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Income and Wealth Concentration in Spain in a Historical and Fiscal Perspective

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Abstract

This paper presents series on top shares of income and wealth in Spain over the 20th century using personal income and wealth tax return statistics, as well as employment income statistics. Top income shares are highest in the 1930s in spite of substantial individual income tax evasion biasing down our estimates. This suggests that income inequality was much higher in the pre-civil war period than it is today. Employment income concentration was moderate in the 1960s and 1970s and dropped sharply from 1975 to 1977 during the transition to democracy. Top income shares have increased significantly since the mid-1990s due to an increase in wage income concentration and a surge in realized capital gains. Financial wealth concentration has also increased in the 1990s but real estate prices have increased sharply as well. As real estate wealth is less concentrated than financial wealth, on net, top wealth shares have declined slightly during the period 1982-2002. The wealth tax exemption of stocks for owners-managers since 1994 has gradually eroded by almost 40% taxable wealth at the top, creating a very serious loophole in the wealth tax as well as large efficiency costs.

1. Introduction

The evolution of income and wealth inequality during the process of development has attracted enormous attention in the economics literature. A number of recent studies have recently constructed series for shares of income accruing to upper income groups (such as the top decile, top percentile, etc.) for various countries using income tax statistics. Those studies are gathered in a volume edited by Atkinson and Piketty (2005). The countries studied in the volume are Anglo-Saxon countries (United Kingdom, Ireland, United States, Canada, New Zealand and Australia) and continental European countries (France, Germany, Netherlands, and Switzerland). No such study has analyzed Southern European countries. This paper proposes to start filling this gap by analyzing the Spanish experience. Spain is an interesting country to analyze on several grounds.

First, there are almost no studies on the evolution of inequality in Spain from a historical perspective. Some studies have analyzed the evolution of wage income inequality over the last two decades using the wage micro survey available since 1980 and the European Community Household Panel.[1] Because of lack of non-tax data, there are very few studies measuring inequality in the pre-1980 Spain, and hardly any looking at the evolution over time.[2] Therefore, this study can be seen as the first serious attempt at compiling systematic time series of inequality using primarily individual tax statistics, which have been completely ignored by previous studies.

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[1] See Febrer and Mora (2005), Gradin (2000, 2002), Alvarez et al. (1996),

[2] The Instituto de Estudios Agrosociales (1958) run a study on income distribution in 1956 as an assignment for the FAO. The Spanish statistics bureau (INE) conducted a household consumption survey in 1958, while the first households budget surveys were carried on in 1964/1965, 1966/1967, 1969/1970 and 1973/1974. The results were rather deficient, and many corrections were made for consistency with the national account system (Alcaide Inchausti (1967, 1974, 1983), Alcaide J. and A. (1974)). Between 1964 and 1973, INE published an annual report, but the information was extremely limited; it focused on the distribution of aggregate income (National Accounts) and the wage surveys we describe later. Albi (1975) computed Gini coefficients from the wage survey in 1964, 1967 and 1970. The cited studies constitute the core references on the topic for the pre 1980 period in Spain. More recently Gradin (2000, 2002) has used the 1973/1974 survey to analyze polarization and inequality from 1973 to 1991.

Second, modern economic growth started quite late in Spain. Because of the civil war shock and the poor economic management during the first two decades of the Franco dictatorship, Spain GDP per capita did not reach the peak of 1929 before 1954. Indeed, up to the 1950s, Spain was still largely an agricultural economy with a GDP per capita around $4,000 (in today dollars) similar to developing countries such as Pakistan or Egypt today.[3] Starting in the late 1950s and following economic liberalization and openness to trade, economic growth took off at a very quick pace. Today, Spain's GDP per capita is only about 20% lower than GDP per capita of the largest western European countries such France, Germany, or the United Kingdom. Therefore, it is quite interesting to analyze income inequality during the stagnation years and during the economic boom starting in the late 1950s to re-assess the link between economic development and inequality.

Third, Spain has undergone dramatic political changes since 1933. Spain was a republic from 1931 to 1938. A progressive government first ran the republic from 1931 to 1933, followed by a conservative government from 1933-1935, when some reforms of the previous years were abandoned. The reformist party returned to power in 1935; however, the division between the advocates of the democratic changes and those supporting a revolutionary process became evident soon. A military coup lead by General Franco, followed by a three year long civil war, transformed Spain into a dictatorship from 1939 till the death of Franco in 1975. Since then, Spain has returned to democracy and was run from 1982 to 1996 by the Socialist party which tried to implement progressive policies such as the enforcement of progressive income taxation, the development of a progressive wealth tax, and the development of a welfare state with universal health coverage. The study of top income and wealth shares in Spain can cast light on the effects of the political regime and economic policies on inequality.

Finally, over the last twenty years, Spain has implemented large income and wealth tax reforms among which sharp reductions in top income marginal tax rates from 66 to 56 percent in 1988 and to 46 percent in 1999. Spain has also

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[3] See for example Maddison (1994) for historical series of real GDP per capita in Spain.

modified the wealth tax base by exempting corporate stocks and business assets for corporate and business owners actively involved in managing the business. Analyzing top income and wealth shares around those reforms allows to cast interesting light on the effects of taxation on the economic behavior of the affluent.

Our results suggest that income concentration was much higher during the 1930s than it is today. In spite of extensive tax evasion and poor enforcement of the progressive individual income tax, very top income shares estimated from reported incomes were higher in the 1930s than over the last two decades. Enforcement of the progressive income tax further deteriorated during the dictatorship and it is therefore unfortunately impossible to know whether the drop in top income shares from 1940 to 1961 is due to decreased tax compliance or genuine reduction in income concentration.

Independent evidence from large and systematic surveys of employers starting in 1963 shows that wage income concentration was moderate and stable over the last period of the dictatorship from 1963 to 1975, the time at which economic growth was the fastest. Wage income concentration fell significantly and suddenly during the transition between 1974 and 1977. Thus, at the beginning of democracy, employment income concentration was very low both in absolute terms and relative to Anglo-Saxon countries or continental European countries.

Over the last two decades, top income shares have increased significantly due to an increase in top salaries and a surge in realized capital gains. The gains, however, have been concentrated in the top percentile (and especially the top fractiles within the top percentile) with little changes in income shares of upper income groups below the top percentile. Financial wealth concentration has also increased in the 1990s due to a surge in stock prices, which are held disproportionately by the wealthy. However, real estate prices have increased sharply as well. As real estate wealth is less concentrated than financial wealth, on net, top wealth shares (including both financial and real estate wealth) have declined slightly during the period 1982-2002.

The data show that the wealth tax exemption of stocks for owners-managers since 1994 has gradually and substantially eroded the wealth tax base, especially at the very top: by 2002, the top 0.01% wealth holders can exempt about 40% of their wealth because of this exemption. This phenomenon suggests that wealthy business owners were able to re-organize their business ownership and activities in order to take advantage of the reform. This suggests that this tax exemption both reduced the redistributive power of the progressive wealth tax and created substantial deadweight burden as business owners were taking costly steps to qualify for the exemption.

Top incomes seem to be responsive to cuts in top marginal tax rates in the short-run but not in the medium or long-run suggesting that the level of marginal tax rates at the top is not the primary determinant of the level of top reported incomes. Taken together, the evidence from the wealth tax and the income tax suggests that the institutional details or the tax code and the opportunities of income shifting are more important than the levels of tax rates to determine the behavioral responses and efficiency costs of taxation.

The paper is organized as follows. Section 2 describes our data sources and outlines our estimation methods. In Section 3, we present and analyze the trends in top income shares since 1933. Section 4 focuses on the recent decades where data are more comprehensive and of higher quality and analyzes top income and wealth shares as well as the composition of top incomes and wealth holdings. Section 5 discusses the lessons from the recent income and wealth tax developments in Spain. Finally, Section 6 offers a brief conclusion.

2. Data and Methodology

Our estimates are from personal income and wealth tax return statistics compiled by the Spanish fiscal administration for a number of years from 1933 to 1971 and annually from 1981 on. The statistical data presented are much more detailed for the 1981-2002 period than for the older period. There is also a concern that the pre-1981 individual income tax was poorly enforced and that

reported incomes significantly understate real incomes. Therefore we will present estimates for those two periods separately.

Before 1981, because of high exemption levels, only a very small fraction of individuals had to file individual tax returns and therefore, by necessity, we must restrict our analysis to the top 0.1% of the income distribution (and for 1933-1949 even the top 0.01%). From 1981 on, we can analyze the top 10% of the income distribution. Spain has adopted an annual personal wealth tax since 1978 (there was no personal wealth tax in Spain before 1977). Detailed statistics on the "new" income and wealth tax have started to be published in 1981 and 1982 respectively.[4] The progressive wealth tax has high exemption levels and only the top 2 or 3% wealthiest individuals file wealth tax returns. Thus, we limit our analysis of wealth concentration to the top 1% and above, and for the period 1982 to 2002.

Our top groups are defined relative to the total number of adults (aged 20 and above) from the Spanish census (not the number of tax returns filed). Table 1 gives thresholds and average incomes for a selection of fractiles for Spain in 2000.

We define income as gross income before all deductions and including all income items reported on personal tax returns: salaries and wages, self-employment and unincorporated business net income, dividends, interest, other investment income and other smaller income items. Realized capital gains are also included in the tax base since 1978 (but were excluded from the base in the earlier period). However, because capital gains are realized infrequently in a lumpy way and fluctuate significantly depending on the evolution of the stock market, we also estimate series excluding capital gains. Our income definition is before personal income taxes and personal payroll taxes but after employers' payroll taxes and corporate income taxes.

The wealth tax is a progressive tax on the sum of all individual wealth components net of debts. In general, real estate wealth is not taxed according to

its market value but according to its registry value ("catastro") for property tax purposes. Market prices are about 2 to 3 times as high as registry value on average. Real estate wealth is a very large component of wealth in Spain. Therefore, we use two definitions of wealth, one including real estate wealth evaluated at market prices and one excluding real estate wealth (and excluding also mortgage debt on the passive side) which we call financial wealth. Total wealth is clearly a better measure of wealth but is not directly measured in the wealth tax statistics and hence requires making large adjustments. Financial wealth is more narrow definition of wealth but it is better measured in tax statistics.

Our main data consist of tables of the number of tax returns, the amounts reported, and the income or wealth composition (since 1982) for a large number of income brackets. As the top tail of the income distribution is very well approximated by Pareto distributions, we can use simple parametric interpolation methods to estimate the thresholds and average income levels for each fractile.

We then estimate shares of income by dividing the income amounts accruing to each fractile by personal income not including transfers from the National Accounts.[5] We proceed similarly to compute wealth shares. In that case, we use estimates of aggregate financial net wealth and real estate wealth from the Bank of Spain.

After analyzing the top share data, we turn to the composition of income and wealth, concentrating on the period since 1981 when composition data were first published. Using this published information and a simple linear interpolation method, we decompose the amount of income for each fractile into employment income, entrepreneurial income (self-employment and small business income), capital income, and capital gains. We divide wealth into real estate (net of

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[4] The official publication exists since 1979 for the income tax and since 1981 for the wealth tax. However, the statistical quality of the data for the first years is defective with obvious and large inconsistencies which make the data non usable.

[5] Using tax returns to compute the level of top incomes and national accounts to compute the total income denominator dates from the famous Kuznets (1953) study on American inequality. This method is also used is most of the studies compiled in Atkinson and Piketty (2005).

mortgage debt), fixed claim assets, corporate stocks, and other components (net of non mortgage debts).

In order to examine the important transition period of the 1970s, we also produce top wage share series for the period 1963 to 1980, using distribution tables of wages and salaries covering all employees of the private sector produced by the Spanish labor department on an annual basis. As those surveys cover the universe of private sector employees, fractiles are defined relative to the total number of employees in the survey and the denominator is taken as the sum of employment incomes reported in the survey.

3. Top Income Shares from 1933 to 2002

Figure 1 displays the average personal income per adult estimated from National Accounts that is used as the denominator for our top income shares estimations along with the price index for the period 1932 to 2002. As discussed in the introduction, modern economic growth started only in the late 1950s in Spain. Growth was fastest in the 1960s. Economic growth stalled during the transition period to democracy and the first years of the democracy from 1975 to 1985, and then resumed again.

Figure 2 displays the top 0.01% income share from 1933 to 2002. The break from 1971 to 1981 denotes the change from the old income tax to the new income tax. A number of important findings emerge from this figure.

First, although the old income tax was poorly enforced, the highest income concentration occurs in the 1930s. This strongly suggests than income concentration in Spain in the 1930s was substantially higher than it is today, and possibly much higher if evasion was pervasive in the 1930s. This finding is not surprising as Spain was a country with low average income and with high concentration of land ownership. However, lack of any statistics on income, wealth, or land ownership concentration made this claim impossible to establish rigorously. The use of the old income tax statistics demonstrates that income concentration was indeed higher than it is today.

Second, the old income tax statistics display a large decrease in income concentration from 1940 to 1950, during the first decade of the Franco dictatorship. Such a decrease can either reflect a decline in income concentration due to the tight economic controls put in place by the fascist regime or an increase in income tax evasion. In particular, it is notable that the drop starts in 1941 precisely when the top marginal tax rate increases significantly from a modest 11% to 40% (see Table F1 in appendix). The (income weighted) marginal tax rate for the top 0.01% income group increases from around 5% in 1940 and before to around 25% in 1941 and after. Therefore, if the drop in the top 0.01% income share from 1.2% in 1940 to 0.8% in 1942 is solely due to an increase in tax evasion/tax avoidance following the increase in marginal tax rate from 5% to 25%, then the elasticity of high incomes with respect to one minus the marginal tax rate is very high, around 2.[6] Such a large elasticity together with a Pareto parameter around 2 in 1942, implies that the marginal tax rate maximizing tax revenue is equal to 1/(1+pareto parameter * elasticity) = 1/(1+2*2)=20%.[7] Therefore, given the extremely poor enforcement and the resulting very large response of evasion to the increase in tax rates, the moderate 25% average marginal tax rate for the top 0.01% was above the Laffer rate maximizing tax revenue.

Third, top income concentration estimated with income tax statistics remains low from 1950 to 1971, the last year for which old income tax statistics are available. Interestingly, the level of income concentration measured with the new income tax statistics in the early 1980s is quite similar to the level of 1971. The sense of all observers is that income tax enforcement in 1971 was very weak relative to enforcement in the early 1980s.[8] This suggests therefore that

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[6] This elasticity can be estimated as log(0.76/1.2)/log(0.75/0.95)=1.93.

[7] See Saez (2001) for a simple derivation of the top marginal tax rate maximizing tax revenue.

[8] The economic historian Francisco Comin has referred to us that during the final period of the dictatorship, the commission in charge of redesigning the income tax asked the fiscal authorities for the list of top taxpayers, expecting to find the main bankers and businessmen of Spain at the top of this list. Strikingly, the top of list consisted in famous bullfighters and show business stars rather than bankers or large business owners (unfortunately, there does not seem to be any written reference on this so it is hard to know to what extent it is an exaggeration). The powerful banking and industrial sectors, with strong influence in the dictatorship of Franco, seem to have been the source of a systematic attempt to block any generalization of the Contribución sobre la

there was a significant decrease in income concentration during the transition from the dictatorship to democracy.

We can get more direct evidence of changes in income inequality during the transition using wage income distribution statistics available on an annual and homogeneous basis from 1963 to 1980. Figure 3 reports the top wage income shares from 1963 to 1980 using such statistics. It is important to keep in mind that those data capture only wage income concentration and hence are silent about changes in business and capital income concentration. Nevertheless, the series show clearly a break at the time of the transition: the top 1% wage income share falls significantly from 5.3% in 1974 to 3.2% in 1977. Top wage shares below the top 1% such as the top 5-1% and the top 10-5% also fall at the time of the transition but less than the top 1%. Those wage income statistics come from a large national survey of employers and are not used for tax purposes. Therefore, they are not biased by under-reporting for tax evasion purposes and hence provide convincing evidence that wage income concentration was significantly higher at the end of the dictatorship than at the beginning of democracy. Interestingly, the Gini coefficients (reported on the right y-axis) show a pattern very similar to the top wage shares with a very large drop from 0.33 to 0.22 from 1973 to 1979.[9] It should also be pointed out, however, that the levels on wage income concentration in Spain in the early 1970s were comparably to those of other countries such as France, the United States, or Canada, and dropped to very low levels during the transition.[10] Those findings of

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Renta and to sustain the statu-quo of the taxation scheme. See, for example, Albiñana (1969) and Vallejo Pousada (1995) for details on how some private banks provided self-interested advice on what income tax code should to be applied by the government.

9 Albi (1975) used the same wage survey to compute Gini coefficients for 1964, 1967 and 1970. His estimates are virtually the same as ours.

[10] One explanation to understand the drop in wage concentration can be found in the economic situation during the transition to democracy. Despite the increase in oil prices and the change in international demand, the Spanish economy was not accustomed to respond to market forces and was still based on state protection and public intervention. The inflation rate, which was 20% in 1976, jumped to 44% in 1977, four times the average of OECD countries; external debt exceeded by far the central banks reserves and a suspension of payments was feared; unemployment rates began to increase. Unions claimed wage adjustments according to expected price changes, and it was argued that this would trigger an inflationary spiral. The macroeconomic crisis and the weak institutional situation forced political parties, businessmen

a decrease in income concentration during the transition period are consistent with those of Alcaide (1967, 1974, 1983) analyzed household surveys of 1964/1965, 1966/1967, 1969/1970, 1973/1974 and 1979/1980. According to his estimates, the top 10% received 36.8%, 41.3%, 40.7%, 39.5% and 29.2% of income respectively, also stressing a decrease in inequality levels from 1974 to 1980.[11]

Finally, Figure 2 shows that there are very large fluctuations in very top income concentration since 1981 with sharp increases in the late 1980s and the late 1990s. At the peak of 2000, top 0.01% income earners captured 0.86% of total income while they earned only 0.53% of total income in 1993. The tax statistics since 1981 are much more detailed than the old income tax statistics. Thus, we can study larger income groups such as the top 10% since 1981. We can also study composition of income. Wealth tax statistics also allow us to study specifically wealth concentration and wealth composition.

4. Income and Wealth Concentration since 1981

Figure 4 displays top income shares for three groups within the top decile: the bottom half of the top decile (top 10-5%), the next 4% (top 5-1%), and the top percentile. In contrast to figure 2, we now include realized capital gains in the top income shares.[12] The figure shows that those top income shares have evolved quite differently: the top 1% increased very significantly from 7.5% in 1981 up to 10% at the peak of 2000. In contrast the top 10-5%, and the top 5-1% shares are

and unions to reach the Moncloa Pacts. The agreements included the devaluation of the peseta, accompanied by a mild restrictive monetary policy with a commitment to begin structural reform. Unions commit to moderate wage demands, generating both an overall loss in purchasing power and a flattening in wage patterns.

11 The ability of these surveys to approximate total personal income from National Accounts was extremely limited. On average, aggregate income generated by the surveys accounted for 60% of the national accounts counterpart. The cited studies included many assumptions on under-reporting by size of income, which were applied to estimate the true distribution, and had a direct impact on income concentration estimates. For example, according to the 1979/1980 survey the top 10% received 25.4% of income before any correction was made.

