	27,0	2,8	9,5	3,60
1837	16 902	4 926	29,1	3,1	9,8	3,42
1847	18 169	4 814	26,5	3,3	11,5	3,86
1857	19 248	6 048	31,4	3,6	14,3	4,51
1867	26 844	7 971	29,7	4,9	16,7	4,12
1877	28 777	8 242	28,6	5,1	18,6	4,22
1887	34 411	9 815	28,5	5,9	20,1	4,01
1902	36 366	9 830	27,0	6,5	26,0	5,05
1913	35 677	11 927	33,4	6,5	26,6	5,23
1929	35 842	14 495	40,4	5,8	25,0	5,42
1938	30 274	16 013	52,9	5,3	17,3	3,76
1947	24 955	14 090	56,5	5,5	15,0	3,07
1956	27 940	16 053	57,5	5,5	15,9	3,24
1994	18 553	12 528	67,5	3,6	9,7	2,86

Source : Authors' computations using estate tax returns (see Table A1 for detailed series and sources)

Table 2: Wealth Concentration at Death in Paris, 1807-1994

	Estate Share		
	Top 10%	Top 1%	Top 0,1%
1807	95,9	51,1	18,1
1817	97,9	56,7	18,3
1827	97,5	52,3	16,9
1837	97,7	50,0	14,8
1847	98,3	55,8	21,3
1857	96,9	51,0	13,4
1867	96,8	52,4	16,0
1877	96,9	59,0	24,6
1887	97,1	55,5	20,1
1902	99,1	64,8	26,1
1913	99,6	72,1	32,8
1929	94,9	63,1	26,4
1938	90,4	53,6	24,1
1947	76,7	38,1	14,8
1956	75,0	34,6	11,7
1994	66,9	23,7	4,9

Source : Authors' computations using estate tax returns (see Table A2 for detailed series and sources)

Table 3: The Fraction of Paris Estates in Top Estates at Death, 1807-1994

	Parisian Decedents	Parisian estates		
	in all decedents 20-yr + %	in top 10% estates %	in top 1% estates %	in top 0,1% estates %
1807	2,5		10,1	20,5
1817	2,5		10,3	21,0
1827	2,8		11,6	23,7
1837	3,1		12,6	25,6
1847	3,3		13,3	27,1
1857	3,6		14,6	29,7
1867	4,9		19,9	40,4
1877	5,1		21,1	42,8
1887	5,9		24,1	49,1
1902	6,5	7,5	26,6	54,1
1913	6,5	7,5	25,5	52,3
1929	5,8	8,3	23,9	53,0
1938	5,3	7,4	21,6	42,1
1947	5,5	11,0	19,8	35,2
1956	5,5	12,8	22,3	35,0
1994	3,6	8,9	25,2	35,2

Source : Authors' computations using estate tax returns (see Table A1 for detailed sources)

Table 4: Wealth Concentration at Death in France, 1807-1994

	Estate Share		
	Top 10%	Top 1%	Top 0,1%
1807	79,1	43,4	16,3
1817	81,0	44,5	18,1
1827	82,4	45,2	16,3
1837	79,6	43,8	14,7
1847	81,6	47,9	18,4
1857	82,9	49,5	17,4
1867	81,0	48,0	17,4
1877	83,8	47,1	20,1
1887	83,9	48,7	19,2
1902	83,9	51,6	23,1
1913	86,3	54,9	26,0
1929	82,0	50,2	24,7
1938	77,6	42,0	19,9
1947	69,9	29,9	11,0
1956	69,4	30,4	11,0
1994	61,0	21,3	6,3

Source : Authors' computations using estate tax returns (see Table A3 for detailed series)

Table 5: The Age Profile of Wealth at Death in Paris, 1817-1994
(average estate left by 50-59 yr-old = 100)

	20-29 yr-old	30-39 yr-old	40-49 yr-old	50-59 yr-old	60-69 yr-old	70-79 yr-old	80-89 yr-old	90-99 yr-old
1817	48	49	49	100	80	70	70	
1827	49	46	73	100	94	99	63	
1837	67	79	107	100	112	123	102	
1847	78	73	102	100	117	154	135	
1857	78	77	101	100	104	102	111	
1867	65	54	82	100	132	141	142	
1877	56	62	63	100	205	262	340	
1887	36	27	66	100	130	214	288	
1902	30	40	80	100	169	239	251	
1947	31	51	73	100	113	105	105	109
1994		11	45	100	87	93	95	68

Source : Authors' computations using estate tax returns (see Table A1 for detailed sources)

**Table 6: The Age Profile of Wealth at Death in Paris, 1817-1994
(average age within top fractiles)**

	Top 10% Estates	Top 5% Estates	Top 1% Estates
1817	57,5	57,6	57,6
1827	61,7	61,9	60,6
1837	60,2	60,6	62,3
1847	61,2	61,4	62,9
1857	62,4	63,6	66,4
1867	62,4	62,3	66,1
1877	61,3	63,8	66,2
1887	62,1	64,6	68,0
1902	61,8	63,9	67,6
1947	67,0	67,4	68,4
1994	81,7	81,3	80,3

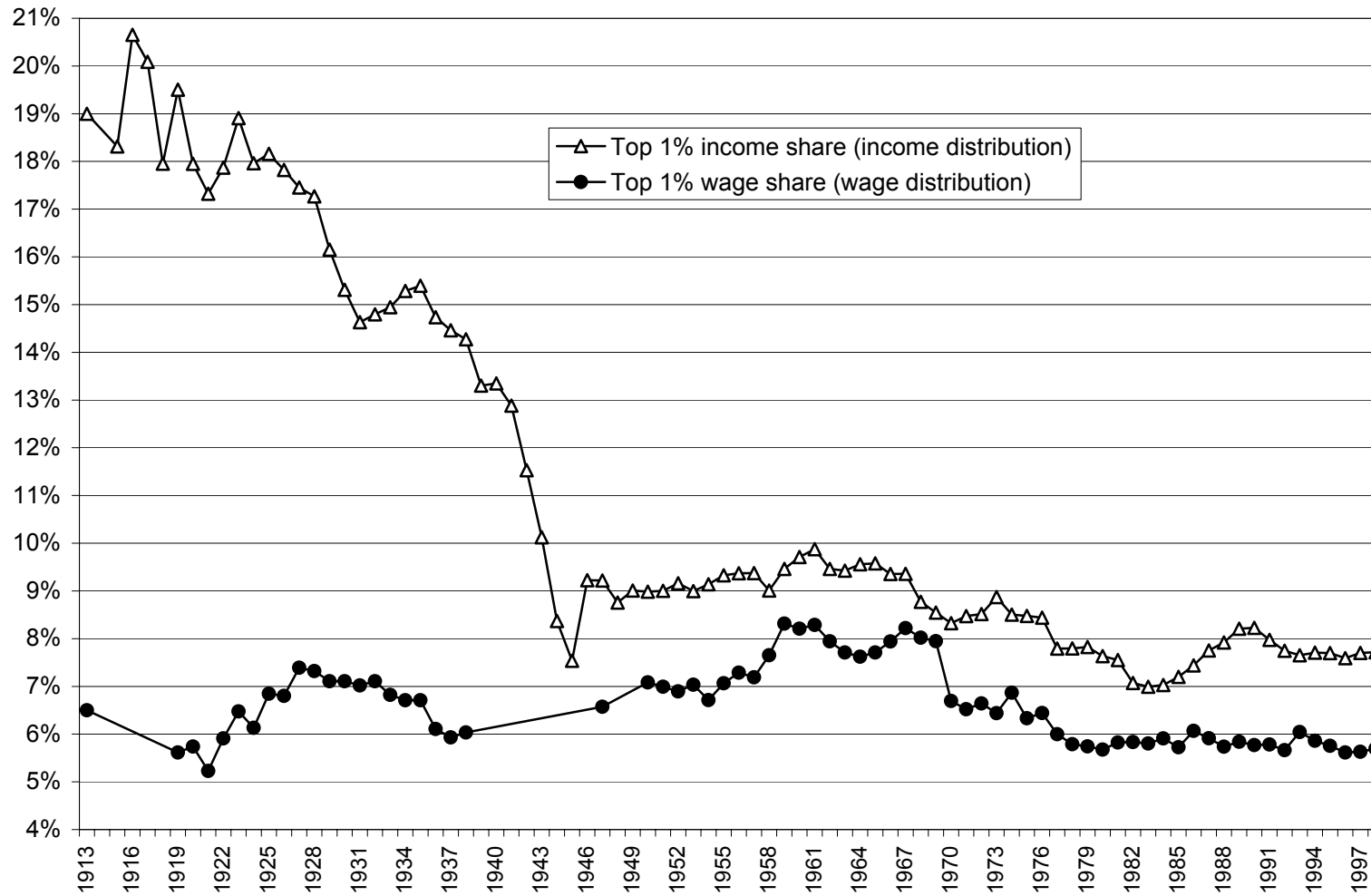
Source : Authors' computations using estate tax returns (see Table A1 for detailed sources)

Table 7: Population and Wealth Shares by Age Groups among the Living in Paris, 1817-1902
(average estate left by 50-59 yr-old = 100)

	20-29 yr-old	30-39 yr-old	40-49 yr-old	50-59 yr-old	60-69 yr-old	70-79 yr-old	80+ yr-old	
Share in total living population (20 yr+) (%)								
1817	28,8	23,5	18,2	14,7	10,0	3,9	0,9	100,0
1827	29,7	26,6	18,2	12,7	8,4	3,6	0,8	100,0
1837	30,3	29,1	18,1	11,1	7,1	3,4	0,8	100,0
1847	31,0	26,6	19,4	13,1	6,6	2,7	0,6	100,0
1857	31,1	27,7	19,1	12,6	6,4	2,6	0,6	100,0
1867	29,5	27,7	20,3	12,2	7,1	2,8	0,6	100,0
1877	29,9	26,2	20,7	13,3	6,8	2,6	0,6	100,0
1887	28,8	26,3	20,1	13,7	7,5	2,9	0,6	100,0
1902	29,3	26,8	20,1	12,9	7,4	3,0	0,6	100,0
Share in total living wealth (20 yr+) (%)								
1817	10,5	12,0	15,1	34,7	19,4	6,6	1,8	100,0
1827	7,9	15,4	19,2	32,2	17,3	7,1	1,0	100,0
1837	8,0	19,1	26,8	18,7	16,8	8,4	2,2	100,0
1847	8,8	15,0	20,4	24,2	19,1	9,8	2,7	100,0
1857	9,7	13,5	18,5	27,0	20,3	7,8	3,1	100,0
1867	9,7	10,1	18,9	20,8	26,2	11,1	3,2	100,0
1877	8,4	15,1	15,8	20,0	22,8	12,6	5,4	100,0
1887	6,8	6,2	19,0	26,1	20,1	15,5	6,3	100,0
1902	9,3	13,1	16,3	21,8	22,1	14,2	5,2	100,0

