Top Wealth Shares in the United States, 1916-2000: Evidence from Estate Tax Returns

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[2]Complete details about methodology and results are available in the NBER Working Paper version, Kopczuk and Saez (2003)

Abstract

This paper presents new homogeneous series on top wealth shares from 1916 to 2000 in the United States using estate tax return data. Top wealth shares were very high at the beginning of the period but have been hit sharply by the Great Depression, the New Deal, and World War II shocks. Those shocks have had permanent effects. Following a decline in the 1970s, top wealth shares recovered in the early 1980s, but they are still much lower in 2000 than in the early decades of the century. Most of the changes we document are concentrated among the very top wealth holders with much smaller movements for groups below the top 0.1%. Consistent with the Survey of Consumer Finances results, top wealth shares estimated from Estate Tax Returns display no significant increase since 1995. Evidence from the Forbes 400 richest Americans suggests that only the super-rich have experienced significant gains relative to the average over the last decade. Our results are consistent with the top income shares series constructed by Piketty and Saez (2003), and suggests that the rentier class of the early century is not yet reconstituted. The most plausible explanations for the facts have been the development of progressive income and estate taxation which has dramatically impaired the ability of large wealth holders to maintain their fortunes, and the democratization of stock ownership which now spreads stock market gains and losses much more widely than in the past.

1 Introduction

The pattern of wealth and income inequality during the process of development of modern economies has attracted enormous attention since Kuznets (1955) formulated his famous inverted U-curve hypothesis. Wealth tends to be much more concentrated than income because of life cycle savings and because it can be transmitted from generation to generation. Liberals have blamed wealth concentration because of concerns for equity and in particular for tilting the political process in the favor of the wealthy. They have proposed progressive taxation as an appropriate counter-force against wealth concentration.[1] For conservatives, concentration of wealth is considered as a natural and necessary outcome of an environment that provides incentives for entrepreneurship and wealth accumulation, key elements of macro-economic success. Redistribution through progressive taxation might weaken those incentives and generate large efficiency costs. Therefore, it is of great importance to understand the forces driving wealth concentration over time and whether government interventions through taxation or other regulations are effective and/or harmful to curb wealth inequality. This task is greatly facilitated by the availability of long and homogeneous series of income or wealth concentration. Such series are in general difficult to construct because of lack of good data. In this paper, we use the extraordinary micro dataset of estate tax returns that has been recently compiled by the Statistics of Income Division of the Internal Revenue Service (IRS) in order to construct homogeneous series of wealth shares accruing to the upper groups of the wealth distribution since 1916, the beginning of the modern federal estate tax in the United States.

The IRS dataset includes detailed micro-information for *all* federal estate tax returns filed during the 1916-1945 period. We supplement this data with both published tabulations and other IRS micro-data of estate tax returns from selected years of the second half of the century. We use the estate multiplier technique, which amounts to weighting each estate tax return by the inverse probability of death, to estimate the wealth distribution of the living adult population from estate data. First, we have constructed almost annual series of shares of total wealth accruing to various sub-groups within the 2% of the wealth distribution.[2] Although small in

[1] In the early 1930s, President Roosevelt justified the implementation of drastic increases in the burden and progressivity of federal income and estate taxation in large part on those grounds.

[2] For the period 1916-1945, the largest group we can consider is the top 1%.

size, these top groups hold a substantial fraction of total net worth in the economy. Second, for each of these groups, we decompose wealth into various sources such as real estate, fixed claims assets (bonds, cash, mortgages, etc.), corporate stock, and debts. We also display the composition by gender, age, and marital characteristics. This exercise follows in the tradition of Lampman (1962), who produced top wealth share estimates for a few years between 1922 and 1956. Lampman, however, did not analyze groups smaller than the top .5% and this is an important difference because our analysis shows that, even within the top percentile, there is dramatic heterogeneity in the shares of wealth patterns. Most importantly, nobody has attempted to estimate, as we do here, homogeneous series covering the entire century.[3]

Our series show that there has been a sharp reduction in wealth concentration over the 20th century: the top 1% wealth share was close to 40% in the early decades of the century but has fluctuated between 20 and 25% over the last three decades. This dramatic decline took place at a very specific time period, from the onset of Great Depression to the end of World War II, and was concentrated in the very top groups within the top percentile, namely groups within the top 0.1%. Changes in the top percentile below the top 0.1% have been much more modest. It is fairly easy to understand why the shocks of the Great Depression, the New Deal policies which increased dramatically the burden of estate and income taxation for the wealthy, and World War II, could have had such a dramatic impact on wealth concentration. However, top wealth shares did not recover in the following decades, a period of rapid growth and great economic prosperity. In the early 1980s, top wealth shares have increased, and this increase has also been very concentrated. However, this increase is small relative to the losses from the first part of the twentieth century and the top wealth shares increased only to the levels prevailing prior to the recessions of the 1970s. Furthermore, this increase took place in the early 1980s and top shares were stable during the 1990s. This evidence is consistent with the dramatic decline in top capital incomes documented in Piketty and Saez (2003) using income tax return data. As they do, we tentatively suggest that steep progressive income and estate taxation, by reducing the rate of wealth accumulation of the rich, may have been the most important factor preventing

[3]Smith (1984) provides estimates for some years between 1958 and 1976 but his series are not fully consistent with Lampman (1962). Wolff (1994) has patched series from those authors and non-estate data sources to produce long-term series. We explain in detail in Section 5.3 why such a patching methodology can produce misleading results.

large fortunes to be reconstituted after the shocks of the 1929-1945 period.

Perhaps surprisingly, our top wealth shares series do not increase during the 1990s, a time of the Internet revolution and the creation of dot-com fortunes, extra-ordinary stock price growth, and of great increase in income concentration (Piketty and Saez, 2003). Our results are nevertheless consistent with findings from the Survey of Consumer Finances (Kennickell (2003) and Scholz (2003)) which also indicate hardly any growth in wealth concentration since 1995. This absence of growth in top wealth shares in the 1990s is not necessarily inconsistent income shares results from Piketty and Saez (2003) because the dramatic growth in top income shares since the 1980s has been primarily due to a surge in top labor incomes, with little growth of top capital incomes. This may suggest that the new high income earners have not had time yet to accumulate substantial fortunes, either because the pay surge at the top is too recent a phenomenon, or because their savings rates are very low. We show that because of democratization of stock ownership in America, the top 1% individuals do not hold today a significantly larger fraction of their wealth in the form of stocks than the average person in the U.S. economy, explaining in part why the bull stock market of the late 1990s has not benefited disproportionately the rich.[4]

Although there is substantial circumstancial evidence that we find persuasive, we cannot prove that progressive taxation and stock market democratization had the decisive role we attribute to them. In our view, the primary contribution of this paper is to provide new and homogeneous series on wealth concentration using the very rich estate tax statistics. We are aware that the assumptions needed to obtain unbiased estimates using the estate multiplier method may not be met and, drawing on previous studies, we try to discuss as carefully as possible how potential sources of bias, such as estate tax evasion and tax avoidance, can affect our estimates. Much work is still needed to compare systematically the estate tax estimates with other sources such as capital income from income tax returns, the Survey of Consumer Finances, and the Forbes 400 list.

The paper is organized as follows. Section 2 describes our data sources and outlines our estimation methods. Section 3 presents our estimation results. We present and analyze the

[4]We also examine carefully the evidence from the Forbes 400 richest Americans survey. This evidence shows sizeable gains but those gains are concentrated among the top individuals in the list and the few years of the stock market "bubble" of the late 1990s, followed by a sharp decline from 2000 to 2002.

trends in top wealth shares and the evolution of the composition of these top wealth holdings. Section 4 proposes explanations to account for the facts and relates the evolution of top wealth shares to the evolution of top income shares. Section 5 discusses potential sources of bias, and compares our wealth share results with previous estimates and estimates from other sources such as the Survey of Consumer Finances, and the Forbes top richest 400 list. Finally, Section 6 offers a brief conclusion and compares the U.S. results with similar estimates recently constructed for the United Kingdom and for France. All series and complete technical details about our methodology are gathered in appendices of the longer NBER working paper version of the paper, Kopczuk and Saez (2003).

2 Data, Methodology, and Macro-Series

In this section, we describe briefly the data we use and the broad steps of our estimation methodology. Readers interested in the complete details of our methods are referred to the extensive appendices at the end of the NBER working paper version of the paper. Our estimates are from estate tax return data compiled by the Internal Revenue Service (IRS) since the beginning of the modern estate tax in the United States in 1916. In the 1980s, the Statistics of Income division of the IRS constructed electronic micro-files of *all* federal estate tax returns filed for individuals who died in the period 1916 to 1945. Stratified and large electronic micro-files are also available for 1965, 1969, 1972, 1976, and every year since 1982. For a number of years between 1945 and 1965 (when no micro-files are available), the IRS published detailed tabulations of estate tax returns (U.S. Treasury Department, Internal Revenue Service (various years)). This paper uses both the micro-files and the published tabulated data to construct top wealth shares and composition series for as many years as possible.

In the United States, because of large exemption levels, only a small fraction of decedents has been required to file estate tax returns. Therefore, by necessity, we must restrict our analysis to the top 2% of the wealth distribution. Before 1946, we can analyze only the top 1%. As the analysis will show, the top 1%, although a small fraction of the total population, holds a substantial fraction of total wealth. Further, there is substantial heterogeneity between the bottom of the top 1% and the very top groups within the top 1%. Therefore, we also analyze in

detail smaller groups within the top 1%: the top .5%, top .25%, the top .1%, the top .05%, and the top .01%. We also analyze the intermediate groups: top 1-.5% denotes the bottom half of the top 1%, top .5-.25% denoted the bottom half of the top .5%, etc. Estates represent wealth at the individual level and not the family or household level. Therefore, it is very important to note that our top wealth shares are based on individuals and not families. We come back to this issue later. Each of our top groups is defined relative to the total number of adult individuals (aged 20 and above) in the U.S. population, estimated from census data. Column (1) in Table 1 reports the number of adult individuals in the United States from 1916 to 2002. The adult population has more than tripled from about 60 million in 1916 to over 200 million in 2000. In 2000, there were 201.9 million adults and thus the top 1% is defined as the top 2.019 million wealth holders, etc.

We adopt the well-known estate multiplier method to estimate the top wealth shares for the living population from estate data. The method consists in inflating each estate observation by a multiplier equal to the inverse probability of death.[5] The probability of death is estimated from mortality tables by age and gender for each year for the U.S. population multiplied by a social differential mortality factor to reflect the fact that the wealthy (those who file estate tax returns) have lower mortality rates than average. The social differential mortality rates are based on the Brown et al. (2002) differentials between college educated whites relative to the average population and are assumed constant over the whole period (see Appendix B for a detailed discussion and analysis of the validity of this assumption).[6] The estate multiplier methodology will provide unbiased estimates of the wealth distribution if our multipliers are correct on average and if probability of death is independent of wealth within each age and gender group for estate tax return filers. This assumption might not be correct for three main reasons. First, extraordinary expenses such as medical expenses and loss of labor income may occur and reduce wealth in the years preceding death. Second, even within the set of estate tax filers, it might be the case that the most able and successful individuals have lower mortality rates, or inversely that the stress associated with building a fortune, increases the mortality rate. Last and most importantly, for estate tax avoidance and other reasons, individuals may

[5]This method was first proposed in Great Britain almost a century ago by Mallet (1908). Atkinson and Harrison (1978) describe the method in detail.

[6]All appendices are available in the NBER working-paper version of the paper.

start to give away their wealth to relatives as they feel that their health deteriorates. We will later address each of these very important issues.

The wealth definition we use is equal to all assets (gross estate) less all liabilities (mortgages, and other debts) as they appear on estate tax returns. Assets are defined as the sum of tangible assets (real estate and consumer durables), fixed claim assets (cash, deposits, bonds, mortgages, etc.), corporate equities, equity in unincorporated businesses (farms, small businesses), and various miscellaneous assets. It is important to note that wealth reported on estate tax returns only includes the cash surrender value of pensions. Therefore, future pension wealth in the form of defined benefits plans, and annuitized wealth with no cash surrender value is excluded. Vested defined contributions accounts (and in particular 401(k) plans) are included in the wealth definition. Social Security wealth as well as all future labor income and human wealth is obviously not included in gross estate. Estate tax returns include the full payout of life insurance but we include only the cash value of life insurance (i.e., the value of life insurance when the person is living) in our estimates.

Therefore, we focus on a relatively narrow definition wealth, which includes only the marketable or accumulated wealth that remains upon the owner's death. This point is particularly important for owners of closely held businesses: in many instances, a large part of the value of their business reflects their personal human capital and future labor, which vanishes at their death. Both the narrow definition of wealth (on which we focus by necessity because of our estate data source), and broader wealth definitions including future human wealth are interesting and important to study. The narrow definition is more suited to examine problems of wealth accumulation and transmission, while the broader definition is more suited to study the distribution of welfare.[7]

For the years for which no micro data is available, we use the tabulations by gross estate, age and gender and apply the estate multiplier method within each cell in order to obtain a distribution of gross wealth for the living. We then use a simple Pareto interpolation technique and the composition tables to estimate the thresholds and average wealth levels for each of our top groups.[8] For illustration purposes, Table 2 displays the thresholds, the average wealth level

[7]The analysis of income distribution captures both labor and capital income and is thus closer to an analysis of distribution of the broader wealth concept.

[8]We also use Pareto interpolations to impute values at the bottom of 1% or 2% of the wealth distribution for

in each group, along with the number of individuals in each group all for 2000, the latest year available.

We then estimate shares of wealth by dividing the wealth amounts accruing to each group by total net-worth of the household sector in the United States. The total net-worth denominator has been estimated from the Flow of Funds Accounts for the post-war period and from Goldsmith et al. (1956) and Wolff (1989) for the earlier period.[9] The total net-worth denominator includes all assets less liabilities corresponding to the items reported on estate tax returns so that the definitions of wealth in the numerator and the denominator are as close as possible. Thus, our denominator only includes defined contribution pension reserves, and excludes defined benefits pension reserves. Life insurance reserves, which reflect the cash surrender value of all policies held are included in our denominator. The total wealth and average wealth (per adult) series are reported in real 2000 dollars in Columns (3) and (4) of Table 1. The CPI deflator used to convert current incomes to real incomes is reported in Column (10). The average real wealth series per adult along with the CPI deflator is plotted in Figure 1. Average real wealth per adult has increased by a factor of three from 1916 to 2000 but the growth was very uneven during the period. There was virtually no growth in average real wealth from 1916 to the onset of World War II. Average wealth then grew steadily from World War II to the late 1960s. Since then, wealth gross has been slower, except in the 1994-2000 period.

After we have analyzed the top share data, we will also analyze the composition of wealth and the age, gender, and marital status of top wealth holders, for all years where this data is available. We divide wealth into six categories: 1) real estate, 2) bonds (federal and local, corporate and foreign) 3) corporate stock, 4) deposits and saving accounts, cash, mortgages, and notes, 5) other assets (including equity in non-corporate businesses), 6) all debts and liabilities. In order to compare the composition of wealth in the top groups with the composition of total net-worth in the U.S. economy, we display in columns (5) to (9) of Table 1, the fractions of real estate, fixed claim assets, corporate equity, unincorporated equity, and debts in total net worth of the household sector in the United States. We also present on Figure 1, the average real value of corporate equity and the average net worth excluding corporate equity. Those figures show

years where the coverage of our micro data is not broad enough.

[9]Unfortunately, no annual series exist before 1945. Therefore, we have built upon previous incomplete series to construct complete annual series for the 1916-1944 period.

that the sharp downturns and upturns in average net worth are primarily due to the dramatic changes in the stock market prices, and that the pattern of net worth excluding corporate equity has been much smoother.

3 The Evolution of Top Wealth Shares

3.1 Trends

The basic series of top wealth shares are presented in Table 3. Figure 2 displays the wealth share of the top 1% from 1916 to 2000. The top 1% held close to 40% of total wealth, up to the onset of the Great Depression. Between 1930 and 1932, the top 1% share fell by more than 10 percentage points, and continued to decline during the New Deal, World War II, and the late 1940s. By 1949, the top 1% share was around 22.5% and 40% below its peak. The top 1% share increased slightly to around 25% in the mid-1960s, and then fell to less than 20% in 1976 and 1982. The top 1% share increases significantly in the early 1980s (from 19% to 22%) and then stays remarkably stable around 21-22% in the 1990s. This evidence shows that the concentration of wealth ownership in the United States decreased dramatically over the century. This phenomenon is illustrated on Figure 3 which displays the average real wealth of those in the top 1% (left-hand-side scale) and those in the bottom 99% (right-hand-side scale). In 1916, the top 1% wealth holders were more than 60 times richer on average than the bottom 99%. The figure shows the sharp closing of the gap between the Great Depression and the post World War II years, as well as the subsequent parallel growth for the two groups (except for the 1970s). In 2000, the top 1% individuals are about 25 times richer than the rest of the population.

Therefore, the evidence suggests that the twentieth century's decline in wealth concentration took place in a very specific and brief time interval, 1930-1949 which spans the Great Depression, the New Deal, and World War II. This suggests that the main factors influencing the concentration of wealth might be short-term events with long-lasting effects, rather than slow changes such as technological progress and economic development or demographic transitions.

In order to understand the overall pattern of top income shares, it is useful to decompose the top percentile into smaller groups. Figure 4 displays the wealth shares of the top 1-.5% (the bottom half of the top 1%), and the top .5-.1% (the next .4 percentile of the distribution).

Figure 4 also displays the share of the second percentile (Top 2-1%) for the 1946-2000 period. The figure shows that those groups of high but not super-high wealth holders experienced much smaller movements than the top 1% as a whole. The top 1-.5% has fluctuated between 5 and 6% except for a short-lived dip during the Great Depression. The top .5-.1% has experienced a more substantial and long-lasting drop from 12 to 8% but this 4 percentage point drop constitutes a relatively small part of the 20 point loss of the top 1%. All three groups have been remarkably stable over the last 25 years.

