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

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Using large samples of estate tax returns, we construct new series on wealth concentration in Paris and France from 1807 to 1994. Inequality increased until 1914 because industrial and financial estates grew dramatically. Then, adverse shocks, rather than a Kuznets-type process, led to a massive decline in inequality. The very high wealth concentration prior to 1914 benefited retired individuals living off capital income (rentiers) rather than entrepreneurs. The very rich were in their seventies and eighties, whereas they had been in their fifties a half century earlier and would be so again after World War II. Our results shed new light on ongoing debates about wealth inequality and growth. (*JEL* H20, J14, N20)

This article presents new series on wealth concentration in Paris and France from 1807 to 1994. It thus extends the series presented in Thomas Piketty (2001, 2003) by a full century and our new series are the first homogeneous series of wealth inequality to cover a span of time sufficient to fully evaluate Simon Kuznets's hypothesis (1955) about the rise and fall of inequality as economies develop. While other scholars have put together measures of wealth inequality over time, they have either done so for much shorter periods or spliced together disparate sources. Our series were constructed by collecting the population of individual estate tax returns in the Paris archives for various years between 1807 and 1902, and linking them to previously published tabulations by size of estate for various years between 1902 and 1994.

Our general motivation for building 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

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[1] See Piketty (2003). For similar series covering the United States, see Piketty and Emmanuel Saez (2003) and for the United Kingdom, see Anthony B. Atkinson (2005). Similar top income series covering most of the twentieth century have now been constructed for about 20 countries (see Atkinson and Piketty, forthcoming).

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

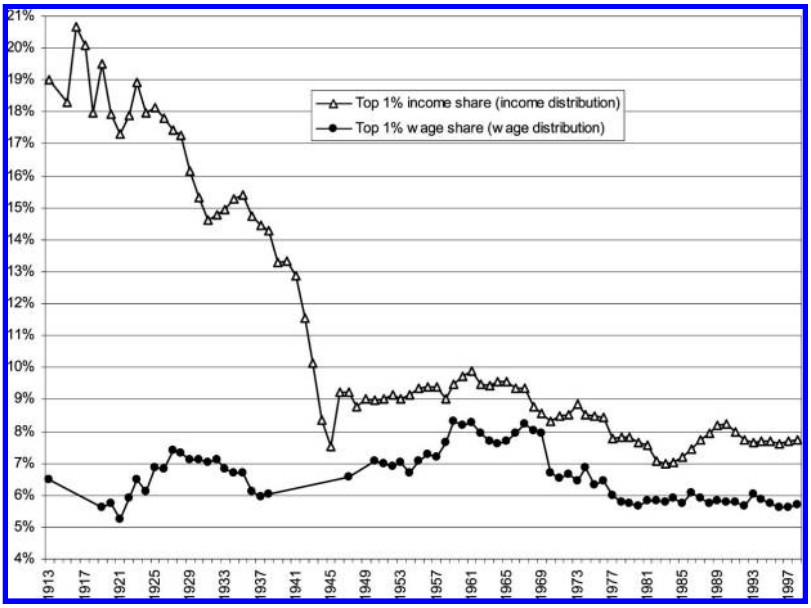

FIGURE 1. THE FALL OF TOP CAPITAL INCOMES IN FRANCE, 1913–1998

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

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 that they begin late—just before World War I. There is no systematic data source on incomes before then because the modern progressive income tax was not created until around 1913 in most countries.[3] Although these series strongly suggest that the 1914–1945 shocks played the key role, one cannot fully exclude the possibly 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 centuries allows us to put the 1914–1945 period into a broader historical perspective.

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 (Maurice Lévi-Leboyer and François Bourguignon, 1985).

Finally, French historical sources on wealth distribution are perhaps the richest in the world

[3] The modern income tax was introduced in 1909 in the United Kingdom, in 1913 in the United States, and in 1914 in France.

TABLE 1—ESTATE TAX RETURNS IN PARIS, 1807–1994—SUMMARY STATISTICS

	N. decedents 20-yr+	N. estate > 0	N. estate > 0 (percent N. deced. 20+)	N. deced. 20-yr+ (percent Paris/France)	Total estate (percent Paris/France)	Average estate (Ratio Paris/rest of France)
1807	11,622	3,647	31.4	2.5	8.2	3.56
1817	11,925	3,287	27.6	2.5	8.4	3.56
1827	14,151	3,877	27.4	2.8	9.4	3.56
1837	16,902	4,922	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	7,370	27.5	4.6	16.8	4.16
1877	28,777	8,245	28.7	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 Piketty et al., 2004, Table A1, for detailed series and sources).

concentration both in France and in Paris during the twentieth century, using standard Pareto interpolation techniques.