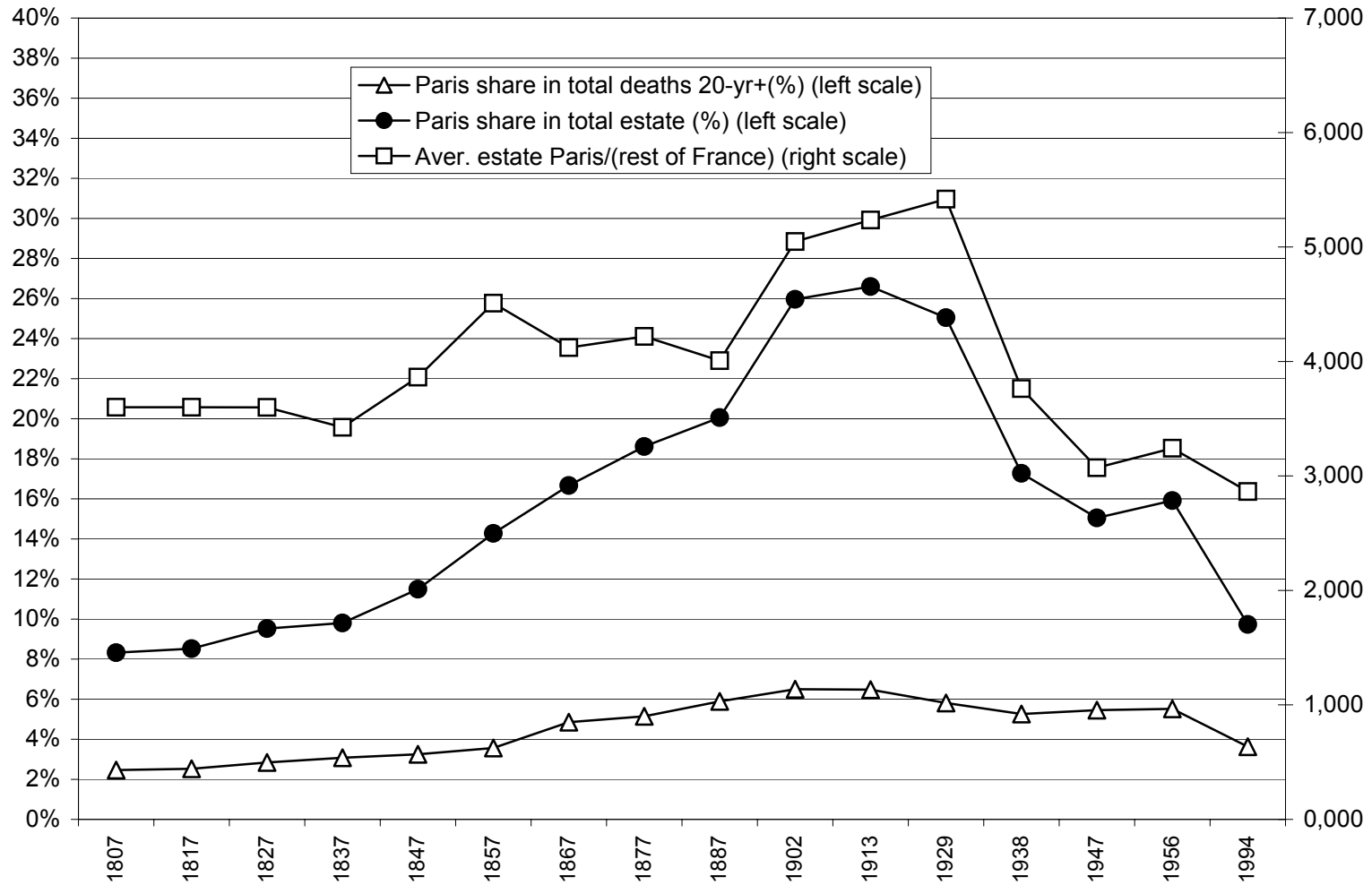
Source : Authors' computations using estate tax returns (see Table A1 for detailed sources)

Figure 1: The fall of top capital incomes in France, 1913-1998



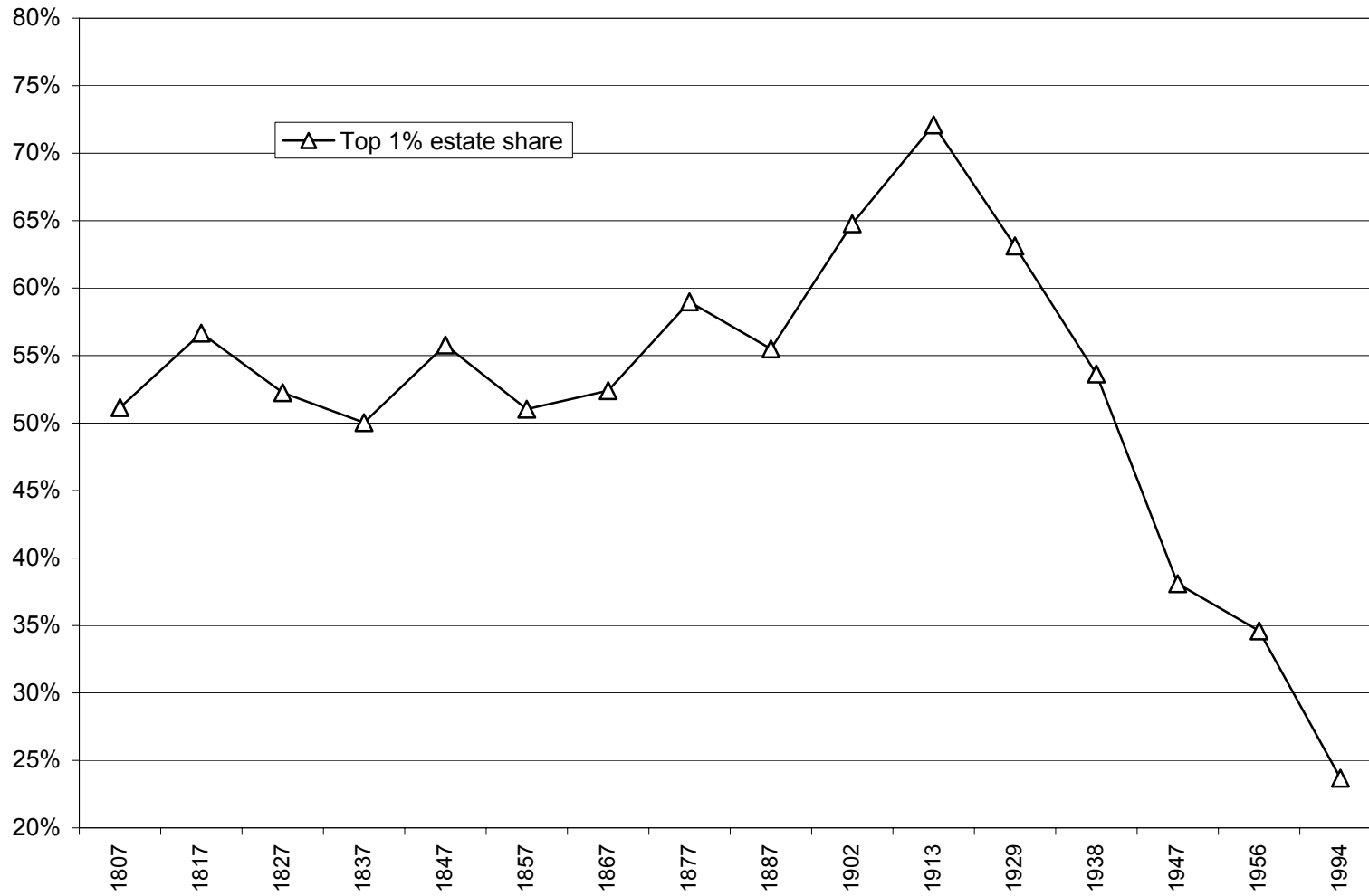
Source: Piketty (2003) (computations based on income tax returns)