Examination of the very top groups in Figure 5 (the top .1% in Panel A and the top .01% in Panel B) provides a striking contrast to Figure 4. The top .1% declined dramatically from more than 20% to less than 10% after World War II. For the top .01%, the fall was even more dramatic from 10% to 4%: those wealthiest individuals, a group of 20,000 persons in 2000, had on average 1000 times the average wealth in 1916, and have about 400 times the average wealth in 2000. It is interesting to note that, in contrast to the groups below the very top on Figure 4, the fall for the very top groups continued during World War II. Since the end of World War II, those top groups have remained fairly stable up to the late 1960s. They experienced an additional drop in the 1970s, and a very significant increase in the early 1980s: from 1982 to 1985, the top .01% increased from 2.5% to 4%, a 60% increase. However, as all other groups, those top groups remained stable in the 1990s. Therefore, the evidence shows that the dramatic movements of the top 1% share are primarily due to changes taking place within the upper fractiles of the top 1%. The higher the group, the larger the decline. It is thus important to analyze separately each of the groups within the top 1% in order to understand the difference in the patterns. We now turn to the analysis of the composition of incomes reported by the top groups.

3.2 Composition

Figure 6 displays the composition of wealth within the top 1% for various years. Wealth is divided into three components: real estate, corporate stock (including both publicly traded and closely held stock), fixed claims assets (all bonds, cash and deposits, mortgages and notes, etc.).[10] Panel A displays the composition for year 2000, the latest year available, and shows that

[10]Other assets and debts have been excluded from the figure but they are reported in Table B3 of the NBER working paper version.

the share of corporate stock is increasing with wealth while the share of real estate is decreasing with wealth, the share of fixed claims assets being slightly decreasing (the share of bonds is slightly increasing and the share of cash and deposits slightly decreasing). In the bottom half of the top 1%, each component represents about one third of total wealth. At the very top, stocks represent about two thirds of total wealth and real estate only about 15%. This broad pattern is evident for all the years of the 1916-2000 period for which we have data:[11] the share of stocks increases with wealth and the share of real estate decreases. The levels, however, may vary overtime due mainly to the sharp movements in the stock market. The pattern for 1929 displayed on Panel B, which, as 2000, was a year of very high stock market prices (as we have seen on Figure 1), looks very similar to 2000. The share of stocks is even slightly higher than in 2000. In contrast, year 1948 (displayed on Panels C) was a year of very low stock prices (see Figure 1). For this year, although the pattern is the same, the fraction of corporate stocks is significantly lower. Finally, 1986, a year of medium stock market prices, the normal pattern of these shares is again displayed on Panel D of Figure 6.

This is further illustrated on Figure 7 which displays the fraction of corporate stock in net worth over the period 1916-2000 for the top .5%, and for total net worth in the U.S. economy (from Tables 4 and 1 respectively). Consistent with Figure 6, the fraction of stock is much higher for the top .5% (around 50% on average) than for total net worth (around 20% on average). Both series are closely parallel from the 1920s to the mid 1980s: they peak just before the Great Depression, plunge during the depression, stay low during the New Deal, World War II, up to the early 1950s, and peak again in the mid-1960s before plummeting in the early 1980s.

This parallel pattern can explain why the share of wealth held by the top groups dropped so much during the Great Depression. Real corporate equity held by households fell by 70% from 1929 to 1933 (Figure 1) and the top groups hold a much greater fraction of their wealth in the form of corporate stock (Figure 7). Those two facts mechanically lead to a dramatic decrease in the share of wealth accruing to the top groups. The same phenomenon took place in the 1970s when stock prices plummeted and the shares of top groups declined substantially (the real price of corporate stock fell by 60% and the top 1% fell by about 20% from 1965 to 1982).

Corporate profits increased dramatically during World War II, but in order to finance the

[11] All these statistics are reported in Table B3 of the NBER working paper version.

war, corporate tax rates increased sharply from about 10% before the war to over 50% during the war and they stayed at high levels after the war. This fiscal shock in the corporate sector reduced substantially the share of profits accruing to stock-holders and explains why average real corporate equity per adult increased by less than 4% from 1941 to 1949 while the average net worth increased by about 23% (see Figure 1). Thus, top wealth holders, owning mostly stock, lost relative to the average during the 1940s, and the top shares declined significantly.

The central puzzle to understand is why this explanation does not work in reverse after 1949, that is, why top wealth shares did not increase significantly from 1949 to 1965 and from 1986 to 2000 when the stock market prices soared, and the fraction of corporate equity in total net worth of the household sector increased from just around 12% (in 1949 and 1986) to almost 30% in 1965 and almost 40% in 2000?

The series on wealth composition of top groups might explain the absence of growth in top wealth shares during the 1986-2000 episode. The fraction of corporate stock in the top groups did not increase significantly during the period (as can be seen on Figure 7, it actually drops significantly up to 1990 and then recovers during the 1990s). Therefore, although the fraction of corporate equity in total net worth triples (from 13% to 39%), the fraction of corporate equity held by the top groups is virtually the same in 1986 and 2000 (as displayed on Panels A and D of Figure 6 and Figure 7). Thus, the data imply that the share of all corporate stock from the household sector held by the top wealth holders fell sharply from 1986 to 2000. Several factors may explain those striking results. First, the development of defined contribution pensions plans, and in particular 401(k) plans, and mutual funds certainly increased the number of stock-holders in the American population,[12] and thus contributed to the democratization of stock ownership among American families. The Survey of Consumer Finances shows that the fraction of families holding stock (directly or indirectly through mutual funds and pension plans) has increased significantly in the last two decades, and was just above 50% in 2001.[13]

Second, the wealthy may have re-balanced their portfolios as gains from the stock-market

[12]The Flow of Funds Accounts show that the fraction of corporate stock held indirectly through Defined Contribution plans and mutual funds doubled from 17% to 33% between 1986 and 2000.

[13]In 1989, only 31.7% of American households owned stock, either directly or indirectly though pension and mutual funds, while 48.9% and 51.9% did in 1998 and 2001 respectively. See Kennickell et al. (1997) and Aizcobe et al. (2003).

were accruing in the late 1980s and the 1990s, and thus reduced their holdings of equity relative to more modest families.

In any case, the data suggests that top wealth holders did not advantage disproportionately from the bull stock market, and this might explain in part why top wealth shares did not increase in that period when top income shares were dramatically increasing (see Section 5 below). By the year 2000, the fraction of wealth held in stock by the top 1% is just slightly above the fraction of wealth held in stock by the U.S. household sector (41% versus 39%). Therefore, in the current period, sharp movements of the stock market are no longer expected to produce sharp movements in top wealth shares as was the case in the past.[14]

3.3 Age, Gender, and Marital Status

Figure 8 displays the average age and the percent female within the top .5% group since 1916.[15] The average age displays a remarkable stability over time fluctuating between 55 and 60. Since the early 1980s, the average age has declined very slightly from 60 to around 57. Thus, the evidence suggests that there have been no dramatic changes in the age composition of top wealth holders over time.[16] In contrast, the fraction of females among top wealth holders has almost doubled from around 25% in the early part of the century to around 45% in the 1990s. The increase started during the Great Depression and continued throughout the 1950s and 1960s, and has been fairly stable since the 1970s. Therefore, there has been a substantial gender equalization in the holding of wealth over the century in the United States, and today, almost 50% of top wealth holders are female. Estate tax law regarding bequests to spouses has changed over time. Before 1948, bequests to spouses were not deductible from taxable estates with an exception of couples located in the so-called community property states where each spouse owned

[14] It should be emphasized, though, that the wealthy may not hold the same stocks as the general population. In particular, the wealthy hold a disproportionate share of closely held stock, while the general population holds in general only publicly traded stocks through mutual and pension funds (see e.g., Kennickell (2003)). Estate tax returns statistics separate closely held from publicly traded stock only since 1986.

[15] Those series are reported on Table 4. Series for all other top wealth groups are reported in Table B4 of the NBER working paper version.

[16] Although, due to significant decreases in mortality over the course of the 20th century, top wealth holders nowadays have more years of potential lifespan ahead of them and are therefore younger relative to the average population than in the early part of the century.

a half of all assets acquired during marriage. Starting in 1948, 50% of spousal bequests became deductible. In 1981, spousal became fully deductible. Those changes might have increased the amount of spousal bequests made by wealthy individuals and hence potentially increased the fraction of women in the top wealth groups.[17] Two points should be noted. First, Figure 8 shows that most of increase in female fraction happened before the changes in estate tax law regarding spousal bequests (in 1948 and 1981) implying that those tax law changes can explain at best a fraction of the trend. Second, even tax law induced changes in spousal bequests have a real impact on the distribution of wealth across gender lines, and thus should not necessarily be regarded as unimportant.

The marital status of top wealth holders has experienced relatively modest secular changes. For males, the fraction of married men has always been high (around 75%), the fraction widowed has declined slightly (from 10 to 5%) and the fraction single has increased (from 10 to 15%). For females, the fraction widowed is much higher, although it has declined over the period from about 40% to 30%. The fraction married has increased from about 40% to 50% for females and thus the fraction single has been stable around 10%. This reinforces our previous interpretation that the increase in the fraction female at the top of the wealth distribution has not been due solely to an increase in the number of wealthy widows following increased spousal bequests, but might reflect increases in female empowerment in the family (fairer distribution of assets between spouses) and in the labor market (reduction of the income gender gap overtime).

4 Understanding the Patterns

4.1 Are the Results Consistent with Income Inequality Series?

One of the most striking and debated findings of the literature on inequality has been the sharp increase in income and wage inequality over the last 25 years in the United States (see Katz and Autor (1999) for a recent survey). As evidenced from income tax returns, changes have been especially dramatic at the top end, with large gains accruing to the top income groups (Feenberg and Poterba (1993, 2000); Piketty and Saez (2003)). For example, Piketty and Saez

[17] See Kopczuk and Slemrod (2003) for a detailed discussion of this point.

(2003) show that the top 1% income share doubled from 8% in the 1970s to over 16% in 2000.[18] How can we reconcile the dramatic surge in top income shares with the relative stability of top wealth shares estimated from Estate Tax Data since the 1980s?

Figure 9 casts light on this issue. It displays the top .01% *income* share from Piketty and Saez (2003), along with the composition of these top incomes[19] into capital income (dividends, rents, interest income, but excluding capital gains), realized capital gains, business income, and wages and salaries. Up to the 1980s (and except during World War II), capital income and capital gains formed the vast majority of the top .01% incomes. Very consistently with the top .01% wealth share series that we presented on Figure 5B, the top .01% income share was very high in the late 1920s, and dropped precipitously during the Great Depression and World War II, and remained low until the late 1970s. Thus both the income and the estate tax data suggests the top wealth holders were hit by the inter-war shocks and that those shocks persisted a long time after the war.

Over the last two decades, as can be seen on Figure 9, the top .01% income share has indeed increased dramatically from 0.9% in 1980 to 3.6% in 2000. However, the important point to note is that this recent surge is primarily a wages and salary income phenomenon and to a lesser extent a business income phenomenon. Figure 9 shows that capital income earned by the top .01% relative to total personal income is not higher in 2000 than it was in the 1970s (around 0.4%). Adding realized capital gains does not alter this broad picture: capital income including capital gains earned by the top .01% represents about 1% of total personal income in 2000 versus about 0.75% in the late 1960s, a modest increase relative to the quadrupling of the top .01% income share during the same period.

Therefore, the income tax data suggests that the dramatic increase in top incomes is a labor income phenomenon that has not translated yet into an increased concentration of capital income. Therefore, in the recent period as well, the income tax data paints a story that is consistent with our estate tax data findings of stability of the top wealth shares since the mid-1980s. The pattern of capital income including realized capital gains displayed on Figure 9 is strikingly parallel to the pattern of the top .01% wealth share of Figure 5B: a mild peak in the

[18] See the series of Piketty and Saez (2003) updated to year 2000.

[19] This group represents the top 13,400 taxpayers in 2000, ranked by income excluding realized capital gains. Capital gains are added back to compute income shares.

late 1960s, a decline during the bear stock market of the 1970s, a recovery in the early 1980s, and no growth from 1990 to 2000.

Three elements might explain why the surge in top wages since the 1970s did not lead to a significant increase in top wealth holdings. First, it takes time to accumulate a large fortune out of earnings.[20] The top .01% average income in the late 1990s is around 10 million dollars while the top .01% wealth holding is around 60 million dollars. Thus, even with substantial saving rates, it would take at least a decade to the average top .01% income holder starting with no fortune to become an average top .01% wealth holder. Second, it is possible that the savings rates of the recent "working rich" who now form the majority of top income earners, are substantially lower than the savings rates of the "coupon-clippers" of the early part of the century. Finally, certain groups of individuals report high incomes on their tax return only temporarily (e.g., executives who exercise stock-options irregularly,[21] careers of sport or show-business stars usually last for just a few years). To the extent that such cases became more prevalent in recent years (as seems possible based on popular accounts), the sharp increase in the concentration of annual incomes documented by Piketty and Saez (2003) may translate into a smaller increase in the concentration of lifetime incomes.

The very rough comparison between income and estate data that we have presented suggests that it would be interesting to try and estimate wealth concentration from income tax return data using the capitalization of income method. In spite of the existence of extremely detailed and consistent income tax return annual data in the United States since 1913, this method has very rarely been used, and the only existing studies have applied the method for isolated years.[22] The explanation for the lack of systematic studies is that the methodology faces serious challenges: income data provides information only on assets yielding reported income (for example, owner-occupied real estate or defined contribution pension plans could not be observed), and there is

[20] Even in recent years after the explosion of executive compensation, few of the richest Americans listed on the annual Forbes 400 survey are salaried executives. Most of them are still either family heirs or successful entrepreneurs (see Section 5.3.3 below).

[21] Stock-options exercises are reported as wage income on income tax returns.

[22] King (1927) and Stewart (1939) used this method for years 1921 and 1922-1936 respectively. More recently, Greenwood (1983) has constructed wealth distributions for 1973 using simultaneously income tax return data and other sources.

substantial and unobservable heterogeneity in the returns of many assets, especially corporate stock (for example, some corporations rarely pay dividends and capital gains are only observed when realized on income tax returns).[23] Nevertheless, it would certainly be interesting to use income tax return data to provide a tighter comparison with our wealth concentration results from estates. We leave this important and ambitious project for future research.

4.2 Why Have Top Wealth Shares Fallen?

We have described in the previous section the dramatic fall in the top wealth shares (concentrated within the very top groups) that has taken place from the onset of the Great Depression to the late 1940s. Our previous analysis has shown that stock market effects might explain the sharp drop in top wealth shares during the 1930s but cannot explain the absence of recovery in top wealth shares in the 1950s and 1960s once stock prices recovered by the end of the 1960s. At that time, the wealth composition in top groups was again very similar to what it had been in the late 1920s, and yet top wealth shares hardly recovered in the 1950s and 1960s and were still much lower in the 1960s than before the Great Depression. As we saw before, this sustained drop is fully consistent with the evidence on very top income shares from Piketty and Saez (2003), although the lack of sustained recovery in the recent years is at odds with findings based on income shares.

The most natural and realistic candidate for an explanation seems to be the creation and the development of the progressive income and estate tax. The very large fortunes (such as the top .01%) observed at the beginning of the 20th century were accumulated during the 19th century, at a time where progressive taxes hardly existed and capitalists could dispose of almost 100% of their income to consume, accumulate, and transmit wealth across generations. The conditions faced by 20th century fortunes after the shock of the Great Depression were substantially different. Starting in 1933 with the New Roosevelt administration, and continuously until the Reagan administrations of 1980s, top tax rates on both income and estates have been set at very high levels.

These very high marginal rates applied only to a very small fraction of taxpayers and estates,

[23] See Atkinson and Harrison (1978) for a detailed comparison of the income capitalization and the estate multiplier methods for the United Kingdom.

but the point is that they were to a large extent designed to hit incomes and estates of the top 0.1% and 0.01% of the distribution. In the presence of progressive capital income taxation, individuals with large wealth levels need to increase their savings rates out of after tax income much more than lower wealth holders to maintain their relative wealth position. Moreover, reduced after-tax rate of return might have affected savings rates of high wealth holders through standard incentive effects. In the presence of high income and estate taxes, wealthy individuals also have incentives to give more to charities during their lifetime further reducing top wealth shares.[24]

Although we cannot observe the counterfactual world without progressive taxation, we note that economic growth, in net worth and incomes, has been much stronger starting with World War II, than in the earlier period. Thus, the macro-economic evidence does not suggest that progressive taxation prevented the American capital stock from recovering from the shock of the Great Depression. This is consistent with Piketty (2003), who shows that, in the purest neo-classical model without any uncertainty, a capital income tax affecting only the rich does not affect negatively the capital stock in the long-run. If credit constraints due to asymmetric information are present in the business sector of the economy, it is even conceivable that re-distribution of wealth from large and passive wealth holders to entrepreneurs with little capital can actually improve economic performance (see e.g., Aghion and Bolton (2003) for such a theoretical analysis). Gordon (1998) argues that high personal income tax rates can result in a tax advantage to entrepreneurial activity, thereby leading to economic growth. A more thorough investigation of the effects of income and estate taxation on the concentration of wealth is left for future work.

5 Are Estimates from Estates Reliable?

In this section, we explore the issue of the reliability of our estimates. Our top wealth share estimates depend crucially on the validity of the estate multiplier method that we use. Thus we first discuss the potential sources of bias and how they can affect the results we have described. Second, we compare our results with previous findings using estate data as well as other data

[24]Lampman (1962) also favored progressive taxation as one important factor explaining the reduction in top wealth shares in his seminal study (see below).

sources such as the Survey of Consumer Finances (SCF), and the Forbes 400 Wealthiest Americans. We focus on whether biases introduced by the estate multiplier methodology can affect our two central results: the dramatic drop in top shares since 1929 and the absence of increase in top shares since the mid-1980s.

5.1 Potential Sources of Bias

The most obvious source of bias would be estate tax evasion. Three studies of evasion, Harris (1949), McCubbin (1994), and Eller et al. (2001), have used results from Internal Revenue Service audits of estate tax returns for years 1940-41, 1982, and 1992 (respectively). Harris (1949) reports under-reporting of net worth of about 10% on average with no definite variation by size of estate, while McCubbin (1994) and Eller et al. (2001) report smaller evasion of about 2-4% for audited returns. Those numbers are small relative to the size of the changes we have presented. Thus, it sounds unlikely that direct tax evasion can have any substantial effects on the trends we have documented and can certainly not explain the dramatic drop in top wealth shares. It seems also quite unlikely that evasion could have hidden a substantial growth in top wealth shares in the recent period. From 1982 to 2000 in particular, the estate tax law has changed very little and hence the extent of under-reporting should have remained stable over time as well. A closely related problem is undervaluation of assets reported on estate tax returns. We describe the issue of undervaluation in detail in appendix C, and we conclude that those adjustments appear to be too small to produce a significant effect on estimated top wealth shares.

