



# Income and wealth concentration in Spain in a historical and fiscal perspective

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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 20<sup>th</sup> century using personal income and wealth tax return statistics. Top income shares are highest in the 1930s, fall sharply during the first two decades of the Franco dictatorship, and have increased slightly since the 1960s, and especially since the mid-1990s. The top 0.01% income share in Spain estimated from income tax data is comparable to estimates for the United States and France over the period 1933-1971. Those findings, along with a careful analysis of all published tax statistics, suggest that income tax evasion and avoidance among top income earners in Spain before 1980 was much less prevalent than previously thought. Wealth concentration has been about stable from 1982 to 2004 as surging real estate prices have benefited the middle class and compensated for a slight increase in financial wealth concentration in the 1990s. We use our wealth series and a simple conceptual model to analyse the effects of the wealth tax exemption of stocks for owners-managers introduced in 1994. We show that the reform induced substantial shifting from the taxable to tax exempt status. This shifting has eroded the wealth tax base substantially and hence the tax exemption has generated large efficiency costs.

JEL Codes: D3, H2, N3, O1

Keywords: Income Concentration, top incomes, behavioral response

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## **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 constructed series for shares of income accruing to upper income groups for various countries using income tax statistics. Most of those studies are gathered in a volume edited by Atkinson and Piketty, 2007. The countries studied are Anglo-Saxon countries (United Kingdom, Ireland, United States, Canada, New Zealand and Australia) and continental European countries (Finland, France, Germany, Netherlands, Sweden, and Switzerland) and large Asian countries (China, India, Indonesia, and Japan). 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 very few studies on the evolution of inequality in Spain from a historical perspective. A number of studies have analyzed the evolution of income, earnings and expenditure inequality over the last three decades using survey data. Research has also been done using income tax data for recent years.<sup>1</sup> Survey-based studies point to a reduction in income or expenditure inequality in the 1970s followed by relative stability in the 1980s and 1990s, while tax-based results display a worsening in the distribution of income in 1982-1991 and 1995-1998. Garde, Ruiz-Huerta, and Martínez, 1995, provide a survey of the literature until 1995.<sup>2</sup> More recently, Prados de la Escosura, 2006a, 2007b has constructed long historical series on income inequality such as ratios of GDP per capita to low skill wages or average wages, as well as industry wage differentials. Those estimates are not based

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<sup>1</sup> Those studies, which include Castañer, 1991, Lasheras et al., 1993, Ayala and Onrubia, 2001, and Rodríguez and Salas, 2006, focus primarily on the redistributive power of the income tax. They estimate global inequality indices such as Gini before and after taxes and do not specifically focus on top income groups as we do here.

<sup>2</sup> For key studies on income inequality in Spain over the last decades, see Alcaide, 1967, 1974, 1999, Alcaide and Alcaide, 1974, 1977, 1983, Alvarez et al., 1996, Ayala and Onrubia, 2001, Ayala and Sastre, 2005, Ayala et al., 1993, Bosch et al., 1989, Budría and Díaz-Giménez, 2007, Cordero et al., 1988, Del Río and Ruiz-Castillo, 2001a,b, Escribano, 1990, Febrer and Mora, 2005, Goerlich and Mas, 2001, 2004, Gradín, 2000, 2002, Martín-Guzmán et al., 1996, Oliver I Alonso et al. 2001, Pascual and Sarabia, 2004, Ruiz-Castillo, 1987,

on micro-data but offer the best evidence to date on inequality trends in Spain from a historical perspective. Therefore, our study can be seen as the first serious attempt at compiling systematic and long run series of income concentration using primarily individual tax statistics, a source that has not been fully exploited by previous studies. It is also important to note that our series measure only top income (or wealth) concentration and hence are silent about changes in the lower and middle part of the distribution. As a result, our series can very well follow different patterns than broader measures of inequality such as Gini coefficients or macro-based estimates, an important point we will emphasize throughout.

Second, 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.<sup>3</sup> Indeed, because of the civil war shock and the poor economic performance during the first two decades of the Franco dictatorship, Spain GDP per capita did not reach the peak of 1929 before 1951. Starting in the 1950s and following economic liberalization and openness to trade, economic growth resumed 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 economies such as France, Germany, or the United Kingdom. Therefore, it is quite interesting to analyze income concentration during the stagnation years and during the economic boom starting in the late 1950s to re-assess the link between economic development and income concentration.

Third, Spain has undergone dramatic political changes since the 1930s. Spain was a republic from 1931 to 1939. A progressive government first ran the republic from 1931 to 1933, followed by a conservative government from 1933 to 1935, when some reforms of the previous years were abandoned. The reformist parties returned to power in 1935; however, the division between the advocates of the democratic changes and those

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1998, Ruiz-Castillo and Sastre, 1999. A summary of the key findings can be found in the appendix.

<sup>3</sup> Prados de la Escosura, 2003, 2006b, 2007a has constructed historical GDP and growth series for Spain. He emphasizes that, before the economic stagnation of the 1930-1952 period, Spain experienced significant economic growth since 1850, in particular from 1850-1883 and in the 1920s. Maddison, 2001, 2003 also reproduces those historical series of real GDP per capita in Spain in his international compilation.

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 development of progressive income and wealth taxation, and 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 and concentration.

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. Spain has also modified the wealth tax base by exempting corporate stocks and business assets for corporate and business owners actively involved in managing the business in 1994. Our constructed top income and wealth shares can be used to cast light on the effects of taxation on the economic and tax avoiding behavior of the affluent. We propose a detailed application in the case of the 1994 wealth tax exemption.

Our results show that income concentration was much higher during the 1930s than it is today. The top 0.01% income share estimated from reported incomes was about twice higher in the 1930s than over the last two decades. The top 0.01% income share fell sharply during the first two decades of the Franco dictatorship, and has increased slightly since the 1970s, and especially since the mid-1990s. Interestingly, both the level and the time pattern of the top 0.01% income share in Spain is fairly close to comparable estimates for the United States (Piketty and Saez, 2003) and France (Piketty, 2001, 2003) over the period 1933-1971, especially the post-World War II decades. Those findings, along with a careful analysis of all published tax statistics as well as a re-evaluation of previous academic work on income tax evasion in Spain, leads us to conclude that income tax evasion and avoidance in Spain before 1980 was much less prevalent than previously thought *at the top of the distribution*. As a result, those income tax statistics are a valuable primary data source for analysing income concentration.

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 owner-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 could exempt about 40% of their wealth because of this exemption. We develop a simple conceptual model to explain this phenomenon, which we estimate using our wealth series. Our empirical results show evidence of very strong shifting effects whereby 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. The case study of the wealth tax exemption illustrates how our series can be used to cast light on the evaluation of tax policy reforms.

The paper is organized as follows. Section 2 describes our data sources, outlines our estimation methods, and discusses the issue of income tax evasion in Spain. In Section 3, we present and analyze the trends in top income shares since 1933 as well as the composition of top incomes since 1981. Section 4 focuses on top wealth shares and composition since 1982. Section 5 uses the wealth series to analyze the efficiency costs of the wealth tax exemption of 1994. Finally, Section 6 offers a brief conclusion. The complete details on our data and methods, as well as the complete sets of results are presented in appendix.<sup>4</sup>

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<sup>4</sup> The appendix is available online at <http://elsa.berkeley.edu/~saez/>

## **2. Data, Methodological Issues, and Context**

### **2.1. Data and Series Construction**

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 1981-2004 period than for the older period. Because the received wisdom is that the individual income tax was poorly enforced, especially in the pre-1981 period, we will discuss in great detail this issue in Section 2.2 and throughout the text in Section 3. Complete details on the methodology are provided in appendix.

Before 1981, because of very 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. Detailed statistics on the 'new' income and wealth tax have started to be published in 1981 and 1982 respectively.<sup>5</sup> 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 2004. For 1981 to the present, estimates are based on Spain excluding two autonomous regions: Pais Vasco and Navarra, because they manage the income tax directly and hence are excluded from the statistics. Those two regions represent about 10% of Spain in terms of population and income. From 1933 to 1935, estimates are based on all Spain; Navarra is excluded since 1937 and Alava (one of the three provinces from the Pais Vasco) since 1943.

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

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<sup>5</sup> 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.



actually filed). For example, in 2004, there are 30,718,000 adults in Spain (excluding Pais Vasco and Navarra) and hence the top 1% represents the top 307,180 tax filers, etc. The Spanish income tax is individually based since 1988 (although joint filing remains possible, it is always advantageous to file separately when both spouses have incomes). Before 1988, the Spanish income tax was family based. We correct our estimates for 1981-1987 using the micro-data (which allow to compute both family and individual income after the reform) in order to account for this change in law.<sup>6</sup>

We define income as gross income before all deductions and including all income items reported on personal tax returns: salaries and pensions, 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 1979 (but were excluded from the base in the earlier period). In order to create comparable series before and after 1979, we also estimate series excluding capital gains for the period 1981-2004. 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 with a significant top rate of 2.5% in the top bracket for very large wealth holdings.<sup>7</sup> 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

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<sup>6</sup> The old income tax was based on individual income from 1933 to 1939 and based on family income from 1940 on. We do not correct estimates for the 1940-1971 period because, at the very top of the distribution, we expect spouses' incomes to be small during that period where very few married women worked.

<sup>7</sup> The wealth tax has always been individually based and not family based.

adjustments. Financial wealth is a more narrow definition of wealth but it is better measured in tax statistics.

Our main data consist of tables displaying the number of tax returns, the amounts reported, and the income or wealth composition 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. This method follows the classical study by Kuznets, 1953 and has been used as well as in all the top income studies presented in Atkinson and Piketty, 2007. In the case of Spain, a very large cross-section of individual micro tax data over sampling high incomes is available for year 2002. A 2 percent panel of tax returns is also available from 1982 to 1998. Therefore, we use the micro data to check the validity of our estimations based on published tax statistics. We find that our tabulations based estimates are almost always very close (within 2-5 percent) to the micro-data based estimates, giving us confidence that the errors due to interpolation are fairly modest.<sup>8</sup>

In order to estimate shares of income, we need to divide the income amounts accruing to each fractile by an estimate of total personal income defined ideally as total personal income reported on income tax returns had everybody been required to file a tax return. Because only a fraction of individuals file a tax return (especially in the pre-1979 era), this total income denominator cannot be estimated using income tax statistics and needs to be estimated using National Accounts<sup>9</sup> and the GDP series created by Prados de la Escosura, 2003 for the pre-1979 period. For the recent period 1981-2004, we approximate the ideal income denominator as the sum of (1) total wages and salaries (net of social security contributions) from National Accounts, (2) 50% of Social Transfers from National Accounts (as pensions, which represent about half of such transfers, are taxed under the income tax), (3) 66.6% of unincorporated business income from National Accounts (as we

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<sup>8</sup> We also use the micro-data to produce estimates on top wage income shares as the micro-data allow us to rank tax filers by size of wages and salaries.

estimate that about 1/3 of such business income is from the informal sector and hence escapes taxation), (4) all capital income reported on tax returns (as capital income is very concentrated, non-filers receive a negligible fraction of capital income<sup>10</sup>). Our denominator for the 1981-2004 period is around 66% of Spanish GDP (excluding Pais Vasco and Navarra) with small fluctuations across years, which is comparable to other studies in Atkinson and Piketty 2007. For the pre-1979 period, because there are no detailed personal income series in the National Accounts series constructed by Prados de la Escosura, we define our denominator as 66% of GDP.<sup>11</sup> 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.

Table 1 gives thresholds and average incomes for a selection of fractiles for Spain in 2004. As just mentioned, the average income is estimated primarily from National Accounts and hence is largely independent of our tax statistics<sup>12</sup> and hence not biased downwards because of tax evasion or avoidance.