Prior to 1902, the tax administration published only the aggregate amount of wealth reported on estate tax returns, broken down by real (land and buildings) and personal (furniture, businesses, stocks, bonds, etc.) assets.[12] 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*, acquiring access to the registers of each tax *bureau* (the lowest-level tax jurisdiction), and dealing with hundreds of thousands of declarations each year. We therefore had to devise a sampling strategy. One option was to select randomly (e.g., on the basis of birth dates or family names) a nationally representative sample of decedents for various years during the nineteenth century. That sample would need to be extremely large, however, 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 and collected data 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, around 1810, the annual number of decedents (20 years old and over) in Paris was about 12,000 (2.5 percent of the French total); that figure nearly tripled during the nineteenth century, to about 35,000 by 1900 (6.5 percent of the French total). However, only 30 percent of decedents in Paris had an estate during the nineteenth century (about half as many as in the rest of France) so we needed only to collect 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 (see Table 1). 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.[13] It is particularly striking to notice that this ratio actually increased

1943–1954. The 1994 micro-file also allows us to break down the data by *département* and age.

[12] These published aggregates were computed by the administration on the basis of tax receipts.

[13] Average estates, as well as top estate fractiles, are always defined in this paper over the set of all decedents aged 20 and older, including those with zero wealth.

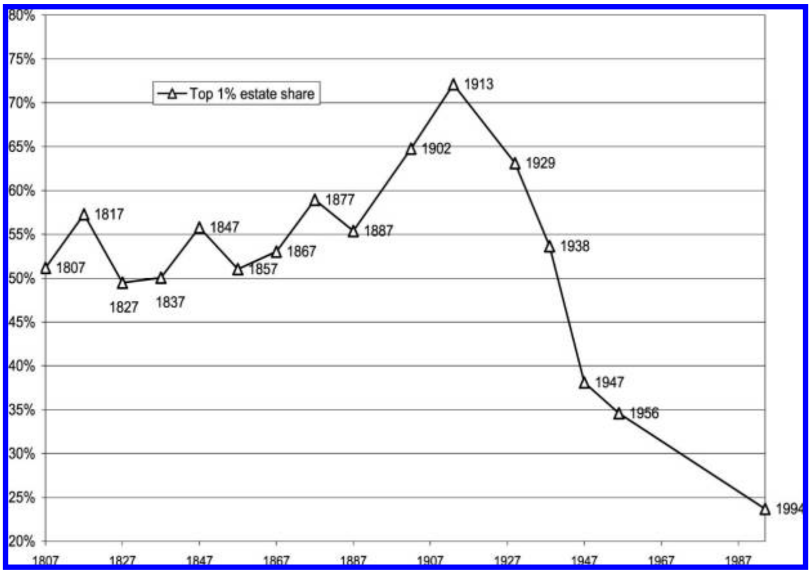

FIGURE 3. WEALTH CONCENTRATION AT DEATH IN PARIS, 1807–1994

Source: Authors' computations based on estate tax returns (see Table 2).

bution own no wealth and the richest decile accounts for at least 95 percent of the value of all assets during the nineteenth century (see Table 2), we focus on the top 1 percent. The richest 1 percent of (adult decedents) Parisians appears to have held a stable and very high fraction of all assets during the first half of the nineteenth century (around 50 to 55 percent of total wealth). 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 the Napoleonic Wars).[18] Inequality in Paris increased substantially after 1867 with the top-1-percent share of wealth at death climbing from about 52 percent to over 72 percent in 1913. World War I and the ensuing shocks then prompted an abrupt decline. The top-1-percent share dropped by 34 percentage points between 1913 and 1947 and by about 10

TABLE 2—WEALTH CONCENTRATION AT DEATH IN PARIS, 1807–1994

	Top-10-percent estate share	Top-1-percent estate share	Top-0.1-percent estate share
1807	96.0	51.2	17.9
1817	97.6	57.3	22.8
1827	97.3	49.5	14.8
1837	97.7	50.1	14.8
1847	98.3	55.8	21.3
1857	96.9	51.0	13.4
1867	97.1	53.0	16.3
1877	96.9	58.9	24.6
1887	97.1	55.4	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	6.5

Source: Authors' computations using estate tax returns (see Piketty et al., 2004, Table A2, for detailed series and sources).