As we have discussed briefly in Section 2, the estate multiplier method requires precise assumptions in order to generate unbiased estimates of the wealth distribution for the living. We use the same multiplier within age, gender, and year cells for all estate tax filers, independent of wealth. We apply the same social differential mortality rates for all years based on the Brown et al. (2002) differential between college educated whites relative to the average population. This is not fully satisfactory for two reasons. First, wealthy individuals (those who file estate tax returns upon death) may not have exactly the same mortality rate as college educated whites from Brown et al. (2002). The bias introduced, however, may be small, because the social mortality gradient is steeper at the lower end of the wealth distribution than at the high end.

Second, we use the same social differential rates for the full 1916-2000 period although those rates might have changed overtime. We analyze in detail in Appendix B life insurance and annuities data compiled by the Survey of Actuaries. Perhaps surprisingly, the data does not point to a significant narrowing over time between mortality rates of the general population and life insurance policy holders. Therefore, our assumption of constant social differential rates might be acceptable.

Assuming that our multipliers are right on average, the key additional assumption required to obtain unbiased wealth shares is that, within age and gender cells and for estate tax filers, mortality is not correlated with wealth. A negative correlation would generate a downward bias in top wealth shares as our multiplier would be too low for the richest decedents. For example, if those with very large estates are less likely to die than those with moderately large estates, then the estate multiplier will under estimate the very wealthy relative to the moderately wealthy.

There are two direct reasons why such a negative correlation might arise. First, extraordinary expenses such as medical expenses and loss of labor income or of the ability to manage assets efficiently may occur and reduce wealth in the years preceding death, producing a negative correlation between death probability and wealth. Smith (1999) argues that health expenses are moderate and therefore are not a major factor driving the correlation of wealth and mortality. However, his evidence is based on expenditures of the general population and it is the end-of-life health expenditures that are most significant. It seems unlikely, though, that health-related expenses create a significant dent in the fortunes of the super-rich but we were unable to assess the importance of lost earnings due to health deterioration at the end of life.[25]

Second, even within the small group of estate tax filers, the top 1 or 2% wealth holders, it might be the case that the most able and successful individuals, of a given age and gender, have lower mortality rates. Although we cannot measure with any precision the quantitative bias introduced by those effects, there is no reason to believe that such biases could have changed dramatically over the period we study. In particular, they cannot have evolved so quickly in the recent period so as to mask a significant increase in top wealth shares and, for the same reason,

[25]For some years, our data set contains information about the length of terminal illness. A simple regression of net worth on the dummy variable indicating a prolonged illness and demographic controls produced a significant negative coefficient, suggesting that this effect may play a role.

they are unlikely to explain the sharp decrease in top wealth shares following the onset of the Great Depression.

More importantly, however, for estate tax avoidance and other reasons, individuals may start to give away their wealth to relatives and heirs as they feel that their health deteriorates. Indeed, all estate tax planners recommend giving away wealth before death as the best strategy to reduce transfer tax liability. Gifts, however, create a downward bias only to the extent that they are made by individuals with higher mortality probability within their age and gender cell. If gifts are unrelated to mortality within age and gender cells, then they certainly affect the wealth distribution of the living but the estate multiplier will take into account this effect without bias. Three important reasons suggest that gifts may not bias our results. First and since the beginning of the estate tax, gifts made in contemplation of death (within 2-3 years of death, see Appendix C for details) must be included in gross estate and thus are not considered as having been given in our wealth estimates. We expect that a large fraction of gifts correlated with mortality to fall into this category. Second, a well known advice of estate tax planners is to start giving as early as possible. Thus, those most interested in tax avoidance will start giving much before contemplation of death and in that case gifts and mortality have no reason to be correlated. Last, since 1976, the estate and gift tax have been unified and the published IRS tabulations show that taxable gifts (all gifts above the annual exemption of $10,000 per donee) represents only about 2-3% of gross estate. Thus, lifetime gifts do not seem to be large enough to produce a significant bias in our estimates for the recent period.

A more subtle possibility of bias comes from a related tax avoidance practice which consists in giving assets to heirs without relinquishing control of those assets. This is mostly realized through trusts whose remainder is given to the heir but whose income stream is in full control of the creator while he is alive. Like an annuity, the value of such a trust for the creator disappears at death and thus does not appear on estate tax returns. This type of device falls in between the category of tax avoidance through gifts and under-valuation of the assets effectively transferred. The popular literature (see e.g., Cooper (1979) or Zabel (1995)) has suggested that many such devices can be used to effectively avoid the estate tax but careful interviews of practitioners (Schmalbeck, 2001) suggest that this is a clear exaggeration and that reducing significantly the estate tax payments requires actually giving away (either to charities or heirs)

a substantial fraction of wealth. Again, such a source of reduction in wealth holdings reflects a real deconcentration of wealth (though not necessarily welfare).

5.2 Changes in Bias Over Time

It is important to emphasize that *real* responses to estate taxation, such as potential reductions in entrepreneurship incentives, savings, or increases in gifts to charities or relatives, do not bias our estimates in general because they do have real effects on the distribution of wealth. Only outright evasion or avoidance of the type we just described can bias our results; and those effects need to evolve over time in order to counteract the trends we have described. We would expect that changes in the levels of estate taxation would be the main element affecting avoidance or evasion incentives over time.

It is therefore important to consider the main changes in the level of estate taxation over the period (see Appendix C and Luckey (1995) for further details). Since the beginning of the U.S. federal estate tax, the rate schedule was progressive and subject to an initial exemption. The 1916 marginal estate tax rates ranged from 0 to 10%. The top rate increased to 40% by 1924, a change that was repealed by the 1926 Act that reduced top rates to 20%. Starting in 1932, a sequence of tax schedule changes increased the top rates to 77% by 1942, subject to a $60,000 nominal exemption. The marginal tax rate schedule remained unchanged until 1976, resulting in a fairly continuous increase of the estate tax burden due to "bracket creep". Following the 1976 tax reform, the exemption was increased every year. The top marginal tax rates were reduced to 70% in 1977 and 55% by 1984. There were no major changes until 2001 (the nominal filing threshold stayed constant at $600,000 between 1988 and 1997). Figure 10 reports the average marginal tax rate in the top 0.1% group[26] and the statutory marginal tax rate applying to the largest estates[27] (left y-axis), along with the top 0.1% wealth share (right y-axis). It is evident from this picture that the burden of estate taxation increased significantly over time. Somewhat surprisingly, the most significant increases in the estate tax burden were brought

[26]These tax rates are computed by first evaluating the marginal tax rates at the mean net worth in Top .01%, .05-.01 and .1-.05 and then weighting the results by net worth in each category. These are "first-dollar" marginal tax rates that do not take into account deductions but just the initial exemption.

[27]After 1987, there is an interval of a 5% surtax intended to phase out the initial exemption in which the marginal tax rate (60%) exceeds the marginal tax rate at the top (55%).

about by holding brackets constant in nominal terms rather than by tax schedule changes.

There are very few attempts to measure the response of wealth to estate taxation.[28] Kopczuk and Slemrod (2001) used the same micro-data than we do to estimate the impact of the marginal estate tax rates on reported estates. They relied on both time-series variation and cross-sectional age variation that corresponds to having lived through different estate tax regimes. They found some evidence of an effect, with estate tax rates at age of 45 or 10 years before death more strongly correlated with estates than the actual realized marginal tax rates. Because the source of their data are tax returns, they were unable to distinguish between tax avoidance and the real response. Holtz-Eakin and Marples (2001) relied on the cross-sectional variation in state estate and inheritance taxes to estimate the effect on wealth of the living. They found that estate taxation has a significant effect on wealth accumulation. It should be pointed out though that their dataset contained very few wealthy individuals. Taken at face value, both of these studies find very similar magnitudes of response (see the discussion in Holtz-Eakin and Marples, 2001) suggesting little role for outright tax evasion: the Holtz-Eakin and Marples (2001) data is not skewed by tax evasion and avoidance while the effect estimated by Kopczuk and Slemrod (2001) reflects such potential responses. This would imply that trends in concentration due to tax evasion and avoidance are not a major issue.

Regardless of these findings, given that between 1982 and 2000 the estate tax system has changed very little, we would expect that the extent of tax avoidance and evasion has also remained fairly stable. Therefore, the absence of increase in top shares since in the 1990s is probably not due to a sudden increase in estate tax evasion or avoidance.[29]

5.3 Comparison with Previous Studies and Other Sources

Another important way to check the validity of our estimates from estates is to compare them to findings from other sources. We have presented a brief comparison above with findings from

[28] There is a larger literature that concentrates on gifts. See for example, McGarry (1999); Bernheim et al. (2001); Poterba (2001); Joulfaian (2003).

[29] Of course, technological advances in estate tax avoidance remains a possibility, especially given that many changes relating to valuation issues are driven by judicial rather than legislative activity. It is striking to note, however, how close are the recipes for estate tax avoidance described in this voluminous literature (see again Cooper (1979) and Zabel (1995)).

income tax returns. After reviewing previous estate tax studies, we turn to comparisons with wealth concentration estimations using other data sources.

5.3.1 Previous Estate Studies

Lampman (1962) was the first to use in a comprehensive way the U.S. estate tax statistics published by the IRS to construct top wealth shares. He reported the top 1% wealth shares for the adult population for a number of years between 1922 and 1956.[30] His estimates are reproduced on Figure 11, along with our series for the top 1%.[31] Although the method, adjustments, and total net worth denominators are different (see appendix), his series is generally similar to ours and in particular displays the same downward trend after 1929.

Smith (1984) used estate tax data to produce additional estimates for the top 0.5% and top 1% wealth shares for some years in the 1958-1976 period. In contrast to Lampman (1962) and our series, the top 1% is defined relative to the full population (not only adults) and individuals are ranked by gross worth (instead of net worth).[32] We reproduce his top 1% wealth share, which looks broadly similar to our estimates and displays a downward trend which accelerates in the 1970s. No study has used post 1976 estate data to compute top wealth shares series for the recent period. A number of studies by the Statistics of Income Division of the IRS have estimated wealth distributions from estate tax data for various years but those studies only produce distributions, and composition by brackets and do not try in general to estimate top shares.[33] An exception is Johnson and Schreiber (2002-03) who present graphically the top 1% and .5% wealth share for 1989, 1992, 1995, and 1998. Their estimates are very close to ours, and display very little variation over the period.

[30] Lampman (1962) does not analyze smaller groups within the top 1% adults.

[31] Those statistics are also reported in Table 5.

[32] See Smith and Franklin (1974) for an attempt to patch the Lampman series with estimates for 1958, 1962, 1965, and 1969.

[33] See Schwartz (1994) for year 1982, Schwartz and Johnson (1994) for year 1986 and Johnson and Schwartz (1994) for year 1989, Johnson (1997-98) for years 1992 and 1995, and Johnson and Schreiber (2002-03) for year 1998.

5.3.2 Survey of Consumer Finances

The Survey of Consumer Finances (SCF) is the only other data that can be used to estimate adequately top wealth shares in the United States, because it over-samples the wealthy and asks detailed questions about wealth ownership. However, the survey covers only years 1962, 1983, 1989, 1992, 1995, 1998, 2001 and cannot be used to reliably compute top shares for groups smaller than the top 0.5% because of small sample size. It should also be noted that all the information in the SCF is at the family level and not the individual level. Top shares estimated at the individual level might be different from top shares estimated at the family level, and the difference depends on how wealth is distributed among spouses within families. Atkinson (2003) discusses this issue formally. He shows that for realistic parameters (on the Pareto distribution and the number of married individuals relative to singles), for a given top share estimated at the family level, the corresponding top share at the individual level will be about 20% higher if all the rich are unmarried or have spouses with no wealth and will be about 20% lower if all the rich are couples with the same wealth. Thus, changes of wealth distribution *within* families, which leave unchanged family based wealth shares, can have relatively large effects on individually based wealth shares. However, the magnitude is not nearly large enough to explain the dramatic decline of the very top shares over the century solely by equalization of wealth between spouses within families.[34]

Kennickell (2003) provides detailed shares and composition results for the 1989-2001 period, and Scholz (2003) provides top share estimates for all the years available from the SCF. Kennickell and Scholz results are very close. We reproduce the top 1% wealth share from Scholz (2003) on Figure 11. The SCF produces estimates of top wealth shares larger than estimates from estates: the top 1% share from estates is between 20 and 25% while to the top 1% share from the SCF is slightly above 30%. We discuss below the reasons that have been put forward to explain this difference by various studies. However, the important point to note is that, as our estate estimates, the SCF does not display a significant increase in top wealth shares between 1962 and 2001. There is an increase from 1992 to 1995, but this increase has in large

[34]The negative correlation, however, between the pattern of the top 1% wealth share on Figure 2 and the fraction female in the top .5% on Figure 8 suggests that equalization of wealth between spouses might have played a role in reducing individually based wealth concentration.

part disappeared by 2001. As a result, the top 1% shares from the SCF in 1983 and 2001 are almost identical.[35] In particular, it is striking to note that the top 1% share did not increase at all during the bull stock market in the second half of the 1990s. Therefore, two independent sources, the estate tax returns and the SCF, arguably the best data sources available to study wealth concentration in the United States, suggest that wealth concentration has not increased significantly since the mid-1980s, in spite of the surge in stock market prices.

A few studies have compared the estate tax data with the SCF data in order to check the validity of each dataset and potentially estimate the extent of tax avoidance. Scheuren and McCubbin (1994) and Johnson and Woodburn (1994) present such a comparison for years 1983 and 1989 respectively. They find a substantial gap in top shares estimates based on the two datasets, of similar magnitude than the one between our estimates and Scholz (2003) estimates.[36] As discussed above, an important source of discrepancy comes from the fact that the SCF is based on families while estate estimates are individually based. Johnson and Woodburn (1994) tries to correct for this and finds a reduced gap, although, in absence of good information on the distribution of wealth within rich families, the correction method might be very sensitive to assumptions (see below).

Scheuren and McCubbin (1994) describes other potential sources creating biases. In addition to the tax avoidance and under-valuation issues that we describe above, they show that SCF wealth might be higher than estate wealth because the value of closely held businesses might drop substantially when the owner-manager dies. Thus, the SCF wealth measure of businesses incorporates human wealth that is by definition excluded from estates. Therefore, the SCF and estates may not measure the same wealth concept even though both measures are interesting. The estate represents wealth that can be transferred while the SCF includes in part human wealth that is destroyed at death. Further comparisons, asset by asset, of the SCF and estate tax returns would be useful to understand better the quantitative importance of each of the sources we have mentioned.

More recently, Wolff (1996) uses the SCF 1992 data to estimate how much estate tax would

[35] Kennickell (2003) reports standard errors of around 1.5 percentage points around the top 1% share estimates. Thus, the small movements in the SCF top 1% share might be due in large part to sampling variation.

[36] The statistics they report do not allow a precise comparison of the gap in the top 1% wealth share.

be collected by applying average mortality rates to the SCF population. He finds that expected collections estimated from the SCF should be about 4 times larger than actual estate tax collections for those who died in 1992, suggesting massive tax evasion and avoidance. Poterba (2000), however, repeats Wolff study for 1995 and finds that estate taxes estimated from the SCF are just 10% higher than what was actually collected. Eller et al. (2001) tries to reconcile this discrepancy and shows that the results are quite sensitive to assumptions made about mortality rates, as well as marital and charitable bequests, but find a range of estimates much closer to Poterba than to Wolff. Our top wealth share estimates are about 25% lower than the SCF top wealth shares, suggesting that there is some under-reporting of estates, but that the difference is actually much closer to the small gap found by Poterba (2000) than the very large gap found by Wolff (1996).

Finally, Wolff (1994) has produced series of top 1% wealth shares by pasting together the earlier estate series by Lampman (1962) and Smith (1984) and the modern SCF estimates.[37] These series represent the top 1% households (not individuals) and are reproduced on Figure 11. A close examination reveals that patching together data from difference sources is a perilous exercise. The Wolff series suggest that there has been a tremendous decline in wealth concentration in the 1960s and 1970s from 34% to 20%, followed by an equally large surge in concentration to above 35% in 1989. Our series based on an homogeneous estate tax data show that the evolution of concentration has actually been much less dramatic during that period. As can be seen from Figure 11, Wolff-Marley' estimate for 1976 is based on estate tax data while the 1962 and 1983 estimates are based on the SCF. Thus, the failure to account for the large gap between the SCF and estate estimates that exists in any given year generates a distortion in the time pattern of the Wolff-Marley series.

5.3.3 Forbes 400 Richest Americans

The popular view is that the personal computer revolution of the 1980s, and the development of Internet in the 1990s, created many new business opportunities and the extremely quick creation of new fortunes (the so called dot-comers). From this perspective, our finding of no increase in

[37] These series are a revised and extended version of the earlier Wolff-Marley series constructed in the same way and presented in Wolff and Marley (1989).

wealth concentration during the 1990s seems surprising indeed. To pursue this question further, we use the Forbes magazine annual survey of the top 400 richest Americans, available since 1982.[38] This systematic source has certainly been highly influential in creating the feeling that the last two decades had been extraordinary favorable to the creation of new fortunes.

The Forbes 400 represent an extremely small fraction of the U.S. adult population, about the top .0002% in 2000, that is, a group 50 times smaller than our top .01% group. We have used the Forbes 400 survey to estimate the top .0002% (corresponding almost exactly to the top 400 individuals in 2000) wealth share. This share is displayed on Figure 12.[39] It shows that the fraction of wealth controlled by the top fortunes tripled from just above 1% in the early 1980s to above 3.5% at the peak in 2000. From 2000 to 2002, the share came down to just below 3% in 2002. Thus the Forbes data is indeed consistent with the popular view that the richest individuals in the United States control a sizeable share of total wealth and, more importantly, that this share has increased significantly over the last two decades. The top .01% share we estimated was around 4% since the mid-1980s. This is compatible with a top .0002% share slightly above 1% as in the early 1980s but not with a top .0002% share equal to 3.5% as in the peak of 2000.[40] Therefore, it appears that our top wealth share series from estates have failed to capture the increase due to the surge in the Forbes 400 top fortunes.[41]

For the early 1980s, McCubbin (1994) analyzed estate tax returns of Forbes 400 decedents and found that wealth reported on estate tax returns was on average 35% lower than on the Forbes list. The discrepancy was attributed mostly to the fact that the estate tax returns include only the assets and property owned by the individual decedent while the Forbes survey also includes wealth distributed to the spouse, and the full value of trusts set-up to distribute

[38] Kennickell (2003) also examines the Forbes 400 data for the years corresponding to the SCF surveys between 1989 and 2001.