Figure 2: Paris's share of French Bequests, 1807-1994



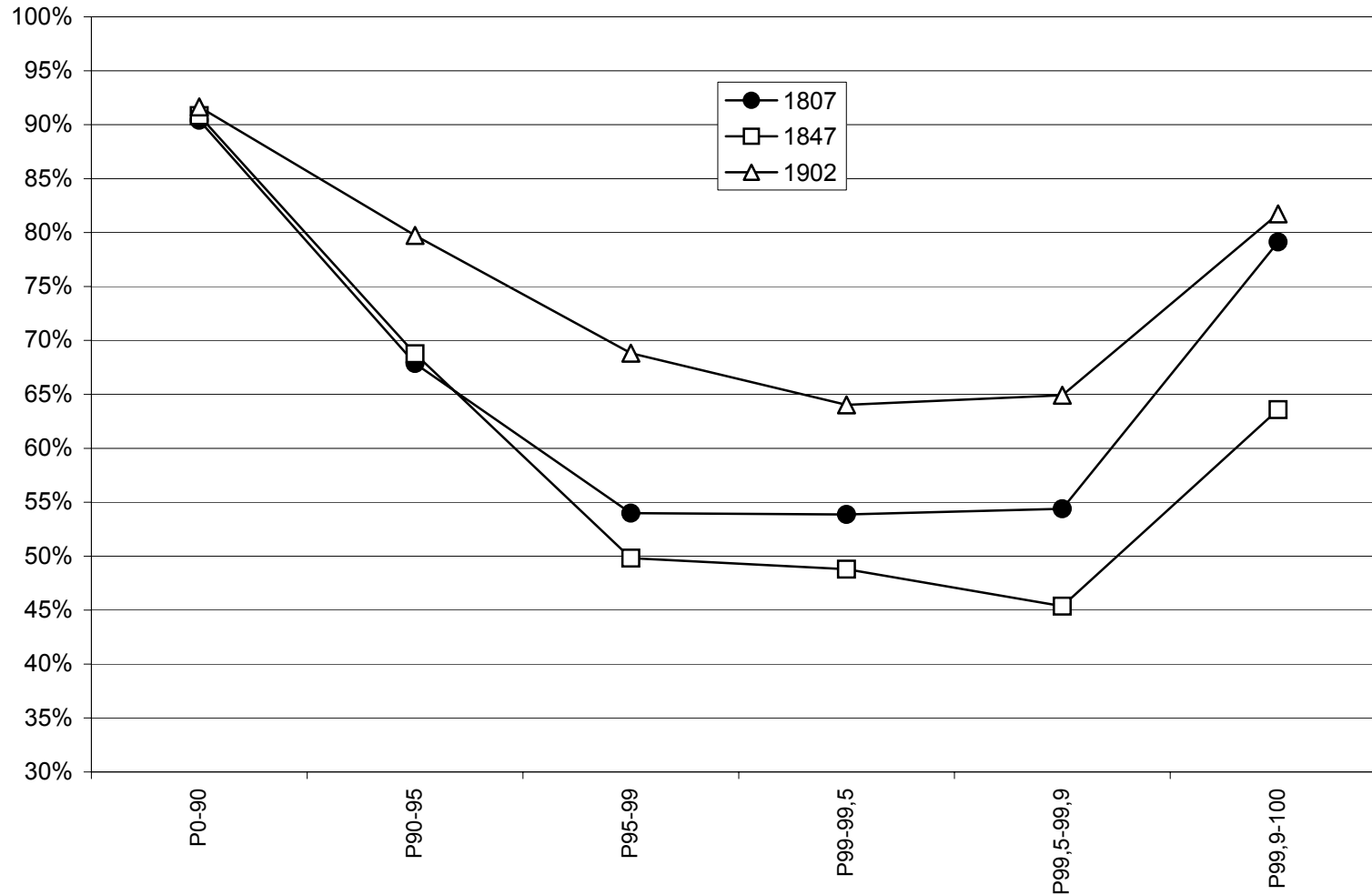
Source: Authors' computations based on estate tax returns (see Table 1 and Table A1 for the detailed series)

Figure 3: Wealth concentration at death in Paris, 1807-1994



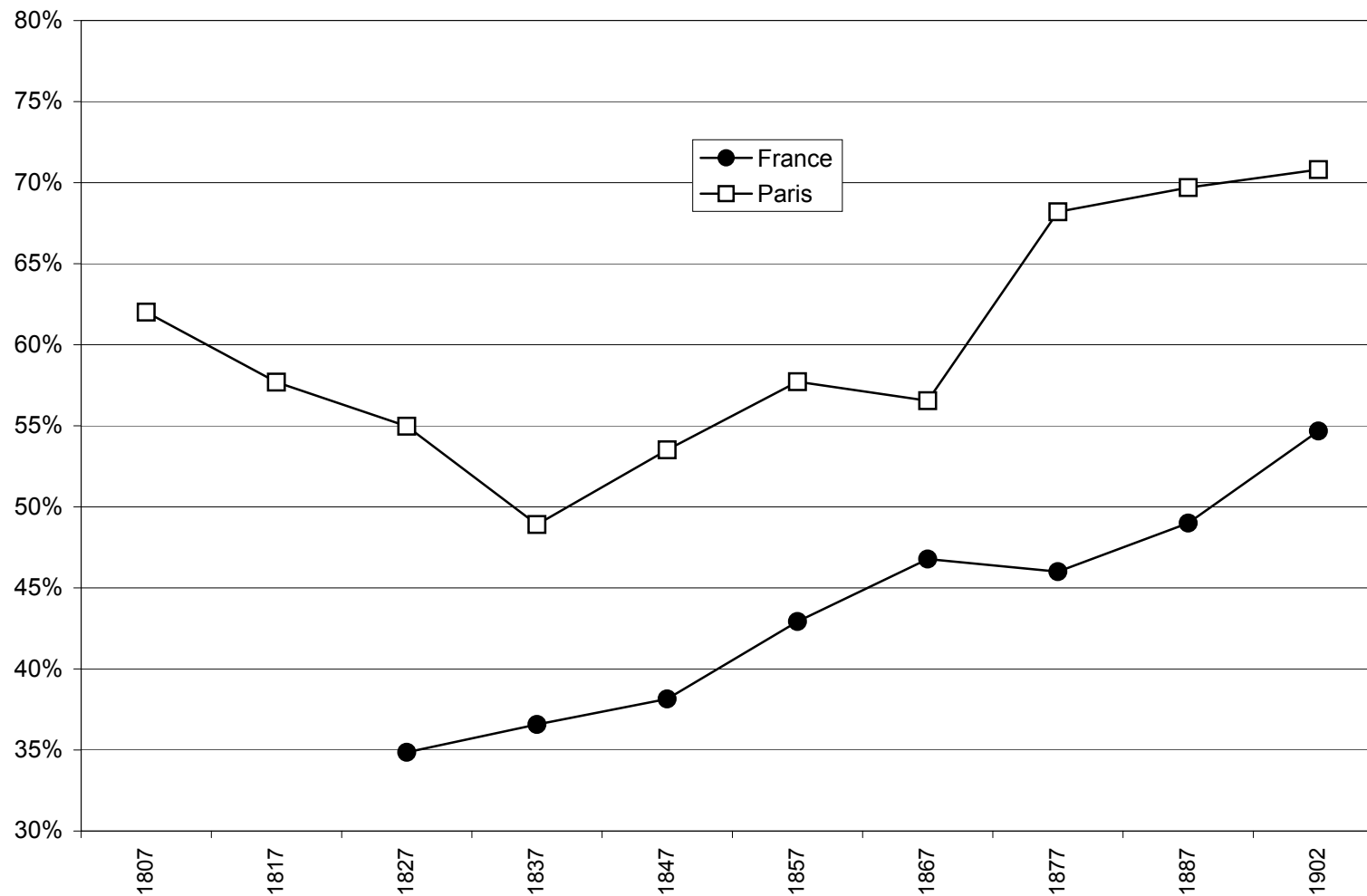
Source: Authors' computations based on estate tax returns (see Table A2 for detailed series)

**Figure 4: Wealth composition at death in Paris, 1807-1902
(share of personal estate in total estate)**



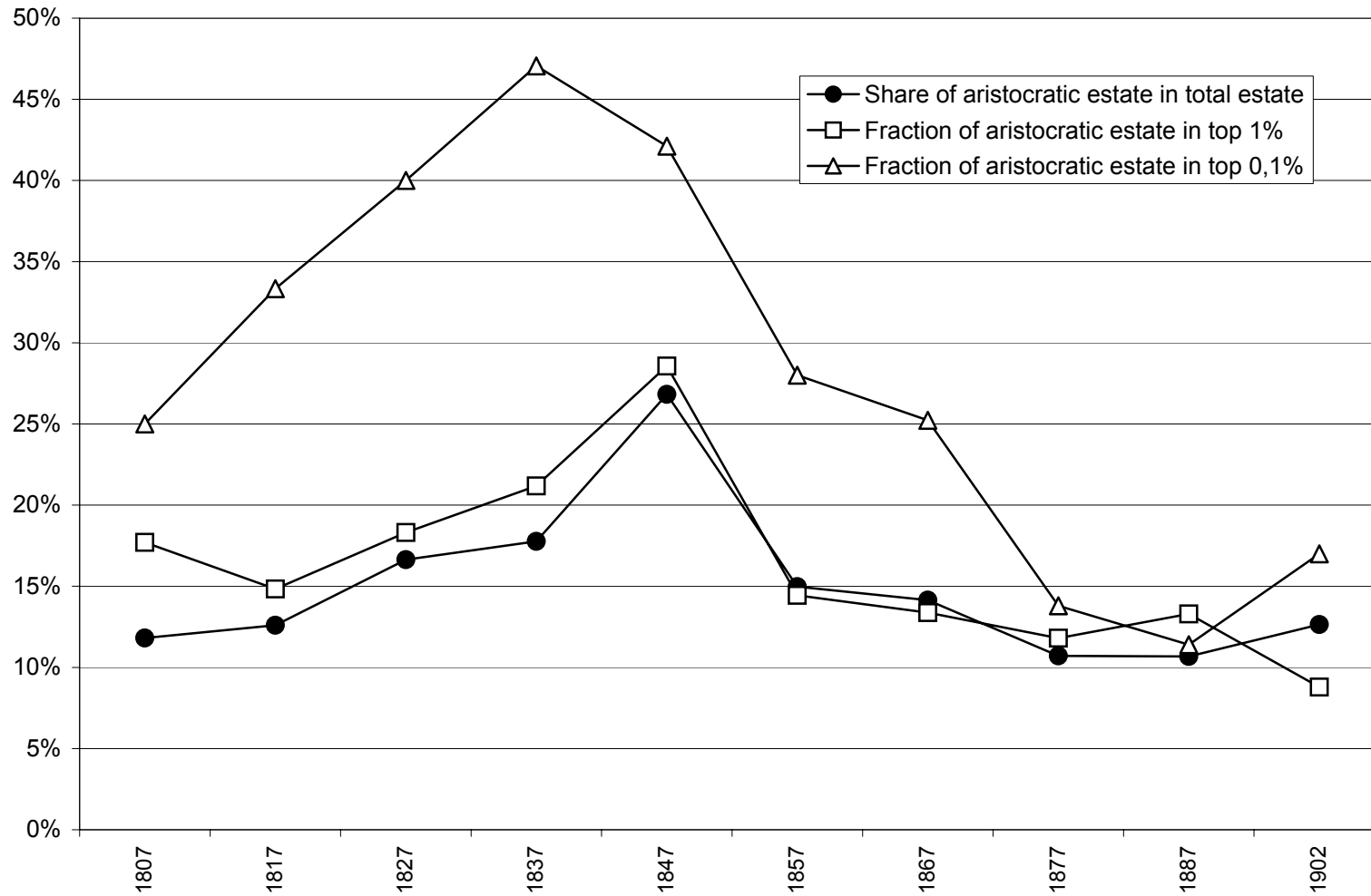
Source: Authors' computations using samples of estae tax returns collected in the Paris archives