12 Realized capital gains were not taxed (and hence not reported) under the old income tax. Therefore, for comparison purposes, we also excluded realized capital gains in Figure 2 for the period 1981-2002.

almost identical in 1981 and in 2000, with very modest fluctuations throughout the period. Therefore the increase in income concentration, which took place in Spain since 1981, has been a phenomenon concentrated within the top 1% of the distribution. Figure 5 illustrates this concentration phenomenon further by splitting the top 1% into three groups: the top 1-0.5%, the top 0.5-0.1%, and the top 0.1%. As in Figure 4, the higher the fractile, the higher the increase in the share from 1981 to 2000: the top 1-0.5% increases modestly from 2.7 to 2.9 percent while the top 0.1% increases sharply by over 75% from 1.87 to 3.32 percent. [13]

In order to understand the mechanisms behind this increase in income concentration at the top, we next turn to the analysis of the composition of top incomes. Figure 6 displays the composition of top income fractiles for years 1981 (Panel A) and year 2002 (Panel B). Overall, as expected, the share of wage income decreases and the share of capital income and realized capital gains increases as we move up the income distribution. Because capital income is dominant in top fractiles and the share of wage income is modest, one would be tempted to interpret the rise in very top income shares from 1981 to 2002 as primarily a capital income phenomenon. This would not be fully accurate because the composition of top incomes has actually changed from 1981 to 2002. Capital gains were minor in 1981 while they are the largest source of income at the very top in 2002. More important, the share of wage income has increased significantly at the top (from about 18% in 1981 to about 30% in 2002 for the top 0.01%) in spite of the dramatic increase in capital gains. This shows that the composition of top income earners has shifted away from wealthy business owners and capital income earners toward executives with large salaries.

Figure 7 casts more light on this issue by displaying the time series composition of the top 0.1% incomes from 1981 to 2002. The figure shows that the increase in the top 0.1% income share is due solely to two components:

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[13] According to the 1979/1980 household survey, the top 1% households received 7.2% of total income. This is relatively close to the 7.6% received by the top 1% adults in 1981, the first year

realized capital gains and wage income. The remaining two components: business income and capital income have stayed about constant. The figure shows also that the 1988 spike was primarily a capital gains phenomenon. In contrast, the wage income increase has been a slow but persistent effect, which has taken place throughout the full period. Capital gains tend to be volatile from year to year as they follow closely the large swings of the stock market. Indeed, Figure 8 displays the total real amounts of capital gains reported by the top 1% income earners along with the Madrid SE stock index from Global Financial data on a log scale from 1981 to 2002. The two series are strikingly correlated. Therefore, the capital gain component reflects largely stock market fluctuations. High income individuals own a disproportionate fraction of corporate stock in the economy. When stock prices increase sharply as in the late 1980s or late 1990s, high incomes get a disproportionate share of the corresponding capital gains, explaining why top income shares tend to follow the stock market cycles.

In order to analyze more precisely this capital income phenomenon, we now turn to top wealth shares estimated from the wealth tax statistics. Figure 9 displays the evolution of average wealth (total net worth of the household sector divided by the total number of individuals aged 20 and above) and its composition from 1981 to 2002. Three elements should be noted. First, wealth has increased very quickly during that period, substantially faster than average income: average wealth in 2002 is 2.3 times higher than in 1982 while average income in 2002 is only 1.5 times higher than in 1982. Second, real estate is an extremely large fraction of total wealth. It represents about 80% of total wealth throughout the period. Third and related, the growth in average wealth has been driven primarily by real estate price increases, and to a smaller degree by an increase in corporate stock prices. In contrast, fixed claim assets have grown little during the period.

Figure 10 displays the composition of wealth in top fractiles of the wealth distribution in 1982 and 1999. As one would expect, the share of real estate is declining and the share of stocks in increasing as we move up the wealth

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the income tax statistics can be used.

distribution. It is notable that real estate still represents over 60% of wealth for the bottom half of the top percentile. Thus, only the very rich hold a substantial share of wealth in the form of stock holdings. The patterns in 1982 and 1999 are quite similar except that the level of stock ownership is higher across the board in 1999, a year with high stock market prices. Those compositional patterns suggest that an increase in real estate price will benefit relatively less the very top and should therefore reduce the very top wealth shares. In contrast, an increase in stock prices will benefit disproportionately the very rich and should increase the very top wealth shares.

Figure 11 displays the top 1% wealth share (net worth including real estate wealth) along with the top 1% financial wealth share (net worth excluding real estate wealth and mortgage debts). Unsurprisingly, the top financial wealth share is larger than the top wealth share because financial wealth is more concentrated than real estate wealth. Top financial wealth concentration is stable around 25% from 1982 to 1990, decreases to about 21% from 1990 to 1995 and then increases again to about 26% by 2002. In contrast the top 1% wealth share including real estate is much more stable and fluctuates within a narrow band between 16 and 18 percent. In contrast to financial wealth, total wealth concentration does not fall from 1990 to 1995 because, as shown on Figure 9, real estate wealth also falls in that period, and this advantages top wealth holders. The reverse happens from 1995 to 2002: In contrast to financial wealth, total wealth concentration does not increase because real estate prices increase sharply.

Figure 12 decomposes the top 1% total wealth share into three groups: the top 0.1%, the next 0.4%, and the bottom half of the top percentile. The graph shows that those top wealth groups have experienced different patterns. The top 0.1% share has fallen substantially from 7% in 1982 to 5% by 2002. In contrast, the top 1-0.5% has increased from 3.8 to 4.8 percent and the top 0.5-0.1% has slightly increased from 6.5 to 7 percent. Those differential patterns are due primarily to composition effects: the bottom groups in the top percentile hold mostly real estate and have benefited from the surge in real estate prices. In

contrast, the top 0.1% has been hit by the sharp real estate prices increases from 1986 to 1991 (see Figure 9). The sharp real estate price increase from 1997 to 2002 has been compensated by a surge in stock prices leading to an overall flat pattern for the top 0.1% wealth share during this period.

Figure 13 displays the wealth composition of top 0.1% wealth holders from 1982 to 2002. It shows that the shares of real estate, business assets, and fixed claim assets have been decreasing and that the share of stocks has been increasing but not enough to compensate for the fall in the other components. Therefore, over the last two decades, the dramatic increase in real estate prices has been the primary cause of the reduction in the concentration of wealth in Spain.

In 2002 the Bank of Spain conducted a household wealth survey whose preliminary results are presented in Bover (2004). According to our estimates, the survey seems to underestimate the main aggregates in a non-trivial way. For that year, the survey determined an average net wealth of 153,000 euros for 13,8 million households, which represents a total of 2,120 billion euros. Nevertheless, total wealth according to the Bank of Spain adds up to 3,658 billion euros (743,000 million of net financial wealth plus 2,915,000 million of real estate wealth). On the contrary, the survey data matches our estimates regarding worth composition in terms of real estate and financial wealth shares. Unfortunately micro data is not available yet to make comparisons at the very top of the distribution.

5. The Effects on Tax Reforms on Reported Income and Wealth

5.1 The Erosion of the Wealth Tax Base

The Spanish wealth tax is declared and paid annually at the same time as the income tax but on a separate form. The double reporting of income and wealth makes both taxes easier to enforce, as discrepancies between reported

capital income and reported wealth can be audited by the fiscal administration [cite on wealth tax enforcement].

In 1994, an exemption for business owners substantially involved in the management of their business was introduced in the wealth tax. More precisely, stock of corporations where the individual owns at least 15% (or the individual and family own at least 20%) and where the individual is substantially engaged in this business activity (getting over 50% of his labor and business income from this activity) is exempted from the wealth tax.[14] The value of those stocks still has to be reported to the fiscal administration and was included in our top wealth share series. The rationale for such an exemption was to protect small businesses, which are often owned and managed by the same individual or family. Those small businesses might face credit constraints and the wealth tax can potentially exacerbate those credit constraints.

Figure 14 displays the composition and share of financial wealth held by the top 0.01% wealth holders. Stocks are now divided into three components: publicly traded stock, taxable closely held stocks, and exempted closely held stock.[15] In 1994, the first year the exemption was introduced, exempted stock represents only about 15% of total closely held stock reported by the top 0.01%. By 2002, the fraction has grown to 77%. Presumably, in 1994, individuals did not have time to reorganize substantially their business activity. Therefore, the 15% fraction of closely held stock benefiting from the exemption in 1994 must be close or just slightly above the fraction of closely held stock which would benefit from the exemption absent any behavioral response to the introduction of the exemption. In subsequent years, however, a large fraction of business owners might have reorganized their businesses in order to qualify for the exemption. For example, business owners might have increased their share of stock in the company in order to meet the 15% ownership threshold. Alternatively, they might

14 Starting in 2003, the ownership requirement has been lowered from 15 to 5%. The latest year of available data for our study is 2002. Therefore, the 2003 tax change cannot yet be analyzed. See Appendix for more detail.

15 Publicly traded stock is also eligible for the exemption but only a trivial fraction of publicly traded stock qualifies for the exemption and therefore we ignore this in the analysis.

have become active managers in their businesses or dropped other work activities outside the business. In any event, absent any behavioral response and taking 1994 as the baseline, this exemption should have eroded reported wealth at the top 0.01% by 6%. It actually ended up eroding reported wealth by 40% in 2002. Furthermore, because the wealth tax is highly progressive, an erosion of 40% translates in a loss of wealth tax paid well over 40%.

Therefore, the fraction of wealth tax lost through the behavioral response is quite possibly over 5 times the predicted tax loss absent any behavioral response. Tax losses over and above those predicted absent any behavioral responses create deadweight burden because individuals change their behavior in order to benefit from the tax reductions. Let us take an illustrative example. Suppose that a business owner can save 100,000 Euros in wealth taxes on its stock ownership by leaving his current salaried job outside the business, which was paying him 100,000 Euros and instead working in his business and hence qualify for the exemption. Suppose that his productivity working in the business is only 40,000 Euros (paid out as a salary to him) and that disutility of work is the same in the business as in the outside job. Then the net gain for the individual is 40,000 Euros: 100,000 Euros saved in taxed minus 60,000 Euros lost in salary. In those circumstances, the individual will re-organize his business and the reduction of 100,000 Euros in taxes will translate into a utility gain of only 40,000 Euros and an additional deadweight burden of 60,000 Euros.

If we assume that total business activity is unchanged and that the only behavioral response is a shift from taxable to non-taxable classification, then business owners will change their status as long as the tax savings exceed the disutility costs. Businesses at the margin in the old regime of uniform taxation (those for which there is almost no disutility cost of shifting) get a tax break and switch at no cost under the new regime, with no deadweight burden generated. Businesses at the margin in the new regime (those for which shifting costs are almost equal to tax savings) get no utility gain and generate a deadweight burden

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Unincorporated businesses can also be eligible. Because such business assets constitute a very small share of reported wealth, we also ignore this in the analysis.

as large as the tax break. Thus, the average deadweight burden is approximately (assuming linear aggregate demand functions) one half to the tax lost due to the behavioral response (this is the classical Harberger triangle). In that case and perhaps counter-intuitively, the wealth tax reduction ends up *increasing* the deadweight burden of taxation. This example shows in a striking way how critical it is to go beyond simply estimating the elasticity of taxable income or wealth with respect to marginal tax rates as advocated by Feldstein 1999 and look into the anatomy of the behavioral response (Slemrod, 1996, Gordon and Slemrod 2000, Saez, 2004) in order to understand the efficiency consequences of tax reforms. It is important to discuss three potential objections to those results.

First, a naïve observer could think that either firms can easily switch at no cost (modest paperwork with no real costs) or cannot switch at all in which case the cost is infinite (for example, the business owner cannot possibly work in his business or does not own the 15% threshold share). In that case, only those with zero cost would switch and no deadweight burden would be generated.[16] Figure 14 suggests strongly that such a story cannot account for the facts. If switching costs were trivial for all firms which can switch, then all potential switchers should have switched immediately. In contrast, the Figure shows that this is a gradual process and the fraction of exempted stock is still increasing 8 years after the reform. This suggests that switching is not obvious or trivial and that therefore, businesses and individuals have to expand considerable effort and time to figure out a way to move to the non-taxable sector, creating deadweight burden as described above.

Second, those results were predicated on the assumption that there is no change in overall business activity. It is conceivable that such a tax break would encourage more business start-ups and hence the new exempted businesses would represent new business activity rather than a shift from the taxable sector. New business activity spurred by the tax break (with no shifting) would imply that the old tax was creating substantial deadweight burden and that the removal of

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[16] In that situation, there is no well defined curve of supply of exempted versus taxable businesses and hence the Harberger triangle disappears.

the tax actually increases economic welfare by more than the predicted loss in taxes and hence reduces deadweight burden (as described in Feldstein, 1999). Figure 14, however, suggests again that this is not the case: the dramatic rise in non-taxable stock has been accompanied by a symmetrical dramatic reduction in taxable closely held stock. This simple graphical evidence suggests that, at least up to 2000, the increase in non-taxable stock is mostly due to substitution rather than new business activity.[17] Analyzing a panel of wealth tax returns linked to businesses would allow to directly assess whether the growth in non-taxable stock is due to newly created businesses which did not exist before or is due to businesses shifting their status from taxable to non-taxable.

Third, it is conceivable that smaller and newer closely held businesses face more severe credit constraints than larger corporations. Credit constraints generate a market imperfection, which can be exacerbated by taxation. Therefore, it is possible that an optimal tax system should tax credit constrained firms less if this were observable. The criteria for exempt status (large individual or family ownership share and active management) might be related to credit constraints. Even if true, by 1994, only a small fraction of closely held businesses were meeting those criteria while the vast majority of businesses (Euro weighted) does in 2002. Thus, those criteria cannot be really good markers of credit constraints both in 1994 and 2002. Furthermore, it might be more efficient to alleviate credit constraint by targeting directly corporations through the corporate income tax rather than through the wealth tax: presumably wealthy individuals who benefit the most from the exemptions are precisely those who could use their other wealth holdings to alleviate potential credit constraints in their businesses.[18]

Therefore, this basic economic analysis of erosion of the wealth tax due to this closely held stock ownership suggests that this reform created significant

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[17] For years 2000 to 2002, non-taxable stocks increase with no further decrease in taxable stock. It is difficult, however, to assess whether this increase in primarily due to the tax cut because it takes place 7 years after the tax reform.

[18] Since 1994, taxpayers are ranked by taxable wealth excluding exempted closely held stock. Therefore, all those taxpayers in the top 0.01% reporting substantial exempt wealth have very large other wealth holdings, and should not be suffering from credit constraints.

deadweight burden and weakened considerably the redistributive power of the tax. In 2002, because of this exemption, the richest 3,000 Spaniards, who constitute the top 0.01% wealth holders, could exempt 40% of their wealth and probably reduce their wealth tax liability by over 50%. In this context, it would have been preferable either not to introduce the reform at all, or allow all closely held stock to benefit from the exemption (in order to avoid the costly shifting which took place).[19]

5.2 The Effects of Top Marginal Tax Rates on Top Incomes

Spain's income tax structure has changed significantly during the period 1981 to 2002. Most notable are the large reduction in the top marginal tax rate from 66 to 56 percent in 1988 and to 46 percent in 1999. Our top income shares series show that there was a peak in 1988, precisely at the time of the reduction in the top marginal tax rate from 66 to 56. However, this 1988 peak was not sustained and was mostly due to realized capital gains (see composition figure 7). Therefore, the peak might have been due to retiming of capital gains which would have taken place in 1987 in order to take advantage of the lower tax rate in 1988 with little or no permanent effect on tax revenue.

The tax rate cut of 1999 took place at a time where top income shares where growing rapidly. The growth accelerated in 1999 and 2000. Figure 7 shows that most of this growth is due to a surge in capital gains although the wage income component also grew from 1998 to 2000. The capital gains growth cannot possibly be due to the top marginal tax rate reduction because since 1996, capital gains have received a preferential treatment and are taxed at a maximum rate of 20%, and hence were not affected by the 1999 reform. From 2000 to 2002, part of the growth in the capital gains and wage income components has been reversed. Therefore, we can tentatively conclude that part

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[19] Allowing all closely held businesses to benefit from the tax reduction could have generated shifting from the publicly traded corporate sector to the closely held sector. It is very unlikely however that shifting in that context would have been as extensive as the one observed following the 1994 reform.

of the short-term growth in top incomes (excluding capital gains) might have been fueled by the reduction in marginal tax rates but it is not clear how long lasting this phenomenon will be and whether most of the gains will disappear in the coming years.

Overall the Spanish evidence does not offer convincing support to the supply side hypothesis claiming that marginal tax rates have a strong effect on incomes reported at the top of the income distribution. The inherent noise in top income shares from year to year, however, would make it difficult to detect systematic effects unless the elasticity of response is very large.

6. Conclusion

This paper has attempted to analyze income and wealth concentration in Spain from a long-run perspective using the best available evidence. Unfortunately, the quality of the data before the return of democracy is not good enough to allow us to make a very precise comparison of inequality from the pre civil war and dictatorship periods relative to the current period.

Nevertheless, our results suggest that income concentration was much higher during the 1930s than it is today. In spite of extensive tax evasion and poor enforcement of the progressive individual income tax, very top income shares estimated from reported incomes were significantly higher in the 1930s than over the last two decades. Enforcement of the progressive income tax further deteriorated during the dictatorship and it is therefore unfortunately impossible to know whether the drop in top income shares from 1940 to 1961 is due to decreased tax compliance or genuine reduction in income concentration.

Wage income distribution information suggests that wage income concentration was moderate during the last decade of the dictatorship and fell significantly to very low levels during the transition to democracy. During the last two decades, income concentration has increased significantly but this phenomenon is concentrated in the top 1%, and especially in the top fractiles within the top 1%. A large fraction of the increase is due to a surge in realized

capital gains following the stock market boom of the late 1990s, which might disappear if the stock market does not recover in coming years. Compositional data also show evidence of an increase in top salaries, which has contributed to the increase in top income shares. Wealth concentration in Spain has declined modestly since 1982. The sharp increase in real estate prices, which tend to reduce wealth concentration, have been to a large extent offset by large stock price increases, leaving the overall wealth concentration relatively stable.

The exemption of stocks from the wealth tax base for business owners actively involved in managing their business introduced in 1994 constitutes a striking example of the perverse effects of eroding the tax base, both on efficiency and redistributive grounds. This exemption had a minor effect on the tax base initially but now reduces the tax base of the wealthiest taxpayers by about 40%, weakening substantially the redistributive effects of the progressive wealth tax. Furthermore, the erosion of the tax base has been due primarily to wealthy business owners shifting from the non-taxable status to the taxable status. This suggests that, not only the costs of the tax cut are much higher than predicted based on a scenario with no behavioral response, but also that those tax losses create substantial additional deadweight burden as business owners expend significant resources to qualify for the non-taxable status.

Top incomes seem to be responsive to cuts in top tax rates in the short-run but not in the medium or long-run suggesting that the level of marginal tax rates at the top is not the primary determinant of the level of top reported incomes. Taken together, the evidence from the wealth tax and the income tax suggests that the institutional details or the tax code and the opportunities for income shifting are more important than the levels of tax rates to determine the behavioral responses and efficiency costs of taxation. Therefore, policy makers should probably refocus their attention to the technical details of the tax code and enforcement mechanisms rather than focusing the efficiency discussions around the level of the tax rates.