[39] Those statistics are also reported in Table 6.

[40] More precisely, if wealth is Pareto distributed with parameter a, then the ratio of the top .01% wealth share to the top .0002% wealth share is $(.01/.0002)^{1-1/a} = 3.7$ for $a = 1.5$, which is about the Pareto parameter that can be obtained for the wealth distribution in 2000 from Table 2.

[41] If just a few billionaires are responsible for the surge, it is possible that they were simply not sampled (by death). Given that these types of fortunes accrued to relatively young individuals and that death probability (adjusted by the socioeconomic status) does not even reach 1% by the age of 60, it seems possible that a few-year long surge of wealth of a few individuals can remain unnoticed.

wealth to family relatives but whose creator retains control. It would be extremely useful to repeat this study for the full period 1982-2002 in order to understand the reasons for the growing discrepancy that has taken place since the mid-1980s between top estates and the Forbes 400.

It is interesting to divide further the group of the Forbes 400 into the top 100 and the next 300 richest (for year 2000). Those top groups correspond to the top .00005% and top .0002-.00005% using our usual notation. The share of wealth accruing to those two groups is reported on Figure 12. It displays a striking contrast: the share of wealth of the top 100 have been multiplied by a factor 4.3 from 1983 to 2000 while the share of wealth of the next 300 richest individuals has only been multiplied by a factor 2.1 during the same period.[42] It is also important to note that the share of the two groups is closely parallel during the 1980s, a decade of relatively modest growth for the Forbes shares, and that the bulk of the divergence between the two Forbes groups, is concentrated in just 3 years, 1996 to 1999, which are the years of the fastest growth of the stock market (see Figure 1). It would be interesting to use the Forbes data to analyze to what extent the new technology stock market "bubble" can account for this phenomenon. In sum, three quarters of all the gains to the Forbes 400 from 1983 to 2000 have actually accrued to the top quarter of the list, and most of those gains happened in the second half of the 1990s. Therefore, taken at face value, the Forbes data, combined with the absence of a significant increase in top wealth shares in the estate tax data and the SCF, suggest that among the rich, only the top few hundred richest individuals in the country have experienced sizeable gains since the mid-1980s, while the vast majority of the rich actually did not experience much gains relative to the average wealth holder in the U.S. population.

The number of fortunes created by the development and expansion of new technology sector is certainly more than a few hundred. This fact can be consistent with our findings only if, at the same time those new fortunes were created, fortunes of similar magnitude were being destroyed. Analyzing in more detail the rise and fall of the new technology companies over the last two decades could be an interesting way to cast light on this issue, and understand why the results from estate tax returns or the SCF seem so much at odds with the popular perception of the 1990s decade and the Forbes 400 data.

[42] The threshold corresponding to the bottom of the top 400 has actually increased "only" by 75% from 1983 to 2000.

Our top wealth shares series from estates show a sharp drop in very top wealth shares from 1916 to 2000; although the Forbes data suggest that our estimates have missed the surge in wealth of the very wealthiest richest Americans. How do the very richest Americans of today compare with the richest individuals from the beginning of the twentieth century? Forbes proposed a list in 1918 of the top 30 richest Americans. The richest person at the time was John Rockefeller, who held an estimated fortune of $1.2 billion (current dollars), and thus held 0.54% of total net worth. How does this compare with the wealth of the richest Americans in 2000, the very peak of the stock-market? As population has grown by a factor 3.33 from 1918 to 2000, to provide a meaningful comparison, we need to add the fortunes of Bill Gates, Lawrence Ellison, Paul Allen, and one third of Warren Buffet, the four richest Americans in 2000. They total $166.33 billion, which is 0.52% of total net worth, almost exactly the same as John Rockefeller in 1918. Thus, even the peak of the stock market bubble did not produce top fortunes larger than the one accumulated by John Rockefeller by 1918, and our top shares results suggest that there were many more wealthy individuals below him than today below Bill Gates.

6 Conclusion

This paper has presented new homogeneous series on top wealth shares from 1916 to 2000 using estate tax return data. Although many studies have analyzed wealth inequality in the United States, none had presented consistent concentration estimates over such a long period on an almost annual basis. We have found that the shocks of the Great Depression, the New Deal, and World War II, have produced a dramatic decrease in the top wealth shares. This decrease has been concentrated within the upper part of the top percentile, the top .1% of the wealth distribution, with much more modest changes for lower wealth groups within the top 1%. This evidence is consistent with the dramatic decline in top capital incomes documented in Piketty and Saez (2003). The large shocks that large wealth holders experienced in the first part of the century seem to have had a permanent effect: top wealth shares increased very modestly during the stock market booms of the 1960s and 1990s, and are much lower today than in the pre-Great Depression era. We have tentatively suggested that steep progressive income and estate taxation, by reducing the rate of wealth accumulation, may have been the most important factor

preventing large fortunes from being reconstituted.

Surprisingly, our top wealth shares series do not increase during the 1990s, a time of extraordinary stock price growth and perceived as having been extremely favorable to the creation of new fortunes. Our results are consistent with findings from the Survey of Consumer Finances (Kennickell (2003) and Scholz (2003)) which also display hardly any significant growth in wealth concentration since 1995. This absence of growth in top wealth shares are also consistent with the top income shares results from Piketty and Saez (2003) because the recent dramatic growth in top income shares has been primarily due to a surge in top labor incomes, with little growth of top capital incomes. Examination of the widely known Forbes 400 richest Americans survey shows a dramatic gain for those wealthy individuals but most of the gains are concentrated within the top 100 and in the few years of the stock market "bubble" of the late 1990s. Our composition series suggest that by 2000, the top 1% wealth holders do not hold a significantly larger fraction of their wealth in the form of stocks than the average person in the U.S. economy, explaining in part why the bull stock market of the late 1990s has not benefited disproportionately the rich.

To what extent is the U.S. experience representative of other developed countries' long run wealth concentration dynamics? Existing wealth concentration series are unfortunately very scarce and incomplete for most countries, and it is therefore very difficult to provide a fully satisfactory answer to this question. However, it is interesting to compare the U.S. top wealth series with comparable series constructed using the estate multiplier technique as well for the United Kingdom by Atkinson and Harrison (1978) and the Inland Revenue, and for France by Piketty et al. (2003). There are important similarities between the American, French, and British pattern of the top 1% wealth share displayed on Figure 13. In all three countries, top income shares fell considerably during the 1913 to 1950 period, and they were never able to come back to the very high levels observed in the early decades of the century. By the end of the century, the top 1% wealth shares are remarkably close around 22% is all three countries. It is plausible to think that in all three countries, top capital incomes have been hit by the depression and wars shocks of the first part of the century and could not recover because of the dynamic effects of progressive taxation on capital.

Some important differences among these countries should be mentioned. First, in the early decades of the twentieth century, top wealth shares were much higher in France, and especially

the United Kingdom, than in the United States. Just before the Great Depression, the top 1% share is about 40% in the United States, 50% in France, and 60% in the United Kingdom. Thus, the dramatic fall of top wealth shares that we described for the United States pales in comparison to the French and British decline. Unsurprisingly, the decline in France is much steeper during World War II, which destroyed a large fraction of the capital stock in the country. Second, in contrast to France and the United States where the top 1% wealth share has been relatively stable since the late 1940s, the top 1% wealth share continues to fall in the United Kingdom from over 45% in the 1950s to about 20% in the late 1970s.[43] Finally, the increase in the top 1% wealth share in the last decades in the United States and the United Kingdom has been of similar and modest magnitude (from less than 20% to 22-23%) but the timing has been different.[44] All of the gains occurred in the early 1980s in the United States, while all the gains happened in the late 1990s in the United Kingdom. A detailed analysis of the U.K. very top shares (such as the top .1%) and composition would be useful to understand whether this difference is driven from differences in concentration of stock ownership or in the tax systems in the two countries.

It is striking that, in both the United States and the United Kingdom, top wealth shares have increased so little in spite of a surge in top income shares. Atkinson (2002) shows that the top 1% income share increased from less than 5% in the late 1970s to over 10% in 1999 in the United Kingdom. The increase for the United States has been from less than 8% to about 16% during the same period (Piketty and Saez, 2003). Such a pattern might not last for very long because our proposed interpretation also suggests that the decline of progressive taxation observed since the early 1980s in the United States[45] and in the United Kingdom could very well spur a revival of high wealth concentration during the next few decades.

[43] Analyzing the evolution of top income and wealth taxation in the three countries more carefully could be useful to test whether taxation is the main factor driving top wealth shares.

[44] The French top wealth share does not seem to have increased at all since the early 1980s.

[45] Top income tax rates have gone down dramatically from 70% to 35% since 1981 and the U.S. estate tax is scheduled to be phased-out by 2011.

References

Aghion, Philippe and Patrick Bolton, "A Theory of Trickle-Down Growth and Development," *Review of Economic Studies*, 2003, *64*, 151–172.

Aizcobe, Ana M., Arthur B. Kennickell, and Kevin B. Moore, "Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances," *Federal Reserve Board Bulletin*, January 2003, pp. 1–32.

Atkinson, Anthony B., "Top Incomes in the United Kingdom over the Twentieth Century," 2002. Oxford Nuffield College, mimeo.

_ , "Measuring Top Incomes: Methodological Issues," 2003. Oxford Nuffield College, mimeo.

_ **and Allan J. Harrison**, *Distribution of Personal Wealth in Britian*, Cambridge: Cambridge University Press, 1978.

Bernheim, B. Douglas, Robert J. Lemke, and John Karl Scholz, "Do Estate and Gift Taxes Affect the Timing of Private Transfers?," Working Paper 8333, National Bureau of Economic Research June 2001.

Brown, Jeffrey R., Jeffrey B. Liebman, and Joshua Pollet, "Estimating Life Tables That Reflect Socioeconomic Differences in Mortality," in Martin Feldstein and Jeffrey B. Liebman, eds., *The Distributional Aspects of Social Security and Social Security Reform*, Chicago and London: The University of Chicago Press, 2002, pp. 447–457.

Cooper, George, *A Voluntary Tax? New Perspectives on Sophisticated Tax Avoidance* Studies of Government Finance, Washington D.C.: The Brookings Institution, 1979.

Eller, Martha, Brian Erard, and Chih-Chin Ho, "The Magnitude and Determinants of Federal Estate Tax Noncompliance," in William G. Gale, James R. Hines Jr., and Joel Slemrod, eds., *Rethinking Estate and Gift Taxation*, Brookings Institution Press, 2001.

Feenberg, Daniel R. and James M. Poterba, "Income Inequality and the Incomes of Very High Income Taxpayers: Evidence from Tax Returns," in James M. Poterba, ed., *Tax Policy and the Economy*, Vol. 7, Chicago: National Bureau of Economic Research; Cambridge, Mass.: MIT Press, 1993, pp. 145–177.

_ **and** _ , "The Income and Tax Share of Very High Income Households, 1960-1995," *American Economic Review*, May 2000, *90* (2), 264–270.

Goldsmith, Raymond, Dorothy Brady, and Horst Mendershausen, *A Study of Saving in the United States*, Vol. III, Princeton: Princeton University Press, 1956.

Gordon, Roger H., "Can High Personal Tax Rates Encourage Entrepreneurial Activity?," *IMF Staff Papers*, March 1998, *45* (1), 49–80.

Greenwood, Daphne, "An Estimation of U.S. Family Wealth and its Distribution from Microdata, 1973," *Review of Income and Wealth*, March 1983, *29*, 23–43.

Harris, C. Lowell, "Wealth Estimates as Affected by Audit of Estate Tax Returns," *National Tax Journal*, December 1949, *2*, 316–333.

Holtz-Eakin, Douglas and Donald Marples, "Distortion Costs of Taxing Wealth Accumulation: Income Versus Estate Taxes," Working Paper 8261, National Bureau of Economic Research April 2001.

Johnson, Barry W., "Personal Wealth, 1992-1995," *Statistics of Income Bulletin*, Winter 1997-98, pp. 70–95.

_ **and Lisa M. Schreiber**, "Personal Wealth, 1998," *Statistics of Income Bulletin*, Winter 2002-03, pp. 87–115.

_ **and Marvin Schwartz**, "Estimates of Personal Wealth, 1989," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 287–304.

_ **and R. Louise Woodburn**, "The Estate Multiplier Technique: Recent Improvements for 1989," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 391–400.

Joulfaian, David, "Gift Taxes and Lifetime Transfers: Time Series Evidence," 2003. Office of Tax Analysis and George Washington University, mimeo.

Katz, Lawrence and David Autor, "Changes in the Wage Structure and Earnings Inequality," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Amsterdam; New York: Elsevier/North Holland, 1999.

Kennickell, Arthur, "A Rolling Tide: Changes in the Distribution of Wealth in the United States, 1989-2001," 2003. Federal Reserve Board mimeo.

Kennickell, Arthur B., Martha Starr-McCluer, and Annika E. Sunden, "Family Finances in the U.S.: Recent Evidence from the Survey of Consumer Finances," *Federal Reserve Board Bulletin*, January 1997, pp. 1–24.

King, Willford I., "Wealth Distribution in the Continental United States at the Close of 1921," *Journal of the American Statistical Association*, June 1927, *22*, 135–153.

Kopczuk, Wojciech and Emmanuel Saez, "Top Wealth Shares in the United States, 1916-2000: Evidence from Estate Tax Returns," Working Paper, National Bureau of Economic Research 2003.

_ **and Joel Slemrod**, "The Impact of the Estate Tax on the Wealth Accumulation and Avoidance Behavior of Donors," in William G. Gale, James R. Hines Jr., and Joel Slemrod, eds., *Rethinking Estate and Gift Taxation*, Brookings Institution Press, 2001, pp. 299–343.

_ **and** _ , "Tax Consequences on Wealth Accumulation and Transfers of the Rich," in Alicia H. Munnell and Annika Sundén, eds., *Death and Dollars: The Role of Gifts and Bequests in America*, Brookings Institution Press, 2003, pp. 213–249.

Kuznets, Simon, "Economic Growth and Economic Inequality," *American Economic Review*, 1955, *45*, 1–28.

Lampman, Robert J., *The Share of Top Wealth-Holders in National Wealth, 1922-56*, Princeton, NJ: Princeton University Press, 1962.

Lindert, Peter, "Three Centuries of Inequality in Britain and America," in Anthony B. Atkinson and Francois Bourguignon, eds., *Handbook of Income Distribution*, Amsterdam; New York: Elsevier/North Holland, 2000, pp. 167–216.

Luckey, John R., "A History of Federal Estate, Gift and Generation-Skipping Taxes," CRS Report for Congress 95-444A, Congressional Research Service March 1995.

Mallet, Bernard, "A Method of Estimating Capital Wealth from Estate Duty Statistics," *Journal of the Royal Statistical Society*, March 1908, *71*, 65–101.

McCubbin, Janet G., "Improving Wealth Estimates Derived From Estate Tax Data," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 363–369.

McGarry, Kathleen, "Inter Vivos Transfers and Intended Bequests," *Journal of Public Economics*, September 1999, *73* (3), 321–51.

Piketty, Thomas, "Income Inequality in France, 1901-1998," *Journal of Political Economy*, 2003, *111*. Forthcoming.

_ **and Emmanuel Saez**, "Income Inequality in the United States, 1913-1998," *Quarterly Journal of Economics*, February 2003, *118*, 1–39.

_ **, Gilles Postel-Vinay, and Jean-Laurent Rosenthal**, "Wealth Concentration in a Developing Economy: Paris and France, 1807-1994," 2003. EHESS and UCLA, mimeo.

Poterba, James M., "The Estate Tax and After-Tax Investment Returns," in Joel Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich*, New York: Harvard University Press and Russell Sage Foundation, 2000.

_ , "Estate and Gift Taxes and Incentives for Inter Vivos Giving in the US," *Journal of Public Economics*, January 2001, *79* (1), 237–64.

Scheuren, Fritz and Janet McCubbin, "Piecing Together Personal Wealth Distributions," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 371–390.

Schmalbeck, Richard, "Avoiding Federal Wealth Transfer Taxes," in William G. Gale, James R. Hines Jr., and Joel Slemrod, eds., *Rethinking Estate and Gift Taxation*, Brookings Institution Press, 2001.

Scholz, John Karl, "Wealth Inequality and the Wealth of Cohorts," 2003. University of Wisconsin, mimeo.

Schwartz, Marvin, "Estimates of Personal Wealth, 1986," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 255–270.

_ **and Barry W. Johnson**, "Estimates of Personal Wealth, 1986," in Barry W. Johnson, ed., *Barry W. Johnson, ed.*, Department of Treasury, Internal Revenue Service, Pub. 1773 (4-94), 1994, pp. 255–270.

Smith, James D., "Trends in the Concentration of Personal Wealth in the United States, 1958-1976," *Review of Income and Wealth*, 1984, *30*, 419–428.

_ **and Stephen Franklin**, "The Concentration of Personal Wealth, 1922-1969," *American Economic Review*, 1974, *64* (2), 162–167.

Smith, James P., "Healthy Bodies and Thick Wallets: The Dual Relation Between Health and Economic Status," *Journal of Economic Perspectives*, Spring 1999, *13* (2), 145–66.

Stewart, Charles, "Income Capitalization as a Method of Estimating the Distribution of Wealth by Size Group," in "Studies in Income and Wealth," New York: National Bureau of Economic Research, 1939. Volume 3.

U.S. Treasury Department, Internal Revenue Service, "Statistics of Income: Estate and Gift Tax Returns," various years. Washington, D.C.

Wolff, Edward N., "Trends in Aggregate Household Wealth in the United States, 1900-1983," *Review of Income and Wealth*, March 1989, *35* (1), 1–29.

_ , *Top Heavy — The Increasing Inequality of Wealth in America*, The Twentieth Century Fund, 1994.

_ , "Discussant's Comments on Douglas Holtz-Eakin, 'The Uneasy Case for Abolishing the Estate Tax'," *Tax Law Review*, 1996, *51* (3), 517–22.

_ **and Marcia Marley**, "Long-Term Trends in U.S. Wealth Inequality: Methodological Issues and Results," in Robert E. Lipsey and Helen Stone Tice, eds., *The Measurement of Saving, Investment and Wealth*, Vol. 52 of *National Bureau of Economic ResearchStudies in Income and Wealth*, Chicago and London: University of Chicago Press, 1989, pp. 765–839.