After analyzing the top share data, we turn to the composition of income and wealth. Using 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 also check the accuracy of our estimation using the micro-tax data for the years when the micro-data is available). We divide wealth into real estate (net of mortgage

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<sup>9</sup> Using tax returns to compute the level of top incomes and national accounts to compute the total income denominator dates from the famous Kuznets' study (1953) on American inequality. This method is also used in most of the studies compiled in Atkinson and Piketty, 2007.

<sup>10</sup> For example, in 2002, the top 10% income earners (representing about one fifth of all tax filers as only about half of adults file taxes) obtained 65% of total capital income reported on tax returns. Capital income in personal income in National Accounts is substantially different from capital income on tax returns because of imputed rents of homeowners, imputed interest to bank account holders, returns on (non-taxable) pension funds, etc. That is why we use capital income from tax returns to define our denominator. See e.g. Park 2000, for a comprehensive comparison in the case of the United States where over 90% of adults file tax returns.

<sup>11</sup> We take into account the exclusion of Navarra since 1937 and that of Alava since 1943.

<sup>12</sup> It is important to note that average incomes are low because they include a large number of non working adults (such as non working wives or students) with either no or very small individual incomes who rely on other family members' income.

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

## 2.2 The issue of Tax Avoidance and Evasion

Income tax data have hardly been used before to study income concentration, especially prior to 1979, because there is a widely held view that income tax evasion in Spain was very high, and that consequently, the income tax data vastly under-estimate actual incomes.<sup>13</sup> A careful analysis of the income tax statistics shows that evasion and avoidance in Spain *at the very top of the distribution* during the first decades of existence of the tax was most likely not significantly higher than it was in other countries such as the United States or France. It is therefore critical to understand the roots of this widely held view, which is based on two main arguments.

First, very few individuals were paying income tax and the individual income tax was raising a very small amount of revenue relative to GDP. Second, the administration did not have the means to enforce the income tax, especially when the exemption thresholds were significantly reduced in the 1960s, and when tax filers could very easily exaggerate their deductions to avoid the tax.

The first argument is factually true as only about 1,500 individuals paid taxes in 1933 (about 0.01% of all adults), and throughout the 1950s and 1960s the number of taxpayers rarely exceeded 40,000 (about 0.2% of all adults). Combined with relatively low tax rates (except at the very top brackets), it is therefore not surprising that the income tax was only raising between 0.03% of GDP in 1933 and 0.22% of GDP in 1978.<sup>14</sup> However, extremely high exemption levels can very well explain such facts even in the absence of tax evasion. Indeed, in 1933, the filing threshold was 100,000

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<sup>13</sup> Comín, 1994 and Comín and Zafra Oteyza, 1994 provide a historical account on the issues of fiscal fraud and tax amnesties over the last century in Spain; Díaz Fuentes, 1994 focuses on the period 1940-1990. For the view that income tax evasion was very high in the pre-1979 period, see Breña Cruz et al. 1974, Castillo Lopez, 1992, Instituto de Estudios Fiscales, 1973, Martí Basterrechea, 1974..

<sup>14</sup> We report in appendix Table G the revenue (as a share of GDP) of each tax source in Spain between 1930 and 2005, based on Comín, 1985 and Instituto de Estudios Fiscales-BADESPE.

Pesetas, that is, 66 times the average income per adult (equal to around 1,500 Pesetas based on our denominator estimation described in Section 2.1).<sup>15</sup> Our series will show that income concentration based on those tax statistics was very high in the 1930s (about twice as high as in recent decades), and actually not much lower than levels estimated for the United States or France. Therefore, there is no reason to believe that the number of filers and income reported at the very top are unreasonably low.

The second argument that enforcement was poor also needs to be qualified. It is undoubtedly true that the 1964-1967 income tax reform that eliminated the high exemption levels failed to transform the income tax into a mass tax as the fiscal administration kept using *de facto* high exemption levels and did not try to make taxpayers with incomes below 200,000 or even 300,000 Pesetas pay the tax (Martí Basterrechea, 1974).

However, there are three main reasons to believe that enforcement *for very top taxpayers* remained acceptable under the old income tax for most of the period for which we have data. First, historically, early progressive income tax systems always use very high exemption levels and therefore only a very small fraction of the population at the top was liable for the tax. The rationale for using income taxes on the very rich only is precisely because, at the early stages of economic development with substantial economic activity taking place in small businesses with no verifiable accounts, it is much easier to enforce a tax on a small number of easily identifiable individuals. The rich are identifiable because they are well known in each locality and they derive their incomes from large and modern businesses with verifiable accounts, or from highly paid (and verifiable) salaried positions, or property income from publicly known assets (such as large land estates with regular rental income).<sup>16</sup> Therefore, the small size of the Spanish income tax is due to the fact that it

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<sup>15</sup> For further comparisons, in 1933, the annual salary of a qualified officer to the government statistics bureau was 4,000 pesetas, while a high-ranking postal service employee received 11,000 pesetas per year (Gaceta de Madrid, 12/31/1933).

<sup>16</sup> Seligman (1911) is the classical reference on the history of early income taxes. The studies gathered in Atkinson and Piketty, 2007 all show that the early income taxes in Western countries were limited to a small number of tax filers. All those studies show that income concentration measures derived from those early income tax statistics are always very high suggesting that enforcement of the income tax on the rich was acceptable. The case of Japan, which started an income tax in 1887 shows that a pre-industrial economy significantly

was a tax limited to the very rich and should not be interpreted as the consequence of poor enforcement.<sup>17</sup> Indeed, official statistics show that the administration was able to audit a very significant fraction of individual tax returns in the pre-1960 period. The audit rates were on average around 10-20% and hence significantly higher than today (see Table F2 and Table F3 in appendix). It is likely that audit rates were even higher for the top 2,000 income earners in the top 0.01%.

Second, when the progressive income tax was started, Spain had already set in place schedule income taxes on wages and salaries, rents, corporate profits, business profits, and capital income.<sup>18</sup> As a result, most of the income components of the rich were already being taxed through those schedule taxes, which offered an alternative way to verify the incomes of the rich.<sup>19</sup> Furthermore, like France, Spain also adopted and used presumptive income taxation based on external signs of wealth (such as ownership of cars, planes, or yachts, or employment of domestic workers) in cases where the administration suspected tax evasion or avoidance.<sup>20</sup>

Third, the administration also threatened to make public the list of taxpayers in order to shame prominent tax evaders (Albiñana, 1969a). Such

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less advanced than Spain in the 1930s could successfully enforce a tax on the rich (Moriguchi and Saez, 2007). The Spanish case seems to follow this general pattern as well.

<sup>17</sup> In the discussions leading to the creation of the income tax during 1932, it was recognized that enforcement would be acceptable only if the exemption threshold was chosen high enough. The parliamentary debates show that, although some congressmen considered that the exemption level was too high, it was recognized that the tax authority lacked both the managerial capabilities and the necessary human resources to administer a broader income tax (Vallejo Pousada, 1995). Most Western countries broadened their income tax during extraordinary events such as the World Wars, and this required a very large administrative effort.

<sup>18</sup> The time series of the revenue raised by each of those schedule taxes are compiled is reported in appendix Table G.

<sup>19</sup> Crosschecking of income tax returns with the schedule income tax returns did take place, as stated, for instance, in Albiñana et al., 1974 and Gota Losada, 1966. Starting in 1933, the administration prepared personal listings with information from all schedule taxes in order to identify individuals with very high incomes. Along the same lines, in 1940 the government launched the 'Registro de Rentas y Patrimonios,' (Registry of Income and Wealth) in which information from personal wealth was gathered with the aim of assisting income tax audits. Additionally, the high level of land ownership concentration allowed local tax authorities to identify large estate proprietors and rents for rural rent tax purposes (see, for instance, Carrión, 1972, 1973, and Alvarez Rey, 2007).

<sup>20</sup> According to Albiñana et al., 1974, Castillo Lopez, 1992 and Martí Basterrechea, 1974, extraordinary deductions were among the main sources for tax evasion after the reform of 1964-1967. Tax statistics report the amount of extraordinary deductions, which are only around 5% of income in the late 1950s. Our series are estimated based on income *before* deductions and thus are not biased downwards due to excessive deductions.

lists were published for tax years 1933, 1934, and 1935 in the official state bulletin. Those lists show that virtually all the largest aristocratic real estate owners among the 'Grandes de España' (the highest nobility rank), were taxpayers, demonstrating that the traditional aristocracy could not evade entirely the income tax.<sup>21</sup>

Contemporaneous observers (Albiñana 1969a,b, Gota Losada, 1970) suggest that enforcement deteriorated during the last decade of Franco's regime.<sup>22</sup> This view is based primarily on the fact that the 1964-1967 reform virtually eliminated exemptions and transformed the income tax in a mass tax, linked to schedule taxes. In practice however, the income tax remained a tax on very high incomes only as the mass tax was not enforced. Therefore, a much more accurate statement is that the Spanish income tax could not become a mass tax (as this happened in most Western countries around the mid-20<sup>th</sup> century) without a significant administrative effort that the Franco regime never seriously attempted, hence giving the impression that the tax was primitive and poorly enforced relative to other countries.<sup>23</sup> However, this does not mean that the Spanish income tax was not properly enforced on very top incomes, and most of the hard evidence that we have been able to gather points toward enforcement levels and techniques *for the very top of the distribution*, that were comparable to those used in other countries.

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<sup>21</sup> In 1932, the list of all the Grandes de España (who were part of the land reform expropriation) was published in the Gaceta de Madrid (12/16/1932). Carrion, 1973, provides details of the land area owned by the largest estate proprietors among them. By comparing these lists and the income tax lists it turns out that 100% of owners of more than 3,000 hectares were income taxpayers (36 people). If proprietors of more than 1,000 hectares are considered (65 people), 92% are present in the tax lists. It should be pointed out that this does not imply that the missing 8% were necessarily evaders; in most cases their ascendants paid the income tax, which reflects different timing between land ownership transfers and nobility title transfers (due, for example, to male preference). Additionally, close inspection of the income tax lists shows that over one tenth of *all taxpayers* in 1933-1935 were either Grandes or close relatives.

<sup>22</sup> The economic historian Francisco Comín reported to us a well-known story: 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. 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 and it is possible that the story has been widely exaggerated as it was told and re-told overtime. As just discussed, the published lists of taxpayers in 1933-1935 provide hard evidence that goes in the opposite direction.

<sup>23</sup> Fiscal inspectors were highly regarded from a social point of view, and their work should not be questioned. Many of them have extensively written on income tax issues, as Albiñana, 1969a,b, Albiñana et al., 1974, Breña Cruz et al., 1974, Gota Losada, 1966, 1970, Martí Basterrachea, 1974, and many others.

### **3. Top Income Shares and Composition**

#### **3.1 Top Income Shares**

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 2004. As discussed in the introduction and as shown in Prados de la Escosura, 2003, 2006b, 2007a, real economic growth (per capita) was negative from 1930 to the early 1950s. Rapid economic growth started in the 1950s. 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 2004. The break from 1971 to 1981 denotes the change from the old income tax to the new income tax. Four important findings emerge from this figure.

First, the highest income concentration occurs in the 1930s. The top 0.01% share was around 1.5% and about twice as high as in the recent period. This finding is not surprising as Spain was a country with low average income and with high concentration of wealth and, in particular, land ownership.<sup>24</sup> However, lack of any statistics on income or wealth concentration made this claim impossible to establish rigorously. The use of the old income tax statistics demonstrates that Spanish income concentration was indeed much higher in the pre-civil war period than it is today.<sup>25</sup> Interestingly, tax statistics providing the composition of reported top incomes show that taxpayers in 1941 (representing the top 0.03%) obtained about 20% of their income from returns on real estate (rents), 35% from returns on financial assets, 25% from non farm business income, 5% from farm business income, and about 15% from employment income (see Table H in appendix).