APPENDIX

A. The Income and Wealth Tax in Spain

A.1.The "old" income tax

After six unsuccessful attempts since 1910, the first personal income tax (Contribución General sobre la Renta) was established in all the territory of Spain, including Guipúzcoa and Vizcaya, in 1932 (Law 20/12/1932) during the Second Republic. Based on their historical autarky privileges, the provinces of Navarra and Alava were excluded since 1937 and 1943 respectively.[20]

Taxable income included income from real estate, capital, rural and mining activities, commercial and industrial business, labor and pensions. Mainly due to the narrow managerial capabilities of the government, this first law determined a rather high taxable income threshold (100,000 pesetas lowered to 80,000 pesetas in 1935) together with low progressive rates, ranging from 1% to 11% (Table F1).[21] Consequently, the progressive income tax was a very small share of government revenue. In 1933 there were only 1,446 tax returns representing 0.3% of the public revenue (Table B3). Fiscal evasion was likely very high. In their introductory note to tax statistics for years 1939 and 1940, the fiscal administration acknowledged that, according to fiscal statistics based on incomes reported on tax returns, "that less than 2% of the national income is represented by incomes above 80,000 pesetas. Even if our country does not display the same degree of concentration of copious wealth as capitalist countries, it is obvious that the true ratio between those incomes above 80,000 pesetas and the national income is clearly higher than the percentage mentioned before."[22]

The fiscal reform of 1940 (Law 16/12/1940), which made changes in the whole tax system, was mainly motivated by the need to increase fiscal revenues to solve the post civil war problems and to cancel war debts. Consequently, the reform relied on the traditional schedule taxes and consumption taxes, which were much easier to collect. Concerning the 'Contribución sobre la Renta,' it

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[20] The autarky regimes governing the territories of Navarra and País Vasco and their relationship with the central administration is not a new issue in the history of Spain. Those regimes date back to the XV century. More recently, Navarra's privilegies were regulated by the *Ley Paccionada* (1841). The *Régimen de Concierto* was negotiated with Alava, Guipúzcoa and Vizcaya in 1877, for which the provinces designed their own fiscal organization while making lump sum transfers to Madrid. The civil war and Franco's policy towards 'traitor' local nationalisms changed the scenario. On the one hand, Alava and Navarra received a preferential treatment and kept their prerogatives after their contribution to the war on Franco's side. On the other, the autarky of Vizcaya and Guipúzcoa was abolished in 1937 (Law 23/6/1937), even before the conflict had ended. Financial autonomy was recognized again after the democratic constitution of 1978.

[21] The parliamentary debates showed that even when some representatives considered that the minimun threshold was too low, it was acknowledged that the tax authority lacked both the managerial capabilities and the necessary human resources to administer the tax (Vallejo Pousada (1999)).

[22] Estadística de la Contribución General sobre la Renta 1935-1940.

reduced the minimum taxable income to 70,000 pesetas and substantially increased the progressivity of the rates, with a top marginal tax rate of 40% for incomes above 1,000,000 pesetas. However, it also raised the taxes on lower incomes, with the minimum tax rate jumping from 1% to 7.5%. It introduced family deductions and a supplementary 30% rate for single individuals.

Tax rates were further increased in 1943 (Law 6/2/1943), when the minimum threshold was set to 60,000 pesetas. Two new reforms (Law 16/12/1953 and Law 26/12/1957) failed to generalize the coverage of the tax. The so-called "unjustified wealth gains" (defined as those which could not be explained by declared income flows) were included in the taxable income and had a positive impact on the tax collection after inspection. Some experts claimed that in 1954 only 5% of potential taxpayers were filing (Vallejo Pousada (1995)). That year, 21,332 individuals paid the tax (Table B3).

By 1960 the Contribución had been pushed down in the fiscal agenda.[23] The stabilization plan of 1959 had been extremely successful in terms of government revenues so the tax reform of 1964 was not motivated by fiscal deficits but to promote growth and development. By the Law 11/6/1964 and the Decree 27/11/1967 the valuation of taxable income was made dependent on the system of schedule taxes and consequently the personal income tax lost all autonomy. Theoretically there were no minimum threshold to file; however, the usual obligation began at 200,000 pesetas. Tax rates ranged from 15% to 61,4%, with an average maximum rate of 50%.

Political pressures on the one side, and investment incentives on the other put an end to wealth inspection; "unjustified wealth gains" were exempted as well as some investments in bonds and stock.[24] In fact, in 1965, schedular taxes represented 92% of individual tax collection and 56% of direct taxes; by 1971 those figures were 93% and 57%.[25]

The collection results were well below expectations again and the situation remained unchanged after the reforms of 1973 and 1975 (Decree Law 12/1973 and 13/1975). The top marginal rate was reduced to 56.12% with an average maximum rate of 40%. Finally, and just before the introduction of the modern income tax in 1979, the law 50/1977 offered the possibility of regularizing the fiscal situation in 1976; this was a success as 213,000 tax filers responded positively.

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[23] A result of this diminishing relevance is the inexistence of official statistics between 1961 and 1979.

[24] As some investments were not included in the Contribución General, it was claimed that taxing "unjustified wealth gains" generated a negative bias against investment in some sectors and impeded economic development. As a result, investments in bonds and stock were exempted up to 25% of taxable income, whenever they were kept at least during three years. Long run capital gains (beyond one year) were not computed as income, as well as short run capital gains if they re invested.

[25] The powerful banking and industrial sectors, with strong influence in the dictatorship of Franco, seem to have been the source of a systematic attempt to block any generalization of the Contribución sobre la Renta and to sustain the statu quo of the taxation scheme. See, for example, Albiñana (1969), Vallejo Pousada (1995) for details on how some private banks sketched income tax codes to be imposed to the government.

Fiscal fraud was extensively widespread during Franco's years, and this evidently affects the meaning and scope of our estimates. A few studies have addressed this issue, although no quantitative assessment has been provided.[26] We can say that by 1975 the obligation to file was extensively accepted, even when true income remained hidden from fiscal authorities. In 1968 there were 199,592 files, but only 5,777 declared incomes above the taxable thresholds. In 1974 those figures increased to 1,318,313 and 28,236 respectively (Table F2).[27]

A.2. The modern income tax

The modern income tax was established in 1979 (Law 44/1978), with two major reforms in 1991 and 1998.

From 1984 to 1987 the top marginal rate was 66%; however the tax could not exceed 46% of the taxable income. In 1988 the tax scale was completely restructured downwards; the top marginal rate decreased from 66% to 56%, but the 46% limit was eliminated.

The reform of 1991 did not modify either the tax rates or the main deductions. It updated the legislation in terms of individual and joint filing after the Supreme Court had decided in 1989 that the obligation to file jointly for married couples was thereafter unconstitutional. It also introduced changes in the taxation of capital gains, which we briefly describe below.

Since the reform of 1998 (Law 40/1998), the system was not supposed to tax overall but disposable income, after the deduction of a personal and family minimum income threshold (family-related reductions existed before, but they were applied to the amount of the tax and not to the original income). For this reason, the joint-filer tax scale disappeared, so that the same scale applies to everybody.

The reform also meant a general rate reduction in the tax scale. The decreases ranged from 2% (from 20% to 18% for the bottom bracket) to 8% (from 56% to 48% for the top bracket). It also reduced the number of brackets from eight to six and eliminated the 0% rate for the lowest income.

Concerning capital gains, the following facts are worth being stressed. Between 1978 and 1991, capital gains (excluding gratuitous *inter-vivos* and *mortis causa* transfers) were taxed as regular income, according to the tax rate scale. From 1992 to 2002, a distinction was made between short run (or 'regular') (below one year) capital gains and long run (or 'irregular') capital gains. The former are added to the rest of the income and taxed according to the regular income tax scale.

Until 1998 long run capital gains were first corrected downwards by a coefficient depending both on the nature of the capital asset and the number of years the asset had been held (real estate, -5.26% per year; stock: -11.11% per year; -7.14% for other assets). Second, the tax was computed as the maximum of (a) adding 50% of irregular capital gains to the regular income and applying the tax scale to the result; and (b) applying the individual average tax rate to

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26 See, for instance, the monographic volume Instituto de Estudios Fiscales (1994).
27 See Martí Basterrechea (1974).

100% of the irregular gains. Since 1996 the average tax rate affecting irregular capital gains could not exceed 20%.

From 1997 to 1998, long run capital gains generated in one to two years continued to follow the rules described above. For those produced in more than two years, a 20% rate was applied only to any amount beyond 200,000 pesetas (overall, gains from stock could not exceed 20%).

Since 1999 only gains generated in more than two years are considered "irregular" and consequently taxed in a different way from the rest of income, at a 20% rate (18% for 2002).

A.3. The Wealth Tax

The Law 50/1977 established a "transitory" and "exceptional" tax on net wealth, declared and paid annually at the same time as the income tax but on a separate form. Originally it was meant to serve as a control over the income tax, with limited redistributive goals. Tax filing was done on an individual basis, with the exception of married couples under joint tenancy; joint filing was optional between 1988 and 1990. [28]

Taxable wealth included: (a) urban real estate was valued at property registry values (catastro), corrected by a set of coefficients set by law which depended upon the year of construction; (b) rural real estate value was the result of capitalizing at 4% the amount fixed by the local estate tax; (c) checking, savings accounts and time deposits corresponded to the annual average balance, net of any amount used to purchase other components of wealth or to cancel debts; (d) life insurance corresponded to recovery value; (e) bonds and traded stock, at the monthly average price during the last quarter; (f) closely held stock, at liquidating value; (g) small personal goods, 3% of wealth below 20 million pesetas and 5% beyond; (h) other items, at market prices and (i) debts at nominal value. Urban real estate declared historical monuments and art works involved in cultural activities were exempted.

Since 1992, a major reform by the Law 19/1991 put an end to the transitory an exceptional character of the tax. It established a strictly individual filing and introduced changes in some of the included components of wealth as well as in their valuation rules. In particular, (a) real estate is valued at the highest of (i) the property registry value, (ii) the purchasing price, (iii) the value determined for other taxes; (b) checking, savings accounts and time deposits, valued at the highest of the final balance or the 4th quarter average balance; (c) bonds and traded stock, at the average of market price during the 4th quarter; (d) closely held stock, at the theoretical value according to the last audited balance; if the audit is still pending the value is obtained from the highest of the last audited balance or the average of the last three annual profits capitalized at 12.5%;[29] (e) life insurance at recovery value; (f) annuities at capitalization value; (g) art works and antiques, at market value; (h) intellectual and industrial property

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[28] In 1989 the Supreme Court decided that the obligation to file jointly for married couples was unconstitutional thereafter.
29 Capitalization rate was raised to 20% in 1999 (Law 50/1998).

rights, exempted if belonging to the original author and valued at purchasing prices otherwise; (i) other items, at market prices and (i) debts, at nominal value. Small personal items and pension funds are not taxed. The main residence was exempted up to 25 million pesetas (150,253.03 euros) in 2000 (Law 6/2000).

Of particular importance for Section 5 in the main text, the Law 22/1993 introduced the following new exemptions, starting in 1994:

(a) Goods necessary for business activities constituting the main income source, performed in a direct and personal way by the individual.

(b) Stock (both publicly traded and closely held) of business corporations whenever all three of the following conditions were met:

(i) the individual is substantially engaged in this business activity, getting over 50% of his total labor, business and professional income from this activity;

(ii) the individual owns at least 20% of the capital;

(iii) the corporation is not involved in wealth management as main activity.

Since 1995 the minimum share requirement was reduced to 15% (Law 42/1994) for the individual, and set to 20% for the family in 1996 (Law 13/1996), when professional organizations were also included in the exemption. In 2003 the individual ownership threshold has been lowered to 5%.[30]

As of 1/1/1997 the wealth tax receipts were transferred to the local governments.

B. References on data sources for Spain

B.1 Tax Statistics

Income tax statistical information covering the "old" income tax has been published regularly between 1933 and 1961: Dirección General de Rentas Públicas, Estadística de la Contribución General sobre la Renta 1933-1934; Dirección General de Contribución sobre la Renta, Estadística de la Contribución sobre la Renta, 1935-1940, 1941,1942; Dirección General de Contribución sobre la Renta, Estadística de Servicios 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950; Ministerio de Hacienda, Dirección General de la Contribución sobre la Renta, Estadística de Servicios 1951, 1952, 1953, 1954, 1955; Ministerio de Hacienda, Dirección General de Impuestos sobre la Renta, Estadística de Servicios de la Contribución sobre la Renta 1956, 1958, 1959, 1960, 1962. Tables display the distribution of taxpayers by level of income together with taxable income and tax paid.

There are no official income tax statistics publications from 1962 to 1979. The Instituto de Estudios Fiscales (1973, 1974) has published a set of officious statistics covering total tax files between 1963 and 1974 together with the distribution of files by income brackets for 1971.

The way statistics are presented is not only affected by fiscal fraud. Tax inspection, which anyway showed a varying degree of pressure between 1933 and 1978, was responsible for a non-trivial fraction of tax collection and for the

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30 In 1994 the fiscal authorities found it difficult to predict the results of the new exemptions (Memoria de la Administración Tributaria 1994, p. 124).

discovery of new taxpayers. Nevertheless, when looking at the distribution of filers by income level, the outcome of tax investigation is not included in the published figures. Additionally, income from tax returns with no taxable income is not included in the official figures (Table F2).

Much more detailed data describe the evolution of the income and wealth taxes between 1981 and 2003: Agencia Estatal de la Administración Tributaria, Departamento de Informática Tributaria, Madrid, <u>Estadísticas IRPF y Patrimonio</u> 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000; Dirección General de Tributos, Subdirección General de Política Tributaria (2002), <u>El Impuesto sobre la Renta de las Personas Físicas y el Impuesto sobre el Patrimonio en 1999</u>; Ministerio de Economía y Hacienda, Secretaría de Estado de Hacienda, <u>Memoria de la Administración Tributaria</u>, 1982-1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003.

B.2 Wages and Salaries 1963-1980

The statistical information regarding wages and salaries is taken from <u>Salarios</u> (Instituto Nacional de Estadística, Madrid), which was published between 1963 and 1980. It is based on a regular employer survey, which covered all workers legally related to any firm employing at least 10 individuals. Civil service was excluded. The sampling design included:

Firms with more than 500 workers	100%
Firms with 250-499 workers	
Sector with less than 100 firms	50%
Sector with more than 100 firms	25%
Firms with 100-249 workers	
Sector with less than 50 firms	50%
Sector with 50-199 firms	30%
Sector with 200 firms or more	15%
Firms with 50-99 workers	
Sector with less than 50 firms	40%
Sector with 50-199 firms	25%
Sector with 200 firms or more	12%
Firms with 20-49 workers	
Sector with less than 50 firms	30%
Sector with 50-199 firms	20%
Sector with 200-1499 firms	10%
Sector with 1500 firms or more	5%
Firms with 10-19 workers	
Sector with less than 50 firms	12%
Sector with 50-199 firms	10%
Sector with 200-1499 firms	5%
Sector with 1500-4999 firms	2%
Sector with 5000 firms or more	1%

Between 1963 and 1976 data include the distribution of workers and total income by wage level (1975 missing); for the period 1977-1980 only the number of workers by wage brackets is provided. Total number of employees is listed in Table D.

C. Wealth and Income Denominators

C.1 Wealth Denominator

In order to compute wealth shares we need to estimate the total personal wealth. We have used two definitions of personal wealth: financial wealth (wealth excluding pension funds -which are not taxed-, real estate and mortgage debt) and total wealth (including real estate and mortgage debt but still excluding pension funds).

The wealth denominator relies on five statistical sources:

(a) Banco de España (2005), Cuentas Financieras de la Economía Española 1990-2005. Table II.21, Hogares e Instituciones sin fines de Lucro al servicio de los Hogares.

(b) Banco de España (2004), Encuesta Financiera de las Familias (EEF): Descripción, Métodos y Resultados Preliminares, Boletín Económico 11/2004.

(c) Banco de España, Indicadores del Mercado de la Vivienda, www.bde.es/infoest/sindi.htm, Table sindi15. Data correspond to monthly averages in the 4th quarter between 1987 and 2004.

(d) Ministerio de Economía y Hacienda, Dirección General de Catastro, Estadísticas Catastrales 1990-2003. www.catastro.minhac.es/estadistica/datos/descargas.htm

(e) Caixa de Catalunya (2004), Report Monográfico: El Crecimiento del Stock de Riqueza de las Familias Españolas y su Impacto sobre el Consumo enel Período 1995-2003: Una Version Territorial, in Informe sobre el Consumo y la Economía Familiar, June.

Financial Wealth: Financial wealth is defined as the sum of bank deposits, currency holdings, stocks and investment funds, other fixed claimed assets and insurance contracts on the asset side, minus commercial and other credit on the liability side. To match the definition of taxable wealth, we do not consider pension funds. Also long run loans are excluded as a proxy for mortgage debt. Data was selected from (a) and correspond to the 4th quarter covering the period 1989-2002.

In order to estimate the financial wealth for the period 1982-2002, we proceeded in the following way. The GDP shares of deposits and currency holdings, insurance contract net of pensions, other fixed claim assets and debts were rather stable for the first years for which data exist (1989-1992); consequently we fixed the ratios for 1982-1988 at the 1989 level. On the other hand, the stock and investment funds GDP share has displayed an increasing tendency during the decade of 1990, in parallel with the Madrid stock market

index. Therefore, for 1986-1988, we applied the 1989 [stock and investment funds/GDP] ratio corrected by the evolution of the stock market index during the 4th quarter (highest minus lowest values). For 1982-1985 the share was set at the same level of 1986.

Real Estate Wealth: Real estate net wealth is the result of deducting mortgage loans from household real estate wealth. The former is taken from Banco de España, Indicadores del Mercado de la Vivienda (source (c)). Data correspond to monthly averages in the 4th quarter and they cover years 1987 to 2004. These estimates are constructed upon the series of residential units, average surface and average market prices. On the liability side, mortgage debts are approximated by long run debts from Cuentas Financieras de la Economía Española (source (a)). For the years 1982-1986 we fixed the [real estate wealth/GDP] ratio at the 1987 level.

Wealth tax information excludes Navarra and Pais Vasco. To take this fact into account, we corrected total wealth computed as described above. We assumed that total wealth in those regions was roughly proportional to real estate wealth. The share of Navarra and Pais Vasco real estate wealth in Spain is taken from Caixa de Catalunya (2004) (source (e)), based on Ministerio de Fomento.

The consistency between valuation rules in the tax code and data available posed several methodological problems to estimate this portion of the wealth. Between 1978 and 1992, urban real estate was mainly priced at cadastral values. Rural estate valuation formula required capitalizing at 4% the amount fixed in the local estate tax. Since 1992, they must be valued at the highest of (a) the property registry value, (b) the purchasing price, (c) the value determined for other taxes. Local real estate taxes are based on cadastral values, originally computed following an established formula with price-coefficients defined for land surface, construction type, urban zone, etc, and which can be updated periodically by local authorities. Nevertheless, cadastral values are generally below 50% of market prices. This can be easily verified comparing the Bank of Spain statistics (based on market prices) with the property registry statistical information (source (d)); for instance, between 1990 and 2002 the ratio between both series ranged from 30% to 45%. This implies a gap difficult to correct between the numerator and the denominator. For this reason, we also studied separately the distribution of financial wealth (net of real estate) in the main text.

C.2 Total number of individuals

For the period 1933-1971, total number of individuals is computed as the number of individuals in the Spanish population aged 20 and above. We do not make any corrections for the fact Navarra is excluded from statistics since 1937 and Alava since 1943 (taking this into account would also imply making an ad hoc correction on the income denominator). These series are based on Census interpolations provided by INE and reported in Table B3, column 1. Column 2

also indicates the total number of tax returns (with positive taxable income) actually filled as well as the fraction of adult population filling a tax return (Column 3).