Zabel, William D., *The Rich Die Richer and You Can Too*, Morrow, William and Co, 1995.

Table 1: Reference Totals for Population, Wealth, and Inflation, 1916-2002

	Adult population		Personal Wealth		Wealth Composition (in percent)						Inflation
	(1) Population (aged 20+) ('000s)	(2) Population covered by estate tax returns	(3) Total Wealth (billions 2000 $)	(4) Average Wealth (2000 $)	(5) Real Estate and Durables	(6) Fixed Claim Assets	(7) Corporate Equity	(8) Non-Corp. Equity	(9) Life Insurance Reserves	(10) Liabilities	(11) CPI-U (2000 base)
1916	60,063	0.454%	3,011	50,127	24.2	19.5	21.1	38.4	2.7	-5.7	6.324
1917	60,914	0.482%	2,770	45,481	26.5	20.3	17.8	38.4	2.7	-5.7	7.425
1918	60,477	0.571%	2,621	43,346	28.4	21.2	15.3	38.0	2.6	-5.6	8.716
1919	61,758	0.718%	2,709	43,868	29.2	20.5	15.6	37.3	2.3	-5.0	10.015
1920	63,117	0.770%	2,494	39,521	31.2	20.9	14.4	36.2	2.3	-5.0	11.598
1921	64,360	0.718%	2,667	41,432	31.4	23.1	14.3	34.1	2.6	-5.6	10.357
1922	65,237	0.716%	2,895	44,374	29.4	23.9	16.9	32.9	2.7	-5.8	9.704
1923	66,498	0.705%	3,000	45,110	29.8	23.7	17.7	32.2	2.8	-6.2	9.879
1924	67,945	0.734%	3,136	46,153	30.7	23.6	18.4	31.3	3.1	-7.0	9.899
1925	69,137	0.738%	3,298	47,709	30.1	22.8	20.7	30.6	3.2	-7.5	10.146
1926	70,348	0.763%	3,471	49,342	29.9	22.4	22.5	29.9	3.3	-8.0	10.248
1927	71,615	0.389%	3,796	53,005	28.9	21.8	25.2	29.1	3.4	-8.3	10.053
1928	72,882	0.399%	4,314	59,191	26.8	20.2	29.6	28.2	3.3	-8.1	9.922
1929	74,112	0.430%	4,773	64,401	25.1	19.0	34.6	26.1	3.2	-8.1	9.922
1930	75,505	0.380%	4,281	56,701	28.4	21.9	27.6	27.5	3.9	-9.2	9.674
1931	76,620	0.296%	3,892	50,792	31.1	25.7	20.8	27.6	5.0	-10.2	8.823
1932	77,683	0.416%	3,548	45,674	33.4	30.7	13.4	27.5	6.3	-11.4	7.914
1933	78,764	0.420%	3,785	48,052	31.4	29.7	14.8	27.7	6.5	-10.2	7.510
1934	79,915	0.423%	3,917	49,016	30.0	27.4	16.9	28.3	6.4	-9.0	7.766
1935	81,064	0.544%	4,054	50,006	28.8	25.7	18.4	29.2	6.5	-8.5	7.960
1936	82,156	0.608%	4,535	55,205	26.6	22.6	22.0	30.3	6.1	-7.6	8.040
1937	83,216	0.618%	4,417	53,080	28.2	22.2	20.4	30.3	6.4	-7.5	8.329
1938	84,344	0.604%	4,365	51,758	30.3	22.7	17.7	30.1	6.9	-7.8	8.171
1939	85,486	0.620%	4,570	53,464	30.2	21.8	18.1	30.4	7.0	-7.6	8.056
1940	86,832	0.620%	4,627	53,288	31.3	22.6	16.3	29.8	7.3	-7.5	8.137
1941	88,173	0.657%	4,610	52,287	32.9	24.4	13.4	28.9	7.6	-7.2	8.544
1942	89,560	0.663%	4,550	50,802	33.0	25.8	11.8	28.5	7.4	-6.6	9.458
1943	90,999	0.552%	4,867	53,485	31.4	26.8	12.1	28.5	7.0	-5.8	10.035
1944	92,376	0.700%	5,408	58,543	29.8	27.8	12.7	28.2	6.6	-5.2	10.205
1945	93,697	0.827%	6,025	64,306	27.7	28.3	14.4	28.0	6.1	-4.6	10.440
1946	94,933	1.176%	6,221	65,533	27.3	28.0	14.5	29.0	5.9	-4.6	11.328
1947	96,183	1.303%	5,918	61,526	29.4	26.7	12.7	30.7	5.9	-5.3	12.959
1948	97,552	1.341%	5,884	60,320	31.7	25.3	11.6	31.5	5.8	-6.0	13.969
1949	98,941	1.410%	6,233	62,993	33.6	24.4	11.5	31.2	5.9	-6.6	13.830
1950	100,224	1.494%	6,567	65,524	35.3	23.4	12.5	30.3	5.8	-7.4	13.968
1951	101,452		6,638	65,431	36.5	22.1	13.8	29.7	5.6	-7.8	15.072
1952	102,626		6,928	67,507	37.5	21.9	14.1	29.2	5.6	-8.3	15.403
1953	103,611	1.884%	7,101	68,539	39.0	22.6	13.5	28.5	5.6	-9.1	15.526
1954	104,623	1.861%	7,432	71,036	39.4	22.5	14.9	27.3	5.6	-9.7	15.604
1955	105,603		8,037	76,109	39.2	22.1	17.8	25.8	5.4	-10.4	15.542
1956	106,687	2.266%	8,483	79,514	39.5	22.1	19.2	24.9	5.3	-11.0	15.775
1957	107,748		8,522	79,090	40.5	22.5	18.4	24.9	5.3	-11.5	16.343
1958	108,710	2.611%	8,761	80,595	40.3	22.4	19.2	24.5	5.2	-11.7	16.784
1959	110,223		9,303	84,398	39.4	22.3	21.6	23.6	5.1	-12.0	16.918
1960	111,314	2.950%	9,526	85,579	39.7	22.8	22.0	23.1	5.1	-12.7	17.189
1961	112,450		9,978	88,733	39.1	22.8	23.4	22.6	5.0	-13.0	17.361

1962	113,754	2.700%	10,382	91,268	38.7	23.0	24.2	22.4	5.0	-13.4	17.552
1963	115,096		10,614	92,215	39.0	23.8	24.2	22.2	5.0	-14.3	17.762
1964	116,796		11,108	95,103	38.5	24.2	25.7	21.5	4.9	-14.9	17.993
1965	118,275	2.923%	11,737	99,231	37.5	24.2	27.5	21.1	4.8	-15.2	18.299
1966	119,724		11,963	99,918	38.0	24.9	26.4	21.4	4.8	-15.6	18.830
1967	121,143		12,425	102,562	38.1	25.3	26.2	21.2	4.7	-15.6	19.376
1968	123,507		13,343	108,037	37.3	24.6	28.5	20.2	4.4	-15.0	20.190
1969	125,543	4.069%	13,447	107,108	38.6	25.0	26.9	20.4	4.3	-15.1	21.280
1970	127,674		13,026	102,028	40.3	26.2	23.7	20.9	4.4	-15.5	22.535
1971	130,774		13,420	102,619	40.2	26.4	23.5	21.0	4.2	-15.3	23.527
1972	133,502	5.343%	14,606	109,410	39.6	25.8	25.0	20.7	4.0	-15.1	24.280
1973	136,006		14,885	109,446	41.4	26.1	22.4	21.9	3.8	-15.6	25.785
1974	138,444		13,574	98,048	44.4	28.2	15.6	24.8	4.0	-17.0	28.621
1975	141,055		13,232	93,809	45.1	29.1	13.4	25.7	4.0	-17.3	31.226
1976	143,609	6.517%	14,136	98,433	44.5	28.3	15.2	25.1	3.7	-16.8	33.037
1977	146,305		14,686	100,378	46.0	28.1	14.2	25.5	3.5	-17.3	35.185
1978	149,142		15,125	101,413	48.2	28.0	12.1	26.4	3.4	-18.1	37.859
1979	152,105		15,518	102,022	49.1	27.5	11.8	26.8	3.1	-18.3	42.137
1980	155,268		15,701	101,122	48.8	26.8	12.8	26.7	2.9	-17.9	47.825
1981	158,033		15,739	99,594	49.2	26.9	12.3	26.5	2.7	-17.6	52.751
1982	160,665	1.966%	15,803	98,360	49.6	27.8	11.5	25.9	2.6	-17.5	56.022
1983	163,135	1.800%	16,275	99,767	48.8	29.1	12.1	24.9	2.6	-17.5	57.814
1984	165,650	1.483%	16,737	101,040	49.5	30.7	11.8	23.5	2.5	-18.0	60.300
1985	168,205	1.178%	17,700	105,231	50.7	32.0	11.9	21.7	2.3	-18.7	62.471
1986	170,556	1.147%	19,199	112,570	50.8	32.7	13.2	20.4	2.2	-19.3	63.658
1987	172,552	1.125%	20,086	116,408	50.9	33.3	13.4	19.7	2.2	-19.5	65.950
1988	174,344	1.046%	20,902	119,890	50.9	33.7	13.5	19.2	2.2	-19.4	68.654
1989	176,060	1.192%	21,736	123,460	50.5	33.2	14.9	18.5	2.2	-19.3	71.949
1990	178,365	1.305%	21,588	121,034	50.7	33.6	15.1	18.3	2.3	-20.0	75.834
1991	180,978	1.312%	21,630	119,519	49.9	33.8	16.6	17.7	2.4	-20.4	79.019
1992	183,443	1.371%	22,186	120,942	49.0	32.8	19.5	16.6	2.4	-20.3	81.390
1993	185,685	1.502%	22,478	121,053	48.8	31.9	21.4	16.1	2.5	-20.6	83.832
1994	187,757	1.541%	22,619	120,472	48.7	31.7	22.0	16.2	2.6	-21.3	86.011
1995	189,911	1.599%	23,407	123,251	47.8	30.8	24.1	16.2	2.6	-21.5	88.419
1996	192,043	1.843%	24,908	129,698	45.7	29.2	27.9	15.6	2.6	-21.0	91.072
1997	194,426	1.953%	26,847	138,082	43.3	27.7	31.9	15.0	2.5	-20.4	93.167
1998	196,795	2.048%	29,306	148,916	41.6	26.2	35.1	14.4	2.5	-19.8	94.657
1999	199,255	2.198%	32,183	161,519	40.0	25.0	38.3	13.5	2.4	-19.2	96.740
2000	201,865	2.108%	32,936	163,161	41.2	24.8	37.9	13.5	2.4	-19.8	100.000
2001	204,323		31,510	154,217	45.6	26.5	33.0	14.2	2.6	-21.8	102.846
2002	206,811		30,194	146,000	50.8	28.8	26.9	14.9	2.9	-24.2	104.472

Notes: Population estimates based on census data from Historical Statistics of the United States and the U.S. Statistical Abstract.

Population covered by tax returns is defined by the population represented, using the multiplier technique, by estate tax returns with net worth above the filing threshold.

Total wealth is defined as net worth of the personal sector excluding all future social security benefits and human wealth but including life insurance reserves.

Only the cash surrender value of pension reserves is included (such as vested defined contribution and 401(k) accounts).

The series is estimated from the Flow of Funds Accounts since 1945 and from several other sources before 1945. The series estimate average wealth during the corresponding year (and not end of year estimates). Wealth composition column reports the percent shares of tangible assets (owner occupied real estate, consumer durables) , fixed claim assets (cash and saving deposits, all bonds, mortgages), corporate equity, non-corporate equity (which includes tenant occupied net real estate), and life insurance reserves. Liabilities include all debts (mortgages and consumer credit). Columns (5) to (10) add up to 100%.

The Consumer Price Index (CPI) series is used to express all nominal values into real 2000 dollars.

All details are provided in the appendices of Kopczuk and Saez (2003).

Table 2

Thresholds and Average Wealth in Top Groups within the Top 2% in 2000

Percentiles (1)	Wealth Threshold (2)	Upper Groups (3)	Number of individuals (4)	Average Wealth (5)
		Full Population	201,865,000	$163,161
2.00%	$748,813	Top 2-1%	2,018,650	$937,538
1.00%	$1,177,044	Top 1-0.5%	1,009,325	$1,484,069
0.50%	$1,864,941	Top 0.5-0.25%	504,663	$2,339,389
0.25%	$3,096,786	Top 0.25-0.1%	302,798	$4,088,109
0.10%	$5,749,004	Top 0.1-0.05%	100,933	$7,185,003
0.05%	$8,936,712	Top 0.05-0.01%	80,746	$13,336,188
0.01%	$24,848,243	Top 0.01%	20,187	$62,324,643

Notes: Computations based on estate tax return statistics (see Appendices in Kopczuk and Saez, 2003).
Wealth defined as total assets less liabilities. It excludes annuitized wealth, and future pensions
with no cash surrender value, future labor income and social security benefits. Amounts are expressed in 2000 dollars.
Source: dollar values can be obtained with straightforward computations from Table 1 and Table 3, row 2000.

Table 3: Top Wealth Shares in the United States, 1916-2000

	Top groups							Intermediate Groups					
	2%	1%	0.50%	0.25%	0.10%	0.05%	0.01%	2-1%	1-.5%	.5-.25%	.25-.1%	.1-.05%	.05-.01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7)	(8)	(9)	(10)		(11)
1916		38.12	32.67	27.44	21.03	16.90	9.69		5.45	5.23	6.40	4.13	7.21
1917		35.58	30.17	25.15	19.31	15.47	8.85		5.41	5.02	5.84	3.84	6.62
1918		36.80	31.17	25.97	20.02	16.11	9.49		5.63	5.19	5.96	3.91	6.63
1923		39.93	33.82	28.42	22.39	18.38	11.32		6.11	5.40	6.03	4.01	7.06
1920		37.61	31.65	26.29	20.36	16.61	10.07		5.96	5.35	5.93	3.75	6.54
1921		35.22	29.12	23.68	17.54	13.68	7.48		6.10	5.43	6.15	3.86	6.20
1922		36.02	29.81	24.11	17.55	13.39	6.38		6.21	5.70	6.55	4.17	7.00
1923		35.22	29.49	24.13	17.80	13.66	6.84		5.73	5.35	6.34	4.14	6.82
1924		36.70	30.85	25.39	19.00	14.95	8.23		5.85	5.46	6.39	4.05	6.72
1925		36.02	30.08	24.77	18.45	14.55	7.79		5.94	5.32	6.31	3.90	6.76
1926		35.15	29.75	24.46	18.41	14.59	8.26		5.40	5.29	6.05	3.82	6.33
1927		39.21	33.19	27.72	21.28	17.19	10.16		6.02	5.46	6.45	4.09	7.03
1928		36.50	31.03	25.93	19.70	15.62	8.87		5.47	5.10	6.23	4.08	6.75
1929		36.76	31.84	26.91	20.80	16.65	9.15		4.92	4.93	6.11	4.16	7.49
1930		40.29	34.47	29.17	22.85	18.71	10.77		5.82	5.31	6.31	4.15	7.94
1931		34.70	29.47	24.63	18.77	14.87	8.25		5.23	4.84	5.85	3.90	6.62
1932		28.40	24.04	19.75	14.68	11.50	6.03		4.36	4.28	5.07	3.18	5.47
1933		30.31	25.80	21.46	16.28	12.91	6.91		4.51	4.34	5.18	3.37	6.00
1934		28.09	23.84	19.76	14.94	11.89	6.57		4.24	4.08	4.83	3.04	5.32
1935		27.77	23.76	19.69	14.98	11.88	6.54		4.01	4.08	4.71	3.10	5.34
1936		29.70	25.51	21.47	16.63	13.30	7.25		4.19	4.04	4.83	3.33	6.05
1937		26.97	22.64	18.73	14.22	11.37	6.14		4.32	3.91	4.52	2.85	5.23
1938		27.06	22.70	18.70	14.13	11.21	6.11		4.36	4.00	4.57	2.93	5.10
1939		25.95	21.59	17.65	13.18	10.40	5.56		4.36	3.94	4.47	2.78	4.84
1940		25.27	20.83	16.87	12.42	9.67	4.96		4.44	3.96	4.45	2.75	4.71
1941		25.30	20.74	16.71	12.35	9.67	5.02		4.56	4.03	4.37	2.67	4.65
1942		23.74	19.34	15.48	11.31	8.69	4.13		4.40	3.85	4.17	2.63	4.56
1943		24.26	19.46	15.35	10.96	8.35	4.23		4.80	4.11	4.39	2.62	4.11
1944		25.49	20.35	16.00	11.40	8.64	4.31		5.14	4.35	4.60	2.76	4.33
1945		24.65	19.38	15.05	10.54	7.92	3.69		5.27	4.33	4.51	2.62	4.23
1946	30.90	24.49	19.06	14.70	10.28	7.61	3.84	6.41	5.43	4.36	4.42	2.67	3.78
1947	31.07	24.28	18.81	14.57	10.26	7.76	4.07	6.79	5.46	4.25	4.30	2.50	3.69
1948	29.67	23.04	17.69	13.54	9.45	7.04	3.65	6.63	5.35	4.15	4.09	2.41	3.39
1949	29.42	22.59	17.25	13.08	9.03	6.69	3.33	6.83	5.34	4.17	4.04	2.35	3.36
1950	29.53	22.78	17.49	13.34	9.24	6.96	3.49	6.75	5.28	4.15	4.10	2.27	3.48
1953	30.91	23.77	18.26	13.95	9.73	7.31	3.60	7.14	5.52	4.31	4.22	2.42	3.72
1954	29.99	23.18	17.89	13.71	9.60	7.31	3.74	6.81	5.30	4.18	4.11	2.29	3.56
1956	31.49	24.75	19.25	14.89	10.48	7.93	3.99	6.74	5.50	4.35	4.41	2.55	3.94
1958	31.19	24.18	18.64	14.35	10.06	7.69	4.15	7.01	5.55	4.29	4.28	2.38	3.54
1960	32.45	25.25	19.50	15.02	10.53	7.99	4.14	7.21	5.75	4.48	4.49	2.54	3.85
1962	31.01	24.39	19.06	14.74	10.36	7.88	4.03	6.61	5.33	4.32	4.38	2.47	3.86
1965	30.75	24.70	19.59	15.35	10.85	8.27	4.41	6.05	5.10	4.25	4.50	2.58	3.86
1969	29.11	22.86	17.84	13.84	9.87	7.64	4.34	6.25	5.02	4.00	3.98	2.22	3.30
1972	29.52	23.13	18.06	14.03	9.89	7.47	3.99	6.39	5.07	4.02	4.14	2.42	3.48
1976	25.67	19.32	14.52	10.91	7.45	5.63	2.91	6.35	4.80	3.61	3.46	1.83	2.72
1982	25.17	19.06	14.36	10.79	7.33	5.40	2.53	6.11	4.70	3.56	3.47	1.93	2.87
1983	26.96	21.07	15.93	12.06	8.40	6.40	3.19	5.89	5.15	3.87	3.66	1.99	3.21
1984	26.57	20.95	16.23	12.23	8.60	6.62	3.51	5.62	4.72	4.00	3.63	1.99	3.10
1985	28.49	22.35	17.43	13.49	9.45	7.25	4.09	6.14	4.92	3.95	4.04	2.20	3.16
1986	28.80	22.66	17.62	13.63	9.61	7.37	3.91	6.14	5.03	4.00	4.02	2.23	3.46
1987	27.78	21.57	16.66	12.79	8.98	6.73	3.44	6.22	4.91	3.88	3.80	2.25	3.29
1988	27.77	21.70	16.85	12.92	8.95	6.80	3.60	6.07	4.86	3.93	3.97	2.15	3.21
1989	28.04	21.96	17.02	13.13	9.30	7.11	3.79	6.08	4.94	3.89	3.83	2.19	3.32
1990	27.39	20.86	15.95	12.21	8.73	6.78	3.63	6.53	4.91	3.74	3.48	1.95	3.15
1991	27.73	21.54	16.56	12.73	8.95	6.79	3.55	6.20	4.98	3.83	3.78	2.16	3.24
1992	27.23	21.18	16.34	12.66	8.99	6.88	3.72	6.06	4.84	3.68	3.67	2.12	3.16
1993	27.51	21.30	16.32	12.44	8.69	6.72	3.76	6.21	4.98	3.89	3.75	1.97	2.96
1994	28.08	21.58	16.62	12.83	9.00	6.96	3.86	6.50	4.96	3.79	3.84	2.04	3.11
1995	27.76	21.56	16.68	12.92	9.30	7.24	3.99	6.20	4.88	3.76	3.62	2.07	3.24
1996	27.92	21.62	16.63	12.78	9.12	7.01	3.86	6.30	4.99	3.85	3.66	2.11	3.15
1997	27.47	21.41	16.54	12.67	9.00	6.98	3.81	6.06	4.87	3.87	3.66	2.03	3.17
1998	27.86	21.86	16.99	13.17	9.44	7.34	3.98	6.01	4.87	3.81	3.74	2.09	3.36
1999	27.73	21.74	16.93	13.22	9.44	7.30	3.90	5.99	4.82	3.70	3.78	2.14	3.40
2000	26.93	21.18	16.63	13.05	9.29	7.09	3.82	5.75	4.55	3.58	3.76	2.20	3.27