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<sup>24</sup> The land reform of the Second Republic was not successful in redistributing large land estates and was eventually abandoned (see Malefakis, 1971 and Carrión, 1973).

<sup>25</sup> If tax evasion at the very top was higher in the 1930s than today, then this reinforces our finding that income concentration was higher in the 1930s. However, as we argued above, we



This suggests that, at the beginning of the Franco regime, only a minority of top income earners were passive landowners deriving all their income from rents (the traditional image of the agrarian aristocracy of the 'Grandes de España,' mainly concentrated in the central and southern areas of the country). Top income earners were much more likely to be also owners of financial assets and non-farm businesses.

Second, the old income tax statistics display a large decrease in the top 0.01% income share from 1.4% 1941 to 0.6% in the early 1950s, during the first decade of the Franco dictatorship. We have argued in Section 2.2 that there is no compelling hard evidence suggesting a deterioration of enforcement at the very top of the distribution and, therefore, we conclude that the poor economic management and the turn toward economic autarchy did not benefit top incomes and actually reduced income concentration in Spain. By 1953, the composition of top incomes had changed significantly relative to 1941: the fraction of non-farm business income has dropped from 26% to 9% while the fraction of farm business income has increased from less than 5% to over 20%.<sup>26</sup> This suggests that the closing of the Spanish economy in the 1940s led to a sharp reduction in successful non-farm business enterprises and as a result, non-farm business owners were replaced by large farm business owners at the top of the distribution.

Third, top income concentration estimated with income tax statistics remains around 0.6% from 1953 to 1971, the last year for which old income tax statistics are available, suggesting that the high economic growth starting the 1950s did not bring a significant change in income concentration. 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. Assuming again a constant level of enforcement from 1971 to 1981, this suggests that the transition from dictatorship to democracy was not associated with a significant change in income concentration. Comparing the change in income composition in the top 0.05% from 1961 to 1981 is interesting: in the capital income category, there is a dramatic shift away from

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did not find compelling arguments showing that enforcement at the top was particularly poor in the 1930s.

real estate to financial assets and in the business income category, there is a dramatic shift away from farm income toward non farm business income. This shows that the very fast economic expansion from 1961 to 1981 made traditional land and farm owners fall behind other business owners at the top of the distribution. Our top income share series show, however, that such a shift took place with no change in overall income concentration.

Finally, Figure 2 shows that there are 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.

In light of our discussion in the introduction about the specific economic and political trajectory of the Spanish economy relative to other western countries analyzed previously, it is interesting to compare the trends in income concentration between Spain and other countries. Figure 3 displays the top 0.01% income share in Spain, France (from Piketty, 2001 and Landais, 2007), and the United States (Piketty and Saez, 2003). Two points are worth noting.

First, Spain starts with a level of income concentration in the 1930s that is slightly lower than France or the United States. However, income concentration in France and the United States falls more sharply than in Spain during World War II. Therefore, from the mid-1940s to 1971, income concentration across the three countries is actually strikingly close.<sup>26</sup> This shows that the number of high income taxpayers is not inherently too low in Spain relative to other countries and supports our claim that enforcement at the top of the distribution was plausibly comparable across Spain and other Western countries. Second, although income concentration has increased in Spain in recent decades, this increase is very small relative to the surge experienced by top incomes in the United States. Thus, the Spanish

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<sup>26</sup> The share of capital income from financial assets drops slightly from 36% to 29% and the share of labor income increases slightly from 13% to 19% from 1941 to 1953.

<sup>27</sup> The series are estimated using similar methodologies across countries although there are of course differences in the details. However, it is important to note that the denominator (as a fraction of GDP) is comparable across countries and around 60% to 65%. It is actually slightly higher in Spain (66% of GDP) than in France (around 60% of GDP on average).

experience is actually closer to the one of continental Europe countries such as France than Anglo-Saxon countries such as the United States.<sup>28</sup>

### **3.2. Detailed analysis since 1981**

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.

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.<sup>29</sup> The figure shows that those top income shares have evolved quite differently: the top 1% increased very significantly from 7.7% in 1981 up to 10.2% in 2004. In contrast, the top 10-5%, and the top 5-1% shares actually slightly declined from 1981 and in 2004, 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. This result could not have been derived from survey data, which have too small samples and top coding issues to reliably study the top 1%.

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 2004: the top 1-0.5% increases modestly from 2.7 to 2.9 percent while the top 0.1% increases sharply by over 80% from 2 to 3.6 percent.

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.

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<sup>28</sup> The studies gathered in Atkinson and Piketty (2007) show that Anglo-Saxon countries experienced a dramatic increase in income concentration in recent decades while continental European countries experiences either no or small increases in income concentration.

<sup>29</sup> To a large extent, 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 Figures 2 and 3 for the period 1981-2002.

Figure 6 displays the share and composition of the top 0.1% income fractile from 1981 to 2004. The figure shows that the increase in the top 0.1% income share is due solely to two components: 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 1986-1988 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 7 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 2004. 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.

Figure 8 reports series of wage concentration (based on micro tax statistics) for the period 1982-2002. It is important to keep in mind that those series capture only wage income concentration and hence are silent about changes in business and capital income concentration. The wage series for 1982-2002 based on tax return data show that there has been a steady increase in wage concentration during the last two decades. This increase has taken place primarily within the top 1%, which has increased significantly from 4.3% in 1982 to 6.5% in 2002.

#### **4. Top Wealth Shares and Composition**

In order to cast light on the capital income component of the income concentration series we discussed, 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

2004. Those average wealth statistics come solely from National Accounts and are hence fully independent from wealth tax statistics.

Three elements should be noted. First, wealth has increased very quickly during that period, substantially faster than average income: average wealth in 2004 is 2.4 times higher than in 1982 while average income in 2004 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 is increasing as we move up the wealth 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 their 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 2004. 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 2004: 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 8% in 1982 to 5% by 2004. In contrast, the top 1-0.5% has increased from 4.3 to 5.2 percent and the top 0.5-0.1% has slightly decreased from 7.6 to 7.2 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 improvement in real estate prices from 1997 to 2004 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 2004. 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. It is instructive to compare the wealth reported on wealth tax returns with the wealth reported in the survey. The complete comparison is reported in Table E3 in the appendix. Three important findings emerge.

First, we find that wealth reported on wealth tax statistics for top income groups such as the top 1% is higher than the wealth reported on the survey by the top 1%, even under the assumption that all the household wealth belongs to the head of household. For example, including real estate, the average top 1% wealth from tax returns is 1.8 million Euros while it is only 1.2 million in the survey. This shows that, in contrast to popular belief, it is not

clear that tax evasion for the wealth tax is pervasive as wealthy individuals seem to report more wealth for tax purposes than for the survey purposes.

Second, the total wealth reported in the survey (and especially financial wealth) is substantially lower than the aggregates from National Accounts that we use as the denominator. For example, the survey reports total wealth of about 2,000 billion Euros while National Accounts report total wealth of about 3,000 billions Euros. This suggests that households are under-reporting their wealth in the survey or that the survey might not have been sampled adequately to reflect a fully representative cross section of Spanish households.

Finally, because the gap in the aggregate between the survey and National Accounts and the gap for top groups between the survey and the wealth tax data are of comparable magnitude, our top wealth shares computed using wealth tax statistics and National Accounts for the denominator are relatively close to the top wealth shares computed internally from the survey (using as denominator total survey wealth).

## **5. The Erosion of the Wealth Tax Base**

In 1994, an exemption for business owners substantially involved in the management of their business was introduced in the wealth tax. More precisely, stocks 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. The value of those stocks still has to be reported to the fiscal administration and was included in our top wealth share series. The exemption was introduced in December 1993 for the first time, affecting wealth held by the end of 1994 (reported in 1995). Importantly for the empirical analysis below, the exemption criteria were relaxed for tax year 1995 (when the individual ownership

requirement was lowered from 20% to 15%) and in tax year 1997 (when the 20% family ownership criteria was introduced).<sup>30</sup>

### 5.1 Conceptual Model

In principle, the 1994 wealth tax reform could have two effects. First, the tax cut for exempted business might spur business activity in the exempted sector. We call this effect the supply side effect. Second, the tax cut for exempted business might induce some businesses, which did not originally meet the exemption criteria, to shift to the exempt sector in order to benefit from the tax cut. For example, business owners could increase their share of stock in the company in order to meet the 15% ownership threshold. Alternatively, they might become active managers in their businesses or drop other work activities outside the business. A business owner would be willing to shift to the exempt sector as long as the costs of shifting are less than the tax savings. We call this effect the shifting effect. In this subsection, we construct a simple model to capture those two effects and we propose an empirical application using our constructed wealth series in the following subsection.<sup>31</sup>

We assume that business owners have an objective function of the form  $c - h(z)$  where  $z$  is pre-tax profits,  $c$  is net-of-tax profits, and  $h(z)$  is an increasing and convex function representing the costs of earning higher profits. Those costs represent labor input costs (including the labor supply cost of the business owner if he is an active manager) and also capital input costs. The quasi-linear form of the objective function amounts to assuming away income effects or risk aversion effects, which simplifies the derivations

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<sup>30</sup> For tax year 2003 (beyond our study), the individual ownership requirement was further reduced from 15% to 5%.

<sup>31</sup> To the best of our knowledge, such a model has not been presented before in the literature on the efficiency costs of taxation. It could be easily applied to other tax settings. For example, in the United States, the issue of shifting business profits from the corporate income tax base to the individual income tax base has received a lot of attention (see e.g., Slemrod, 1995, 1996, Gordon and Slemrod, 2000, Saez, 2004). Such shifting occurs because businesses meeting specific criteria (number of shareholders) can elect to be taxed directly at the individual level.



and the welfare analysis.<sup>32</sup> Furthermore, we assume that the business owner can pay a cost  $q \geq 0$  in order to meet the tax exemption status. Such costs represent for example the costs of increasing the business ownership to 15% or the opportunity costs of dropping outside work activities to meet the labor income requirement. We assume that  $q$  is distributed according to a cumulated distribution  $P(q)$ . A fraction  $P_0 = P(q=0)$  of businesses meet those criteria even in the absence of the tax preference. In reality, businesses differ in size, which could be modeled through heterogeneity in the cost function  $h(z)$ . However, as we consider only linear taxation (which is an approximation to the actual progressive tax system), the distribution of business sizes is irrelevant for the analysis and hence we assume that businesses differ only in  $q$ .

We assume that the tax rate on profits  $z$  in the taxed sector is  $\tau_0$  and that the tax rate in the exempt sector is  $\tau_1$  with of course  $\tau_1 \leq \tau_0$ . Note that  $\tau_1$  is not necessarily zero as the business also faces corporate and individual income taxes. It is also important to note that we convert the wealth tax rate  $t$  into a tax rate  $\tau$  on profits using the standard formula  $\tau = t/r$  where  $r$  is the normal annual return on assets. We denote by  $l$  the tax status of the business with  $l=0$  denoting the standard taxable status and  $l=1$  the exempt status. The manager solves the following maximization problem:

$$\max_{l,z} z(1 - \tau_l) - h(z) - q \cdot l$$

This maximization problem can be decomposed into two stages. First, conditional on  $l$ ,  $z$  maximizes  $z(1 - \tau_l) - h(z)$  which generates the first order condition  $1 - \tau_l = h'(z)$ . This equation captures the within sector supply side effect, as a decrease in  $\tau_l$  leads to an increase in  $z_l$  with an elasticity  $e_l = \left( (1 - \tau_l) / z_l \right) \partial z_l / \partial (1 - \tau_l) = h'(z_l) / (z_l h''(z_l))$ .

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<sup>32</sup> Including income effects would not change the qualitative nature of our findings but would complicate the presentation, as we would have to introduce compensated elasticities to capture efficiency costs in our formulas. In the case of wealthy business owners who actively work in their business, it seems plausible to assume that income effects are small (if income effects were large, those business owners would not be working).