For the period 1982-2002, total individuals correspond to the number of adults aged 20 and over excluding País Vasco and Navarra. Again this series come from Census interpolations provided by INE and it is listed in Tables A and B (column 1).

C.3 Total Income Denominator

The lack of official statistics is a standard feature of the Spanish National Accounts System until the decade of 1960. The existence of unofficial series, produced by independent scholars or research institutes and not always mutually consistent, is an example of this deficiency. For the period 1933-1971, total income corresponds to National Income (in current pesetas) reported in Alcaide Inchausti (1976), pp. 1142-1143. The price index covering 1933-1939 has been taken from the same publication (p. 1144, column 1). The first official consumer price index dates back to 1940. Table B3, Column 4 displays the income series converted in 2000 Euros.

For the period 1981-2002 total income is defined as wages and salaries from National Accounts (net of social contributions) plus 50% of social transfers, plus 66.6% of unincorporated business income (excluding Navarra and Pais Vasco), plus all non-business, non labor income reported on tax returns. The total denominator series expressed in 2000 Euros is reported in Column 4 of Table A. The average income per adult is reported in Column 5 while the CPI index (base 100 in year 2000) is reported in Column 6.

D. Estimating Top Shares

D.1. Basic Pareto Interpolation

The general interpolation technique is based on the well known empirical regularity that the top tail of the income distribution is very closely approximated by a Pareto distribution. A Pareto distribution has a cumulative distribution function of the form $F(y)=1-(k/y)^a$ where k and a are constants, and a is the Pareto parameter of the distribution. Such a distribution has the key property that the average income above a given threshold y is always exactly proportional to y. The coefficient of proportionality is equal to $b=a/(a-1)$.

The first step consists then in estimating the income thresholds corresponding to each of the percentiles P90, P95, P99, …, P99.99, that define our top income groups. For each percentile p, we look first for the published income bracket [s,t] containing the percentile p. We estimate then the parameters a and k of the Pareto distribution by solving the two equations: $k=s \, p^{(1/a)}$ and $k=t \, q^{(1/a)}$ where p is the fraction of tax returns above s and q the fraction of tax returns

above t.[31] Note that the Pareto parameters k and a may vary from bracket to bracket. Once the density distribution on [s,t] is estimated, it is straightforward to estimate the income threshold, say y_p, corresponding to percentile p.

The second step consists of estimating the amounts of income reported above income threshold y_p. We estimate the amount reported between income y_p and t (the upper bound of the published bracket [s,t] containing y_p) using the estimated Pareto density with parameters a and k. We then add to that amount the amounts in all the published brackets above t.

Once the total amount above y_p is obtained, we obtain directly the mean income above percentile p by dividing the amount by the number of individuals above percentile p. Finally, the share of income accruing to individuals above percentile p is obtained by dividing the total amount above y_p by our income denominator series (Table A, col. (4)). Average incomes and income shares for intermediate fractiles (P90-95, P95-99, etc.) are obtained by subtraction.

D.2. Adjustments to raw Pareto Interpolations

We do no adjustments at all to the raw estimates for the period 1933-1971. For the recent period, we do the following adjustments.

Exclusions from the income tax

Statistics are presented by brackets of income net of the labor income deduction and pension deduction. The amount of those deductions is reported for each brackets in the tax statistics. Therefore, for each fractile, we can compute the average amount of deductions and add those amounts to the raw estimates.

Series excluding capital gains

Second, since 1981, capital gains are included in taxable income (see appendix section B above). For series excluding capital gains, we need to subtract the capital gains component from the raw series. The amount of capital gains is also reported by brackets in the tax statistics. In order to compute our series from the raw series, one could simply deduct for each group the share of capital gains estimated from composition tables. The problem is that ranking according to the income including capital gains and ranking according to income excluding capital gains might be different, especially at the very top. For example, in the extreme case where very top incomes of the income tax statistics distributions consist only of capital gains, then the deduction of capital gains would lead to the conclusion that the very top incomes of the income (excluding capital gains) distribution are equal to zero. Therefore, deducting the full amount of capital gains would provide an underestimate of the income shares we would like to estimate. In order to correct for this re-ranking bias, we therefore need to subtract less than 100% of capital gains.

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[31] This is the standard method of Pareto interpolation used by Kuznets (1953) and Feenberg and Poterba (1993).

Based on other studies such as Piketty and Saez (2003) for the United States and Saez and Veall (2005) for Canada, where not only similar tabulated tax statistics but also micro data are available, a good approximation is to subtract 80% of capital gains amounts instead of 100% to obtain shares of income excluding capital gains. This is therefore the rule we follow in the case of Spain.

Shift from family to individual taxation in 1988

Before 1988, taxation was based on the family unit (as in the United States today). Starting in 1989, individual taxation became possible and is actually an advantageous option when the secondary earner has positive income. As we have discussed above, our top groups are defined relative to the total adult population and our series measure individual income concentration. For the period 1988 to 2002, income tax statistics measure individual incomes as married couple where both spouses have positive incomes have an incentive to file separately in order to reduce their tax burden.

Before 1988, however, income tax statistics measure family income as the income of spouses are aggregated for income tax purposes. Therefore, our basic methodology overstates income concentration (as spousal income is added to the income of top earners). Indeed, uncorrected series display a clearly visible discontinuity from 1987 to 1988. We therefore need to make a correction. There is no specific breakdown of amounts reported by each spouse on family tax returns. Therefore, we simply assume that the (log) growth of each top income shares from 1987 to 1988 (when the law changes) is equal to the average (log) growth between 1986 to 1987 and 1988 to 1989. We then correct top income shares for each year from 1981 to 1987 by the same multiplicative factor. The correction reduces raw income shares by about 10%.

Top Wealth Shares Estimation

Top wealth shares for the period 1982-2002 are also estimated using the same Pareto interpolation technique. We do not make a correction for individual versus family filing because the wealth tax has always been assessed at the individual level (except for married couples with joint tenancy) and, in contrast to income share series, there are no discontinuity in the series from 1987 to 1988.

As in the case of the income tax, we add back exempted items such as exempted businesses (after the 1994 reform) or the standard exemption for the main residence (after 2000), which are fortunately reported by wealth brackets.

We estimate two top wealth shares series : series excluding real estate and series included market priced real estate. For series excluding real estates, we subtract the real estate (including the real estate exemption after 2000) from our raw estimates. For series including real estates, we inflate the value of real estate by a uniform multiplicative factor equal to total real estate from the Flow of Funds accounts divided by total cadastral value reported in aggregate real estate

statistics, and we add back to our raw series the difference between the market price series and the cadastral value.

Estimation of wealth and income composition series

We have constructed income and wealth composition series for each of our top groups for the period 1981-2002 using tax statistics showing the breakdown of income and wealth into various components by income and wealth brackets.

The income composition series reported in Table C1 indicate for each upper income group the fraction of total income (including capital gains) that comes from the various types of income. We consider 4 types of income: wage income; entrepreneurial income; capital income (excluding capital gains); and realized capital gains. Wage income includes wages and salaries (including the wage income deduction), as well as pensions. Entrepreneurial income includes self-employment income from professions such as doctors, lawyers, etc. Business income also includes income from sole proprietorships, partnership income, and farm income. Capital income includes dividends, interest income, rents, and other investment income. Capital gains includes both long-term and short-term capital gains reported on tax returns. We have excluded from these composition series the other income category which never make more than 5% of the total income as this simplifies the reading of our composition series (the other income category was taken into account when computing top income levels and top income shares in total income).

The wealth composition series reported in Table E2 indicate for each upper wealth group the fraction of total wealth (including the market value of real estate) that comes from the various types of assets. We consider six types of assets: real estate, business assets, fixed claim assets, stocks, other assets, and debts. Real estate includes the market value of real estate. It is estimated as reported real estate amount (including the deduction for primary residence since 2000) times the ratio of total market value of real estate in Spain divided by total cadastral value of real estate in Spain. Business assets include the value of unincorporated business assets. Fixed claim assets include cash, checking and savings accounts, annuitized wealth, life insurance, public and corporate bonds. Stocks include publicly traded and closely held corporate stock either directly owned or owned through investment funds. Other includes household goods, jewels, vehicles, intellectual property rights, non exempted works of arts and other assets. Debts include mortgage debts, consumer debts, and business debts.

The composition series are estimated from the published tables in indicating for each income (or wealth) bracket not only the number of taxpayers and the total amount of their total income (or wealth) but also the separate amounts for each type of income (or wealth), as well as the deductions. The composition of income (or wealth) within each group was estimated from these tables using a simple linear interpolation method. Such a method is less satisfactory than the Pareto interpolation method used to estimate top income

levels (no obvious law seems to fit composition patterns in a stable way). See Piketty and Saez (2005) for a more precise discussion of this method where it is systematically compared with direct estimates using micro data.

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TABLE 1.

Thresholds and Average Incomes in Top Income Groups in 2002

Percentile threshold (1)	Income threshold (2)	Income Groups (3)	Number of adults (aged 20+) (4)	Average income in each group (5)
		Full Adult Population	30,249,000	12,997 €
Top 10%	26,745 €	Top 10-5%	1,512,450	30,886 €
Top 5%	36,011 €	Top 5-1%	1,209,960	47,193 €
Top 1%	70,335 €	Top 1-0.5%	151,245	79,573 €
Top .5%	92,970 €	Top 0.5-0.1%	120,996	123,958 €
Top .1%	194,824 €	Top 0.1-0.01%	27,224	307,092 €
Top .01%	686,125 €	Top 0.01%	3,025	1,404,427 €

Notes: Computations based on income tax return statistics.

Income defined as annual gross income reported on tax returns including capital gains

and before individual income taxes but net of all social contributions (employer and employee)

Amounts are expressed in current 2002 Euros.

Column (2) reports the income thresholds corresponding to each of the percentiles in column (1). For example,

an annual income of at least 26,745 Euros is required to belong to the top 10% tax units, etc.

TABLE A. Reference Totals for Population, Income, and Inflation, 1981-2002

	Tax Units and Population			Total Income		Inflation	Taxes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Adults	Number of tax returns	(2)/(1) (%)	Total income (millions 2000 , Euros)	Average income (2000 Euros)	CPI (2000 base)	Top Marginal Tax Rate (%)
	('000s)	('000s)					
1981	22,857	6,296	27.5	198,986	8,706	32.238	65.09
1982	23,242	6,262	26.9	194,719	8,378	36.818	68.47
1983	23,635	6,397	27.1	194,858	8,244	41.560	65
1984	24,036	6,544	27.2	194,172	8,078	45.911	66
1985	24,445	7,081	29.0	201,393	8,239	49.926	66
1986	24,760	7,896	31.9	211,411	8,538	54.289	66
1987	25,082	8,028	32.0	224,902	8,967	57.162	66
1988	25,410	8,954	35.2	241,033	9,486	60.119	56
1989	25,745	9,845	38.2	253,219	9,836	64.116	56
1990	26,087	10,965	42.0	274,394	10,518	68.359	56
1991	26,335	11,584	44.0	288,874	10,969	72.494	56
1992	26,673	12,341	46.3	291,863	10,942	76.647	56
1993	27,015	12,794	47.4	294,439	10,899	80.307	56
1994	27,360	13,578	49.6	286,710	10,479	84.021	56
1995	27,710	14,119	51.0	293,658	10,598	87.682	56
1996	28,114	14,620	52.0	299,046	10,637	90.825	56
1997	28,523	15,000	52.6	305,152	10,698	92.989	56
1998	28,938	15,424	53.3	320,948	11,091	94.485	56
1999	29,359	13,721	46.7	336,125	11,449	96.701	48
2000	29,785	14,123	47.4	349,707	11,741	100.000	48
2001	30,016	14,123	47.1	359,825	11,988	103.196	48
2002	30,249	14,123	46.7	368,802	12,192	106.598	48

Notes: Population and tax units estimates based on census population surveys
Tax units estimated as number of adults aged 20 and over in Spain (excluding Pais Vasco and Navarra).
Total income defined as wages and salaries from National Accounts (net of social contributions) plus 50% of social transfers plus 66.6% of unincorporated business income (excluding Navarra and Pais Vasco), plus all non-business, non labor income reported on tax returns.
Consumer Price Index is the official CPI index (see Appendix for more details).

TABLE A2. Aggregate Net Worth and Composition, 1981-2002

	Wealth Tax Units and Population			Total Financial Wealth		Total Wealth		Wealth Composition						Inflation	Wealth Tax
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Adults	Number of wealth tax returns	(2)/(1)	Total Net Financial Wealth	Average	Total Net Wealth	Average	Real Estate	Mortgage Debt	Fixed Claim Assets	Stocks	Other	Other Debts	CPI	Top Marginal Tax Rate
			(%)	(millions 2000 Euros)	(2000 Euros)	(millions 2000 Euros)	(2000 Euros)							(2000 base)	
	('000s)	('000s)													(%)
1981	22,857	509	2.2	303,845	13,293	1,011,736	44,264	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	32.238	2.5%
1982	23,242	492	2.1	305,951	13,164	1,018,749	43,832	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	36.818	2.5%
1983	23,635	541	2.3	308,664	13,060	1,027,781	43,486	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	41.560	2.5%
1984	24,036	535	2.2	315,269	13,117	1,049,773	43,675	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	45.911	2.5%
1985	24,445	675	2.8	322,142	13,178	1,072,660	43,881	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	49.926	2.5%
1986	24,760	781	3.2	339,172	13,698	1,129,364	45,612	78.8%	-8.8%	24.6%	5.4%	4.3%	-4.3%	54.289	2.5%
1987	25,082	887	3.5	385,174	15,357	1,224,350	48,814	77.2%	-8.6%	24.1%	7.3%	4.2%	-4.3%	57.162	2.5%
1988	25,410	756	3.0	414,974	16,331	1,423,395	56,017	78.7%	-7.9%	22.0%	7.2%	3.9%	-3.9%	60.119	2.5%
1989	25,745	855	3.3	446,286	17,335	1,633,733	63,458	79.9%	-7.2%	20.1%	7.2%	3.5%	-3.6%	64.116	2.5%
1990	26,087	974	3.7	427,685	16,395	1,711,299	65,600	82.2%	-7.1%	20.4%	4.8%	3.5%	-3.7%	68.359	2.5%
1991	26,335	1,033	3.9	455,007	17,278	1,916,843	72,787	83.0%	-6.7%	18.0%	5.6%	3.4%	-3.4%	72.494	2.5%
1992	26,673	863	3.2	464,272	17,406	1,738,375	65,174	80.8%	-7.5%	20.0%	6.6%	3.6%	-3.9%	76.647	2.5%
1993	27,015	928	3.4	507,815	18,798	1,754,032	64,928	78.5%	-7.4%	20.0%	9.0%	3.5%	-3.9%	80.307	2.5%
1994	27,360	809	3.0	527,373	19,275	1,740,103	63,600	77.2%	-7.5%	20.2%	9.6%	3.9%	-3.8%	84.021	2.5%
1995	27,710	783	2.8	577,726	20,849	1,791,833	64,664	75.2%	-7.5%	20.4%	11.1%	3.9%	-3.6%	87.682	2.5%
1996	28,114	825	2.9	614,866	21,870	1,814,871	64,554	73.9%	-7.8%	19.6%	13.4%	4.0%	-3.5%	90.825	2.5%
1997	28,523	892	3.1	688,512	24,139	1,892,369	66,345	72.0%	-8.4%	18.2%	17.5%	4.0%	-3.3%	92.989	2.5%
1998	28,938	946	3.3	805,177	27,824	2,074,458	71,686	70.2%	-9.0%	16.8%	20.9%	4.1%	-3.1%	94.485	2.5%
1999	29,359	981	3.3	867,394	29,544	2,284,268	77,805	71.6%	-9.6%	16.7%	19.9%	4.4%	-3.0%	96.701	2.5%
2000	29,785	869	2.9	843,599	28,323	2,454,847	82,419	75.7%	-10.1%	16.6%	16.0%	4.6%	-2.8%	100.000	2.5%
2001	30,016	874	2.9	866,099	28,855	2,718,916	90,582	78.1%	-9.9%	15.4%	14.6%	4.3%	-2.5%	103.196	2.5%
2002	30,249	884	2.9	811,933	26,842	3,022,332	99,915	83.2%	-10.0%	14.3%	10.7%	4.2%	-2.3%	106.598	2.5%

Notes: Population and tax units estimates based on population census

Tax units estimated as number of adults aged 20 and over in Spain (excluding Pais Vasco and Navarra).

Total Wealth from Flow of Funds accounts and other sources (see appendix).

Consumer Price Index is the official CPI index.

Table B1. Top Income Shares in Spain (including Capital gains), 1981-2002

	Top 10%	Top 5%	Top 1%	Top .5%	Top .1%	Top .01%	Top 10-5%	Top 5-1%	Top 1-.5%	Top .5-.1%	Top .1-.01%	Top .01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1981	32.70	21.25	7.63	4.98	1.94	0.55	11.46	13.62	2.65	3.04	1.39	0.55
1982	33.11	21.70	7.95	5.27	2.15	0.66	11.41	13.75	2.69	3.11	1.50	0.66
1983	33.41	21.82	7.79	5.07	1.98	0.59	11.59	14.03	2.73	3.09	1.38	0.59
1984	33.71	21.99	7.81	5.07	1.99	0.62	11.72	14.18	2.74	3.08	1.37	0.62
1985	34.06	22.43	8.12	5.31	2.11	0.62	11.63	14.31	2.81	3.21	1.49	0.62
1986	35.15	23.45	8.88	5.97	2.59	0.93	11.70	14.57	2.91	3.38	1.67	0.93
1987	35.37	23.73	9.15	6.24	2.84	1.13	11.64	14.57	2.92	3.40	1.72	1.13
1988	35.68	23.91	9.19	6.24	2.81	1.08	11.77	14.72	2.95	3.43	1.73	1.08
1989	36.11	24.03	9.01	6.02	2.53	0.82	12.08	15.02	2.99	3.49	1.72	0.82
1990	35.71	23.61	8.80	5.85	2.42	0.73	12.10	14.81	2.96	3.43	1.69	0.73
1991	34.97	22.97	8.47	5.58	2.26	0.67	12.00	14.50	2.89	3.32	1.59	0.67
1992	34.15	22.50	8.42	5.54	2.20	0.62	11.65	14.08	2.89	3.34	1.58	0.62
1993	33.64	22.11	8.22	5.38	2.10	0.57	11.53	13.89	2.84	3.28	1.53	0.57
1994	34.00	22.30	8.27	5.41	2.12	0.58	11.70	14.03	2.86	3.30	1.54	0.58
1995	33.84	22.23	8.29	5.44	2.14	0.59	11.61	13.94	2.85	3.30	1.55	0.59
1996	33.87	22.27	8.32	5.49	2.18	0.60	11.60	13.95	2.83	3.32	1.58	0.60
1997	33.86	22.42	8.55	5.70	2.33	0.67	11.45	13.87	2.85	3.36	1.66	0.67
1998	34.24	22.86	8.94	6.04	2.56	0.81	11.37	13.92	2.90	3.48	1.75	0.81
1999	34.78	23.39	9.47	6.55	2.97	1.05	11.39	13.92	2.92	3.57	1.93	1.05
2000	35.25	23.90	9.95	7.00	3.32	1.25	11.35	13.94	2.95	3.68	2.07	1.25
2001	34.92	23.63	9.82	6.91	3.26	1.21	11.29	13.81	2.92	3.64	2.05	1.21
2002	34.23	23.08	9.46	6.59	3.01	1.01	11.15	13.63	2.87	3.58	2.00	1.01

Notes: Computations by authors on tax return statistics. Taxpayers are ranked by gross income (including capital gains).