Notes: Computations by authors based on estate tax return statistics.
Series display the share of total net-worth accruing to each upper wealth group.
Series for Top 2-1% are estimated only for the 1946-2000 period because the tax return population does not cover that group in the pre-war period.
See the appendices of Kopczuk and Saez (2003) for details.

Table 4: Wealth and Demographic Composition of Top 0.5% Wealth Holders, 1916-2000

	A. Wealth Composition							B. Demographic Composition							
	Real Estate	Fixed Claim Assets	Corporate Stock	Life Insurance	Other	Debts		Average Age	% Female	Female % Married	Female % Widows	Female % Single	Male % Married	Male % Widowers	Male % Single
1916	28.1	35.5	36.4	0.3	7.8	-8.1	1916		24.9						
1917	29.5	32.3	39.9	0.4	6.2	-8.2	1917		27.2						
1918	27.7	33.3	40.1	0.5	8.3	-10.0	1918		26.5						
1919	25.1	29.9	45.3	1.0	9.2	-10.4	1919	55.6	24.5						
1920	24.2	28.1	49.4	1.3	8.8	-11.7	1920	55.2	22.8						
1921	29.9	32.1	42.1	2.0	7.7	-13.7	1921	55.4	23.7						
1922	27.3	32.5	44.0	2.4	7.2	-13.6	1922	55.2	25.8						
1923	25.7	30.6	46.5	2.5	6.9	-12.2	1923	55.9	28.1						
1924	22.5	33.2	45.1	2.4	7.3	-10.6	1924	55.8	26.8						
1925	21.9	31.3	46.7	2.3	8.2	-10.3	1925	55.8	25.6	38.1	41.7	20.2	73.1	9.9	17.0
1926							1926	55.6	27.4	39.5	41.6	19.0	73.6	10.8	15.7
1927	18.7	28.5	54.7	2.4	6.4	-10.7	1927	54.9	25.0	42.8	39.9	17.3	77.6	9.7	12.8
1928	17.4	24.1	58.1	2.2	7.9	-9.7	1928	54.9	23.7	40.3	41.8	17.9	76.9	9.6	13.5
1929	15.6	26.6	58.9	1.6	8.1	-10.7	1929	54.6	27.2	40.3	41.4	18.3	75.8	9.8	14.5
1930	15.3	29.1	58.1	2.4	7.4	-12.4	1930	54.5	24.9	40.7	38.9	20.4	78.6	8.3	13.1
1931	17.5	34.4	48.3	4.0	8.0	-12.1	1931	54.6	22.7	42.9	40.5	16.6	80.3	8.2	11.5
1932	19.1	38.6	42.5	5.1	16.8	-22.0	1932	55.9	29.7	40.0	42.1	17.9	73.1	11.2	15.7
1933	19.4	40.4	41.9	4.9	9.2	-15.8	1933	56.4	31.6	38.5	44.9	16.6	72.8	11.3	15.8
1934	17.7	38.5	46.8	4.5	9.4	-17.0	1934	56.7	33.7	40.1	42.3	17.6	72.2	11.1	16.7
1935	15.8	38.7	43.8	4.3	9.4	-12.0	1935	57.0	36.6	37.1	42.7	20.2	69.7	11.8	18.4
1936	14.1	36.3	50.3	2.0	6.8	-9.6	1936	56.8	34.5	34.9	45.0	20.0	72.0	11.2	16.9
1937	15.8	36.3	48.9	2.1	7.4	-10.5	1937	57.6	36.6	37.7	41.9	20.4	72.1	11.1	16.8
1938	15.2	35.5	45.7	3.0	9.0	-8.4	1938	57.5	34.7	36.5	42.7	20.9	71.6	10.7	17.7
1939	14.9	34.1	49.3	3.2	7.1	-8.7	1939	57.6	35.7	38.0	44.1	17.8	70.2	10.8	18.9
1940	16.6	34.4	45.0	3.2	9.3	-8.5	1940	57.7	36.2	36.9	41.6	21.5	73.5	10.3	16.2
1941	20.9	40.6	45.3	1.3	6.2	-14.3	1941	57.7	36.9	35.3	44.5	20.2	73.7	9.9	16.4
1942	20.3	35.7	49.4	1.2	6.5	-13.1	1942	56.9	37.2	36.9	42.6	20.5	72.0	9.9	18.1
1943	19.4	35.1	50.2	1.4	7.9	-14.0	1943	55.8	33.3	39.1	40.7	20.3	74.2	8.5	17.3
1944	15.2	31.9	46.3	3.2	9.7	-6.3	1944	54.3	31.0	40.4	40.3	19.3	72.7	8.0	19.4
1945							1945	55.4	31.9	40.7	40.4	18.9	76.3	7.7	15.9
1946	18.9	32.7	46.9	0.8	7.1	-6.5	1946								
1947	19.4	32.9	46.1	0.8	7.7	-6.8	1947								
1948	19.9	32.4	46.0	0.9	7.9	-7.0	1948	54.7	35.9						
1949	20.5	31.1	46.7	0.9	8.2	-7.2	1949	55.0	35.5						
1950	20.3	31.0	47.4	0.8	8.2	-7.7	1950	55.2	36.4						
1953	17.8	26.4	52.9	0.7	8.5	-6.3	1953	54.9	37.2						
1954	17.4	25.2	53.9	0.7	8.9	-6.0	1954								
1956	16.2	24.0	56.6	0.6	8.5	-5.9	1956								
1958	16.6	22.7	57.5	0.5	8.6	-6.0	1958	56.3	38.1						
1960	14.7	22.0	60.6	0.5	7.5	-5.3	1960								
1962	14.6	19.8	62.0	1.0	9.7	-7.1	1962	58.7	40.5	44.7	38.7	16.7	81.6	6.9	11.5
1965	14.5	22.1	63.4	0.9	4.1	-4.9	1965		42.1						
1969	17.1	21.2	58.0	1.4	12.5	-10.2	1969	59.6	40.9	43.5	38.7	17.8	82.5	7.0	10.5
1972	18.8	21.9	56.5	1.3	10.3	-8.7	1972	58.3	44.5	40.0	39.5	20.5	80.2	7.9	11.8
1976	24.4	27.4	44.5	1.4	12.3	-10.1	1976	61.0	41.8	36.6	45.1	18.4	81.7	7.0	11.3
1982	31.2	22.4	35.3	1.8	19.3	-10.1	1982	58.7	41.9	48.4	35.7	15.9	80.8	6.7	12.6
1983	28.6	23.1	36.1	2.1	19.1	-9.1	1983	60.0	35.8	51.4	34.7	13.9	87.8	6.2	6.0
1984	31.7	23.8	37.6	1.7	17.8	-12.6	1984	59.0	48.3	64.1	23.9	12.0	80.7	6.1	13.2
1985	25.6	23.5	40.6	1.7	17.7	-9.1	1985	58.5	39.5	45.4	33.1	21.4	79.3	5.7	15.0
1986	24.4	22.8	41.5	1.6	19.0	-9.2	1986	58.2	42.5	49.1	33.2	17.7	75.2	6.1	18.7
1987	25.3	23.4	36.5	2.0	21.4	-8.6	1987	59.1	37.0	54.1	33.5	12.4	78.6	6.3	15.1
1988	28.0	24.9	35.4	2.6	17.6	-8.5	1988	58.5	42.4	46.9	29.9	23.2	77.1	5.3	17.5
1989	28.1	23.7	31.8	1.8	22.9	-8.3	1989	58.1	42.3	55.1	28.7	16.2	73.2	5.8	21.0
1990	26.2	28.2	30.2	1.6	21.9	-8.1	1990	58.2	45.2	53.9	30.3	15.9	72.7	6.5	20.8
1991	24.0	27.4	35.2	1.7	19.8	-8.1	1991	57.6	43.0	47.4	29.6	23.1	71.7	6.4	21.9
1992	24.1	27.8	36.4	1.7	18.0	-8.0	1992	58.4	42.1	47.3	31.0	21.7	73.2	5.5	21.3
1993	19.6	28.9	38.5	1.8	17.5	-6.4	1993	55.7	44.3	46.2	31.3	22.5	72.9	5.5	21.6
1994	21.1	29.3	37.2	1.6	17.6	-6.8	1994	57.1	42.7	51.5	28.8	19.7	67.9	5.1	27.0
1995	23.6	24.6	39.0	1.5	17.6	-6.4	1995	58.2	45.7	48.2	26.7	25.2	76.0	6.6	17.4
1996	19.7	24.1	43.1	1.5	18.0	-6.5	1996	56.5	41.3	48.7	28.5	22.7	66.9	6.7	26.4
1997	18.6	23.4	45.0	1.4	17.7	-6.0	1997	56.8	43.1	46.5	29.3	24.2	69.2	6.6	24.2
1998	17.9	23.9	48.7	1.5	13.9	-5.9	1998	57.6	44.6	47.9	28.8	23.3	72.3	7.0	20.6
1999	18.1	22.9	44.9	1.1	18.5	-5.5	1999	57.4	44.4	49.9	25.6	24.5	68.7	5.6	25.8
2000	20.5	20.0	43.7	1.1	21.1	-6.6	2000	59.5	39.2	51.2	27.5	21.3	67.1	6.6	26.3

Notes: Wealth is defined as all sources of (non-human) wealth net of debts and liabilities but excludes annuities, and claims on future pensions.
The sums of all sources less debts add up to 100%. See the appendices of Kopczuk and Saez (2003) for details.

Table 5: Comparing Top 1% Wealth Share with Previous Estimates

Author	Kopczuk-Saez	Lampman (1962)	Smith (1984)	Wolff-Marley (1989)	Wolff (1995)	Scholz (2003)
Unit	Adults	Adults	Individuals	Individuals	Households	Households
Data	Estates	Estates	Estates	Patched Estates	Patched SCF-Estates	SCF
Wealth	Net Worth	Net Worth	Net Worth	Total Assets	Net Worth	Net Worth
	(1)	(2)	(3)	(4)	(5)	(6)
1922	36.02	31.6		34.0	36.7	
1929	36.76	36.3		37.2	44.2	
1933	30.31	28.3		31.3	33.3	
1939	25.95	30.6		38.1	36.4	
1945	24.65	23.3		28.9	29.8	
1949	22.59	20.8		25.7	27.1	
1953	23.77	24.3		28.1	31.2	
1954	23.18	24.0				
1956	24.75	26.0				
1958	24.18		26.6	27.0		
1962	24.39		28.2	30.1	31.8	31.6
1965	24.70		25.4	31.9	34.4	
1969	22.86		27.4	29.0	31.1	
1972	23.13		21.9	28.6	29.1	
1976	19.32		19.2	18.9	19.9	
1983	21.07				30.9	31.5
1986	22.66				31.9	
1989	21.96				35.7	30.0
1992	21.18					30.0
1995	21.56					35.3
1998	21.86					34.1
2000	21.18					
2001						32.3

Notes: Lampman (1962), Table 94, p. 204, estimates are based on all estate tax returns filers and Pareto interpolation to optain top 1% share.
Smith (1984), Table 1, p. 422, ranks individuals by total assets (not net worth) and defines top 1% group relative to total population (not only adults), and reports share of net-worth for this group.
Wolff-Marley (1989), Table 6, p. 786, row W2, completed and corrected in Wolff (1995), Table A1, pp. 78-79, col. (1), "Wolff-Marley series". Top 1% defined relative to total population (not only adults). Estimates based on previous estimates by Lampman (1962) and Smith (1984).
Wolff (1995), Table A1, pp. 78-79, col. (6) "New Household Series" based on previous "Wolff-Marley" series and SCF estimations.
Scholz (2003) based on SCF data. See the appendices of Kopczuk and Saez (2003) for details.

Table 6: Very Top Shares from Forbes 400 Richest Americans

			Very Top Wealth Shares			Ratio to Average Wealth			Top Estate Share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Forbes 400 Total Wealth (billions 2000 $)	Forbes 400 Average Wealth (millions 2000 $)	Top .0002% (top 404 in 2000)	Top .00005% (top 101 in 2000)	Top .0002-.00005% (rank 102 to 404 in 2000)	Top .0002% (top 404 in 2000)	Top .00005% (top 101 in 2000)	Top .0002-.00005% (rank 102 to 404 in 2000)	Top .01% Share (top 20,000 in 2000)
1982	164.2	411	0.984	0.521	0.510	4,922	10,414	3,400	2.525
1983	204.1	510	1.187	0.593	0.593	5,933	11,864	3,957	3.194
1984	207.3	518	1.165	0.595	0.570	5,826	11,909	3,799	3.514
1985	214.5	536	1.153	0.567	0.586	5,763	11,335	3,905	4.085
1986	245.1	613	1.217	0.628	0.589	6,084	12,560	3,926	3.913
1987	333.6	834	1.603	0.856	0.747	8,017	17,129	4,979	3.438
1988	320.4	801	1.486	0.797	0.689	7,430	15,946	4,592	3.596
1989	373.1	933	1.670	0.885	0.785	8,349	17,702	5,232	3.791
1990	359.5	899	1.635	0.868	0.767	8,173	17,360	5,110	3.631
1991	363.4	909	1.658	0.932	0.726	8,291	18,649	4,839	3.549
1992	369.3	923	1.655	0.946	0.709	8,277	18,930	4,726	3.715
1993	390.6	977	1.735	1.000	0.735	8,676	20,001	4,901	3.761
1994	405.2	1,013	1.799	1.049	0.750	8,994	20,976	5,001	3.857
1995	446.0	1,115	1.923	1.142	0.781	9,614	22,841	5,205	3.993
1996	514.0	1,285	2.089	1.221	0.868	10,444	24,424	5,785	3.859
1997	669.5	1,674	2.537	1.552	0.985	12,687	31,042	6,569	3.808
1998	779.3	1,948	2.715	1.751	0.965	13,577	35,017	6,431	3.976
1999	1033.0	2,582	3.286	2.268	1.018	16,429	45,355	6,787	3.903
2000	1200.1	3,000	3.743	2.510	1.233	18,715	50,202	8,219	3.820
2001	925.1	2,313	3.031	1.971	1.060	15,157	39,428	7,066	
2002	860.0	2,150	2.958	1.909	1.049	14,791	38,184	6,993	

Notes: Data source is the Forbes 400 Richest American list published annually in October by Forbes Magazine since 1982.
Columns (1) and (2) report the total wealth and average wealth of the Forbes 400 richest (in 2000 dollars, CPI from Table 1)
Columns (3) to (5) report the share of total wealth (reported in Table 1, col. (3)) for the top .0002%, the top .00005%, and the top .0002-.00005% estimated using the Forbes list.
The top .0002% corresponds to the top 404 richest americans in 2000. The top .00005% corresponds to the top 101 richest americans in 2000.
The top .0002-.00005% corresponds to the americans with wealth rank 102 to 404 in 2000.
Columns (6) to (8) report the ratio of the average wealth in the top .0002%, the top .00005%, and the top .0002-.00005% to the average wealth in the United States (from col. (4) in Table A).
Column (9) report the top .01% wealth share estimated from tax returns (from Table 3, col. (7)).
See the appendices of Kopczuk and Saez (2003) for details.