Second, the business chooses  $l$ . We denote by  $V_l = \max_z [z(1 - \tau_l) - h(z)]$  the indirect utility in each taxable status  $l = 0, 1$  (not including the cost  $q$  of becoming tax exempt). Therefore, if  $q \leq V_1 - V_0$ , then the exempt status  $l = 1$  is optimal, while if  $q > V_1 - V_0$ , then  $l = 0$  is optimal. As a result, a fraction  $P^* = P(V_1 - V_0)$  of businesses chooses the exempt status. Using the envelope theorem, we have  $\partial V_l / \partial \tau_l = -z_l$ . Therefore,  $\partial P^* / \partial \tau_0 = p(V_1 - V_0) \cdot z_0$  and  $\partial P^* / \partial \tau_1 = -p(V_1 - V_0) \cdot z_1$ , where  $p(q)$  denotes the density of the distribution  $P(q)$ . Unsurprisingly, if there are firms on the margin between the tax exempt and taxable status, then increasing the tax  $\tau_0$  in the taxable sector generates a shift toward the tax-exempt sector. Conversely, reducing the tax advantage of the exempt sector by increasing  $\tau_1$  reduces the number of firms in the tax-exempt sector.

We denote by  $T = (1 - P^*) \tau_0 z_0 + P^* \tau_1 z_1$  the total tax revenue and by  $W = (1 - P^*) V_0 + \int_0^{V_1 - V_0} (V_1 - q) dP(q)$  the private surplus in the economy. Social surplus is  $SW = W + T$ . Routine computations show that:

$$\frac{\partial T}{\partial \tau_0} = (1 - P^*) z_0 \left[ 1 - \frac{\tau_0}{1 - \tau_0} e_0 - \frac{P^*}{1 - P^*} (\tau_0 z_0 - \tau_1 z_1) \right] \quad (1)$$

$$\frac{\partial T}{\partial \tau_1} = P^* z_1 \left[ 1 - \frac{\tau_1}{1 - \tau_1} e_1 + \frac{P^*}{P^*} (\tau_0 z_0 - \tau_1 z_1) \right] \quad (2)$$

The first term (equal to one) inside the square brackets of (1) and (2) represents the mechanical increase in tax revenue absent any behavioral response. The last two terms inside the square brackets represent the loss of tax revenue due to the supply side effect and the shifting effect respectively. The reduction in private surplus due to the tax change is equal to the mechanical tax increase (absent behavioral responses).<sup>33</sup> Therefore, the last two terms represent the net effect on social surplus  $SW$  of the tax increase or equivalently (minus) the marginal deadweight burden of increasing taxes. Absent shifting effects ( $P^* = 0$ ), we obtain the standard Harberger formula

showing that the marginal loss in tax revenue (per dollar) is proportional to the supply side elasticity  $e$  and the tax rate  $\tau$ .

If the tax rate  $\tau_0$  in the taxable sector is below the Laffer rate maximizing tax revenue (when taking into account only supply side effects) then  $\tau_0 z_0 > \tau_1 z_1$ . Therefore, equation (1) shows that shifting effects increase the marginal deadweight burden of increasing the tax in the taxable sector. In contrast, equation (2) shows that shifting effects decrease the marginal deadweight burden of increasing the tax in the exempt sector. The economic intuition is transparent: increasing the tax differential across the two sectors leads to more shifting: the marginal shifters spend  $q$  for a tax saving equal to  $q$ , which is pure deadweight burden. Strikingly, in the extreme case where  $\tau_1 = 0$ ,<sup>34</sup>  $\partial SW / \partial \tau_1 = p^* \tau_0 z_0 / P^*$ : social surplus increases with an increase in  $\tau_1$  no matter how large the supply side effect in the tax exempt sector is. Therefore, providing a wealth tax exemption for businesses meeting some specific set of criteria has two opposite effects on social surplus. First, it has a positive effect on social surplus through the standard supply side effect: exempt businesses face lower taxes and hence might expand their economic activity. This effect is measured through the supply side elasticity  $e$ . This leads to an increase in business activity and hence reported business wealth in the exempt sector with no effect on the taxable sector. Second, however, the exemption might induce some businesses to shift to the exempt status and waste resources in doing so. This shifting effect leads to an increase in reported business wealth in the exempt sector, which comes at the expense of reported business wealth in the taxable sector. We propose an empirical estimation using our wealth composition series below.

## 5.2 Empirical Estimation

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<sup>33</sup> This can be seen directly from the fact that  $\partial V_l / \partial \tau_l = -z_l$ , which is a direct consequence of the envelope theorem.

<sup>34</sup> As we discussed above, even though business owners benefiting from the exemption are exempt from the wealth tax, business owners still pay income taxes on the profits so that in reality  $\tau_1 > 0$ .

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. 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.<sup>35</sup> The fraction of business exempt wealth grows enormously from 1994 to 2002, which is consistent either with a very large supply side effect or a significant shifting effect. However, the fraction of taxable closely held stocks shrinks significantly from 1994 to 2002 which strongly suggests that the great increase in tax exempt wealth comes, at least in part, at the expense of taxable wealth through the shifting channel. We use our series to quantify the relative size of each effect.

We propose a simple quantitative analysis using our estimated series and the model described above. Let us assume that, taking the tax or exempt status as fixed, business wealth is given by  $z = \bar{z}(1 - \tau)^e$  where  $\tau$  is the total tax rate (including income and wealth taxes) on profits,  $e$  is the supply side elasticity, and  $\bar{z}$  is potential wealth absent any taxes. We assume that the fraction of businesses in the tax-exempt sector is given by  $P = P(\tau_0, \tau_1)$ . We use subscript  $b$  to denote before reform variables and subscript  $a$  to denote after reform variables. Hence  $P_b$  is the fraction of businesses meeting the exemption criteria just before the reform and  $P_a$  is the fraction of businesses meeting the exemption criteria after the reform. Hence  $P_b - P_a$  captures the shifting effect (purged from the supply side effect)

For a given top group (such as the top 1% or the top 0.01%), after the reform, we observe exempt closely held stocks  $P_a \bar{z}_a (1 - \tau_0)^e$  and non-exempt

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<sup>35</sup> Those would be businesses for which the cost of shifting  $q$  was zero because the businesses already met the criteria.

closely held stock  $(1 - P_a)\bar{z}_a(1 - \tau_1)^e$ . Before the reform, we observe only the total closely held stocks held by the top group  $P_b\bar{z}_b(1 - \tau_0)^e + (1 - P_b)\bar{z}_b(1 - \tau_0)^e$  as there is no distinction between taxable and exempt stock.

We estimate  $\tau_0$  and  $\tau_1$  as the sum of the income tax on profits and the wealth tax. We assume that the income tax on profits (corporate income tax if the business is incorporated or individual income tax if the business is unincorporated and taxed directly at the individual level) is 30% for the top 1% wealth holders and 40% for top 0.01% holders. We assume that the wealth tax rate (when the business is taxable) is 0.8% of the value of assets for the top 1% and 1.3% for the top 0.01%.<sup>36</sup> We convert wealth tax rates into an implicit tax on profits assuming a return rate on assets equal to 5%. Therefore, the total tax rates on profits for non-exempt businesses are 46% and 66% for the top 1% and top 0.01% respectively. Although there is significant uncertainty about the exact tax rates, they only affect the estimation of  $e$  (and not  $P_a$  and  $P_b$ ).

In order to estimate the three key parameters  $e$ ,  $P_a$  and  $P_b$ , and the two auxiliary variables  $\bar{z}_a$  and  $\bar{z}_b$  from the three observed quantities, we need to make two important additional assumptions. First, we assume that the fraction of closely held stocks meeting the exemption criteria before the reform  $P_b$  is given by the observed fraction of stocks meeting the exemption the first year the reform is implemented. This assumption is reasonable if businesses do not have time to respond to the tax change in the first year after the reform. In any case, if businesses start responding in the first year, then we will over-estimate  $P_b$ , hence under-estimate the shifting effect  $P_a - P_b$  and overestimate the supply side elasticity  $e$ .<sup>37</sup> In the empirical estimation, we need to take into account the fact that the wealth tax exemption criteria were

<sup>36</sup> Those estimates are based on the tabulated data. The wealth tax rates go from 0.2% in the lowest bracket to 2.5% in the top bracket but the effective tax rates are substantially lower due to numerous exemptions.

<sup>37</sup> A counter argument could be that business owners did not know about the wealth tax exemption in the first year after the reform and hence failed to claim it even in cases where they were fully eligible. This argument is difficult to believe in the case of large wealth holders who use tax accountants to file their taxes. More broadly, the costs of learning about complex tax exemptions can be incorporated into the cost  $q$  of meeting the exemption criteria and our model and results would go through unchanged.

relaxed in 1995 and in 1997. Therefore, we assume that the growth in the fraction exempt from 1994 to 1995 and from 1996 to 1997 is entirely due to the relaxation of the criteria (and hence that the fraction exempt would have stayed constant absent the relaxation). This is a very conservative estimation as the fraction exempt grows in every single year from 1994 to 2002. As a result, we assume that the fraction exempt (before the reform) is actually about twice as large as the fraction actually exempt in 1994. This conservative assumption leads to a conservative estimate of the shifting effect.

Second, we assume that, absent any tax change, total closely held stocks (taxable and non-taxable) would have grown at a rate  $g$  equal to the growth rate of other financial assets held by the top 1%. In that case,  $\bar{z}_a = (1 + g) \cdot \bar{z}_b$  where  $1 + g$  is taken as the ratio of other financial assets held by the top 1% after and before the reform. This is clearly a strong assumption. Using our pre-reform series, we show that it holds as a first approximation in the pre-reform period.<sup>38</sup> Panel A of Table 2 presents those key parameters for the top 1% (left panel) and for the top 0.01% (right panel) for various choices for the pre-reform base year and the post-reform year.

With those two assumptions, we can estimate the behavioral parameters  $e$ ,  $P_a$  and  $P_b$ , (Panel B in Table 2) as well as evaluate the tax and efficiency consequences (Panel C in Table 2). Three important results arise from this exercise. First and most important, all the estimates robustly suggest that there is a very large shifting effect: the fraction of businesses benefiting from the exemption jumps from less than 1/3 to about 2/3 for the top 1%. The shifting is even more extreme for the top 0.01% and goes from 37% exempt to over 80% exempt. It is important to reiterate that this represents the pure shifting effect (controlling for the supply side effect).<sup>39</sup> Of course such a large shifting effect is not surprising in light of Figure 14 which showed a striking drop in taxable closely held wealth compensated by an increase in exempt

<sup>38</sup> For example from 1982 to 1993, among the top 1%, the (real) growth of other financial assets was 63% while the growth of closely held stocks was 44%. However from 1987 to 1993, closely held stock (in the top 1%) grew faster (37%) than other financial assets (17%).

<sup>39</sup> Such shifting effects are quite robust to assuming a rate of growth of closely held stock that is slower (absent any tax change) than other financial assets. For example, one would have to assume that closely held assets would have declined by 15% in real terms from 1993 to 2002 to make the shifting effects disappear for the top 1% group, which seems very

closely held wealth. Second, the estimates for the supply side elasticity are sensitive to the choice of the comparison years and hence cannot be estimated precisely with our series.<sup>40</sup> However, the elasticity estimates are never extremely large and are often around zero (or even negative). This shows that the data series do not display consistent evidence of a very large supply side effect. Third and finally, Panel C shows that the combination of large shifting effects with moderate supply side elasticity implies that the actual tax loss due to the reform is much larger than the predicted tax loss of the reform absent any behavioral response. Even in the case of column (1) where the supply side elasticity  $e$  is largest and equal to 0.83, the actual loss in tax revenue from the top 1% wealth holders is larger than the loss in tax revenue assuming no behavioral response. When the supply side elasticity estimate is smaller, the loss in tax revenue with behavioral responses can be three to four times larger than with no behavioral responses. As our theoretical model showed, the difference between actual changes in tax revenue and predicted changes in tax revenue (absent the behavioral response) are a measure of the efficiency costs of the tax change.<sup>41</sup> The last row in Table 2 displays such an estimated change in total surplus due to the tax change.