The Table reports the percentage of total income accruing to each of the top groups. Top 10% denotes top decile,

top 10-5% denotes the bottom half of the top decile, etc.

Table B2. Top Income Shares in Spain, excluding Capital Gains, 1981-2002

	Top 10%	Top 5%	Top 1%	Top .5%	Top .1%	Top .01%	Top 10-5%	Top 5-1%	Top 1-.5%	Top .5-.1%	Top .1-.01%	Top .01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1981	32.61	21.12	7.50	4.87	1.87	0.52	11.48	13.62	2.63	3.01	1.35	0.52
1982	32.96	21.50	7.75	5.08	2.00	0.58	11.46	13.75	2.67	3.07	1.42	0.58
1983	33.29	21.67	7.65	4.94	1.88	0.55	11.62	14.02	2.71	3.06	1.33	0.55
1984	33.58	21.82	7.63	4.90	1.86	0.55	11.76	14.19	2.73	3.04	1.31	0.55
1985	33.74	22.05	7.77	5.01	1.92	0.54	11.69	14.28	2.76	3.09	1.38	0.54
1986	34.70	22.86	8.25	5.40	2.19	0.70	11.84	14.61	2.86	3.21	1.49	0.70
1987	34.86	23.06	8.42	5.54	2.27	0.78	11.80	14.65	2.88	3.26	1.49	0.78
1988	35.07	23.16	8.38	5.47	2.19	0.70	11.91	14.78	2.91	3.29	1.49	0.70
1989	35.68	23.50	8.48	5.53	2.20	0.66	12.18	15.02	2.95	3.34	1.54	0.66
1990	35.37	23.18	8.38	5.46	2.15	0.62	12.19	14.80	2.92	3.31	1.53	0.62
1991	34.60	22.54	8.09	5.25	2.04	0.58	12.06	14.45	2.84	3.21	1.46	0.58
1992	33.94	22.26	8.21	5.35	2.07	0.57	11.68	14.05	2.86	3.28	1.50	0.57
1993	33.20	21.62	7.84	5.07	1.93	0.51	11.58	13.78	2.77	3.14	1.41	0.51
1994	33.56	21.83	7.91	5.11	1.96	0.51	11.73	13.92	2.79	3.16	1.44	0.51
1995	33.39	21.73	7.90	5.13	1.97	0.52	11.66	13.83	2.77	3.16	1.46	0.52
1996	33.46	21.81	7.94	5.17	1.99	0.52	11.66	13.86	2.77	3.18	1.47	0.52
1997	33.31	21.80	8.05	5.28	2.08	0.56	11.52	13.75	2.77	3.19	1.53	0.56
1998	33.40	21.93	8.20	5.42	2.19	0.62	11.47	13.73	2.78	3.23	1.57	0.62
1999	33.99	22.49	8.66	5.82	2.44	0.76	11.50	13.83	2.84	3.38	1.69	0.76
2000	34.24	22.74	8.89	6.04	2.60	0.86	11.50	13.85	2.84	3.44	1.74	0.86
2001	34.09	22.65	8.85	6.01	2.56	0.84	11.44	13.80	2.85	3.45	1.72	0.84
2002	33.45	22.17	8.58	5.79	2.42	0.71	11.28	13.59	2.80	3.37	1.71	0.71

Notes: Computations by authors on tax return statistics. Taxpayers are ranked by gross income (excluding capital gains).
The Table reports the percentage of total income accruing to each of the top groups. Top 10% denotes top decile,
top 10-5% denotes the bottom half of the top decile, etc.

Table B3. Top Income Shares in Spain from Older Income Tax Statistics 1933-1971

	Total number of tax units ('000s)	Tax returns	Fraction filing (2)/(1)	Total income (mns of 2000 Euros)	CPI (base 2000)	Top 0.1%	Top 0.05%	Top 0.01%	Top 0.1-0.05%	Top 0.05-0.01%	Top 0.01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1933	14,488	1,446	0.010%	48,805	66.231			0.96			0.96
1934	14,652	1,792	0.012%	51,251	68.081			0.97			0.97
1935	14,818	2,880	0.019%	50,271	68.345			1.30			1.30
1940	15,677	3,840	0.024%	37,957	118.359			1.20			1.20
1941	15,892	4,495	0.028%	35,739	158.265			0.88			0.88
1942	16,110	5,123	0.032%	38,732	169.203			0.76			0.76
1943	16,331	5,538	0.034%	40,881	168.222			0.75			0.75
1944	16,555	5,849	0.035%	42,568	175.69			0.73			0.73
1945	16,782	6,629	0.040%	42,433	187.911			0.72			0.72
1946	17,012	8,223	0.048%	44,975	246.6		1.32	0.61		0.71	0.61
1947	17,245	7,983	0.046%	45,718	290.202		1.04	0.49		0.55	0.49
1948	17,481	9,067	0.052%	45,539	309.74		1.05	0.47		0.58	0.47
1949	17,721	10,111	0.057%	46,379	326.487		1.05	0.47		0.58	0.47
1950	17,964	12,419	0.069%	50,294	361.941		0.97	0.42		0.55	0.42
1951	18,134	13,597	0.075%	60,897	396.038		0.81	0.35		0.46	0.35
1952	18,307	15,427	0.084%	66,127	388.193		0.85	0.38		0.47	0.38
1953	18,481	16,545	0.090%	69,117	394.454		0.85	0.37		0.48	0.37
1954	18,657	21,332	0.114%	73,823	399.358	1.55	1.08	0.43	0.47	0.65	0.43
1955	18,834	26,716	0.142%	78,881	415.426	1.59	1.08	0.42	0.50	0.66	0.42
1957	19,194	38,493	0.201%	90,219	487.165	1.32	0.91	0.37	0.41	0.54	0.37
1958	19,377	35,581	0.184%	92,192	551.512	1.12	0.77	0.31	0.35	0.47	0.31
1959	19,561	42,246	0.216%	88,319	592.247	1.22	0.84	0.34	0.38	0.51	0.34
1961	19,950	26,623	0.133%	99,309	613.747	0.97	0.69	0.29	0.28	0.40	0.29
1971	22,129	338,989	1.532%	181,082	1193.094	1.52	0.98	0.43	0.54	0.55	0.43

Source: Income tax statistics published by the fiscal administration for years 1933 to 1971.

Because of tax evasion, those top income shares are likely to be substantially below real top income shares.

Total number of tax units defined as the number of individuals aged 15 to 65 in the labor force.

CPI index: 100 Euros in 2000 are equivalent to 66.231 Ptas in 1933, …, 1193.1 Ptas in 1971.

Total income is defined as 100% of National Income (expressed in millions of 2000 Euros).

Table C1: Income Composition in Top Income Groups, 1981-2002

	Top 10%				Top 5%				Top 1%				Top 0.5%				Top 0.1%				Top 0.01%			
	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains
1981	80.5	8.6	10.2	0.7	76.1	10.8	12.2	1.0	59.3	18.5	20.0	2.3	50.3	22.4	18.5	3.0	30.0	30.2	22.4	5.0	16.8	32.9	30.2	8.5
1982	79.7	9.8	9.6	0.9	74.9	12.1	11.6	1.5	57.3	20.5	18.6	3.5	47.7	25.1	20.5	4.9	26.6	34.6	25.1	8.9	15.1	37.1	34.6	14.3
1983	80.5	9.3	9.6	0.6	76.1	11.4	11.6	1.0	60.2	18.6	18.7	2.4	51.5	22.3	18.6	3.3	31.6	29.3	22.3	6.3	18.2	30.3	29.3	10.3
1984	78.4	10.8	9.8	1.0	74.2	12.6	11.7	1.5	58.3	19.0	19.3	3.5	49.4	22.0	19.0	4.8	29.7	26.5	22.0	8.7	16.0	24.3	26.5	15.3
1985	76.4	11.6	9.6	2.5	71.5	13.7	11.4	3.4	54.4	20.7	18.2	6.7	45.4	24.0	20.7	8.4	26.8	29.3	24.0	12.4	15.3	29.4	29.3	15.6
1986	72.8	13.4	9.9	3.9	67.1	15.6	11.9	5.4	47.8	22.4	18.8	11.0	38.2	25.2	22.4	14.2	21.0	28.8	25.2	21.5	12.2	24.6	28.8	32.3
1987	72.6	13.9	9.2	4.2	66.9	16.1	11.1	5.9	47.8	22.2	17.7	12.3	38.4	24.3	22.2	16.3	20.4	25.5	24.3	27.0	11.2	21.3	25.5	39.6
1988	72.4	14.3	8.9	4.5	66.6	16.8	10.4	6.2	46.6	24.2	16.1	13.2	37.4	26.3	24.2	17.5	21.4	26.0	26.3	29.5	11.5	20.8	26.0	45.0
1989	73.2	13.8	9.5	3.5	67.8	16.3	11.1	4.8	49.0	23.8	17.9	9.4	40.7	26.0	23.8	12.0	25.9	27.4	26.0	18.4	17.3	25.0	27.4	25.5
1990	73.2	13.1	10.7	3.0	67.9	15.5	12.6	4.0	50.5	22.2	19.6	7.8	42.8	24.0	22.2	9.9	28.6	25.8	24.0	15.2	20.5	25.3	25.8	19.9
1991	73.7	12.7	10.7	2.9	68.6	15.2	12.4	3.9	52.0	22.1	18.8	7.2	44.5	24.4	22.1	9.0	30.9	27.4	24.4	13.4	21.9	28.5	27.4	17.6
1992	72.7	14.2	11.0	2.1	67.9	16.5	13.0	2.7	55.6	22.3	17.8	4.4	49.5	24.7	22.3	5.5	37.2	28.8	24.7	8.5	27.3	31.7	28.8	11.6
1993	72.8	13.1	10.9	3.2	68.0	15.1	12.6	4.4	55.7	20.5	16.4	7.4	49.8	22.9	20.5	8.8	37.9	27.2	22.9	11.9	28.9	29.7	27.2	14.8
1994	74.4	13.2	8.9	3.5	69.7	15.5	10.4	4.5	57.2	22.0	13.5	7.4	51.2	25.0	22.0	8.7	39.1	31.0	25.0	11.2	24.0	37.1	31.0	15.3
1995	74.8	12.6	9.0	3.6	69.9	14.6	10.7	4.8	56.9	20.3	15.0	7.8	50.8	22.8	20.3	9.1	38.7	26.9	22.8	11.6	24.8	28.9	26.9	16.2
1996	75.8	11.7	9.1	3.4	71.0	13.7	10.8	4.5	57.8	19.6	15.0	7.6	51.5	22.0	19.6	9.2	38.6	26.5	22.0	12.7	24.1	28.9	26.5	19.2
1997	75.8	12.0	7.6	4.6	70.7	14.0	9.3	6.0	56.9	19.7	13.6	9.8	50.7	21.9	19.7	11.7	37.4	26.4	21.9	15.8	23.6	29.5	26.4	23.8
1998	74.0	11.9	7.0	7.2	68.2	14.0	8.7	9.2	53.5	19.3	13.0	14.3	47.1	21.1	19.3	16.8	34.4	24.9	21.1	22.1	26.0	21.5	24.9	32.8
1999	72.9	12.0	8.3	6.8	67.5	13.8	10.0	8.7	53.3	18.2	14.1	14.4	47.2	19.5	18.2	17.5	34.8	20.9	19.5	25.6	26.9	16.6	20.9	37.8
2000	72.3	11.0	8.6	8.1	66.6	12.6	10.3	10.5	52.1	16.0	14.3	17.6	46.4	16.7	16.0	21.2	35.2	16.8	16.7	30.6	28.4	13.0	16.8	42.1
2001	73.2	11.0	9.3	6.6	67.7	12.5	11.0	8.8	53.5	15.6	15.1	15.8	47.7	16.2	15.6	19.6	35.3	16.2	16.2	30.0	28.6	12.6	16.2	41.0
2002	73.8	11.1	9.0	6.1	68.4	12.8	10.7	8.1	54.2	16.5	14.7	14.6	48.2	17.6	16.5	18.1	36.4	18.5	17.6	27.2	28.2	15.2	18.5	40.0

Notes: Fractiles defined by size of total income. For each fractile, the first four columns (summing to 100%) give the percentage of
wage income (wages and salaries, pensions, other employment income), entrepreneurial income (self-employment income, farm
income, and small business income), and capital income (dividends, interest, rents, foreign and other investment income), and capital gains in total income
Details on methodology are presented in Appendix.
Source: Computations based on tax return statistics

Table C1 (continued): Income Composition in Top Income Groups, 1981-2002

	Top 10-5%				Top 5-1%				Top 1-0.5%				Top 0.5-0.1%				Top 0.1-0.01%				Top 0.01%			
	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains	Wage	Entrep.	Capital	K gains
1981	89.3	4.3	6.5	-0.1	86.0	6.2	7.5	0.2	76.2	11.0	11.8	1.0	63.4	17.3	17.6	1.8	35.5	29.1	31.8	3.6	16.8	32.9	30.2	8.5
1982	89.5	5.2	5.6	-0.3	85.6	6.9	7.3	0.3	76.2	11.5	11.3	0.9	62.4	18.5	17.1	2.0	31.8	33.5	28.3	6.4	15.1	37.1	34.6	14.3
1983	89.3	5.3	5.7	-0.2	85.3	7.1	7.4	0.2	76.6	11.6	11.1	0.8	64.4	17.8	16.4	1.4	37.6	28.9	28.9	4.5	18.2	30.3	29.3	10.3
1984	87.1	7.2	5.8	0.0	83.6	8.8	7.2	0.3	75.3	13.1	10.5	1.1	63.2	18.8	15.9	2.1	36.8	27.7	30.3	5.3	16.0	24.3	26.5	15.3
1985	86.6	7.1	5.8	0.5	82.0	9.4	7.2	1.4	72.1	14.3	10.4	3.3	58.6	20.2	15.6	5.6	32.2	29.3	27.6	11.0	15.3	29.4	29.3	15.6
1986	85.2	8.7	5.6	0.6	79.8	11.2	7.3	1.7	68.2	16.3	11.3	4.2	52.3	22.3	17.1	8.3	26.2	31.3	27.5	15.0	12.2	24.6	28.8	32.3
1987	85.2	9.1	5.1	0.6	79.7	12.1	6.7	1.6	68.3	17.7	10.4	3.7	53.9	23.3	15.8	7.0	26.8	28.4	26.5	18.3	11.2	21.3	25.5	39.6
1988	84.3	9.1	5.8	0.9	79.2	12.2	6.8	1.8	66.2	19.6	10.1	4.0	50.7	26.6	15.3	7.5	27.6	29.3	23.3	19.8	11.5	20.8	26.0	45.0
1989	84.1	8.8	6.1	1.0	79.1	11.8	7.1	2.0	66.0	19.3	10.7	4.0	51.7	24.9	16.2	7.3	30.0	28.6	26.5	14.9	17.3	25.0	27.4	25.5
1990	83.6	8.4	7.1	0.9	78.4	11.5	8.3	1.8	65.9	18.3	12.3	3.4	53.1	22.8	18.1	6.1	32.1	26.0	28.8	13.1	20.5	25.3	25.8	19.9
1991	83.7	7.9	7.4	0.9	78.4	11.1	8.6	1.9	66.7	17.5	12.3	3.5	54.0	22.3	17.8	6.0	34.7	26.9	26.8	11.7	21.9	28.5	27.4	17.6
1992	81.7	9.9	7.3	1.1	75.1	13.2	10.2	1.6	67.2	17.6	12.9	2.3	57.6	22.0	16.9	3.6	41.1	27.6	24.0	7.3	27.3	31.7	28.8	11.6
1993	82.1	9.3	7.6	1.0	75.3	11.8	10.3	2.6	67.2	15.7	12.4	4.7	57.6	20.1	15.5	6.7	41.4	26.3	21.6	10.8	28.9	29.7	27.2	14.8
1994	83.4	8.9	6.2	1.5	77.1	11.6	8.5	2.8	68.8	16.2	10.3	4.8	59.2	21.0	12.7	7.1	45.0	28.6	16.8	9.6	24.0	37.1	31.0	15.3
1995	84.2	8.7	5.7	1.4	77.8	11.1	8.1	2.9	68.8	15.5	10.4	5.3	58.9	20.0	13.8	7.4	44.1	26.2	19.9	9.9	24.8	28.9	26.9	16.2
1996	85.0	7.8	5.9	1.3	79.1	10.1	8.3	2.6	70.4	14.7	10.5	4.4	60.2	19.0	13.9	6.8	44.2	25.5	20.2	10.1	24.1	28.9	26.5	19.2
1997	86.0	7.9	4.3	1.8	79.4	10.5	6.6	3.6	69.8	15.1	9.1	6.0	60.1	18.7	12.5	8.7	43.1	25.2	19.3	12.5	23.6	29.5	26.4	23.8
1998	85.8	7.6	3.5	3.1	77.8	10.5	5.9	5.8	67.0	15.4	8.7	9.0	56.7	18.2	12.3	12.8	38.8	26.8	18.1	16.3	26.0	21.5	24.9	32.8
1999	84.0	8.2	4.9	2.9	77.4	10.7	7.2	4.8	67.3	15.2	10.1	7.4	57.7	18.2	13.4	10.6	39.1	23.3	18.7	19.0	26.9	16.6	20.9	37.8
2000	84.4	7.7	5.0	2.9	77.2	10.1	7.4	5.3	65.7	14.5	11.0	8.9	56.8	16.6	14.1	12.5	39.2	19.3	18.0	23.6	28.4	13.0	16.8	42.1
2001	84.8	7.7	5.6	1.9	78.1	10.2	8.0	3.6	67.7	14.3	11.5	6.6	59.2	16.2	14.7	10.0	39.2	18.5	19.1	23.2	28.6	12.6	16.2	41.0
2002	85.1	7.7	5.5	1.8	78.5	10.1	7.9	3.5	68.4	14.1	11.2	6.3	58.3	16.7	14.7	10.3	40.6	20.2	18.6	20.6	28.2	15.2	18.5	40.0

Notes: Fractiles defined by size of total income. For each fractile, the first four columns (summing to 100%) give the percentage of
wage income (wages and salaries, pensions, other employment income), entrepreneurial income (self-employment income, farm
income, and small business income), and capital income (dividends, interest, rents, foreign and other investment income), and capital gains in total income
Details on methodology are presented in Appendix.
Source: Computations based on tax return statistics

Table D. Top Wage Income Shares in Spain from survey of employers 1963-1980

	Total number of employees ('000s)	Total income (mns of 2000 Euros)	CPI (base 2000)	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 10-5%	Top 5-1%	Top 1-0.5%	Gini Coefficient
	(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1963	2,713	16,468	7.053	23.68	14.26	4.46	2.72	9.42	9.80	1.74	0.299
1964	2,783	17,557	7.544	23.61	14.29	4.58	2.82	9.32	9.71	1.76	0.299
1965	2,909	18,736	8.542	24.03	14.63	4.79	2.97	9.40	9.83	1.83	0.310
1966	2,937	20,526	9.071	24.33	15.03	4.98	3.10	9.30	10.05	1.89	0.316
1967	2,917	21,858	9.656	24.17	15.10	5.07	3.17	9.07	10.03	1.90	0.304
1968	2,871	22,230	10.130	24.60	15.46	5.26	3.31	9.14	10.20	1.95	0.303
1969	2,878	23,988	10.431	25.47	16.19	5.66	3.60	9.28	10.54	2.06	0.308
1970	2,931	25,977	11.026	25.29	15.62	5.19	3.24	9.67	10.43	1.95	0.326
1971	2,953	27,383	11.931	25.32	15.72	5.33	3.35	9.60	10.38	1.99	0.324
1972	2,955	29,190	12.915	25.20	15.73	5.28	3.30	9.48	10.45	1.98	0.326
1973	2,985	30,326	14.723	25.36	15.87	5.34	3.34	9.49	10.53	2.00	0.326
1974	2,995	27,515	17.491	24.27	14.96	4.87	3.00	9.30	10.09	1.87	0.314
1976	2,861	35,669	23.307	23.32	14.02	4.22	2.52	9.31	9.79	1.71	0.303
1977	4,130	49,041	29.009	19.74	11.42	3.21	1.86	8.32	8.21	1.35	0.255
1978	3,867	47,668	34.833	19.59	11.32	3.17	1.83	8.27	8.15	1.34	0.250
1979	3,792	49,330	40.440	19.43	11.36	3.25	1.90	8.07	8.11	1.36	0.222
1980	3,644	47,450	46.880	19.42	11.39	3.30	1.93	8.03	8.09	1.36	0.218

Source: Survery of employers statistics published by the Spanish Bureau of Statistics (INE) from 1963 to 1980.