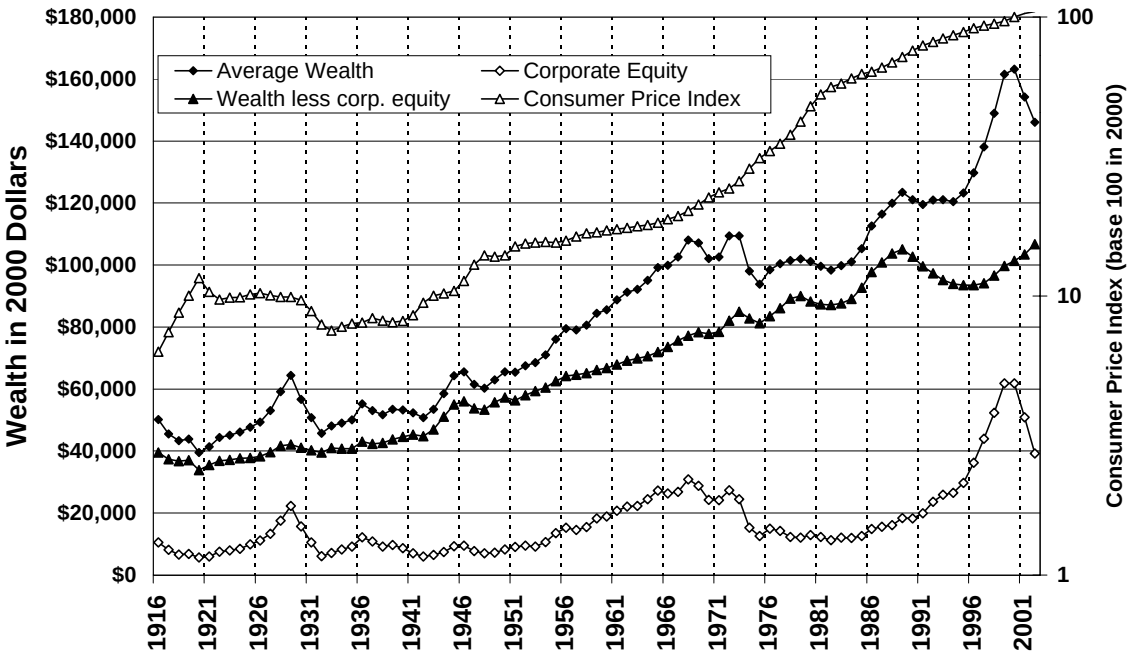

FIGURE 1

Average Real Wealth and Consumer Price Index in the United States, 1916-2002

Source: Table 1, columns Average Wealth (in real 2000 dollars) and CPI (base 100 in 2000)

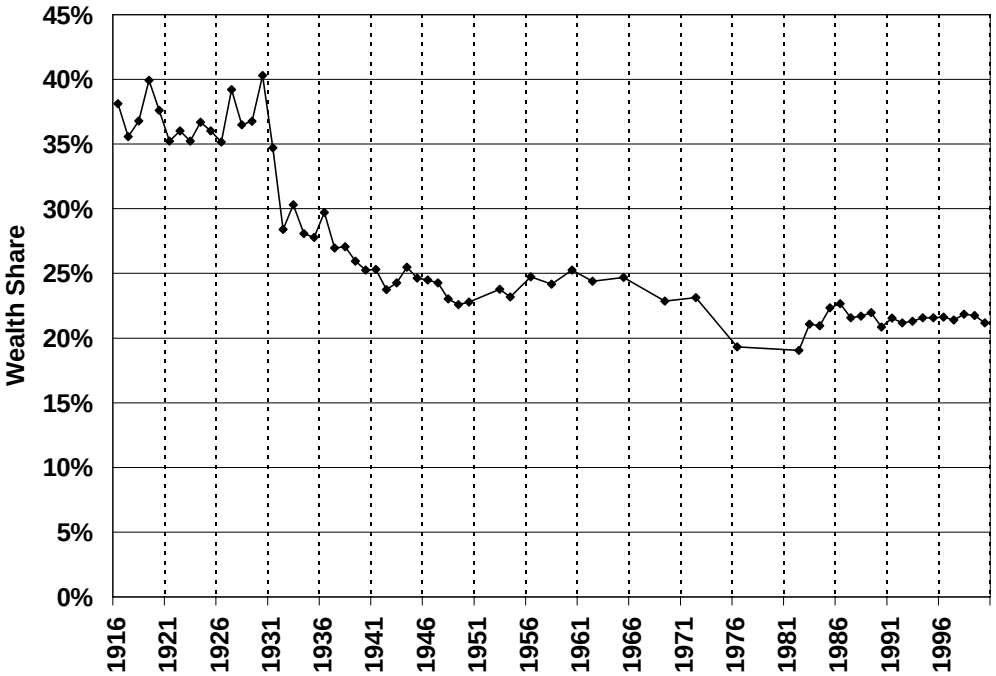

FIGURE 2

The Top 1% Wealth Share in the United States, 1916-2000

Source: Table 3, col. Top 1%.

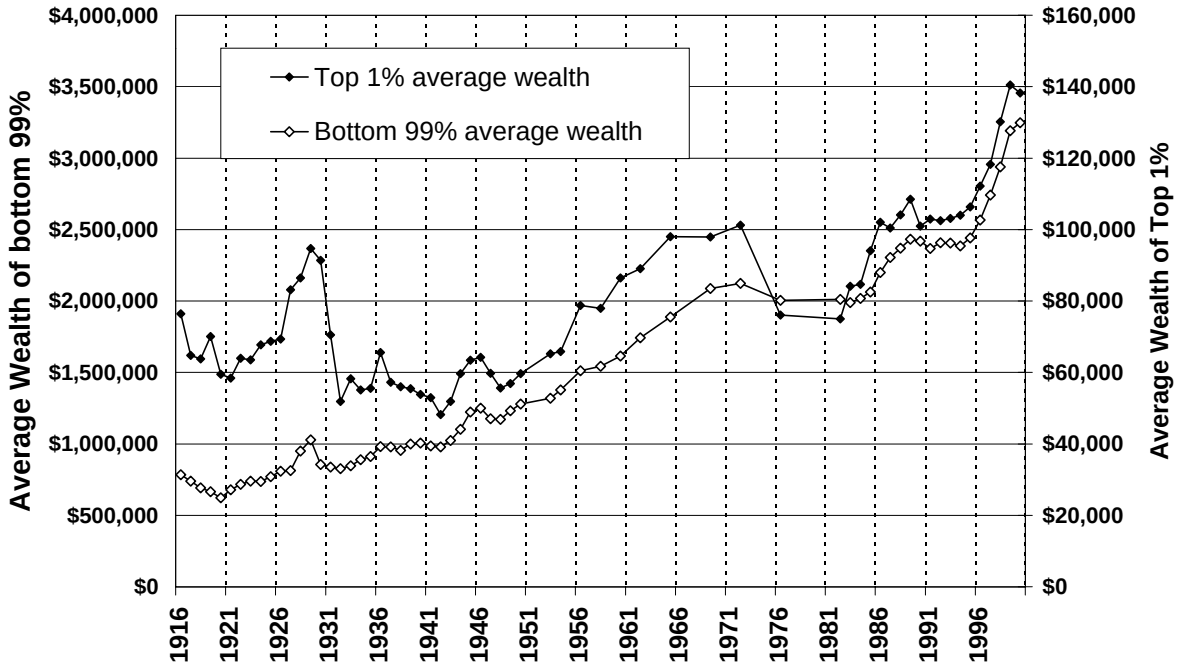

FIGURE 3

Average Real Wealth of bottom 99% and top 1% in the United States, 1916-2000

Source: Computations based on Tables 1 and 3 (column Top 1%), Bottom 99% computed from Average Wealth (Table 1, Col. (4)) and Average Top 1% wealth. Amounts are expressed in 2000 dollars.

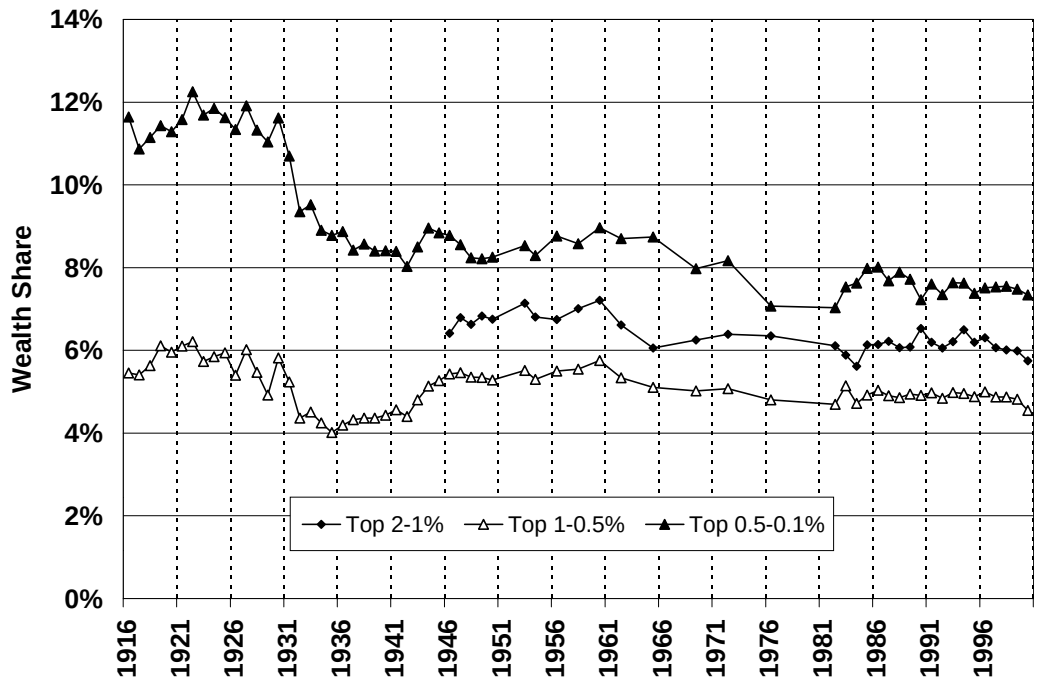

FIGURE 4

The Wealth Shares of Top 2-1%, 1-0.5%, and 0.5-0.1%, 1916-2000

Source: Table 3, columns Top 2-1%, 1-0.5%, and 0.5-0.1%.
Estimates for Top 2-1% are only available from 1946.

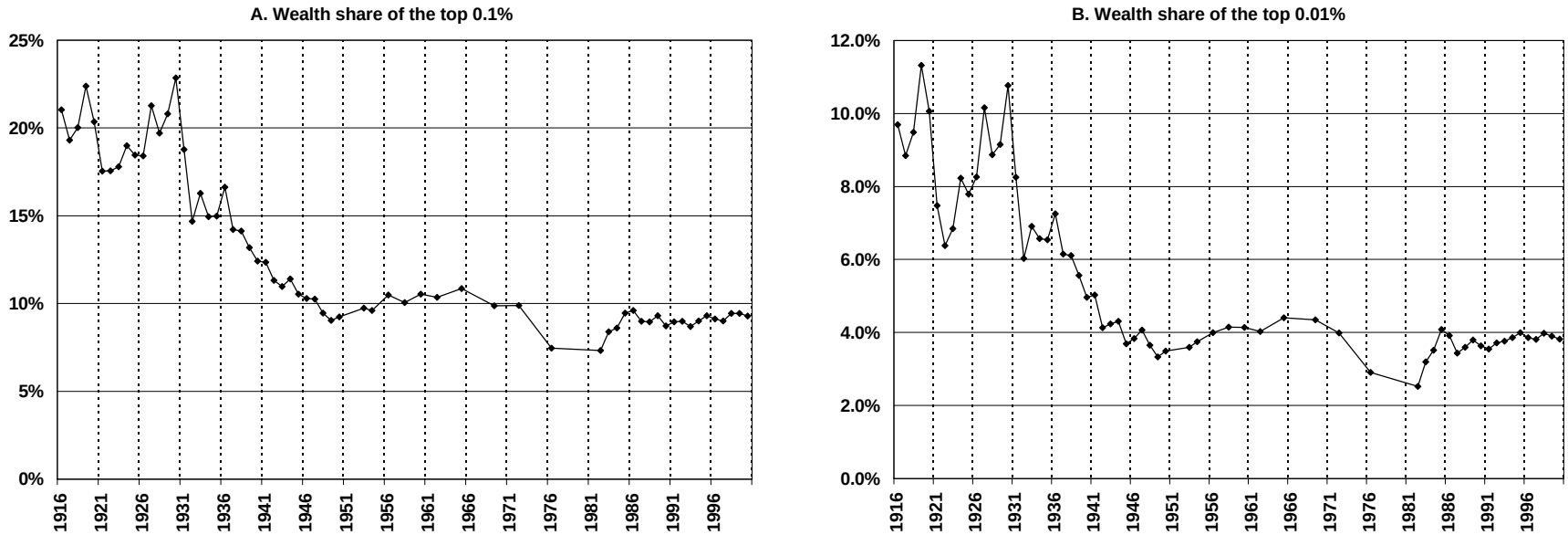

FIGURE 5

The Shares of the Top Wealth Groups in the United States, 1916-2000

Source: Table 3, Columns 0.1%, and 0.01%.

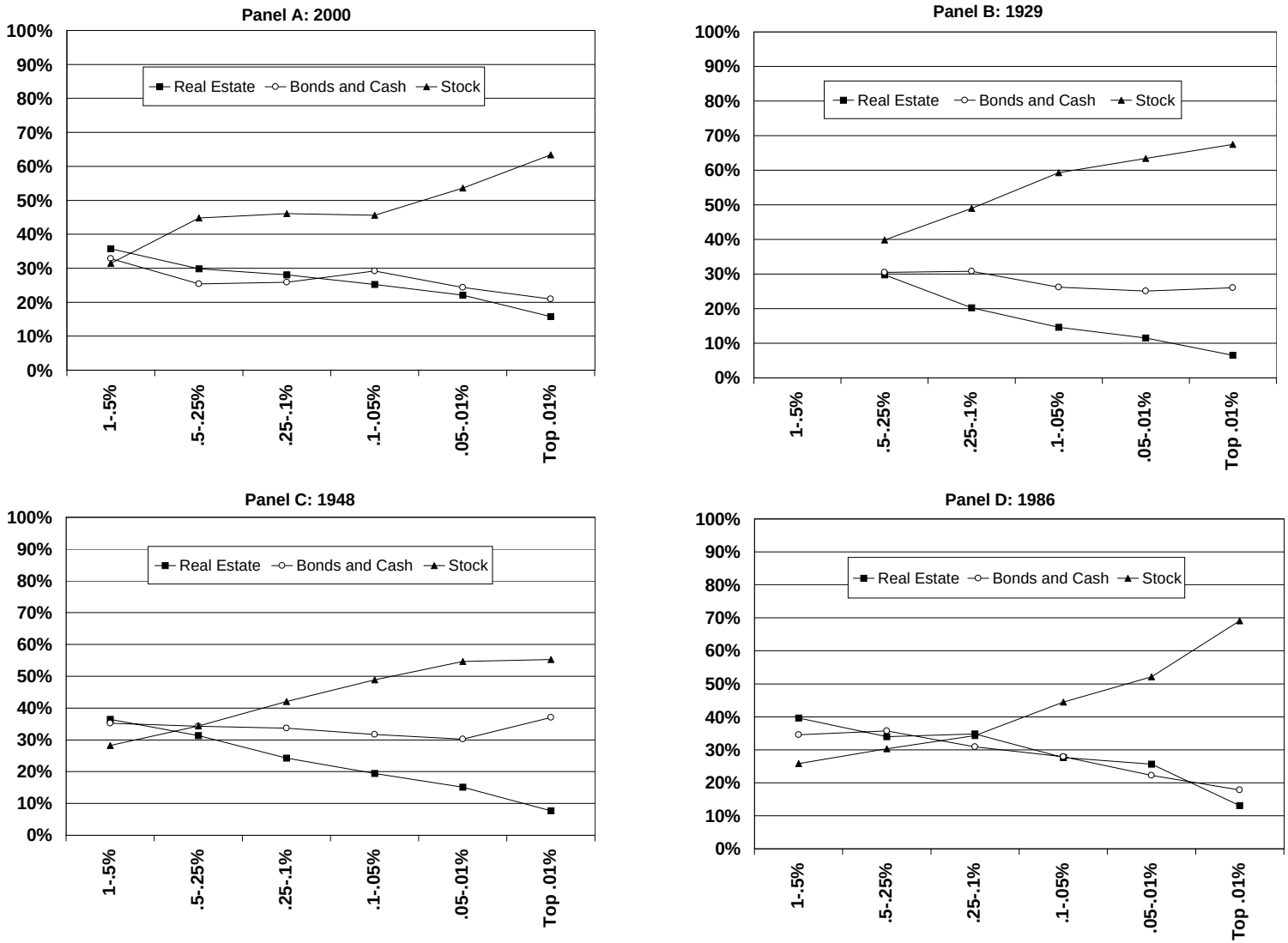

FIGURE 6

Wealth Composition of Top Groups within the Top Percentile in 2000, 1929, 1948 and 1986

Source: Table B3, rows 2000, 1929, 1948, 1986 in Kopzcuk and Saez (2003).
Sum of three categories is 100%. Categories others and debts have been excluded.

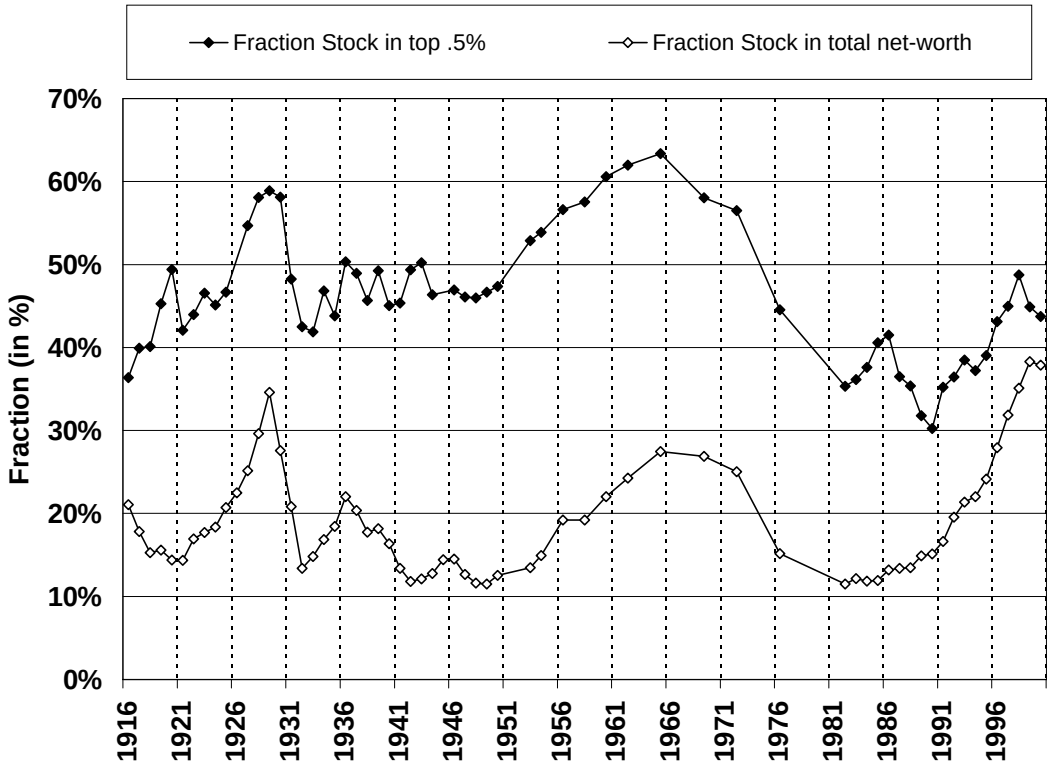

FIGURE 7

Fraction of Corporate Stock within the Top .5% and total net-worth, 1916-2000

Source: Table 1, Column (7) and Table 4, Panel A, Column Corporate Stock.