Therefore, our estimates suggest that the wealth tax exemption was a very inefficient way to provide tax relief: the welfare gain to taxpayers was substantially smaller than the loss in tax revenue because resources were dissipated by taxpayers in meeting the tax exemption criteria. This ends up increasing the deadweight burden of taxation as individuals change their behavior in order to benefit from the tax reductions (Feldstein, 1999). Our empirical analysis could be made more precise using directly longitudinal micro-data on wealth taxpayers. Such data could provide direct evidence of shifting and of shifting costs.<sup>42</sup>

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unrealistic given the growth that closely held stock experienced in the pre-tax reform period from 1982 to 1993.

<sup>40</sup> In contrast to shifting parameters,  $e$  is also sensitive to the assumption about the growth rate  $g$  of closely held assets absent the tax change.

<sup>41</sup> This is exactly true in the case of small tax changes. In the case of the relatively large change we are considering, this is only a first order approximation.

<sup>42</sup> Unfortunately, we have not been able to obtain access to such data and it is unlikely that access could be obtained in the near future.

## **6. Conclusion**

This paper has attempted to analyze income and wealth concentration in Spain from a long-run perspective using the income tax statistics evidence. We recognize that our data sources, especially before the return to democracy, cover only the very top of the income distribution so that we cannot speak to overall income inequality patterns. We have argued, however, that the extent of tax evasion at the top of the distribution, was likely much lower than commonly thought and that, as a result, those tax statistics can cast new useful light on the patterns of income concentration in Spain before the return to democracy.

Our results show that income concentration was much higher during the 1930s than it is today: the top 0.01% income share was about twice as high in the 1930s than over the last two decades. Income concentration dropped during the 1940s and remained fairly stable throughout the Spanish economic miracle from the 1950s to the 1970s. During the last two decades, income concentration has increased significantly and 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 and since 2002. The data also show evidence of an increase in top salaries, which has contributed to the increase in top income shares. It should be noted that the increase in income concentration in Spain is much smaller than the increase in concentration that took place in the United States.

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 taxable status to the non-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.

## **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, Navarra and Alava were excluded since 1937 and 1943 respectively.<sup>43</sup>

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 high taxable income threshold (100,000 pesetas lowered to 80,000 pesetas in 1936) together with low progressive rates, ranging from 1% to 11% (Table F1). In 1933 there were only 1,446 tax returns and income tax collection represented 0.03% of GDP and 0.35% of total tax collection (Table B3 and Table G). The income tax was based on individual income (as opposed to family income) from 1933 to 1939.

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 income and consumption taxes, which were much easier to collect. Concerning the *Contribución sobre la Renta*, it 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. 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. The new law applied to 1941 incomes. From 1940 on, the income tax was based on family income (instead of individual income from 1933 to 1939).

Tax rates were further increased in 1942 (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 definition of “unjustified wealth gains” (defined as those which could not

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<sup>43</sup> 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 privileges were regulated by the *Ley Paccionada* (1841). The *Régimen de Concierto* was negotiated with Alava, Guipúzcoa and Vizcaya in 1877, for which the provinces were responsible for the collection of national administration taxes while making lump sum transfers to Madrid. The 1936-1939 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 (Decree Law 23/6/1937), even before the conflict had ended. Financial autonomy was recognized again during transition to democracy (Real Decreto-Ley 30/10/1976).

be explained by declared income flows) for audit purposes helped improve the inspection results, and had a positive impact on the tax collection.

By the mid-1960s the *Contribución* had been pushed down in the fiscal agenda.<sup>44</sup> 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. The Law 11/6/1964 and the Decree 27/11/1967 made the valuation of taxable income dependent on the system of schedule taxes.<sup>45</sup> Consequently the personal income tax completely lost its autonomy. Theoretically there were no minimum threshold to file; however, the usual obligation began at 200,000-300,000 pesetas. Tax rates ranged from 15% to 61.4%, with an average maximum rate of 50%.

The collection results were well below expectations again and the situation remained unchanged after the reforms of 1973 and 1975 (Decree Laws 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 a tax amnesty 1976; this was a success as 213,000 tax filers responded positively.

## **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. Albi (2006) provides a detailed description of the current system along with all the reforms from 1979 to date.

From 1984 to 1987 the top marginal rate was 66%; however the average tax rate could not exceed 46%. In 1988 the tax scale was completely restructured downwards; the top marginal rate decreased from 66% to 56%, but the 46% limit was eliminated (Table A1, column 9).

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 Constitutional Court 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 income). For this reason, the joint-filer tax scale disappeared, so that the same scale applies to everybody since that year. The reform also meant a general rate reduction in the marginal rates. The drops 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.

<sup>44</sup> A result of this diminishing relevance is the inexistence of official statistics between 1961 and 1979.

<sup>45</sup> 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, 1969a and Vallejo Pousada, 1995, for details on how some private banks sketched income tax codes to be imposed to the government.

Concerning capital gains, the following facts are worth mentioning. 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 2004, a distinction was made between short run (or 'regular', meaning below one year) capital gains and long run (or 'irregular') capital gains. Short run capital gains are added to the main income and taxed according to the tax scale.

Until 1998 long run capital gains were first corrected downwards by a coefficient depending both on the nature of the asset and the number of years the asset had been held (real estate, -5.26% per year; stock: -11.11% per year; -7.14% per year for other assets). Finally, 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 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.

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% since 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.

Concerning taxable wealth and valuation rules: (a) urban real estate was valued at property registry values (*catastro*), corrected by coefficients 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 and exceptional character of the tax. It established a strictly individual filing and introduced changes in some of the included components 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%;<sup>46</sup> (e) life insurance at recovery value; (f) annuities at capitalization value; (g) art works and antiques, at market value; (h) intellectual and industrial property rights, exempted if belonging to the original author and valued at purchasing prices otherwise; (i) other items, at market prices and (j) 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) since 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) Closely held stocks of business corporations whenever all three of the following conditions were met:

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

(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 1997 (Law 13/1996). In 1998, professional activities were also included in the exemption mentioned in (a) (Law 66/1997). In 2003, the individual ownership threshold was lowered to 5% (Law 51/2002).<sup>47</sup>

As of 1/1/1997 the wealth tax revenues were transferred to the local governments (Law 46/1996).

## **B. References on data sources for Spain**

Table I summarizes the references on data sources for Spain.

### **B.1 Tax Statistics**

Income tax statistical information covering the “old” income tax was 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

<sup>46</sup> Capitalization rate was raised to 20% in 1999 (Law 50/1998).

<sup>47</sup> In 1994 the fiscal authorities found it difficult to predict the results of the new exemptions (Memoria de la Administración Tributaria 1994, p. 124).

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 statistics from unofficial sources covering total tax files between 1963 and 1974 together with the distribution of files by income brackets for 1971.

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, Estadísticas IRPF y Patrimonio 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000; Dirección General de Tributos, Subdirección General de Política Tributaria (2002), El Impuesto sobre la Renta de las Personas Físicas y el Impuesto sobre el Patrimonio en 1999; Ministerio de Economía y Hacienda, Memoria de la Administración Tributaria, 1982-1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005.

## **B.2 Wages and Salaries**

Results displayed in Table D are based on the panel of individual income tax returns 1982-1998 (Instituto de Estudios Fiscales, Panel IRPF-AEAT) and the 2002 sample of income tax files (Instituto de Estudios Fiscales, Muestra de Declarantes de IRPF 2002). Individual wage incomes are obtained from the corresponding box in the tax file. Therefore, Table D includes civil servants. As for the denominator, total wages and salaries are defined as total employment income from National Accounts, net of social security, and excluding País Vasco and Navarra. Total number of employees is total salaried employment from National Accounts. As the wages of spouses are aggregated for income tax purposes until 1987, we corrected estimates for 1982-1987 along the same lines as explained in Appendix D.2.

## **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](http://www.bde.es/infoest/sindi.htm), Table sindi15. Data refer to averages in the 4th quarter between 1987 and 2004.

(d) Ministerio de Economía y Hacienda, Dirección General de Catastro, Estadísticas Catastrales 1990-2004.

<http://www.catastro.minhac.es/esp/estadisticas1.asp>

(e) Caixa de Catalunya (2004), Report Monográfico: El Crecimiento del Stock de Riqueza de las Familias Españolas y su Impacto sobre el Consumo en el 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 claim 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 include pension funds. Also long run loans are excluded as a proxy for mortgage debt. The data were selected from (a) and correspond to the 4th quarter, covering the period 1989-2002.

In order to estimate the financial wealth for the period 1982-1988, 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: The consistency between valuation rules in the tax code and the data available posed several methodological problems to estimate this fraction of 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, real estate, both urban and rural, must be valued at the highest of (a) the property registry value, (b) the purchasing price, (c) the value determined for other local taxes. Local real estate taxes are based on cadastral values, 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 less than 50% of market prices. This can be easily verified comparing the Bank of Spain statistics (based on market prices, source (c)) with the property registry statistics (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.

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 the 4th quarter and 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 País Vasco. To take this fact into account, we corrected total wealth as follows. We assumed that total wealth in those regions was roughly proportional to real estate wealth. The share of Navarra and País Vasco real estate wealth in Spain is taken from Caixa de Catalunya (2004) (source (e)), based on Ministerio de Fomento.

The numerator, that is, the real estate declared in the wealth tax files, was also adjusted to reflect market prices. The correction factor is the ratio between the market-priced wealth (source (c)) and the GDP from 1987 to 2002. Between 1982 and 1986 the factor was set to the 1987 value. This decision was based on the fact that the ratio [real estate wealth from source (c)/ real estate wealth from property registry statistics source (d)] displays a very similar pattern but is available for a shorter period.

## **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; this excludes Navarra and Alava since 1937 and 1943 respectively. 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 filed 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 and are reported in Table A1, Column 1. The census data have been taken from Presidencia del Consejo de Ministros, Dirección General del Instituto Geográfico Catastral, Censo de la Población de España 1930; Ministerio de Trabajo, Dirección General de Estadística, Censo de la Población de España 1940; Presidencia del Gobierno, Instituto Nacional de Estadística, Censo de la Población de España 1950; Censo de la Población y las Viviendas de España 1960; Censo de la Población de España 1970; Instituto Nacional de Estadística, Censo de Población y Viviendas 1980, 1991, 2001.

## **C.3 Total Income Denominator**

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 País 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 A1. The average income per adult is reported in Column 7 while the CPI index (base 100 in year 2000) is reported in Column 6.



For the period 1933-1971, we use as denominator 66% of the Spanish GDP from Prados de la Escosura (2003). The number 66% is chosen to be consistent with our denominator for the recent period, which fluctuates between 63% and 69% of Spanish GDP (excluding Pais Vasco and Navarra). Our denominator for the 1933-1971 period is reported in Table B3. The first official consumer price index dates back to 1940. Table B3, Column 4 displays the income series converted in 2000 Euros.

## **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  $P_{90}$ ,  $P_{95}$ ,  $P_{99}$ , ...,  $P_{99.99}$ , 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  $t$ .<sup>48</sup> 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 A1, col. (4)). Average incomes and income shares for intermediate fractiles ( $P_{90-95}$ ,  $P_{95-99}$ , etc.) are obtained by subtraction.

### **D.2. Adjustments to raw Pareto Interpolations**

#### **Period 1933-1971**

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<sup>48</sup> This is the standard method of Pareto interpolation used by Kuznets (1953) and Feenberg and Poterba (1993).