CPI index: 1 Euro in 2000 are equivalent to 7.053 Ptas in 1963, …, 46.880 Ptas in 1980.

Total income is defined as sum of employment income reported on the representative survey.

Table E1. Top Wealth Shares in Spain, 1982-2002

	Top 1%	Top .5%	Top .1%	Top .01%	Top 1-.5%	Top .5-.1%	Top .1-.01%	Top .01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

A. Top Wealth Shares Including Real Estate

	Top 1%	Top .5%	Top .1%	Top .01%	Top 1-.5%	Top .5-.1%	Top .1-.01%	Top .01%
1982	19.82	15.51	7.84	2.58	4.31	7.67	5.26	2.58
1983	19.43	15.09	7.74	2.68	4.34	7.35	5.06	2.68
1984	18.86	14.62	7.41	2.46	4.25	7.21	4.95	2.46
1985	19.12	14.66	7.28	2.37	4.47	7.38	4.91	2.37
1986	19.54	14.93	7.44	2.55	4.61	7.50	4.88	2.55
1987	19.06	14.46	7.04	2.31	4.60	7.42	4.73	2.31
1988	17.30	12.99	6.37	2.04	4.31	6.62	4.32	2.04
1989	16.87	12.61	6.04	1.92	4.26	6.58	4.11	1.92
1990	16.81	12.38	5.79	1.78	4.44	6.59	4.01	1.78
1991	16.11	11.72	5.38	1.59	4.39	6.34	3.79	1.59
1992	16.03	11.64	5.32	1.60	4.39	6.32	3.73	1.60
1993	16.61	11.84	5.46	1.66	4.78	6.37	3.80	1.66
1994	16.33	11.50	5.18	1.53	4.83	6.32	3.66	1.53
1995	15.93	11.20	5.00	1.47	4.73	6.20	3.52	1.47
1996	16.61	11.74	5.25	1.56	4.87	6.49	3.69	1.56
1997	17.39	12.17	5.39	1.59	5.22	6.77	3.81	1.59
1998	17.21	12.02	5.35	1.61	5.19	6.67	3.74	1.61
1999	17.18	12.26	5.31	1.58	4.92	6.95	3.73	1.58
2000	17.30	12.42	5.39	1.58	4.88	7.02	3.81	1.58
2001	17.16	12.28	5.32	1.60	4.88	6.96	3.72	1.60
2002	18.28	13.10	5.60	1.57	5.18	7.50	4.04	1.57

A. Top Financial Wealth Shares (excluding real estate)

	Top 1%	Top .5%	Top .1%	Top .01%	Top 1-.5%	Top .5-.1%	Top .1-.01%	Top .01%
1982	24.85	21.36	13.16	5.46	3.49	8.19	7.70	5.46
1983	25.22	21.36	13.34	5.99	3.87	8.02	7.35	5.99
1984	23.40	19.72	12.20	5.32	3.68	7.51	6.89	5.32
1985	23.73	19.75	11.97	5.09	3.98	7.78	6.88	5.09
1986	25.41	21.06	12.82	5.61	4.35	8.24	7.21	5.61
1987	24.77	20.47	12.48	5.32	4.30	7.99	7.16	5.32
1988	24.68	20.06	11.64	4.93	4.62	8.43	6.71	4.93
1989	24.76	20.24	11.66	5.01	4.52	8.58	6.64	5.01
1990	25.78	20.92	11.77	4.91	4.86	9.15	6.85	4.91
1991	24.74	19.98	11.09	4.54	4.76	8.89	6.55	4.54
1992	23.35	18.72	10.19	4.15	4.64	8.53	6.04	4.15
1993	23.25	18.18	9.97	4.05	5.07	8.21	5.92	4.05
1994	22.08	17.03	9.02	3.52	5.06	8.01	5.50	3.52
1995	20.77	15.85	8.37	3.25	4.92	7.48	5.12	3.25
1996	21.28	16.16	8.59	3.32	5.12	7.57	5.28	3.32
1997	21.94	16.32	8.63	3.20	5.62	7.69	5.42	3.20
1998	21.17	15.64	8.39	3.15	5.53	7.25	5.24	3.15
1999	22.04	17.27	9.07	3.41	4.78	8.20	5.66	3.41
2000	24.34	19.06	10.02	3.74	5.28	9.03	6.29	3.74
2001	24.79	19.44	10.36	4.04	5.35	9.08	6.32	4.04
2002	26.19	20.58	10.90	4.13	5.61	9.68	6.77	4.13

Notes: Computations by authors on wealth tax return statistics.
See details in Appendix.

Table E1: Composition in Top Wealth Groups, 1982-2002

	Top 1-0.5%						Top 0.5-0.1%						Top 0.1-0.01%						Top 0.01%					
	Real estate	Busine ss	Fixed claim	Stock	Other	Debts	Real estate	Busine ss	Fixed claim	Stock	Other	Debts	Real estate	Busine ss	Fixed claim	Stock	Other	Debts	Real estate	Busine ss	Fixed claim	Stock	Other	Debts
1982	75.3	4.9	13.6	6.5	3.6	-3.9	67.7	5.6	12.7	12.2	4.5	-2.6	55.8	5.2	11.2	24.6	5.6	-2.5	36.8	2.9	10.7	46.2	5.6	-2.2
1983	73.3	5.1	14.5	7.0	3.6	-3.4	67.2	5.4	12.9	12.8	4.6	-2.9	56.4	4.8	11.6	23.8	5.7	-2.2	33.0	2.5	12.8	39.6	13.2	-1.1
1984	73.9	4.5	14.0	7.1	3.5	-3.1	68.7	4.7	12.2	12.5	4.6	-2.7	58.2	4.1	10.9	23.3	5.6	-2.1	35.1	2.3	11.2	45.4	7.1	-1.1
1985	73.3	4.3	14.2	7.7	3.7	-3.2	68.3	4.4	12.2	13.2	4.6	-2.7	57.9	3.7	11.0	24.1	5.5	-2.1	35.6	2.2	10.6	46.0	6.8	-1.1
1986	71.7	4.2	14.0	9.5	3.9	-3.2	67.0	4.0	12.1	15.0	4.8	-2.8	55.7	3.3	10.8	27.1	5.7	-2.5	34.0	2.0	14.6	46.2	5.6	-2.3
1987	70.6	4.1	13.9	10.6	4.2	-3.5	66.1	3.9	12.3	15.9	4.9	-3.1	52.4	2.9	11.1	30.4	6.0	-2.8	27.5	1.8	11.5	55.2	6.5	-2.6
1988	68.7	3.3	13.2	12.9	4.7	-2.8	62.9	2.7	12.3	19.2	5.5	-2.6	54.8	2.2	12.0	27.2	6.3	-2.5	29.7	1.4	12.3	50.9	8.7	-3.0
1989	71.0	2.9	12.9	11.8	4.2	-2.8	64.4	2.4	11.7	19.1	5.1	-2.6	55.9	1.9	11.4	27.4	5.9	-2.5	28.8	1.1	12.0	53.4	7.5	-2.7
1990	72.6	2.6	13.9	9.5	4.0	-2.7	65.3	2.3	12.4	17.6	5.0	-2.5	57.2	1.9	12.1	25.6	5.8	-2.5	31.0	1.2	11.2	52.1	7.3	-2.8
1991	74.3	2.3	12.9	9.8	3.4	-2.6	67.9	2.0	10.8	18.8	3.1	-2.5	60.4	1.8	10.3	27.0	3.2	-2.6	33.6	1.1	9.4	55.3	3.5	-2.8
1992	71.9	2.9	15.1	10.8	2.1	-2.8	63.9	2.5	11.4	21.9	2.9	-2.7	56.7	2.2	10.7	29.9	3.3	-2.7	30.6	1.4	8.5	58.6	4.0	-3.1
1993	69.4	2.7	14.1	14.3	2.2	-2.7	62.7	2.5	10.7	23.8	2.8	-2.6	54.9	2.1	9.7	33.0	3.1	-2.7	29.5	1.2	7.4	61.5	3.4	-3.0
1994	68.7	2.4	14.1	15.4	2.1	-2.7	62.3	2.2	10.9	24.4	2.8	-2.6	55.5	1.9	9.9	32.5	3.0	-2.8	30.9	1.1	7.9	59.9	3.4	-3.3
1995	66.8	2.2	14.6	16.8	2.1	-2.6	61.6	2.2	11.5	24.6	2.7	-2.5	54.4	1.9	10.2	33.4	2.9	-2.8	30.2	1.1	7.9	60.7	3.3	-3.1
1996	64.7	2.1	12.8	20.6	2.2	-2.3	60.8	2.0	10.6	26.2	2.5	-2.1	52.0	1.8	9.0	36.1	2.9	-1.8	28.5	1.2	6.8	60.6	3.9	-1.0
1997	60.9	2.1	10.4	26.8	2.2	-2.3	58.7	2.1	9.4	29.7	2.4	-2.2	48.2	1.7	8.2	41.4	2.7	-2.3	26.7	1.0	6.5	65.0	3.5	-2.7
1998	58.6	1.9	9.2	30.3	2.3	-2.3	57.8	1.9	8.9	31.3	2.3	-2.2	45.7	1.5	7.9	44.4	2.8	-2.3	24.2	1.0	6.9	67.1	3.5	-2.7
1999	63.1	1.8	10.5	25.0	1.9	-2.3	55.2	1.7	8.9	33.9	2.4	-2.1	42.4	1.4	8.0	47.5	3.0	-2.3	18.3	0.8	7.8	71.4	4.4	-2.6
2000	62.8	1.7	11.5	24.1	1.9	-1.9	55.8	1.6	9.7	32.3	2.5	-2.0	43.3	1.3	8.7	45.6	3.3	-2.2	18.9	0.8	8.7	69.5	5.0	-2.9
2001	65.1	1.6	11.4	22.0	1.8	-1.8	58.4	1.7	9.7	29.7	2.3	-1.9	45.9	1.4	8.7	43.0	3.1	-2.1	19.9	0.7	7.5	70.0	4.5	-2.5
2002	70.8	1.5	10.1	17.8	1.5	-1.7	65.3	1.4	8.4	24.5	2.0	-1.7	54.9	1.2	7.4	35.5	2.7	-1.7	29.3	0.7	6.6	61.8	3.8	-2.1

Notes: Fractiles defined by size of total wealth. For each fractile, the six columns (summing to 100%) give the percentage of
real estate, business assets, fixed claim assets (cash, deposits, bonds), stock (publicly traded and closely held), other (insurance, annuities, and other small items) in total wealth.
Details on methodology are presented in Appendix.
Source: Computations based on wealth tax return statistics

TABLE F1. Income Tax Rates, 1933-1966

Income (pesetas)		Tax Rate (%)
from	to	
1933-1935		
100,001	120,000	1.00
120,001	150,000	1.43
150,001	200,000	2.00
200,001	250,000	2.78
250,001	300,000	3.42
300,001	400,000	3.97
400,001	500,000	4.86
500,001	750,000	5.57
750,001	1,000,000	6.84
If rent exceeds 1,000,000:		
first 1,000,000		7.70
excess		11.00
1936-1940		
80,001	100,000	1.00
100,001	120,000	1.50
120,001	150,000	1.93
150,001	200,000	2.50
200,001	250,000	3.28
250,001	300,000	3.92
300,001	400,000	4.47
400,001	500,000	5.36
500,001	750,000	6.07
750,001	1,000,000	7.34
If rent exceeds 1,000,000:		
first 1,000,000		8.20
excess		11.00
1941-1942		
70,001	100,000	7.50
100,001	250,000	18.00
250,001	500,000	25.00
500,001	1,000,000	30.00
over 1,000,000		40.00
1943-1953		
60,001	100,000	7.50
100,001	150,000	18.00
150,001	250,000	25.00
250,001	500,000	30.00
over 500,000		40.00
1954-1966		
100,001	125,000	2.50
125,001	175,000	3.85
175,001	200,000	4.60
200,001	250,000	5.90
250,001	300,000	7.55
300,001	400,000	10.05
400,001	500,000	13.35
500,001	600,000	16.65
600,001	700,000	20.00
700,001	800,000	23.30
800,001	900,000	26.65
900,001	1,000,000	29.85
1,000,001	2,000,000	33.00
2,000,001	3,000,000	35.65
3,000,001	4,000,000	37.75
4,000,001	5,000,000	39.30
5,000,001	6,000,000	42.00
over 6,000,000		44.00
1967-1973		
0	100,000	15.00
100,001	200,000	18.20
200,001	300,000	26.60
300,001	400,000	23.00
400,001	500,000	25.40
500,001	600,000	27.80
600,001	700,000	30.50
700,001	800,000	33.40
800,001	900,000	36.30
900,001	1,000,000	39.20
1,000,001	1,100,000	42.10
1,100,001	1,300,000	47.20
1,300,001	1,600,000	56.10
over 1,600,000		61.40

Table F2. Total Number of Tax Returns 1933-1974

	Total Tax returns (1)	Tax returns with positive taxable income (2)
1933	1,446	1,446
1934	1,792	1,792
1935	2,880	2,880
1936	3,507	3,507
1937	1,542	1,542
1938	1,978	1,978
1939	2,289	2,289
1940	3,840	3,840
1941	4,495	4,495
1942	5,123	5,123
1943	5,538	5,538
1944	12,312	5,849
1945	11,817	6,629
1946	13,189	8,223
1947	17,897	7,983
1948	16,649	9,067
1949	19,755	10,111
1950	22,930	12,419
1951	23,887	13,597
1952	26,373	15,427
1953	27,653	16,545
1954	89,460	21,332
1955	98,604	26,716
1956	109,026	
1957	119,618	38,493
1958	175,172	35,581
1959	190,791	42,246
1960	197,842	
1961	222,593	26,623
1962	240,179	
1963	296,701	
1964	323,223	
1965	347,434	
1966		
1967		
1968	199,592	5,777
1969	228,132	13,709
1970	263,181	20,072
1971	338,989	22,556
1972	350,761	29,329
1973	498,663	36,663
1974	1,318,313	28,236

Sources: Income tax statistics published by the fiscal administration for years 1933 to 1971;

Instituto de Estudios Fiscales (1973); Martí Basterrechea (1974)
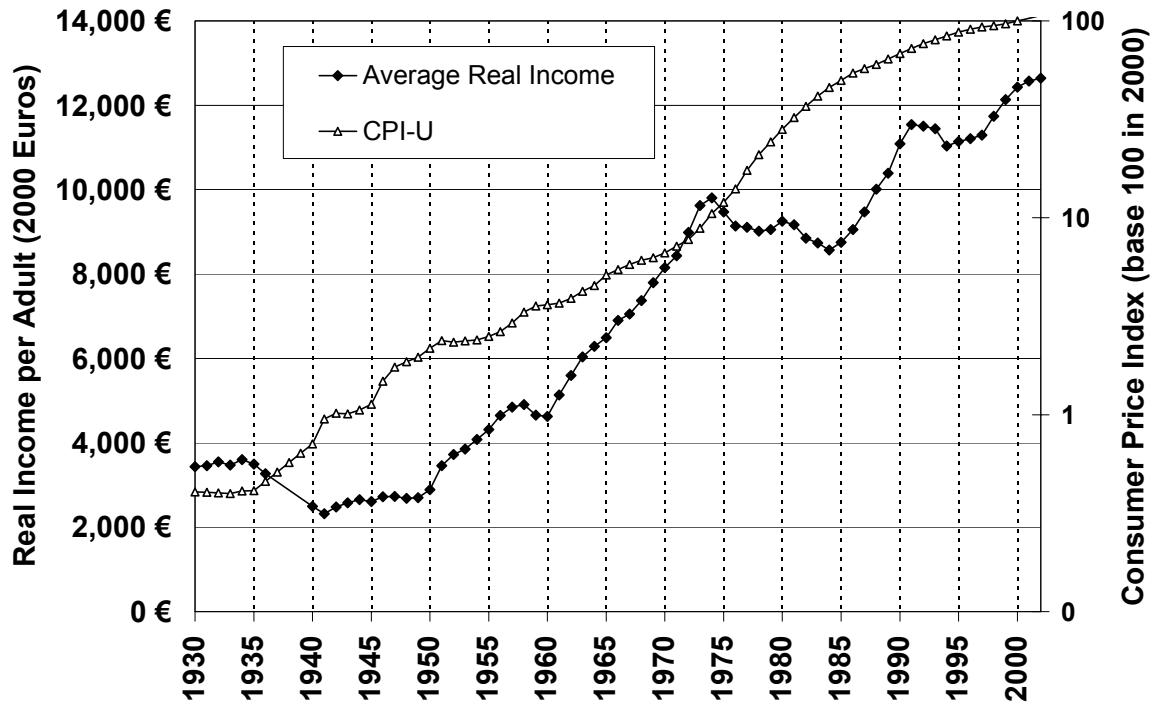
FIGURE 1.