Figure 5: Wealth composition at death in Paris and France, 1807-1902
(share of personal estate in total estate)



Source: Authors' computations using samples of estate tax returns collected in the Paris archives and national aggregate estate statistics compiled by the French tax administration (see Table A1 for detailed sources)

Figure 6: Aristocratic estates at death in Paris, 1807-1902



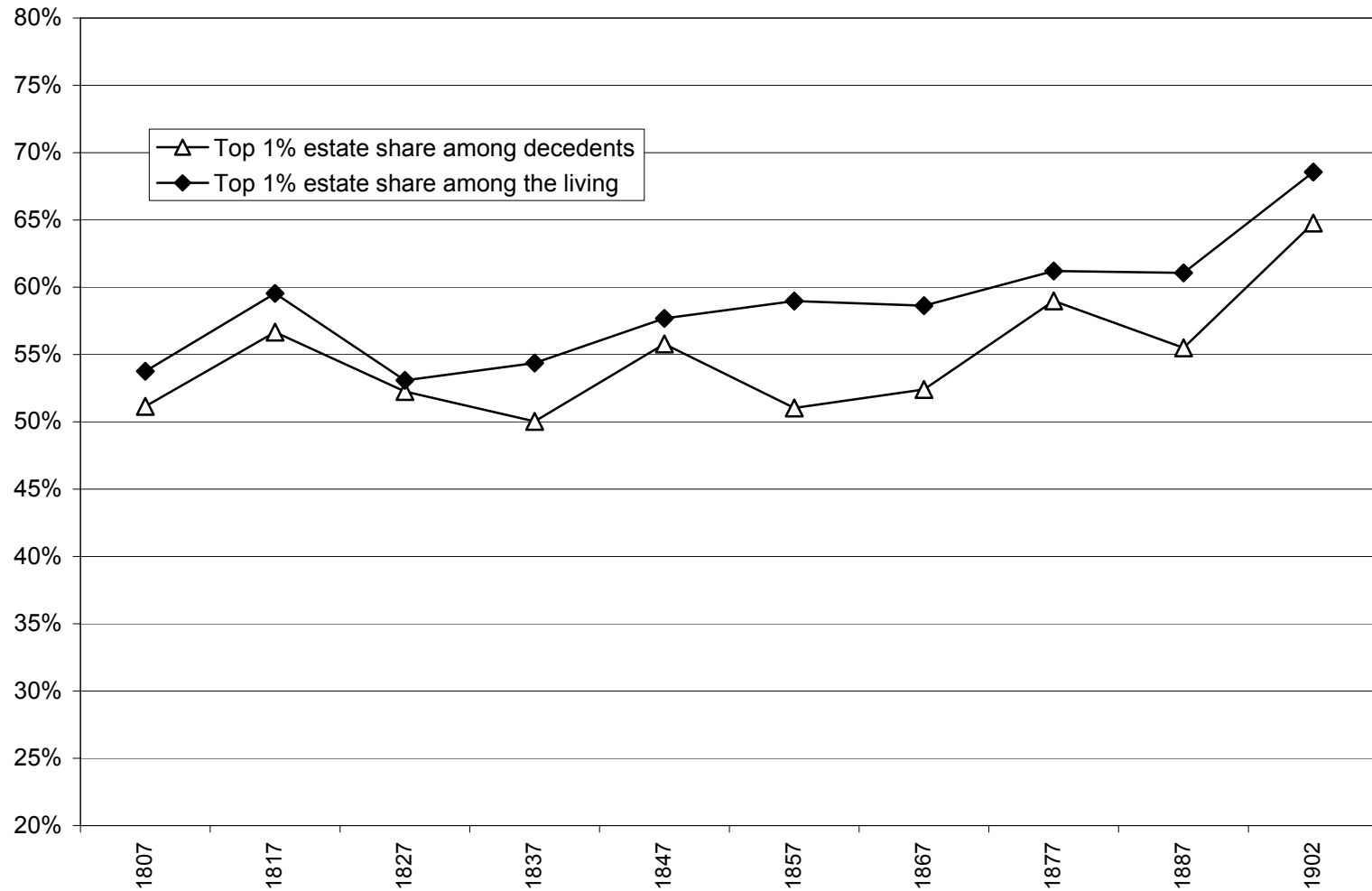
Source: Authors' computations using samples of estae tax returns collected in the Paris archives

Figure 7: Wealth concentration at death in Paris and France, 1807-1994



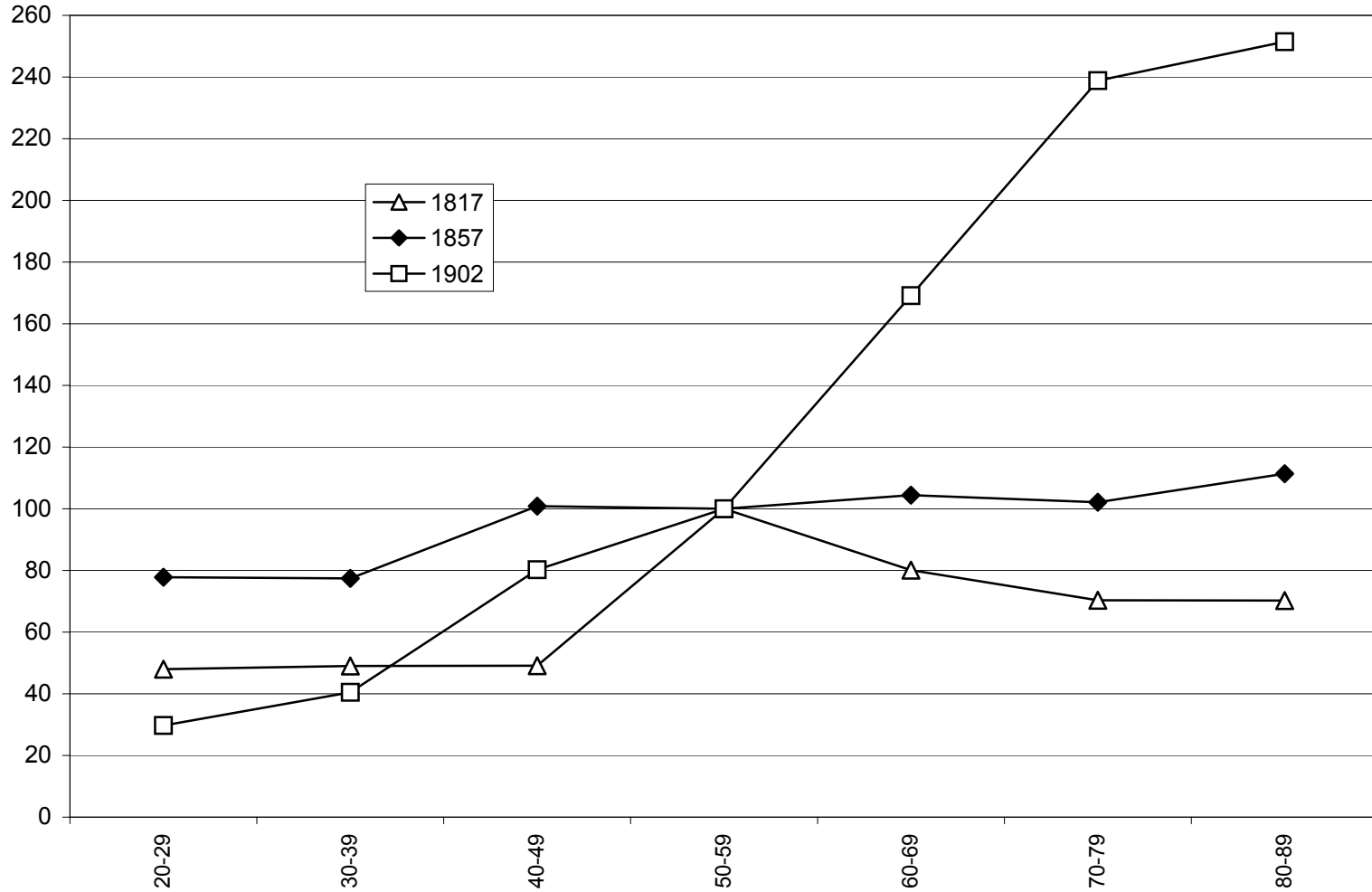
Source: Authors' computations based on estate tax returns (see Tables A2 and A3 for detailed series)

Figure 8: Wealth concentration among decedents and among the living in Paris, 1807-1902