For the period 1933-1971 we adopt the following adjustments to the statistics.

In 1935 and 1940, the statistics also report tax filers from previous years, who have been subject to an audit and a subsequent increase in reported income. Those audited tax filers are placed in the bracket where they belonged in the previous year but only the additional income uncovered by the audit is reported. As a result of those audited tax filers, the number of filers in each bracket is too high relative to income reported. In order to remove those audit taxpayers, we discard the information on the number of tax filers per bracket and we use only the total income per bracket. We recover the number of tax filers by assuming that average income per current year taxpayer in 1935 and 1940 is the same as in 1934. Our estimates are slightly over-estimated due to the additional income due to audits. However, additional income due to audits is probably small relative to regular reported income. Furthermore, income including audits is a closer approximation to real incomes than income before audits (although for 1935 and 1940, the additional income from audits corresponds to an earlier year).

For 1941, about 14% of tax returns were reported separately and only in the aggregate. As the average income for those 14% returns is extremely close to the average for remaining returns, we assume that those 14% returns are distributed by brackets in the same way as the rest of returns. The same issue arises for 1957, 1958, 1961 where a significant fraction of returns were not processed in time for the regular publication and are only reported in aggregate in the subsequent publication year. In each case, we assume that those late returns are distributed as the regular returns. Because the average income of late returns is close to the average for regular returns, this seems an acceptable assumption.

From 1942, a deduction for dependent children was introduced and the tax returns are presented by size of income net of this dependent children exemption. The deduction is 3,000 Pesetas for each child from 1942 to 1953, 10,000 Pesetas from 1954 to 1960, and 25,000 Pesetas in 1961. We add back those deductions to our income estimates in order to estimate shares based on income before those deductions. In most years, those deductions are reported by brackets. When they are only reported in aggregate, we impute the deductions in each bracket using years when this information is provided. The average number of children is fairly stable overtime and across brackets so this approximation is acceptable.

Two important additional deductions are introduced in 1954. The first deduction is deductions for extraordinary expenses and charitable contributions. The law allowed for deductible expenses without bounds, which were declared at the discretion of the taxpayers: wedding expenses, pharmacy purchases, transfers to family members in state of necessity (where the term necessity was fuzzily defined). Individuals could also make donations without limits (many of which were suspected of being de facto self-donations for high income earners, when the individual himself managed the foundation, created with the sole purpose of attracting donations). The second deduction is a deduction for employment income equal to 33% of labor income up to a maximum deduction of 100,000 Pesetas. Those two deductions are reported by brackets for years 1958, 1959, and 1961, and are about 5% of reported incomes each within the top 0.1%. We assume that the level of deductions is

the same as in 1958 in years 1954-1957 when the information on deductions is not reported separately.

The 1971 tax statistics are reported by size of gross income equal to the sum of each component (capital income, business income, labor income, etc.) before the extraordinary deductions and the deductions for dependent children. However, the deduction for labor income has been netted out of the labor income component. Because there is no information of labor income by brackets, we assume that the fraction of labor income within the top 0.1% is 20% (which was the corresponding number in 1961, the closest year where this information is available). The labor income deduction is also about 5% of total income in the top 0.1% in 1971.

## Period 1981-2004

### 1. Exclusions from the income tax

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

### 2. 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.

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. Using the 2002 large sample of micro-tax returns, we have verified that this rule gives very accurate results: the estimates based on micro-data excluding capital gains for 2002 are extremely close to the results we obtain from the tabulated statistics published by the tax administration.

### 3. 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 couples 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 use the micro tax panel data to make the correction for the 1981-1987 period. Using the micro data for 1988, we can compute top income shares at the household level and at the individual level (as the micro data allows to reconstitute families). We can then compute adjustment factors as the ratio of the individual shares to the household shares. We then apply those factors to all years from 1981 to 1987 to obtain corrected estimates. This 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 in the published statistics.

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 C 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 include 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, annualized 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 (2007) for a more precise discussion of this method where it is systematically compared with direct estimates using micro data.

### **D.3. Estimating Top Shares from individual Income Tax Panel**

We also computed top shares with and without capital gains (Tables B5 and B6) using the microdata from the panel of income tax returns 1982-1998 (Instituto de Estudios Fiscales, Panel IRPF-AEAT) and the 2002 sample of income tax files (Instituto de Estudios Fiscales, Muestra de Declarantes de

IRPF 2002). The panel is composed of approximately 2% of total returns (the number of observations ranges from 123,599 in 1982 to 308,558 in 1998), while the 2002 sample has information for 907,399 out of 15,481,382 files and oversamples high incomes. The definition of individual income follows the same rules as in the tabulated data case. Total reference income and population is also the same.

As it was described above, before 1988 data available only identifies family income as the income of spouses is aggregated in the tax file due to mandatory joint filing. We used the micro tax panel for 1988 to adjust for this.

For 2002, the results from the sample are very close to the results from the tax tabulations. The 2002 sample perfectly matches aggregates. On the other side, the panel shares display an overall similar pattern when compared to shares based on grouped data, but differences are somewhat larger. This is mainly due to sample size issues and sampling strategy problems in the panel.

### **E. Computing Marginal Tax Rates**

Marginal tax rates displayed in Table B4 were computed using the panel of individual income tax returns 1982-1998 and the 2002 sample of income tax files. For each individual we computed the taxable income following the tax code, as the sum of taxable sources excluding elements taxed by average or flat rates and not subject to the progressive tax scale (capital gains, irregular income and income adjustments from previous years). Then we applied the tax scale to identify the marginal rate that affects each individual.

We also computed total gross income as the sum of taxable sources, capital gains and irregular income (but excluding adjustments from previous years) plus labor income deductions. We ranked individuals by gross income (as done for our estimates based on grouped data) and computed the average marginal tax rates for top percentiles weighted by gross income. This procedure explains the fact that in some cases the marginal tax rate is lower for the top 0.01% than for the top 0.1%. The reason is the following: consider two individuals in the top 0.01%; the first one has no capital gains and no irregular income; consequently she is affected by the maximum marginal rate; the second individual only has capital gains; therefore she is affected by a zero marginal rate according to the progressive tax scale, while she still belongs to the top group. As the proportion of capital gains in total income increases with income (see Table C), it is then possible to find more people at the top subject to relatively smaller marginal rates.

### **F. Estimating Net Worth Shares and Composition from the Wealth Survey**

In 2002 the Bank of Spain conducted a household wealth survey whose preliminary results are presented in Bover (2004). We compare our results based on the tax statistics with the survey microdata (Table E3).

To be consistent with our tax estimates we defined net financial wealth as the sum of: checking accounts, bank deposits, jewelry, antiques, artworks, life insurance, mutual funds, fixed income securities, business assets, and

other household claims net of debts different from mortgage debts. Total net wealth is net financial wealth as described plus the declared price for the main residence plus other real estate minus mortgage debts. We do not consider pension funds, which are not taxed.

As the survey data are based on household information while our results refer to the individual distribution, we compute the top shares under two extreme scenarios. In the first one, we assume that all wealth belongs to the head of the household (panels C and D in Table E3). For the second scenario, we assume that every spouse owns 50% of the household wealth (panels E and F in Table E3). The reference total for the population is the number of adults aged 20 and over in all Spain, this time including País Vasco and Navarra.

### **G. Previous Work on Inequality in Spain**

Until the beginning of the decade of 1970 the studies on inequality and income distribution in Spain are very scarce, due mainly to the lack of data. The Instituto de Estudios Agrosociales, 1958 ran a study on the distribution of expenditure in 1956, as an assignment for the FAO, while the Spanish statistics bureau (INE) conducted a households' consumption survey in 1958 (Infomación Comercial Española, 1962).

The first households' budget surveys (Encuesta de Presupuestos Familiares, EPF) were carried out in 1964/1965, 1966/1967, 1969/1970, 1973/1974 and 1980/1981. The results were somewhat deficient, and many ad-hoc assumptions were made for consistency with the national accounts, including corrections for under-reporting by income size and income source, as well as adjustments to a Pareto distribution. In fact, the ability of these surveys to approximate a comparable total personal income from National Accounts was extremely limited.<sup>49</sup> They generated the first distribution series to be comparable in time (Alcaide Inchausti 1967, 1974; Alcaide and Alcaide 1974, 1977, 1983). According to their estimates, the top 10% received 36.8%, 41.3%, 40.7%, 39.5% and 29.2% of income respectively, stressing a decrease in inequality levels from 1973/1974 to 1980/1981.<sup>50</sup>

In 1963 the INE launched the publication *Salarios*, based on an annual employer survey, referred to workers legally related to any firm employing at least 10 individuals. The survey covered most of the industrial sector, construction and some services, but excluded the agricultural sector, non-road transportation, leisure and civil service. Respondents were about 2,400 establishments that reported on the number of workers and their average salary by wage intervals. The survey had important methodological revisions in 1976 and 1981. Albi, 1975 computed Gini coefficients from this wage survey between 1963 and 1972, finding an increasing trend in earnings

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<sup>49</sup> The differences between National Accounts and household surveys regarding income measurement have been analyzed in Deaton, 2005 and the Canberra Expert Group on Household Income Statistics (2001).

<sup>50</sup> As an example, the magnitude of the corrections applied by these studies can be seen from the fact that, according to the 1980/1981 survey, the top 10% received 25.4% of income before any correction was made.

inequality; Cordero et al., 1988 compared the 1982 and 1986 wage surveys and also found a growing level of wage concentration.<sup>51</sup>

Between 1964 and 1980, the INE published an annual report on national income and distribution (Instituto Nacional de Estadística, 1965-1970 and 1971-1980), but the information was extremely limited and focused not on the personal but on the functional distribution of aggregate income from National Accounts; it also included a summary of the main results from the wage survey mentioned above.

Based on the 1980/1981 households' budget survey, Ruiz-Castillo (1987) studied inequality using the information about expenditure and not income. Bosch et al., 1989 applied the same methodology to compare the 1973/1974 and 1980/1981 surveys. A new comparison between the 1973/1974 and 1980/1981 surveys pertains to Ruiz-Castillo, 1998. Ruiz-Castillo and Sastre, 1999 added the comparison with the 1990/1991 survey. The authors find a considerable drop in inequality between 1973/1974 and 1980/1981; given the increase of per capita expenditure, they conclude that a rise in welfare took place. For the decade of 1980 they observe an increase in the average expenditure but a stop in the pattern of reduction in inequality which took place during the previous decade. These studies have been extended in Del Rio and Ruiz-Castillo, 2001a,b. Gradín, 2000, 2002 has used the EPFs to analyze polarization and inequality from 1973 to 1991.<sup>52</sup>

Notwithstanding the different levels reported in inequality indexes and the different variable analyzed (income, expenditure), the studies based on households' surveys show a decrease in inequality during the 1970s.

Research has also been done on the basis of the European Community Household Panel (ECHP). See, for example, Pascual and Sarabia, 2004 for an analysis of the period 1993-2000 (they find a drop in inequality in 1993-1994, a sustained increase in 1994-1996, and a new decrease in 1997-2000; overall inequality measured by the Gini coefficient seems to display a small overall reduction), and Ayala and Sastre, 2005 for mobility issues between 1994 and 1998. Budría and Díaz-Giménez, 2006 analyze in detail the 1998 ECHP wave, as well as income mobility between 1994 and 1998.

Starting in 1985, the INE developed a continuous households' survey. Oliver et al., 2001 has used this source between 1985-1996 and documents an improvement in income distribution for the whole period according to several indicators; nevertheless, the reported Gini coefficient for 1996 is statistically equal to that of 1987.