Average Real Income and Consumer Price Index in Spain, 1930-2002

Source: Table A.
Figure reports the average real income per adult (aged 20 and above), expressed in real 2000 Euros.
CPI index is equal to 100 in 2000.
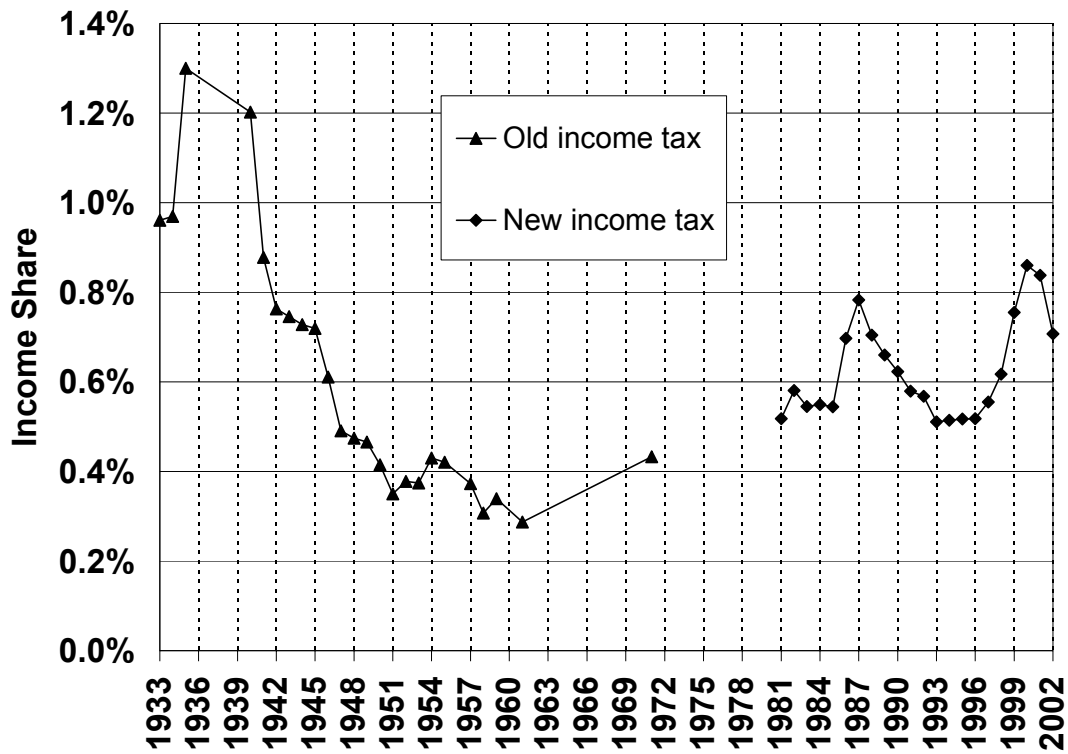
FIGURE 2

The Top 0.01% Income Share in Spain, 1933-2002

Source: 1933-1971 from Table B3 (column top 0.01%), 1981-2002 from Table B1 (column top 0.01%).
For 1933 to 1971, estimations based on the old income tax statistics (with no adjustment for tax evasion)
For 1981 to 2002, estimations based on income excluding realized capital gains (for homogeneity
with older income tax).
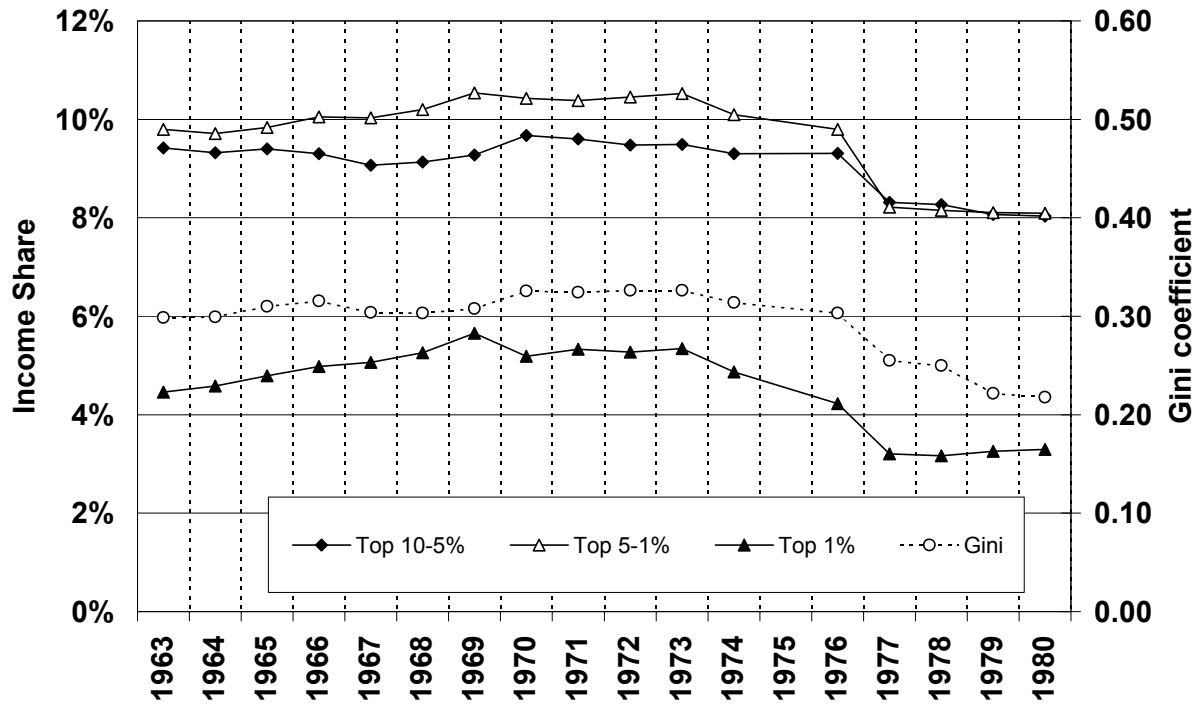
FIGURE 3

Top Wage Income Shares and Gini in Spain, 1963-1980

Source: Table D, columns Top 10-5%, Top 5-1%, Top 1%, and Gini coefficient.
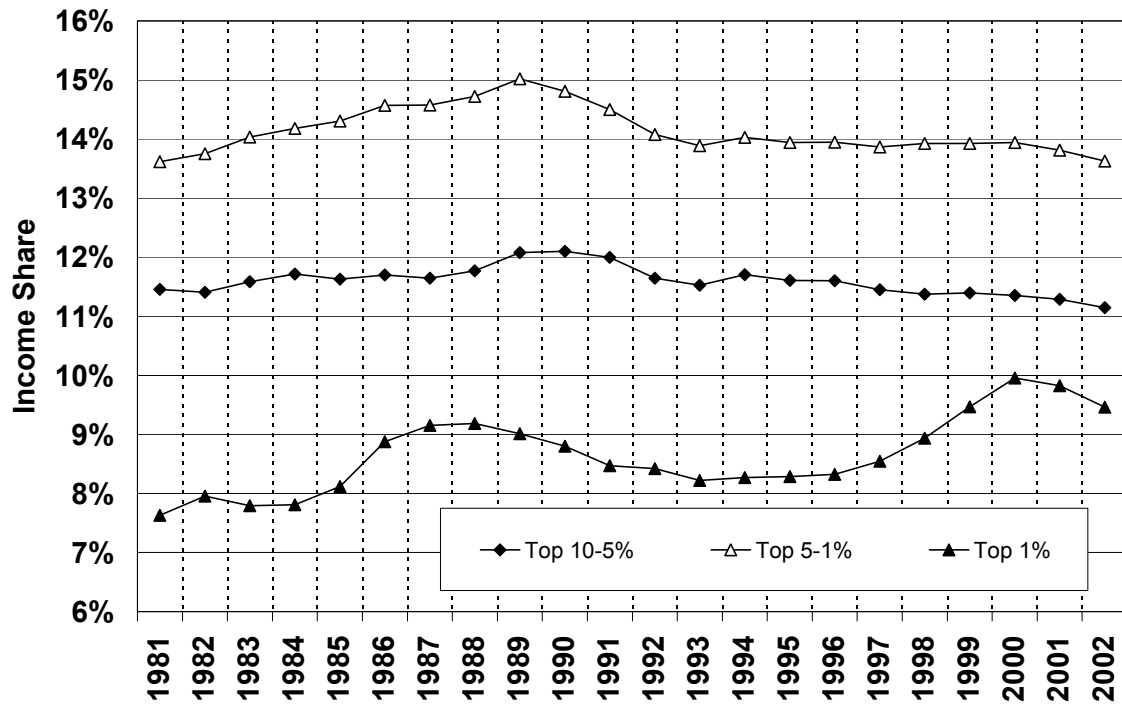
FIGURE 4

The Top 10-5%, Top 5-1%, and Top 1% Income Share in Spain, 1981-2002

Source: Table B2, columns top 10-5%, top 5-1%, and top 1%.
Income includes realized capital gains
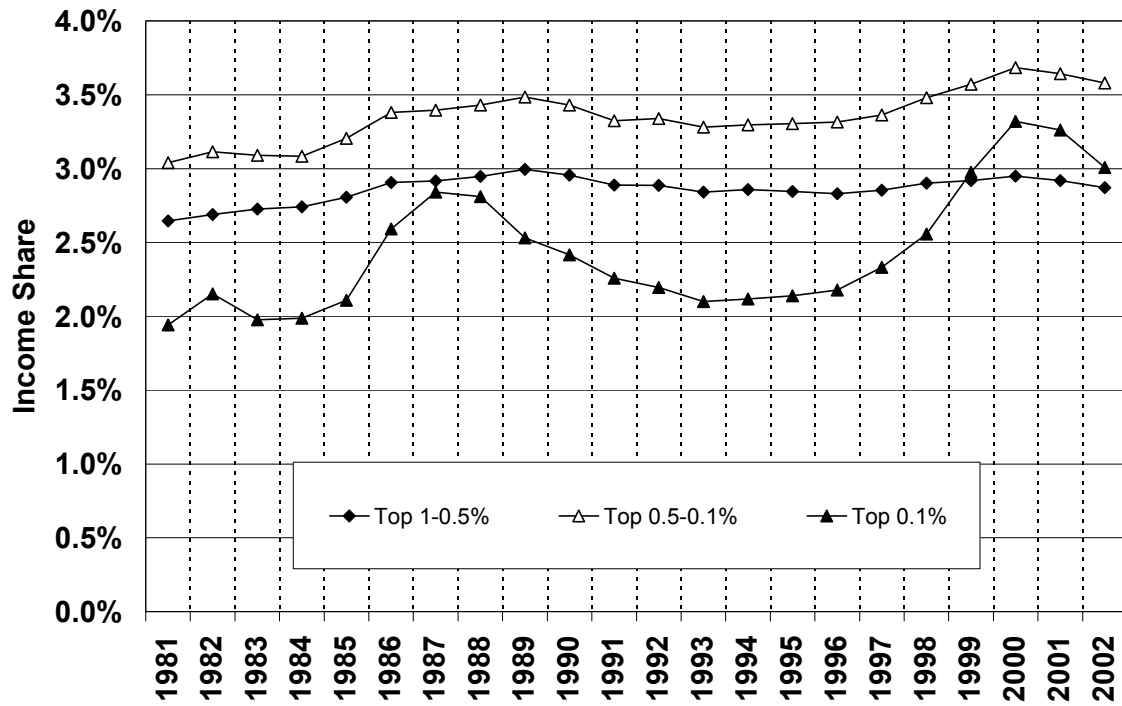
FIGURE 5

The Top 1-0.5%, Top 0.5-0.1%, and Top 0.1% Income Share in Spain, 1981-2002

Source: Table B2, columns top 1-0.5%, top 0.5-0.1%, and top 0.1%.
Income includes realized capital gains
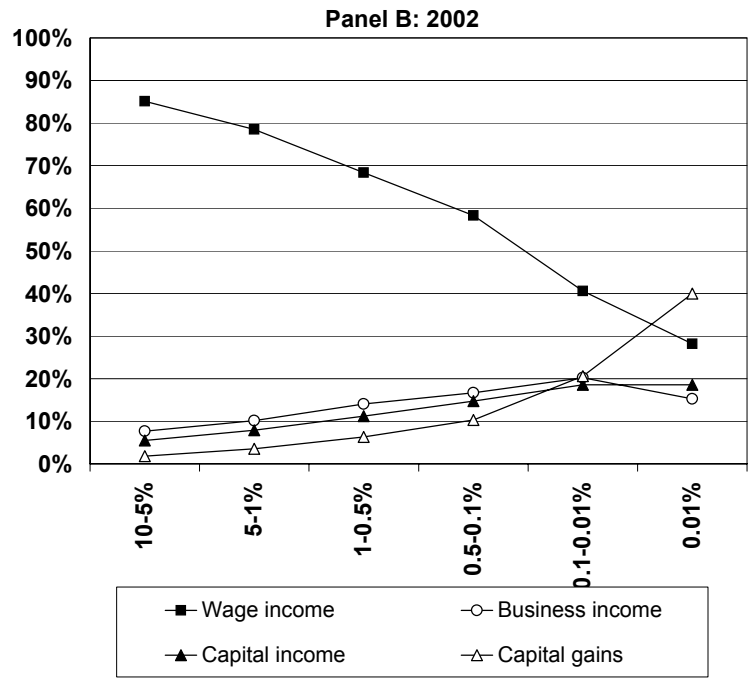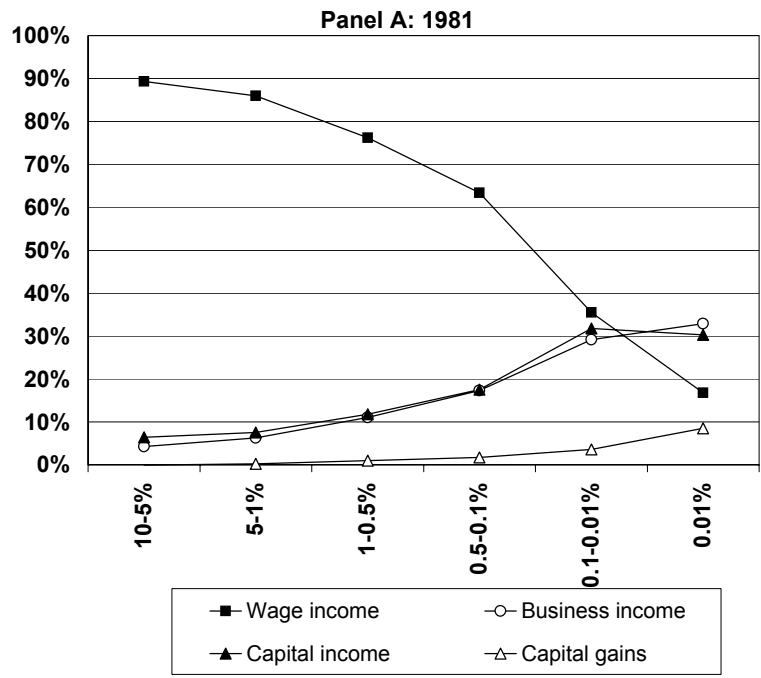
FIGURE 6

Income Composition of Top Groups within the Top Decile in 1981 and 2002

Capital income is defined as interest, dividends, and rents and does not include capital gains.

Source: Table C1, rows 1981 and 2002.
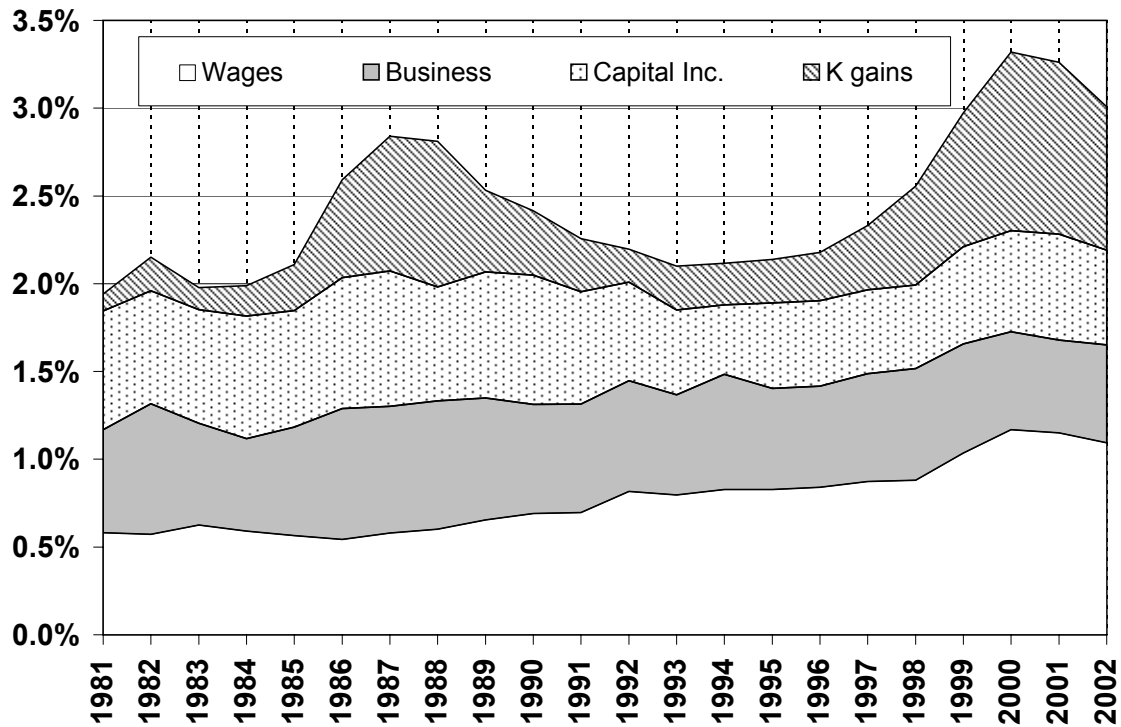
FIGURE 7

The Top 0.1% Income Share and Composition in Spain, 1981-2002

Source: Table B1, top 0.1% income share and Table C1, composition columns for top 0.1%.
The figure displays the income share of the top 0.1% tax units, and how the top 0.1% incomes are
divided into four income components: wages and salaries (including pensions),
business and professional income, capital income (interest, dividends, and rents), and realized capital gains.
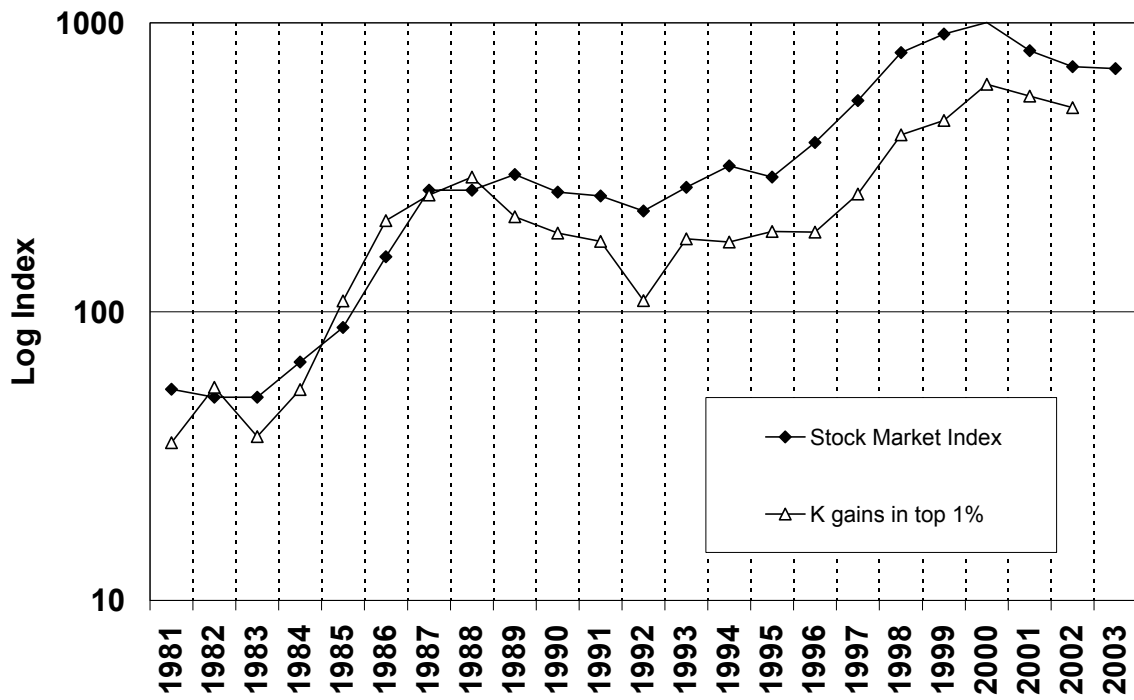
FIGURE 8