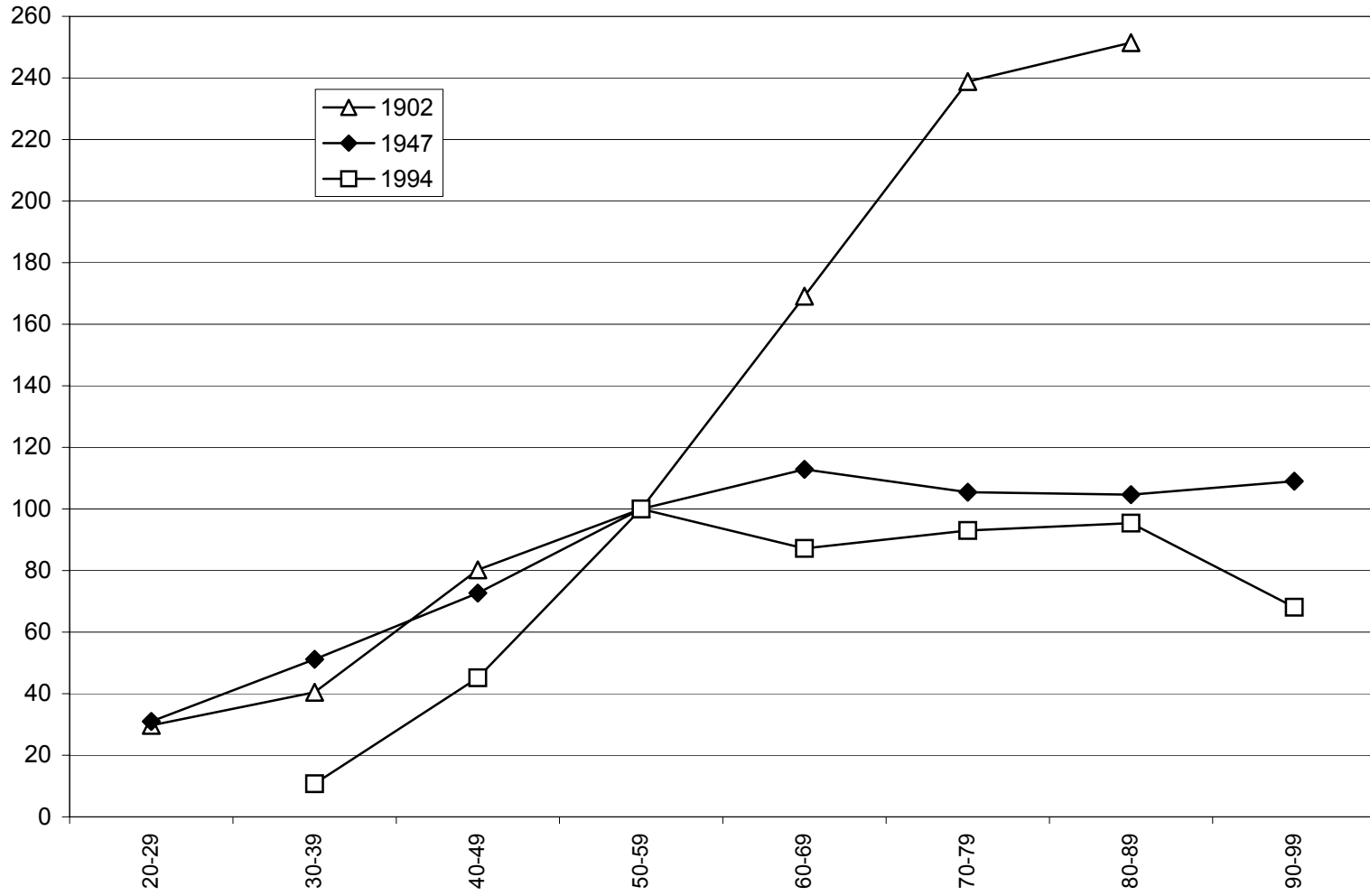
Source: Authors' computations using samples of estate tax returns collected in the Paris archives (see Tables A2 et A4 for detailed series)

Figure 9: The Changing Age Profile of Wealth at Death in Paris, 1817-1902
(average estate left by 50-59 year-old = 100)



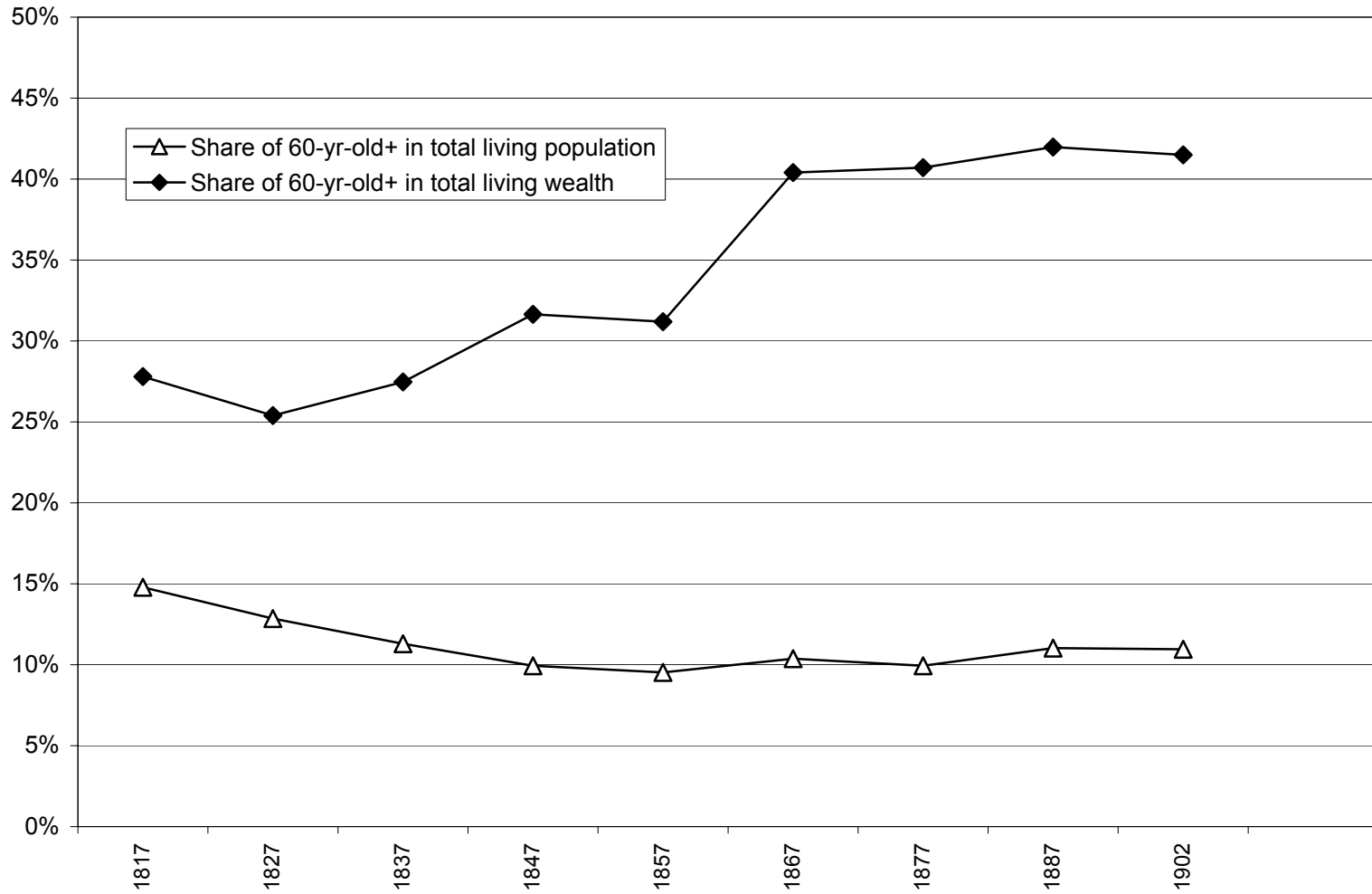
Source: Authors' computations using samples of estate tax returns collected in the Paris archives

Figure 10: The Changing Age Profile of Wealth at Death in Paris, 1902-1994
(average estate left by 50-59 year-old = 100)



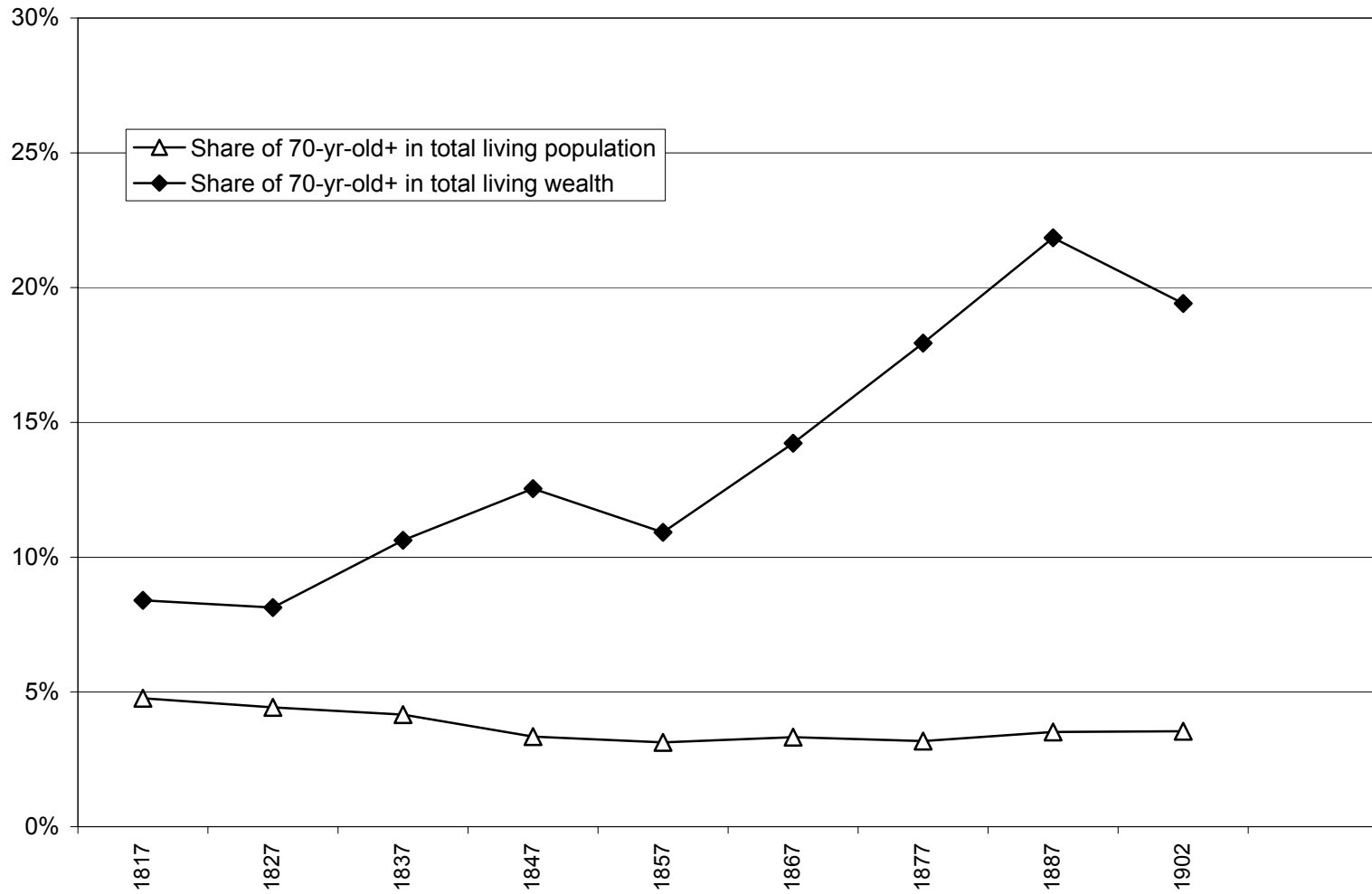
Source: Authors' computations based on estate tax returns (see Table A1 for detailed sources)