[18] Other spikes in the top-1-percent share are due for the most part to the volatility of the very top estates (the top-0.1-percent share, and mostly the top-0.01-percent share). Note that with about 20,000 decedents per year in Paris, the top-0.1-percent fractile includes only 20 decedents, and the top 0.01 percent only 2 decedents, so that the estimates for these fractiles are unstable. They depend on the identity of very wealthy individuals who happened to die in a specific year. The figures reported in Table 2 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.

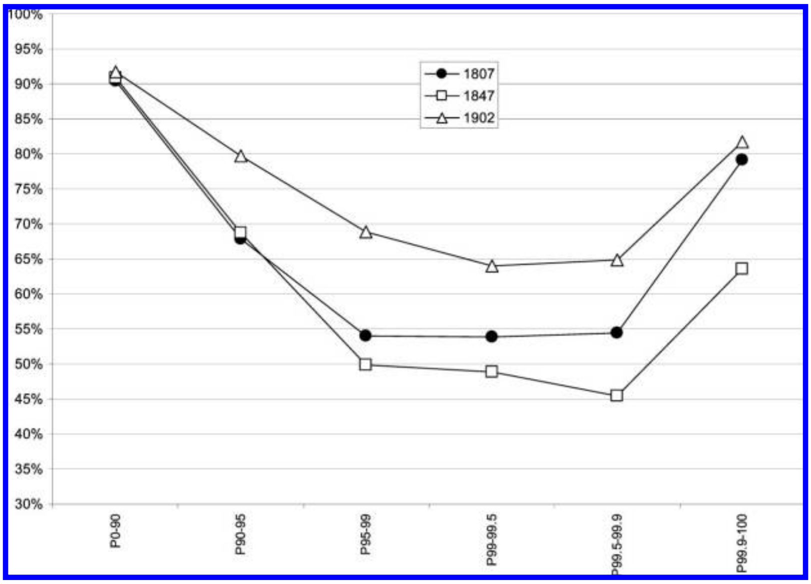

FIGURE 4. WEALTH COMPOSITION AT DEATH IN PARIS, 1807–1902
(*Share of personal* (*non-real*) *estate in total estate*)

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

percentage points between 1956 and 1994. Converting these wealth-at-death concentration estimates into wealth-of-the-living concentration estimates leaves this general picture unchanged (see Section IV below).

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 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 moveable items. 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, and accelerated after 1867.

The ebb and flow of the relative importance of real estate was linked to Paris's recovery from the French 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 Catholic 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 the city's population expanded, building and land values recovered, and the relative importance of real estate grew, before being overshadowed by the financial boom of the last part of the century (Michel Lescure, 1982).

The share of aristocratic decedents among the very rich follows an inverted-U-shaped curve over the nineteenth century (see Figure 6).[19] That is, nobles became more and more numerous in top wealth fractiles from 1807 until 1847, then the trend reversed and their impor-

[19] 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 (1801–1814), and the Bourbons (1815–1830).

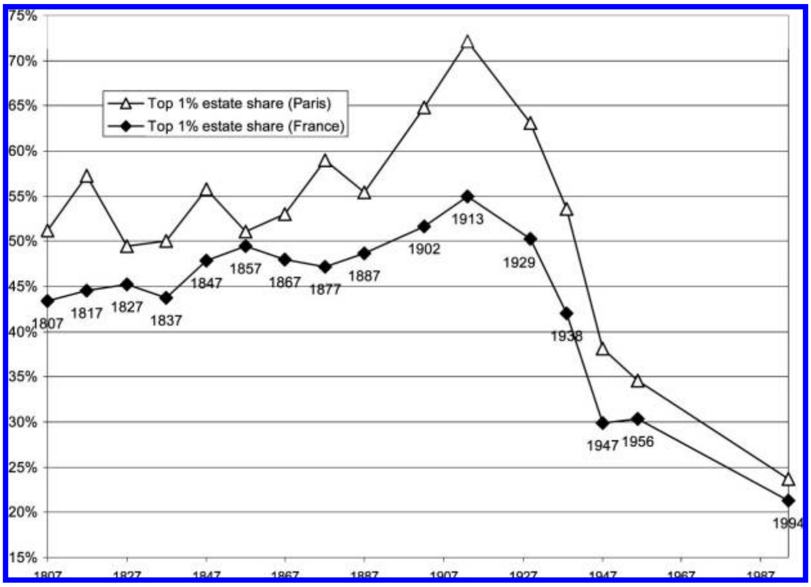

FIGURE 7. WEALTH CONCENTRATION AT DEATH IN PARIS AND FRANCE, 1807–1994

Source: Authors' computations based on estate tax returns (see Tables 2 and 4).