More recently, researchers have used income tax data to assess inequality, providing a different picture when compared to results from households' surveys. Castañer, 1991 and Lasheras et al., 1993 analyze the redistributive power of the income tax; the authors show that several inequality indicators grew steadily between 1982 and 1990. Ayala and Onrubia, 2001 use the income tax panel between 1982 and 1994 and income tax tabulations between 1995 and 1998 to compute Gini indexes. They do not consider capital gains. They observe an increasing inequality trend between 1982 and 1991, followed by a relative stability until 1994, and a new

<sup>51</sup> See Cordero et al., 1988 for an account of the limitations of the wage survey since 1981.

<sup>52</sup> Other studies include Medel et al., 1988, Escribano, 1990, Ayala et al., 1993, Alvarez et al., 1996.



increasing trend after 1995, which the authors attribute to a growing inequality in the wage distribution. Rodríguez and Salas, 2006 use the income tax panel to analyze the redistributive consequences of the income tax reforms between 1982 and 1995.

Finally, both survey and tax sources have been used to study tax reforms, as in Díaz and Sebastián, 2004 and González-Torrabadella and Pijoan-Mas, 2006, among others.

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**TABLE 1.**  
**Thresholds and Average Incomes in Top Income Groups in 2004**

<b>Percentile threshold</b>	<b>Income threshold</b>	<b>Income Groups</b>	<b>Number of adults (aged 20+)</b>	<b>Average income in each group</b>
(1)	(2)	(3)	(4)	(5)
		Full Adult Population	30,718,000	14,653 €
Top 10%	31,599 €	Top 10-5%	1,535,900	35,993 €
Top 5%	42,163 €	Top 5-1%	1,228,720	55,411 €
Top 1%	83,081 €	Top 1-0.5%	153,590	95,132 €
Top .5%	112,559 €	Top 0.5-0.1%	122,872	154,655 €
Top .1%	255,964 €	Top 0.1-0.01%	27,646	426,328 €
Top .01%	989,652 €	Top 0.01%	3,072	2,150,855 €

Notes: Computations based on income tax return statistics and National Accounts.

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 2004 Euros.

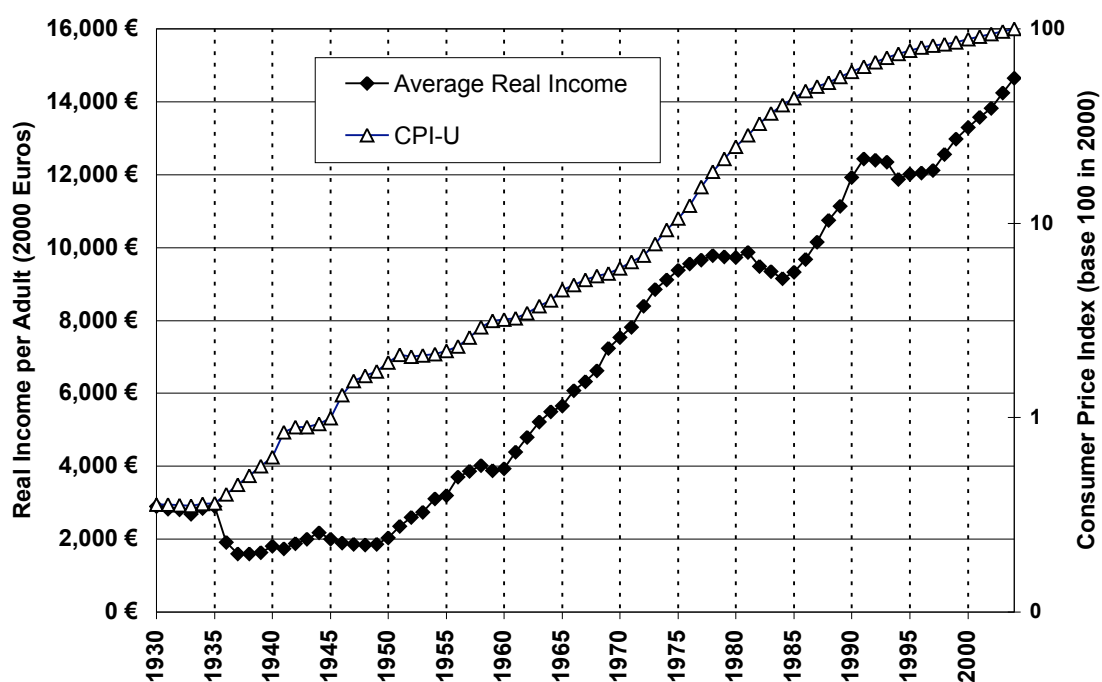
Column (2) reports the income thresholds corresponding to each of the percentiles in column (1). For example, an annual income of at least 31,599 Euros is required to belong to the top 10% tax units, etc.



**Table 2. Estimating Behavioral Responses from the 1994 Wealth Tax Exemption**

	Top 1% Wealth Holders			Top 0.01% Wealth Holders		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Observed variables and assumptions</b>						
<b>Before the Reform (base year)</b>						
Imputed exempt closely held stock ( $E_b$ )	1993	1993	1990	1993	1993	1990
Imputed taxable closely held stock ( $T_b$ )	14,575	14,575	14,278	4,301	4,301	4,405
	29,161	29,161	28,568	7,237	7,237	7,412
<b>After the Reform (post year)</b>						
Exempt closely held stock ( $E_a$ )	2002	2001	2002	2002	2001	2002
Taxable closely held stock ( $T_a$ )	61,308	53,694	61,308	13,252	12,444	13,252
	24,923	25,269	24,923	4,002	4,100	4,002
Growth in other financial wealth from base year to post year (g)	70.1%	82.6%	87.5%	80.7%	104.2%	77.1%
Total tax rate on profits for non-exempt closely-held businesses ( $\tau_0$ )	46%	46%	46%	66%	66%	66%
Total tax rate on profits for exempt closely-held businesses ( $\tau_1$ )	30%	30%	30%	40%	40%	40%
<b>B. Estimates of key behavioral parameters</b>						
Fraction of closely held businesses exempt before tax change ( $P_b$ )	33.3%	33.3%	33.3%	37.3%	37.3%	37.3%
Fraction of closely held businesses exempt after tax change ( $P_a$ )	66.5%	68.4%	69.0%	80.8%	82.6%	80.9%
Supply side elasticity (e)	0.83	-0.06	0.39	-0.42	-0.79	-0.43
<b>C. Tax and Welfare Implications of 1994 Wealth Tax Reform</b>						
Change in tax revenue assuming no behavioral responses	-198	-213	-214	-101	-114	-101
Change in tax revenue including behavioral responses	-218	-450	-355	-291	-393	-294
Estimated change in total social surplus	-20	-237	-141	-190	-279	-192

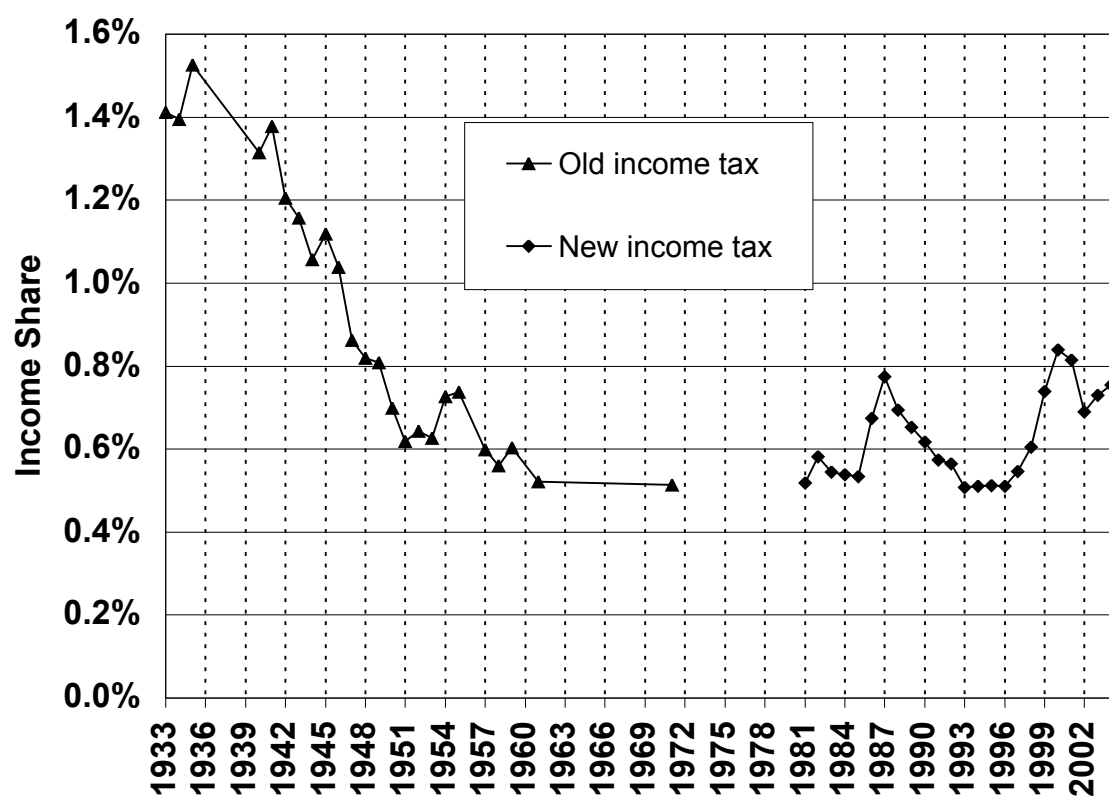
Notes: All amounts are in millions of 2002 Euros. The tax rates are computed by adding the income tax rate on profits (30% for top 1% and 40% for top 0.01%) and the wealth tax. The wealth tax rate (0.8% for top 1% and 1.3% for top 0.01%) is converted into a profit tax rate assuming a return on assets of 5%.



**FIGURE 1.**  
Average Real Income and Consumer Price Index in Spain, 1930-2004

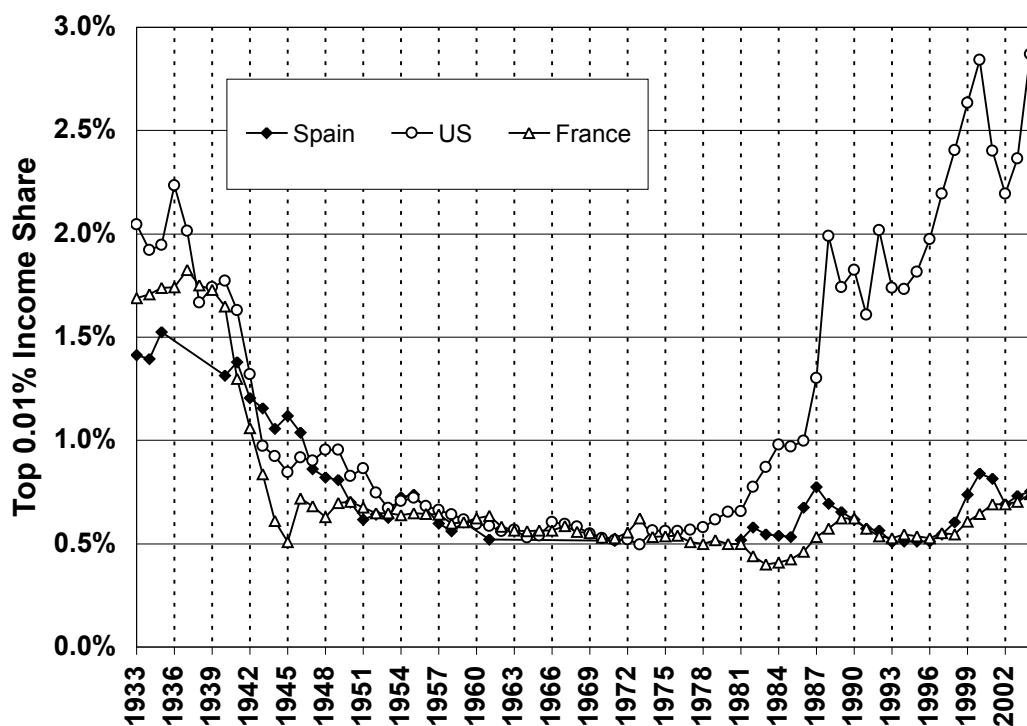
Source: Table A1.