Figure 11: The age profile of wealth among the living in Paris, 1807-1902 (I)



Source: Authors' computations using samples of estae tax returns collected in the Paris archives

Figure 12: The age profile of wealth among the living in Paris, 1807-1902 (II)



Source: Authors' computations using samples of estae tax returns collected in the Paris archives

Table A1: Estate Tax Returns in Paris and France, 1807-1994 - Summary Statistics

	Paris			France			France minus Paris		
	N. decedents 20-yr +	N. estate>0	Average estate (all decedents)	N. decedents 20-yr +	N. estate>0	Average estate (all decedents)	N. decedents 20-yr +	N. estate>0	Average estate (all decedents)
1807	11 622	3 691	5 630	472 523		1 664	460 901		1 564
1817	11 925	3 104	5 205	472 559		1 541	460 634		1 446
1827	14 151	3 817	9 156	497 885		2 732	483 734		2 544
1837	16 902	4 926	9 718	549 661		3 049	532 759		2 838
1847	18 169	4 814	13 001	558 687		3 678	540 518		3 365
1857	19 248	6 048	16 619	540 469		4 146	521 221		3 686
1867	26 844	7 971	20 622	580 147		5 726	553 303		5 003
1877	28 777	8 242	28 708	559 555		7 931	530 778		6 805
1887	34 411	9 815	31 532	583 976		9 262	549 565		7 868
1902	36 366	9 830	34 068	559 810	363 612	8 525	523 444	353 782	6 750
1913	35 677	11 927	41 238	551 114	360 539	10 037	515 437	348 612	7 877
1929	35 842	14 495	111 067	617 073	388 620	25 758	581 231	374 125	20 497
1938	30 274	16 013	98 364	575 955	379 226	29 937	545 681	363 213	26 141
1947	24 955	14 090	424 427	457 611	308 526	153 793	432 656	294 436	138 184
1956	27 940	16 053	2 001 181	506 542	294 735	693 706	478 602	278 682	617 377
1994	18 553	12 528	922 704	511 467	326 213	343 938	492 914	313 685	322 154

Sources : N. decedents 20-yr +: Etat-Civil data (published in *Annuaire Statistique de la Ville de Paris* and *Annuaire Statistique de la France* (various issues))

N. estate>0 and average estate (all decedents) (Paris): 1807-1902: Samples of individual estate tax returns collected in the Paris archives; 1902-1956 :Tabulations of estate tax returns broken down by estate brackets and by *département* published by the French Finance Ministry (see *Piketty (2001a, Appendix J)* for the exact references of the official publications where the raw tabulations were originally published); 1994 : National sample of individual estate tax returns released by the French Finance Ministry (DMTG sample; see *Piketty (2001a, Appendix J)*)

N. estate>0 and average estate (all decedents) (France): 1807-1902: Annual aggregate series on total estate at death compiled by the French tax administration (see *Annuaire Statistique de la France 1966 - Résumé rétrospectif* , p.530) (these series only include total estate, not the number of the positive estates; moreover they only cover the post-1826 period; for 1807 and 1817 we assumed the same average estate ratio between Paris and the rest of France as in 1827);

1902-1994 : Same sources as above.

Notes : (1) Average estates are measured in current French francs. Average estates refer to gross estates for the years 1807-1887, and to net estates for the years 1902-1994. In 1902, the aggregate (net estate)/(gross estate) ratio was equal to 0,91, and was approximately uniform across estate brackets, so that shares of top faciles in total estate were virtually identical for gross estates and net estates (with a gap smaller than 1%; data available for other years confirm this finding)

(2) The 1902-1913 tabulations published by the French Finance Ministry are for the Seine *département* , which at that time included a number of small suburban areas in addition to the city of Paris (the Seine *département* was restricted to the city of Paris in 1930, but the tabulations were compiled separately for the city of Paris and the rest of the Seine *département* starting in 1925). For 1902 we used the samples collected in the Paris archives (our 1807-1902 samples are always restricted to the city of Paris), and for 1913 we adjusted the figures reported in the Seine *département* tabulation compiled by the Finance Ministry on the basis of the Paris/Seine ratios observed for 1902 and 1925 (the Seine and Paris figures are virtually identical for top estates)

Table A2: Top Estates Fractiles at Death in Paris, 1807-1994

	N.decedents 20yr+	Thresholds in current French francs					
		P90	P95	P99	P99,5	P99,9	P99,99
1807	11 622	5 528	21 042	107 045	173 835	480 676	1 537 092
1817	11 925	3 189	16 508	111 077	194 001	560 272	1 673 222
1827	14 151	7 083	31 566	200 000	326 140	832 594	2 800 737
1837	16 902	6 640	34 999	223 060	337 324	911 212	2 050 398
1847	18 169	7 662	41 420	292 298	451 364	1 035 659	7 036 204
1857	19 248	12 967	59 030	383 920	642 116	1 467 529	3 518 833
1867	26 844	16 724	70 000	478 000	769 099	1 800 000	5 921 960
1877	28 777	21 775	86 453	567 179	943 135	2 662 118	10 790 010
1887	34 411	24 176	102 891	676 036	1 101 659	2 983 062	8 876 016
1902	36 366	14 579	78 725	699 908	1 315 321	3 858 350	15 612 250
1913	35 677	17 728	98 374	943 051	1 824 954	5 864 878	29 080 208
1929	35 842	91 734	267 470	2 010 258	4 138 735	12 958 419	45 125 326
1938	30 274	98 518	296 484	1 704 192	2 724 730	8 370 985	49 727 986
1947	24 955	518 506	1 515 198	5 567 321	10 736 513	26 927 847	89 128 090
1956	27 940	4 120 365	7 966 224	25 923 694	46 855 102	113 871 960	370 631 378
1994	18 553	2 474 223	3 753 231	11 738 945	17 735 520	36 162 276	66 656 928
	Average estates in current French francs						
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	5 630	54 007	96 553	287 955	437 353	1 017 156	3 015 668
1817	5 205	50 932	93 389	294 904	444 049	953 919	1 729 989
1827	9 156	89 305	162 848	478 395	698 148	1 546 431	3 466 819
1837	9 718	94 948	172 639	486 205	700 393	1 434 021	2 674 681
1847	13 001	127 780	235 881	725 321	1 086 630	2 773 768	9 451 051
1857	16 619	161 003	292 164	848 086	1 187 798	2 218 707	4 040 818
1867	20 622	199 618	363 605	1 080 749	1 567 401	3 293 999	8 167 825
1877	28 708	278 190	511 945	1 693 355	2 670 192	7 064 236	30 940 500
1887	31 532	306 053	560 499	1 749 732	2 641 286	6 340 549	19 957 840
1902	34 068	337 752	638 662	2 206 730	3 475 089	8 886 958	28 968 130
1913	41 238	410 701	798 065	2 973 333	4 821 543	13 508 606	53 957 581
1929	111 067	1 053 804	1 952 219	7 010 897	11 306 277	29 358 803	106 562 855
1938	98 364	889 149	1 602 691	5 276 548	8 436 354	23 719 021	124 319 966
1947	424 427	3 254 777	5 346 142	16 168 068	25 045 755	62 816 319	141 045 054
1956	2 001 181	15 016 227	24 590 728	69 227 908	102 960 308	233 595 673	760 309 092
1994	922 704	6 172 411	9 096 175	21 853 380	29 440 392	60 325 264	138 868 850
	Shares of top fractiles in total estate (%)						
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	100,0	95,9	85,8	51,1	38,8	18,1	5,4
1817	100,0	97,9	89,7	56,7	42,7	18,3	3,3
1827	100,0	97,5	88,9	52,3	38,1	16,9	3,8
1837	100,0	97,7	88,8	50,0	36,0	14,8	2,8
1847	100,0	98,3	90,7	55,8	41,8	21,3	7,3
1857	100,0	96,9	87,9	51,0	35,7	13,4	2,4
1867	100,0	96,8	88,2	52,4	38,0	16,0	4,0
1877	100,0	96,9	89,2	59,0	46,5	24,6	10,8
1887	100,0	97,1	88,9	55,5	41,9	20,1	6,3
1902	100,0	99,1	93,7	64,8	51,0	26,1	8,5
1913	100,0	99,6	96,8	72,1	58,5	32,8	13,1
1929	100,0	94,9	87,9	63,1	50,9	26,4	9,6
1938	100,0	90,4	81,5	53,6	42,9	24,1	12,6
1947	100,0	76,7	63,0	38,1	29,5	14,8	3,3
1956	100,0	75,0	61,4	34,6	25,7	11,7	3,8
1994	100,0	66,9	49,3	23,7	16,0	6,5	1,5