Madrid Stock-Market Index and Capital Gains at the Top, 1981-2003

Source: Globalfinance data
For each year, the mean of the low and high is reported.
Capital gains at the top 1% is the real amount of capital gains reported by the top 1% income earners
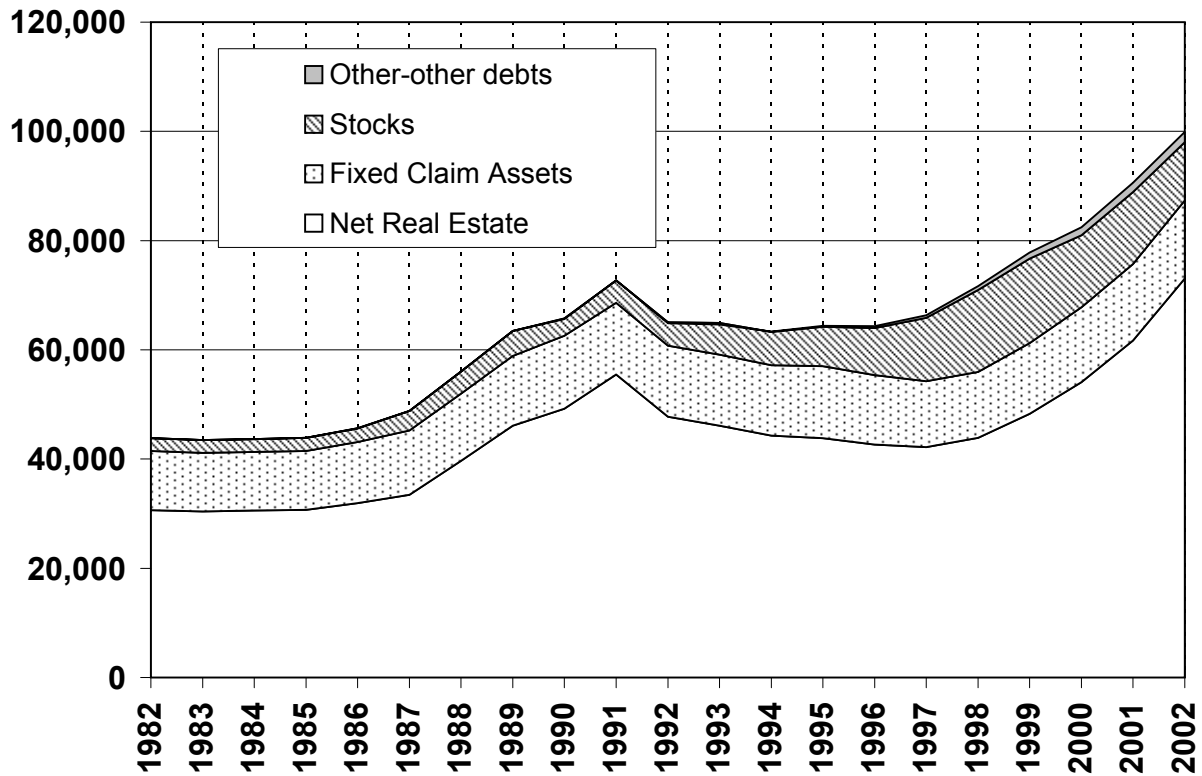
FIGURE 9

Average Net Worth and Composition, 1982-2002

Source: Table A2.
Net real estate is defined as total household real estate wealth net of mortgage debt
Fixed claim assets are cash, deposits, and bonds.
Stocks include publicly traded and closely held stock, directly or indirectly held.
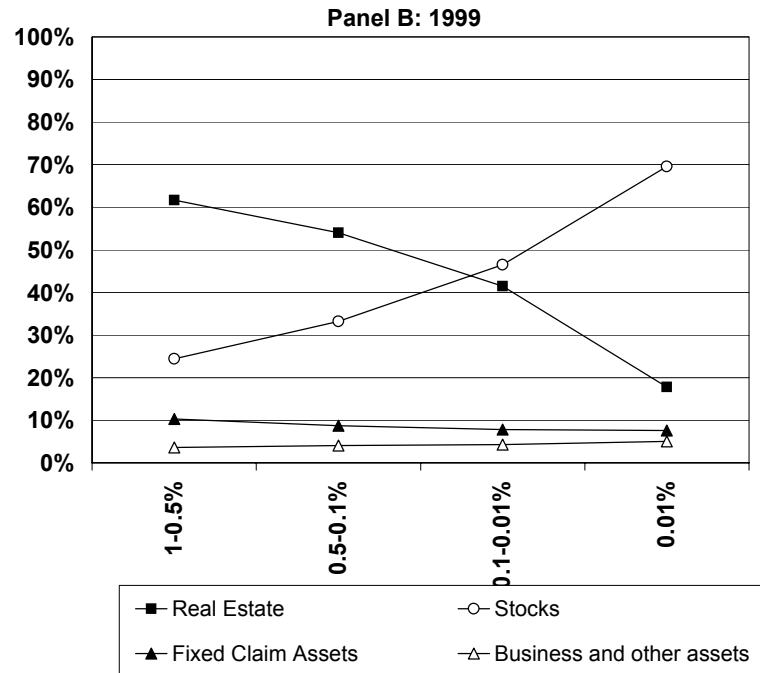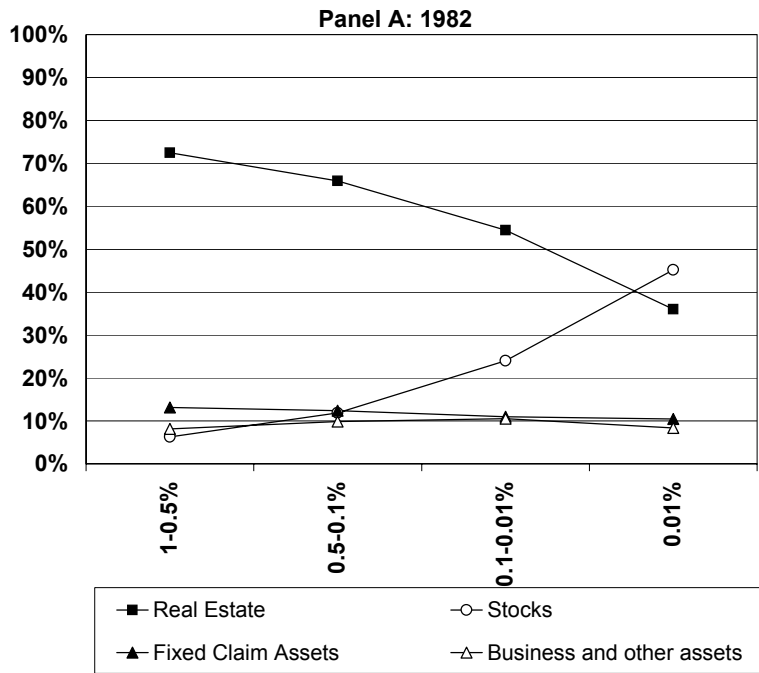
FIGURE 10
Income Composition of Top Groups within the Top Decile in 1982 and 1999

Source: Table E2, rows 1982 and 1999.
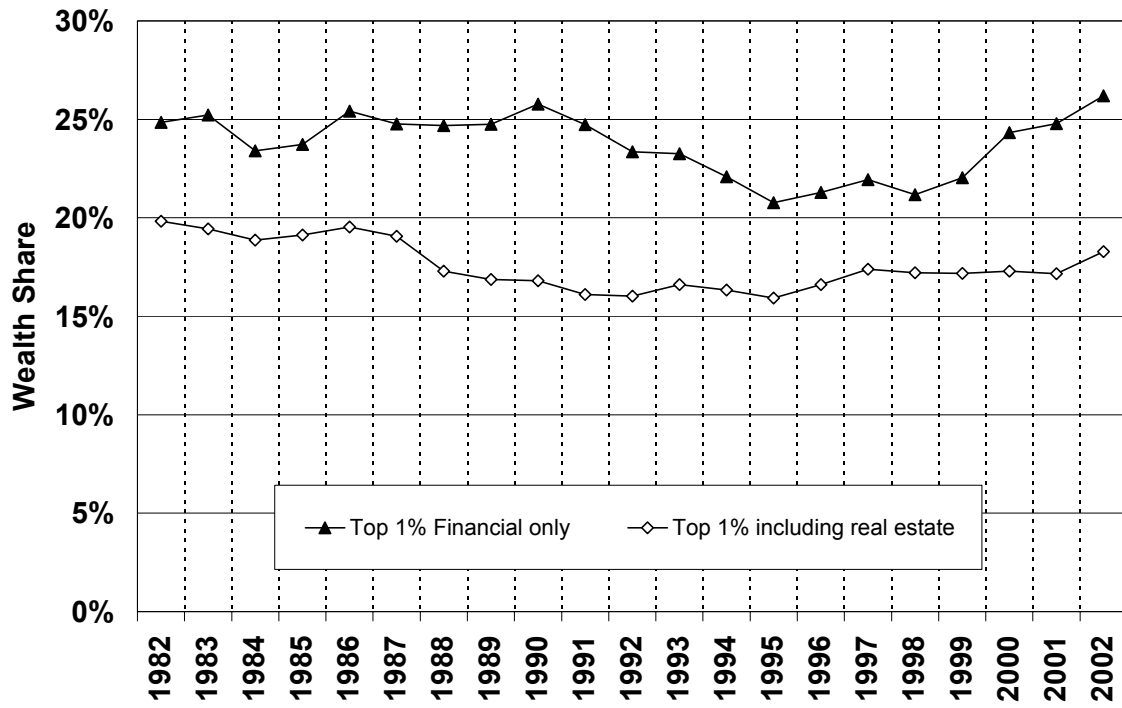
FIGURE 11
Top 1% Wealth Share in Spain, 1982-2002

Source: Table E1, columns top 1%.
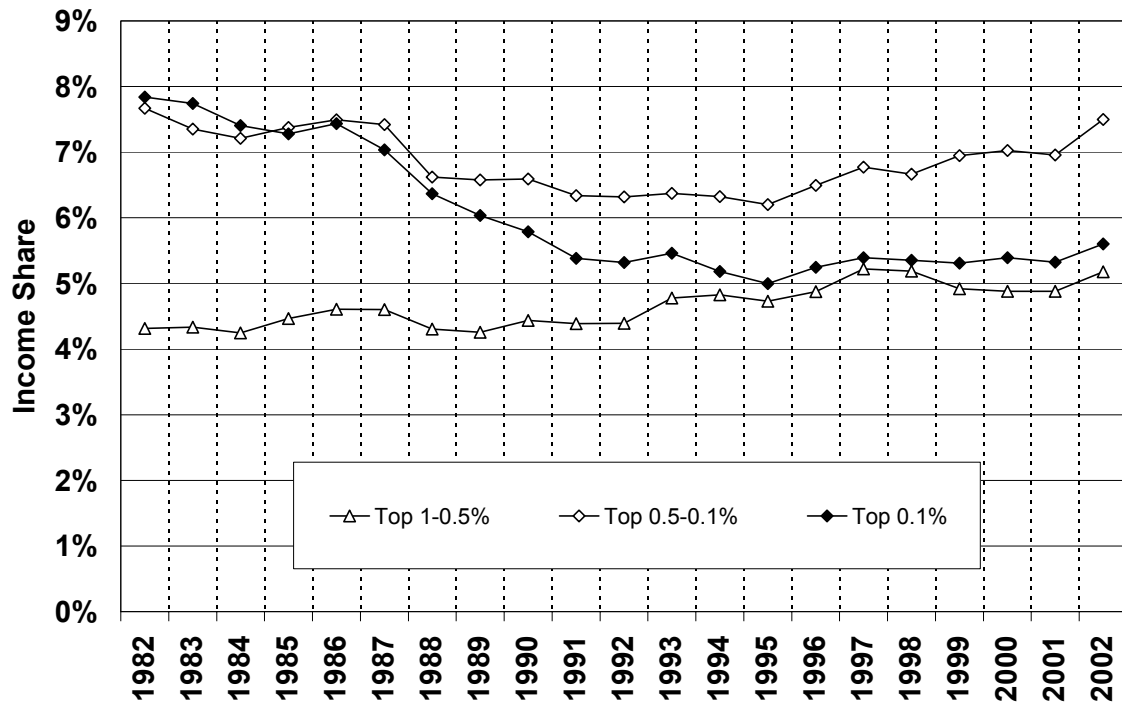
FIGURE 12
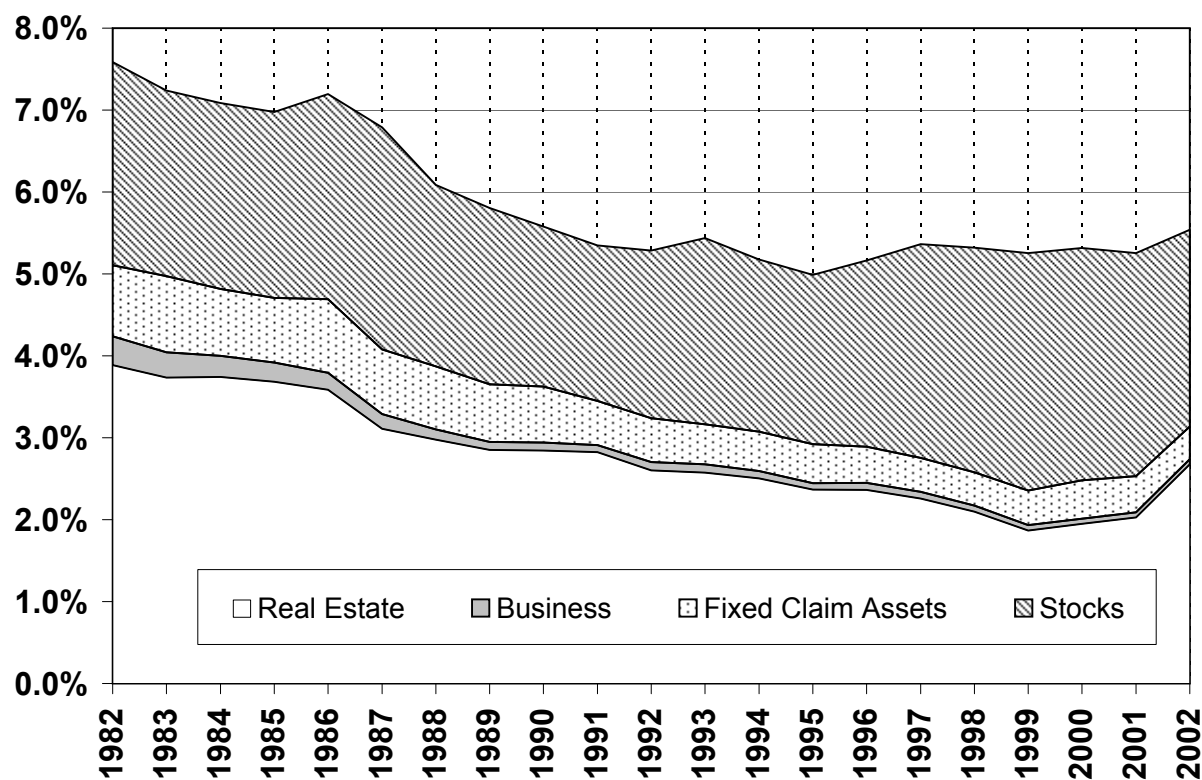Top Wealth Shares (including real estate) in Spain, 1982-2002

Source: Table E1

FIGURE 13

The Top 0.1% wealth Share and Composition in Spain, 1982-2002

Source: Table E1 and E2, columns top 0.1%.
The figure displays the wealth share of the top 1% tax units, and how the top 1% wealth holdings are divided into 4 components: real estate, business assets, fixed claim assets (cash, deposits, bonds), and stocks (publicly traded or closely held).
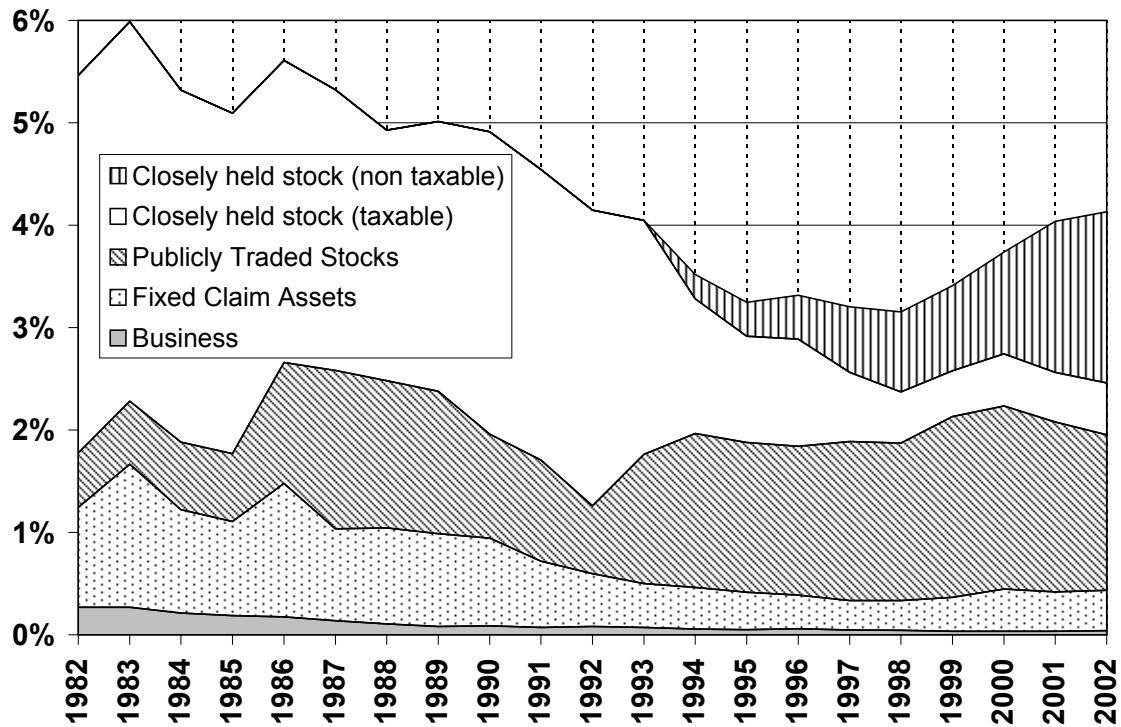
FIGURE 14

The Top 0.01% Financial Wealth Share and Composition in Spain, 1982-2002

Source: Table E1 and E2, and direct computations based on wealth tax statistics.
The figure displays the financial wealth share and composition of the top 0.01% tax units.
Stocks are broken down into three components: publicly traded stocks, taxable closely held stocks, and exempted closely held stocks. Since 1994, closely held stock where owner owns more than 15% of company, and derives over 50% of his/her labor income from working in the company is exempted from the wealth tax.