tance declined steadily. To be sure, aristocrats remain overrepresented throughout the period, including in 1902 (about 13 percent of nobles in the top 1 percent of estates, over 25 percent in the top 0.1 percent, versus less than 1 percent 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 moveable wealth. Aristocrats were able to recoup part of their losses during the first half of the nineteenth century. Napoleon provided some assistance by conferring titles of nobility on his chief military officers and endowing them with wealth. Later, the Restoration government (1815–1830) compensated individuals who fled abroad 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* (André Gain, 1929). 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.

III. 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, available data (broken down by *département*) shows that the evolution of top estate shares in France was parallel to that of top estate shares in Paris. Wealth inequality is always lower for the country as a whole, but the trends are similar (see Figure 7). It is also striking to note that Paris's share of the top 1 percent of French estates has remained fairly stable over the twentieth century (it fluctuates between 20 percent and 25 percent, with no trend), even though Paris's share of all decedents has been dwindling over time, reflecting the population decline of the capital (see Table 3). In 1902, Paris decedents were four times more likely to belong to the national top 1 percent of estates than average decedents (26.6/6.5 = 4.1); in 1994, Paris de-

TABLE 5—THE AGE PROFILE OF WEALTH AT DEATH IN PARIS, 1817–1994
(*Average estate left by 50- 59-year-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	26	22	28	100	54	59	59	
1827	44	50	53	100	88	87	60	
1837	133	90	107	100	116	123	110	
1847	87	73	102	100	117	204	132	
1857	84	77	101	100	104	109	145	
1867	67	58	136	100	141	125	154	
1877	66	73	63	100	197	260	430	
1887	45	33	63	100	152	233	295	
1902	29	40	80	100	253	272	401	
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 Piketty et al., 2004, Table A1, for detailed sources).

age profile of wealth between 1807 and 1994 (see Table 5). During the nineteenth century, as wealth concentration was increasing, 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 fifties: they were typically 100 percent richer on average than people in their forties, 25 percent richer than those in their sixties, and 40 percent richer than those in their seventies and eighties. By the 1870s, however, the age-wealth pattern had become strongly monotonic: the richest individuals were the oldest individuals. In 1902, people in their sixties and seventies bequeathed 150 percent more than those in their fifties, and those in their eighties 300 percent more! On the eve of World War I, top wealth holders were old and likely to be retired. This pattern breaks some time during the 1914–1945 period.[33] In 1947 as well as in 1994, we are back to a pattern where the richest individuals are those in their fifties. Overall, the period of maximal wealth inequality (1860–1913) also appears to be a period characterized by a very specific age profile of wealth and large concentration of assets among the elderly.

Another way to analyze the changing age-wealth relationship is to look at average age by top estate fractile.[34] In 1817, average age was virtually the same for the top 10 percent and the top 1 percent of estates (or even slightly declining). The average-age-per-fractile relationship becomes upward sloping during the nineteenth century, and by 1902 those in the top 1 percent were almost six years older than those in the top 10 percent. The relationship is flat in 1947 and downward-sloping in 1994. Finally, one can apply the estate multiplier method (see Section IV above) and analyze how wealth concentration by age group among the living 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 older made up about 15 percent of the population in 1817, and after 1847 about 10 to 11 percent.[35] The share of total wealth owned by the elderly rose significantly, however, as wealth distribution worsened. The wealth belonging to those aged 60 or more rose from about 25 to 30 percent of the total at the beginning of the nineteenth century to about 40 to 45 percent by the end of the century. The wealth share of those aged 70 or older doubled, from less than 10 percent to about 20 percent.[36]

[33] Existing evidence on the age-wealth profile for 1931 (see Danysz, 1934) suggests that the Great Depression and World War II (rather than World War I) played the leading roles in breaking this pattern. This is an issue we plan to investigate in future research.

[34] See Piketty et al. (2004, Table 6).

[35] Although life expectancy was increasing, which should have led to large shares of population for older groups, the city was also growing quickly. The large number of immigrants (who were typically in their twenties) increased the relative size of the younger cohorts (see Piketty et al., 2004, Table 7 and Figure 11).

[36] See Piketty et al. (2004, Figure 12).