Sources : Authors' computations using the data sources described in Table A1

Table A3: Top Estates Fractiles at Death in France, 1807-1994

		Thresholds in current French francs					
		P90	P95	P99	P99,5	P99,9	P99,99
1807	472 523	2 358	5 288	28 000	50 584	125 870	426 282
1817	472 559	1 845	4 136	21 900	42 484	132 833	420 134
1827	497 885	3 706	8 309	44 000	83 511	243 950	869 095
1837	549 661	3 965	7 820	51 511	94 320	249 171	593 805
1847	558 687	5 400	10 800	57 980	118 529	335 707	2 415 514
1857	540 469	5 777	11 701	82 600	152 400	462 327	1 174 056
1867	580 147	7 705	15 084	96 212	184 396	549 600	1 914 993
1877	559 555	8 520	18 110	115 916	217 600	653 654	2 805 886
1887	583 976	9 433	16 902	139 599	256 000	768 647	2 422 201
1902	559 810	9 533	28 853	115 609	235 832	833 103	3 570 181
1913	551 114	11 314	32 217	134 069	270 082	996 501	4 574 925
1929	617 073	40 825	78 286	359 117	656 827	2 204 242	10 275 526
1938	575 955	58 165	97 801	383 780	670 890	1 974 460	7 337 826
1947	457 611	307 120	571 709	1 876 162	3 194 471	7 682 274	26 845 396
1956	506 542	1 202 096	2 417 529	8 929 759	14 015 059	38 259 852	124 384 982
1994	511 467	860 155	1 258 239	3 770 233	5 343 627	12 257 300	33 410 881
		Average estates in current French francs					
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	1 664	13 159	23 344	72 247	110 939	271 633	831 864
1817	1 541	12 484	22 146	68 541	109 027	278 458	521 635
1827	2 732	22 507	39 928	123 573	190 584	445 486	1 031 595
1837	3 049	24 277	43 432	133 452	202 772	449 746	866 480
1847	3 678	30 023	53 296	176 102	275 156	677 984	2 386 187
1857	4 146	34 366	61 770	205 327	315 965	722 627	1 359 435
1867	5 726	46 383	83 216	274 614	425 133	997 977	2 556 102
1877	7 931	66 467	120 578	373 959	597 577	1 597 123	7 225 626
1887	9 262	77 717	143 013	451 141	712 066	1 782 972	5 797 036
1902	8 525	71 556	128 675	440 221	710 626	1 970 616	6 635 051
1913	10 037	86 594	156 983	551 092	901 135	2 612 763	10 351 818
1929	25 758	211 231	370 556	1 294 142	2 147 872	6 369 604	27 275 957
1938	29 937	232 379	390 731	1 257 821	2 040 936	5 969 784	28 702 172
1947	153 793	1 074 401	1 703 206	4 602 018	7 024 177	16 892 200	50 325 550
1956	693 706	4 816 758	7 805 313	21 072 257	31 425 065	76 235 341	227 396 983
1994	343 938	2 096 720	3 067 094	7 319 247	10 258 099	21 713 287	59 185 958
		Shares of top fractiles in total estate (%)					
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	100,0	79,1	70,2	43,4	33,3	16,3	5,0
1817	100,0	81,0	71,9	44,5	35,4	18,1	3,4
1827	100,0	82,4	73,1	45,2	34,9	16,3	3,8
1837	100,0	79,6	71,2	43,8	33,3	14,7	2,8
1847	100,0	81,6	72,4	47,9	37,4	18,4	6,5
1857	100,0	82,9	74,5	49,5	38,1	17,4	3,3
1867	100,0	81,0	72,7	48,0	37,1	17,4	4,5
1877	100,0	83,8	76,0	47,1	37,7	20,1	9,1
1887	100,0	83,9	77,2	48,7	38,4	19,2	6,3
1902	100,0	83,9	75,5	51,6	41,7	23,1	7,8
1913	100,0	86,3	78,2	54,9	44,9	26,0	10,3
1929	100,0	82,0	71,9	50,2	41,7	24,7	10,6
1938	100,0	77,6	65,3	42,0	34,1	19,9	9,6
1947	100,0	69,9	55,4	29,9	22,8	11,0	3,3
1956	100,0	69,4	56,3	30,4	22,7	11,0	3,3
1994	100,0	61,0	44,6	21,3	14,9	6,3	1,7

Sources : Authors' computations using the data sources described in Table A1 and the methodology described in secti

Table A4: Top Estates Fractiles among the Living in Paris, 1807-1902

	Thresholds in current French francs						
	N. living 20yr+	P90	P95	P99	P99,5	P99,9	P99,99
1807	493 316	3 971	14 975	91 390	138 014	347 792	1 641 388
1817	506 184	2 291	11 748	94 832	154 025	405 384	1 786 755
1827	574 089	5 206	22 428	144 455	220 475	519 002	4 132 900
1837	631 678	4 206	20 954	146 020	244 728	668 421	1 618 900
1847	784 417	4 036	22 200	177 188	337 962	662 801	1 765 905
1857	884 450	7 589	30 622	190 366	353 082	1 229 358	3 001 180
1867	1 320 324	10 087	34 914	224 000	431 949	1 107 527	5 921 960
1877	1 400 732	13 405	43 468	298 568	593 027	1 801 648	6 964 895
1887	1 638 710	13 433	47 710	329 494	694 695	1 959 653	5 381 267
1902	1 911 376	9 456	39 432	360 174	684 172	2 480 111	15 720 000
1947 (France)	28 286 718	263 815	488 166	1 415 808	2 230 392	5 649 847	18 467 416
1994 (France)	43 091 985	588 115	947 205	2 184 896	2 875 053	6 691 938	23 657 780
	Average estates in current French francs						
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	4 399	42 272	76 495	236 469	355 099	824 353	3 114 621
1817	4 067	39 865	73 988	242 176	360 536	773 103	1 786 755
1827	6 315	61 475	111 211	335 219	483 204	1 101 309	4 132 900
1837	6 405	62 610	114 832	348 240	505 574	1 107 985	1 912 682
1847	7 586	74 522	138 249	437 601	620 312	1 285 639	2 676 280
1857	9 877	95 560	174 873	582 483	904 759	1 921 827	3 001 180
1867	11 554	111 587	203 292	677 347	1 058 198	2 724 638	10 356 980
1877	15 401	148 702	272 138	942 591	1 468 490	3 435 867	10 121 720
1887	16 824	163 140	299 521	1 027 460	1 582 794	3 419 709	8 886 234
1902	19 388	190 342	360 270	1 329 257	2 168 190	5 957 852	15 742 750
1947 (France)	119 512	839 391	1 312 904	3 422 454	4 995 021	11 992 015	32 656 621
1994 (France)	212 622	1 366 427	1 964 334	4 297 833	6 167 309	14 539 004	29 026 300
	Shares of top fractiles in total estate (%)						
	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1807	100,0	96,1	86,9	53,8	40,4	18,7	7,1
1817	100,0	98,0	91,0	59,5	44,3	19,0	4,4
1827	100,0	97,3	88,1	53,1	38,3	17,4	6,5
1837	100,0	97,8	89,6	54,4	39,5	17,3	3,0
1847	100,0	98,2	91,1	57,7	40,9	16,9	3,5
1857	100,0	96,8	88,5	59,0	45,8	19,5	3,0
1867	100,0	96,6	88,0	58,6	45,8	23,6	9,0
1877	100,0	96,6	88,4	61,2	47,7	22,3	6,6
1887	100,0	97,0	89,0	61,1	47,0	20,3	5,3
1902	100,0	98,2	92,9	68,6	55,9	30,7	8,1
1947 (France)	100,0	70,2	54,9	28,6	20,9	10,0	2,7
1994 (France)	100,0	64,3	46,2	20,2	14,5	6,8	1,4

Sources : Authors' computations using the data sources described in Table A1 and the methodology described in section

Table A5: Top Estates Fractiles at Death in France, 1902-1994 (thresholds in current French francs)

	N.decedents 20yr+	N. estates>0	P90	P95	P99	P99,5	P99,9	P99,99
1902	559 810	363 612	9 533	28 853	115 609	235 832	833 103	3 570 181
1903	555 829	386 032	10 077	29 522	120 787	246 837	938 665	3 179 368
1904	560 314	381 601	10 014	28 610	121 562	246 832	901 625	4 450 804
1905	580 460	385 019	10 111	28 620	123 753	253 824	934 441	4 429 150
1907	612 300	401 574	10 355	29 662	123 000	249 972	925 426	4 193 256
1909	594 163	379 418	10 724	29 792	124 956	258 083	980 569	4 935 528
1910	549 464	359 836	10 931	31 546	128 971	268 832	1 014 789	4 209 416
1911	583 163	359 113	10 662	30 319	127 227	259 710	980 740	4 004 125
1912	546 776	358 921	11 017	31 258	128 349	263 209	986 846	4 524 669
1913	551 114	360 539	11 314	32 217	134 069	270 082	996 501	4 574 925
1925	585 355	385 943	32 260	62 173	231 393	418 330	1 369 248	5 245 321
1926	583 217	403 990	35 596	67 924	262 486	474 965	1 647 835	7 084 458
1927	562 847	381 456	37 670	72 478	283 579	522 430	1 838 216	8 390 437
1929	617 073	388 620	40 825	78 286	359 117	656 827	2 204 242	10 275 526
1930	546 298	357 240	45 181	88 202	387 253	735 356	2 481 742	11 532 757
1931	580 407	372 183	46 098	89 934	373 265	709 100	2 205 120	9 603 289
1932	562 864	370 999	45 117	87 110	374 203	685 694	2 097 144	9 261 477
1933	571 738	354 147	44 258	85 119	360 702	665 485	1 987 701	10 676 624
1935	581 498	370 150	43 263	83 215	344 192	615 970	1 902 986	7 441 802
1936	567 724	362 638	43 297	82 405	330 922	608 073	1 765 910	6 502 196
1937	556 956	361 328	46 202	88 130	376 670	694 507	1 942 174	8 578 674
1938	575 955	379 226	58 165	97 801	383 780	670 890	1 974 460	7 337 826
1939	554 525	330 696	60 089	100 899	398 349	690 491	2 008 422	8 016 276
1940	659 709	296 633	56 184	88 902	329 833	493 231	1 384 717	5 131 485
1941	594 252	346 213	77 204	152 334	467 099	757 184	2 107 200	7 598 864
1942	587 115	354 581	94 563	193 640	704 581	1 072 524	2 988 552	10 461 455
1943	546 105	332 276	118 232	248 228	933 468	1 630 835	4 550 520	16 485 205
1944	584 184	313 250	150 925	246 423	911 634	1 536 372	4 534 291	17 407 819
1945	549 212	318 693	186 777	348 054	1 105 394	1 809 654	5 111 592	19 290 026
1946	462 058	285 230	241 183	441 847	1 452 376	2 160 214	5 746 834	21 260 093
1947	457 611	308 526	307 120	571 709	1 876 162	3 194 471	7 682 274	26 845 396
1948	448 686	284 264	419 442	670 566	2 241 028	3 724 553	9 033 850	31 740 465
1949	504 031	287 669	464 344	846 621	2 568 783	4 206 184	10 984 340	39 295 274
1950	475 401	275 899	537 552	1 026 567	3 581 498	5 440 269	16 080 474	53 892 890
1951	509 529	283 090	588 681	1 145 122	4 117 001	6 307 871	18 582 518	65 013 181
1952	474 302	285 768	1 000 906	1 933 057	6 239 586	9 918 343	25 225 173	86 786 173
1953	511 429	259 223	994 793	1 941 950	6 233 265	10 688 402	24 989 834	89 940 961
1954	474 808	285 932	1 239 585	2 439 988	8 466 758	12 522 875	34 095 967	115 750 586
1955	484 434	288 960	1 188 799	2 366 872	8 502 922	12 614 294	37 042 427	114 184 623
1956	506 542	294 735	1 202 096	2 417 529	8 929 759	14 015 059	38 259 852	124 384 982
1957	493 842	298 727	1 531 425	2 522 398	9 716 978	15 867 887	42 574 356	137 420 753
1958	465 633	314 038	1 880 708	3 754 505	11 422 388	18 666 242	51 054 961	154 354 734
1959	474 860	318 560	2 007 960	4 080 349	12 644 908	20 667 418	54 854 365	207 957 115
1960	489 739	289 654	20 872	43 207	131 505	211 426	575 261	1 851 646
1962	510 260	304 652	23 799	51 689	179 993	271 988	716 387	2 693 640
1964	490 275	323 915	42 774	81 049	250 697	418 866	1 043 780	3 493 166
1984	529 454	297 399	503 393	726 116	1 923 359	2 692 150	5 818 956	17 817 570
1994	511 467	326 213	860 155	1 258 239	3 770 233	5 343 627	12 257 300	33 410 881

Source: Authors' computations using national tabulations of estate tax returns by estate brackets published by the French Finance Ministry (see *Piketty (2001a, Appendix J)* for the exact references of the official publications where the raw tabulations were originally published) and the 1984-1994 national samples of individual estate tax returns released by the French Finance Ministry (DMTG sample; see *Piketty (2001a, Appendix J)*).