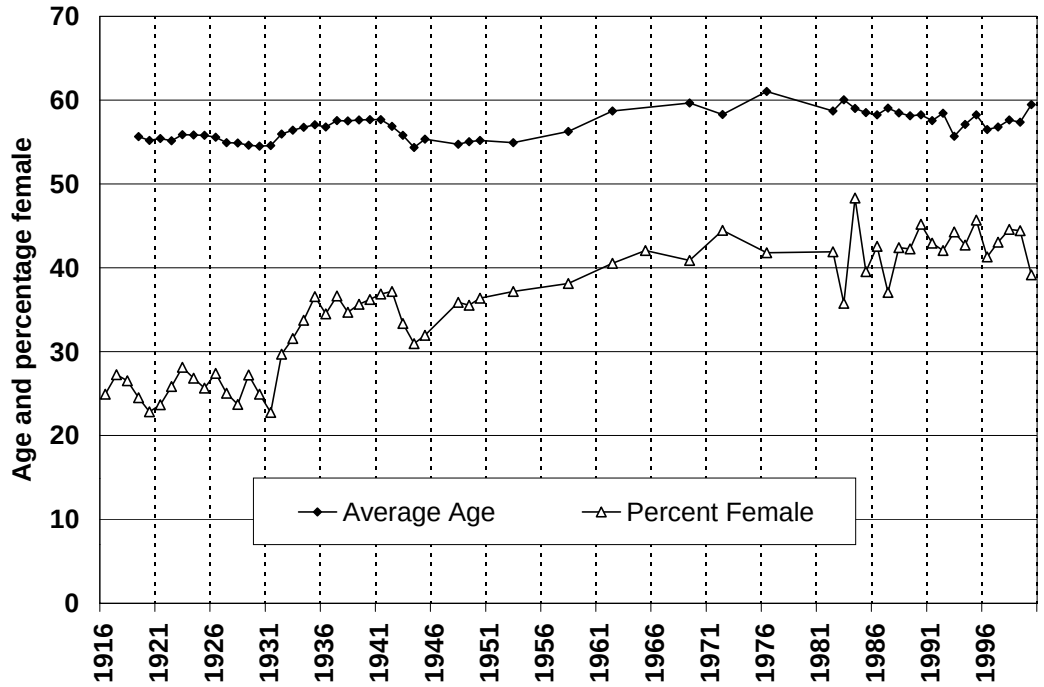

FIGURE 8

Average Age and Fraction Female in Top 0.5%, 1916-2000

Source: Table 4, Panel B.

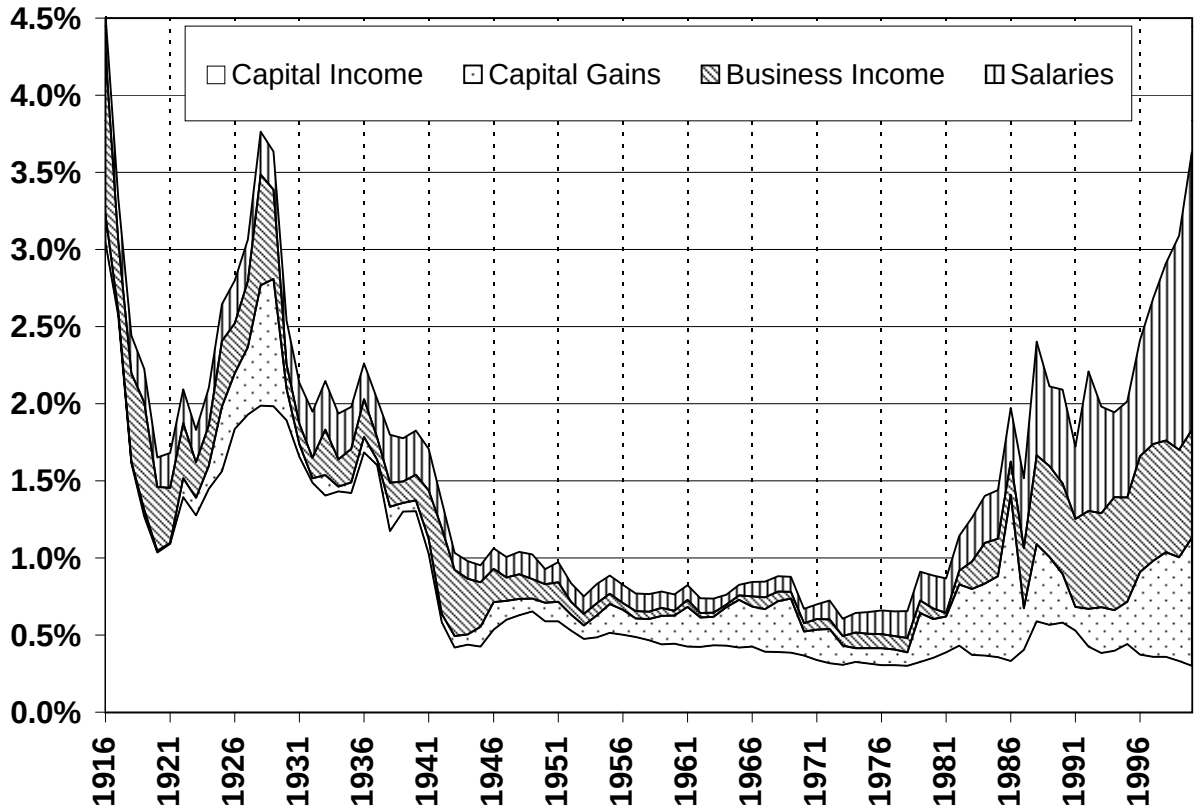

FIGURE 9

The Top 0.01% Income Share and Composition, 1916-2000

The Figure displays the top 0.01% income share (top curve). Estimates are based on families and not individuals.
Taxpayers are ranked by income excluding capital gains but capital gains included in the share. Interest, Rents, Trusts, etc.),
The Figure displays the composition of those top incomes into Capital Income (Dividends, Realized Capital Gains, Business Income (Sole Proprietorships, Partnerships, S-Corporations), and Salaries (Wages and Salaries, Pensions).
Source: Piketty and Saez (2003), series updated to year 2000

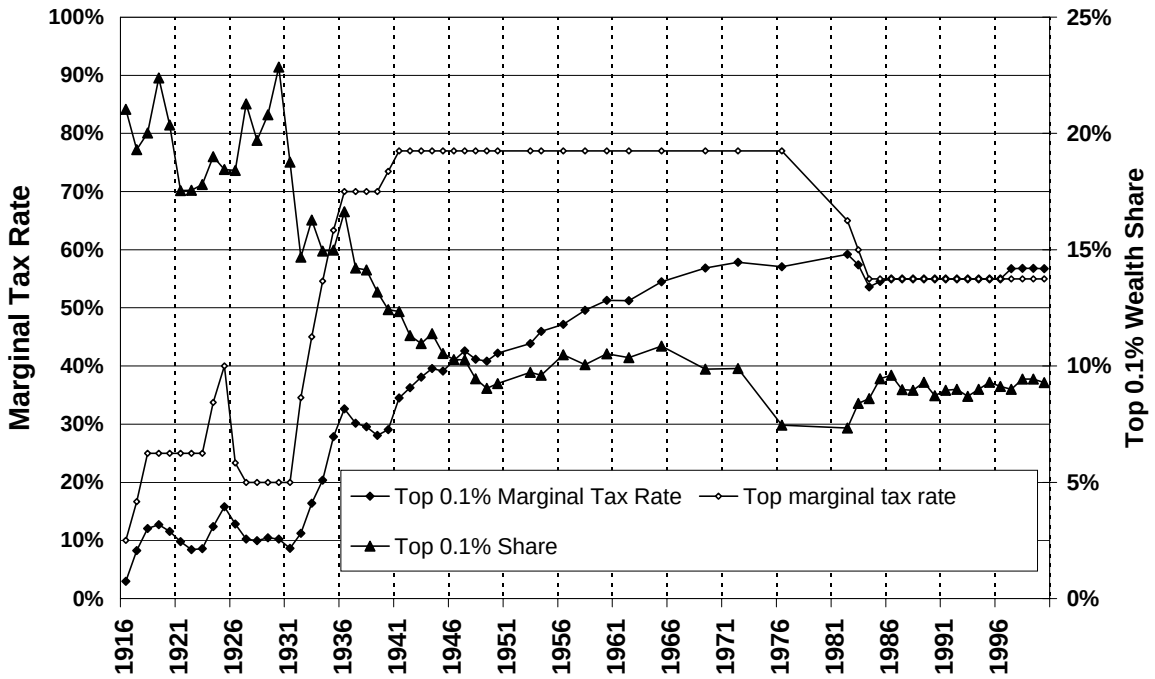

FIGURE 10

Marginal Tax Rate and Wealth Share for the Top 0.1%, 1916-2000

Notes: Marginal Tax Rate computations are made assuming no deductions beyond the basic exemption. Effective marginal tax rates are lower due to additional deductions (funeral expenses, spousal bequest deductions, charitable bequests, etc.).

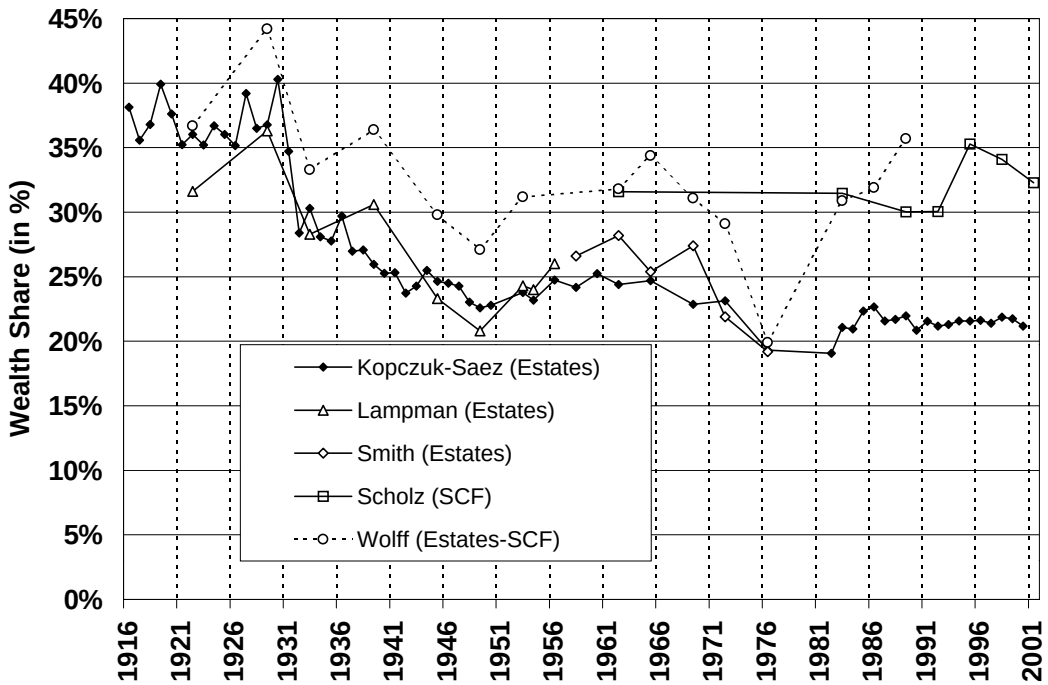

FIGURE 11

The Top 1% Wealth Share: Comparing Various Estimates

Source: Table 5.

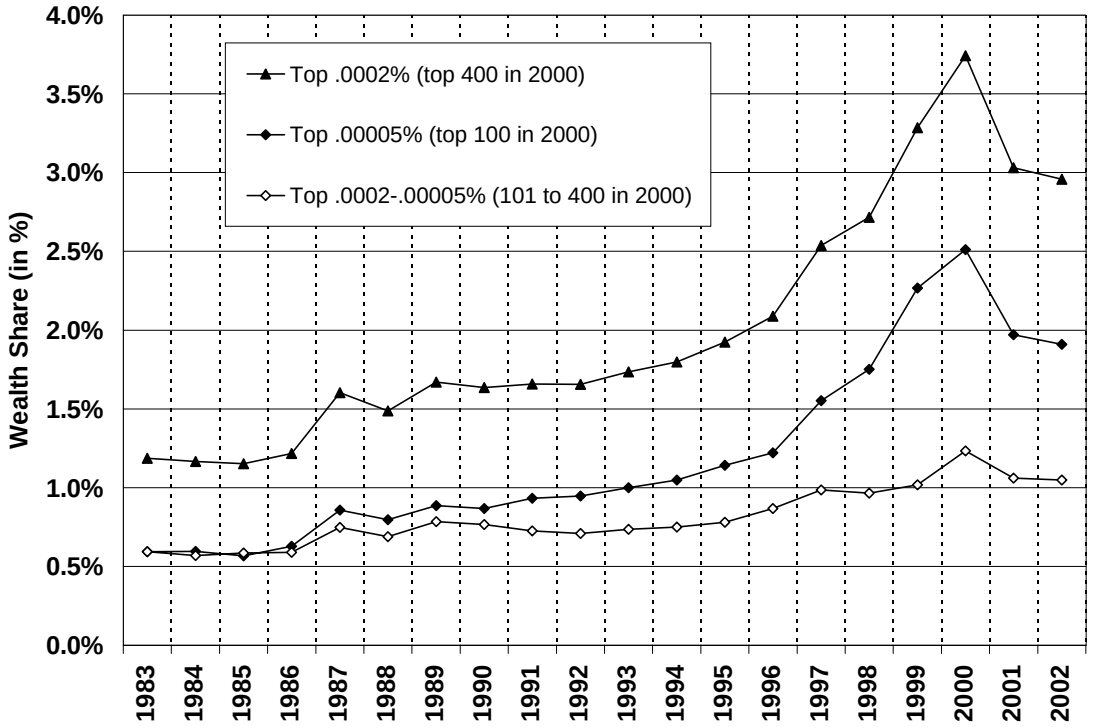

FIGURE 12

Very Top Shares from Forbes 400 Richest Americans, 1983-2002

Source: Table 6, col. (3), (4), (5), and (9).
Year 1982 has been excluded because, as the first survey year, the Forbes list missed a number of fortunes.

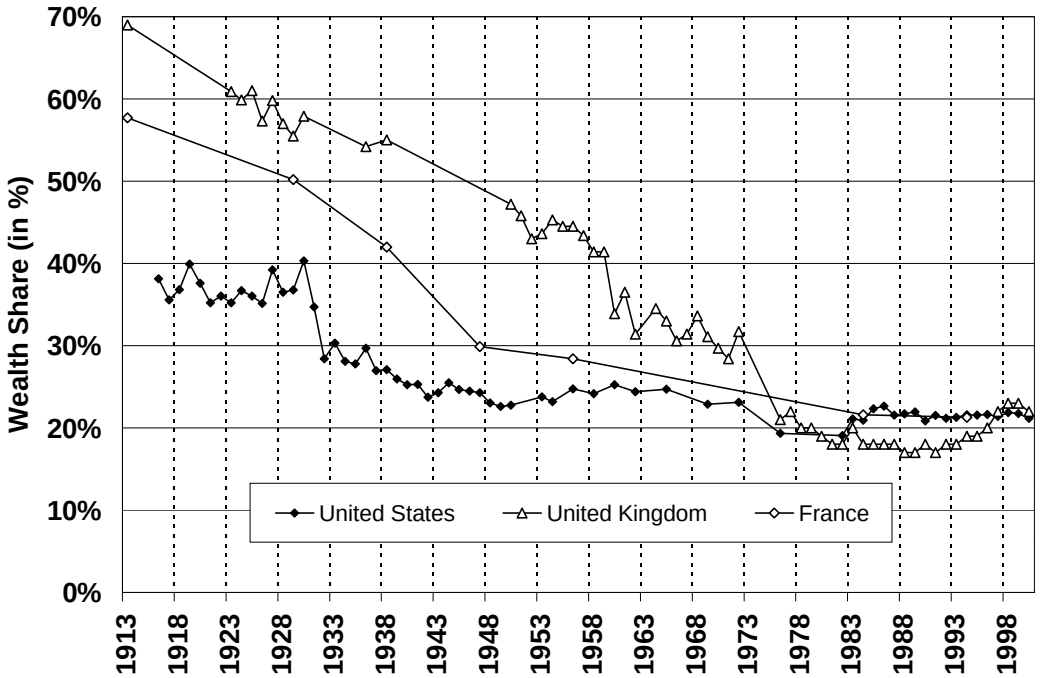

FIGURE 13

The Top 1% Wealth Share in the United States, the United Kingdom, and France

Sources: United States, Table 3, column Top 1%
United Kingdom: 1913-1972, Atkinson and Harrison (1978), p. 159, Column Top 1%, England and Wales.
1976-2000: Inland Revenue Personal Wealth (Top 1% Marketable net worth series for adult population, Table 13.5) http://www.inlandrevenue.gov.uk/stats/personal_wealth/dopw_t05_1.htm
Series 1913-1989 reproduced in Lindert (2000), Table 2, pp. 181-182.
France: Piketty, Postel-Vinay, and Rosenthal (2003), Table 4, Top 1% estate share
(wealth shares not yet available).