Table A6: Top Estates Fractiles at Death in France, 1902-1994 (average levels in current French francs)

	P0-100	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1902	8 525	71 556	128 675	440 221	710 626	1 970 616	6 635 051
1903	8 859	76 301	138 694	482 268	784 665	2 161 834	7 336 771
1904	9 412	82 391	151 580	547 082	911 773	2 804 285	13 167 404
1905	9 901	87 214	160 456	591 528	997 333	3 133 434	15 572 542
1907	8 920	76 941	139 928	485 682	788 450	2 134 386	7 147 037
1909	9 661	83 966	153 110	549 159	905 858	2 664 926	10 681 757
1910	9 682	83 343	150 918	526 659	851 179	2 318 107	8 454 133
1911	9 880	86 593	158 353	569 996	946 916	2 810 246	12 386 548
1912	10 200	88 787	161 503	582 218	970 697	2 947 949	13 315 922
1913	10 037	86 594	156 983	551 092	901 135	2 612 763	10 351 818
1925	16 745	134 539	231 693	746 866	1 204 405	3 224 711	11 321 151
1926	18 961	151 695	261 866	855 506	1 400 380	4 018 664	14 554 187
1927	21 574	174 812	303 774	1 026 747	1 685 926	4 928 363	19 426 353
1929	25 758	211 231	370 556	1 294 142	2 147 872	6 369 604	27 275 957
1930	29 249	238 655	418 894	1 471 355	2 446 116	7 276 434	29 621 534
1931	27 515	220 092	381 139	1 278 721	2 099 886	5 931 064	21 873 572
1932	26 831	212 115	365 265	1 200 993	1 952 732	5 445 306	22 149 860
1933	25 344	201 513	347 124	1 138 611	1 848 783	5 116 916	17 152 570
1935	25 690	203 738	352 864	1 184 149	1 946 298	5 794 463	28 586 824
1936	26 104	205 786	355 945	1 194 850	1 982 056	6 014 764	31 470 055
1937	26 728	207 066	354 633	1 139 279	1 838 269	5 041 541	21 057 030
1938	29 937	232 379	390 731	1 257 821	2 040 936	5 969 784	28 702 172
1939	30 109	238 203	399 981	1 291 481	2 091 194	6 135 868	29 941 171
1940	20 342	166 260	263 082	786 302	1 175 832	3 109 278	12 165 886
1941	34 886	262 536	432 810	1 216 876	1 854 827	4 631 172	14 416 347
1942	48 553	368 756	610 409	1 789 059	2 723 332	6 841 357	21 934 432
1943	66 474	508 774	841 023	2 448 598	3 743 288	8 962 841	25 822 502
1944	64 963	515 633	841 898	2 487 037	3 854 609	9 800 408	31 824 124
1945	83 343	632 160	1 034 953	2 938 926	4 481 968	11 183 677	37 671 964
1946	110 853	786 457	1 251 007	3 399 431	5 056 196	12 128 853	34 965 411
1947	153 793	1 074 401	1 703 206	4 602 018	7 024 177	16 892 200	50 325 550
1948	182 529	1 298 212	2 075 464	5 544 903	8 286 405	20 098 556	61 261 960
1949	214 674	1 581 323	2 550 457	7 300 127	10 422 404	27 217 838	73 356 889
1950	268 522	1 996 144	3 226 125	9 024 015	13 707 411	34 211 290	110 977 063
1951	324 131	2 345 782	3 806 841	10 709 068	16 407 918	39 876 272	130 447 133
1952	478 345	3 549 350	5 714 181	15 460 083	22 789 509	54 752 917	151 314 909
1953	467 032	3 542 180	5 687 982	15 205 615	22 630 817	52 911 590	172 830 990
1954	637 193	4 650 830	7 405 531	19 449 695	28 767 340	69 960 377	216 651 262
1955	626 738	4 585 416	7 380 566	19 729 674	29 269 455	69 184 754	199 944 195
1956	693 706	4 816 758	7 805 313	21 072 257	31 425 065	76 235 341	227 396 983
1957	781 078	5 467 843	9 006 043	25 206 827	37 957 630	91 883 836	305 542 552
1958	977 300	6 659 792	10 726 764	29 384 823	43 486 553	99 662 225	285 067 468
1959	1 081 906	7 602 114	12 289 180	34 494 604	51 565 950	130 844 895	452 611 880
1960	11 502	77 751	124 505	338 860	500 329	1 178 968	3 293 893
1962	14 673	100 569	162 115	445 091	672 579	1 711 966	5 709 878
1964	20 129	144 150	232 649	630 799	929 535	2 195 630	7 348 007
1984	173 041	1 121 057	1 617 061	3 735 628	5 228 807	11 410 998	35 881 862
1994	343 938	2 096 720	3 067 094	7 319 247	10 258 099	21 713 287	59 185 958

Source: Authors' computations using national tabulations of estate tax returns by estate brackets published by the Finance Ministry (see *Piketty (2001a, Appendix J)* for the exact references of the official publications where the raw tabulations were originally published) and the 1984-1994 national samples of individual estate tax returns released by the French Finance Ministry (DMTG sample; see *Piketty (2001a, Appendix J)*).

Table A7: Top Estates Fractiles at Death in France, 1902-1994 (shares of top fractiles in total estate (%))

	P90-100	P95-100	P99-100	P99,5-100	P99,9-100	P99,99-100
1902	83,94	75,47	51,64	41,68	23,12	7,78
1903	86,13	78,28	54,44	44,29	24,40	8,28
1904	87,54	80,52	58,12	48,44	29,79	13,99
1905	88,09	81,03	59,75	50,37	31,65	15,73
1907	86,26	78,43	54,45	44,19	23,93	8,01
1909	86,91	79,24	56,84	46,88	27,58	11,06
1910	86,08	77,94	54,39	43,96	23,94	8,73
1911	87,64	80,14	57,69	47,92	28,44	12,54
1912	87,05	79,17	57,08	47,58	28,90	13,05
1913	86,27	78,20	54,91	44,89	26,03	10,31
1925	80,35	69,18	44,60	35,96	19,26	6,76
1926	80,01	69,06	45,12	36,93	21,19	7,68
1927	81,03	70,40	47,59	39,07	22,84	9,00
1929	82,01	71,93	50,24	41,69	24,73	10,59
1930	81,59	71,61	50,30	41,81	24,88	10,13
1931	79,99	69,26	46,47	38,16	21,56	7,95
1932	79,06	68,07	44,76	36,39	20,30	8,26
1933	79,51	68,48	44,93	36,47	20,19	6,77
1935	79,31	68,68	46,09	37,88	22,56	11,13
1936	78,83	68,18	45,77	37,97	23,04	12,06
1937	77,47	66,34	42,63	34,39	18,86	7,88
1938	77,62	65,26	42,02	34,09	19,94	9,59
1939	79,11	66,42	42,89	34,73	20,38	9,94
1940	81,73	64,66	38,65	28,90	15,29	5,98
1941	75,26	62,03	34,88	26,58	13,28	4,13
1942	75,95	62,86	36,85	28,04	14,09	4,52
1943	76,54	63,26	36,84	28,16	13,48	3,88
1944	79,37	64,80	38,28	29,67	15,09	4,90
1945	75,85	62,09	35,26	26,89	13,42	4,52
1946	70,95	56,43	30,67	22,81	10,94	3,15
1947	69,86	55,37	29,92	22,84	10,98	3,27
1948	71,12	56,85	30,38	22,70	11,01	3,36
1949	73,66	59,40	34,01	24,28	12,68	3,42
1950	74,34	60,07	33,61	25,52	12,74	4,13
1951	72,37	58,72	33,04	25,31	12,30	4,02
1952	74,20	59,73	32,32	23,82	11,45	3,16
1953	75,84	60,90	32,56	24,23	11,33	3,70
1954	72,99	58,11	30,52	22,57	10,98	3,40
1955	73,16	58,88	31,48	23,35	11,04	3,19
1956	69,44	56,26	30,38	22,65	10,99	3,28
1957	70,00	57,65	32,27	24,30	11,76	3,91
1958	68,14	54,88	30,07	22,25	10,20	2,92
1959	70,27	56,79	31,88	23,83	12,09	4,18
1960	67,60	54,12	29,46	21,75	10,25	2,86
1962	68,54	55,24	30,33	22,92	11,67	3,89
1964	71,61	57,79	31,34	23,09	10,91	3,65
1984	64,79	46,72	21,59	15,11	6,59	2,07
1994	60,96	44,59	21,28	14,91	6,31	1,72

Source: Authors' computations using national tabulations of estate tax returns by estate brackets published by the Finance Ministry (see *Piketty (2001a, Appendix J)* for the exact references of the official publications where the raw tabulations were originally published) and the 1984-1994 national samples of individual estate tax returns released by the French Finance Ministry (DMTG sample; see *Piketty (2001a, Appendix J)*).