Figure reports the average real income per adult (aged 20 and above), expressed in real 2004 Euros. CPI index is equal to 100 in 2004.



**FIGURE 2**  
The Top 0.01% Income Share in Spain, 1933-2004

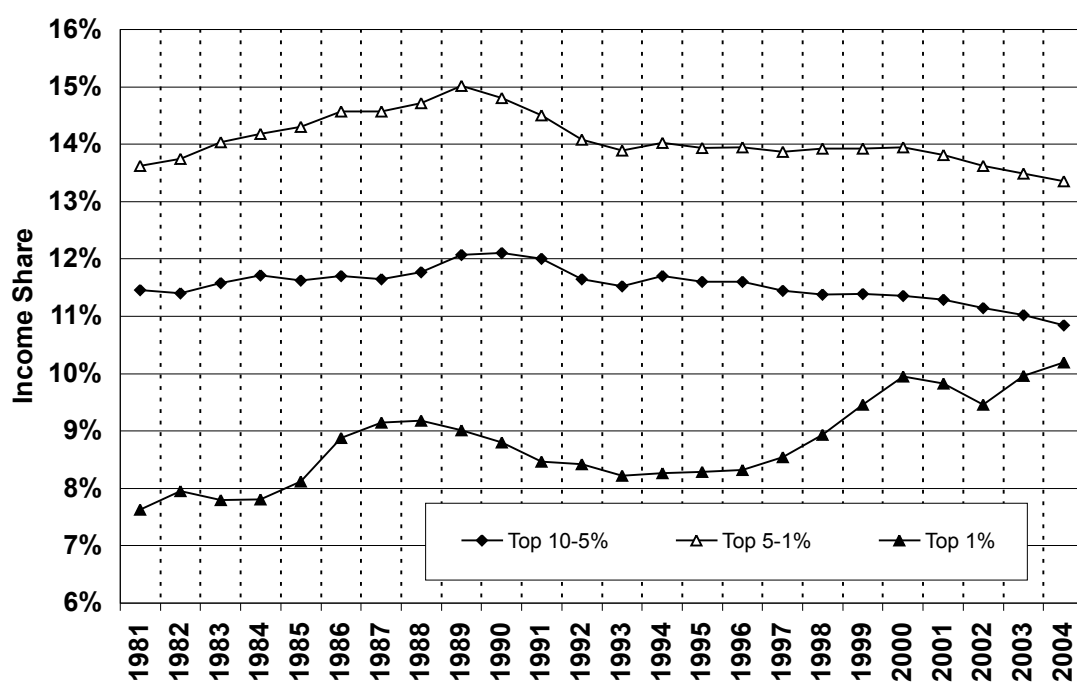
Source: 1933-1971 from Table B3 (column top 0.01%), 1981-2004 from Table B2 (column top 0.01%).  
For 1933 to 1971, estimations based on the old income tax statistics.  
For 1981 to 2004, estimations based on income excluding realized capital gains (for homogeneity with older income tax).



**FIGURE 3**

The Top 0.01% Income Share in Spain, US and France, 1933-2004

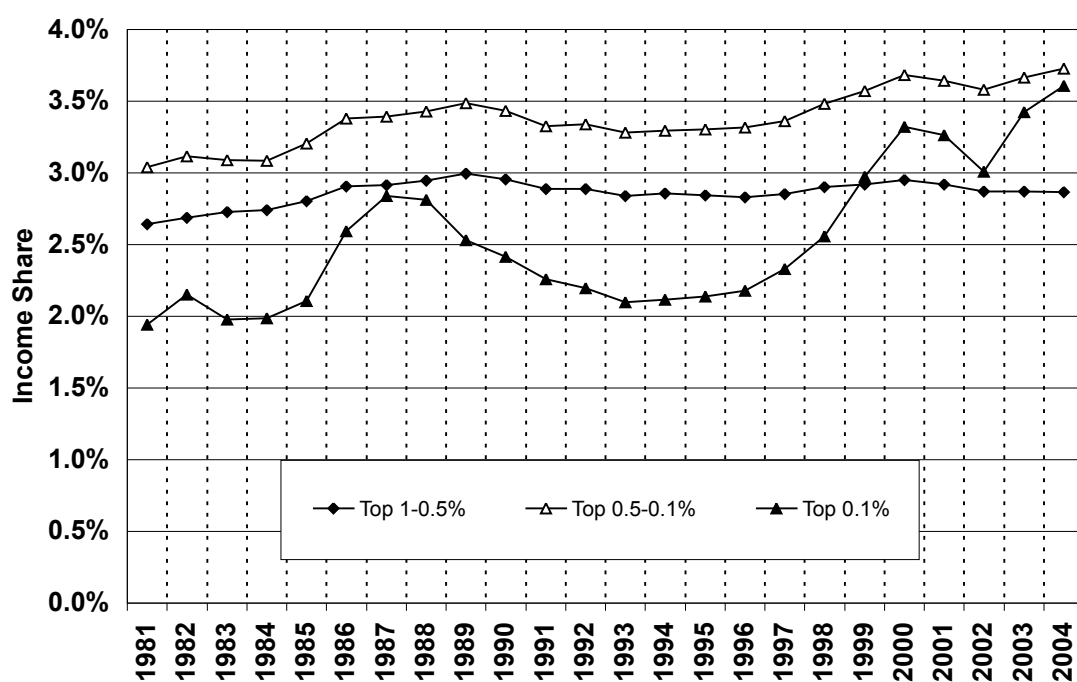
Sources: US: Piketty and Saez (2003); France: Piketty (2001) and Landais (2007);  
 Spain: 1933-1971 from Table B3 (column top 0.01%), 1981-2004 from Table B2 (column top 0.01%).  
 Top 0.01% income share excludes realized capital gains.



**FIGURE 4**

The Top 10-5%, Top 5-1%, and Top 1% Income Share in Spain, 1981-2004

Source: Table B1, columns top 10-5%, top 5-1%, and top 1%.  
Income includes realized capital gains

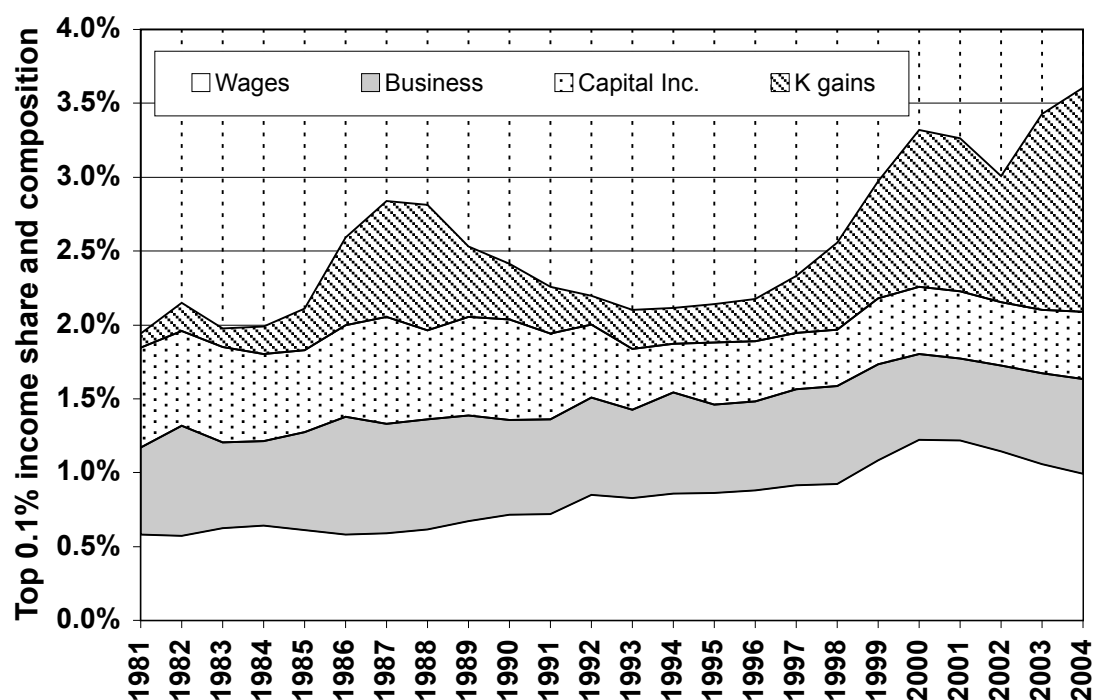


**FIGURE 5**

The Top 1-0.5%, Top 0.5-0.1%, and Top 0.1% Income Share in Spain, 1981-2004

Source: Table B1, columns top 1-0.5%, top 0.5-0.1%, and top 0.1%.

Income includes realized capital gains

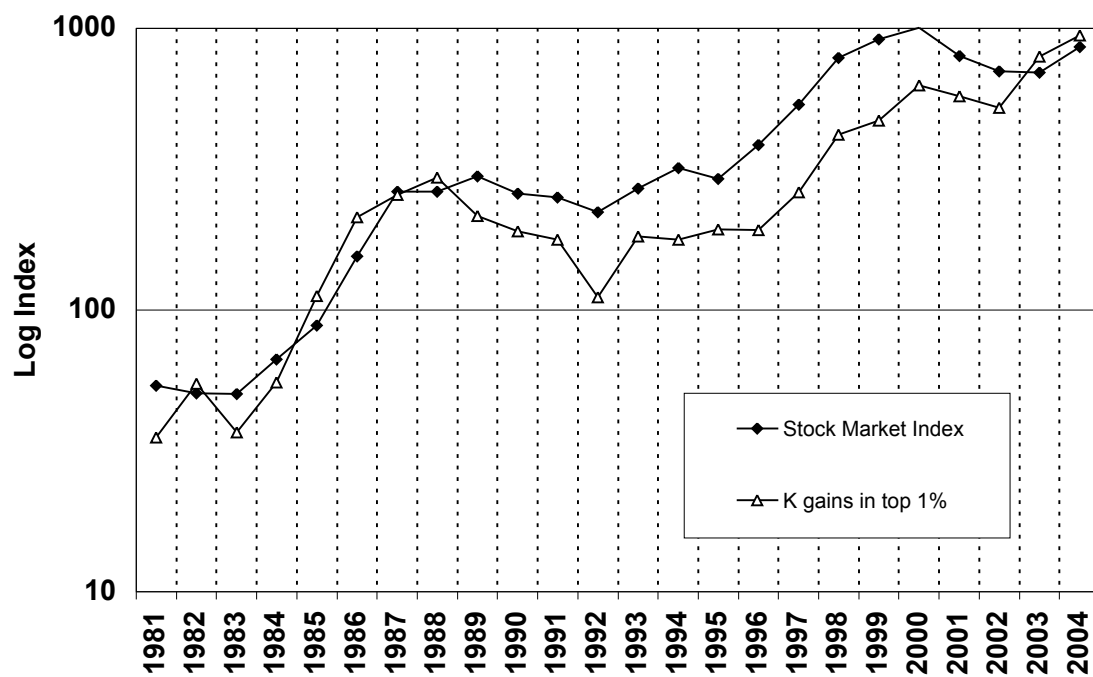


**FIGURE 6**

The Top 0.1% Income Share and Composition in Spain, 1981-2004

Source: Table B1, top 0.1% income share and Table C, 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. For example, in 1981, the top 0.1% was 1.95% of total income. Of those 1.95%, 0.55% were from wage income, 0.6% from business income, 0.7% from capital income, and 0.1% from capital gains.



**FIGURE 7**  
 Madrid Stock-Market Index and Capital Gains at the Top, 1981-2004

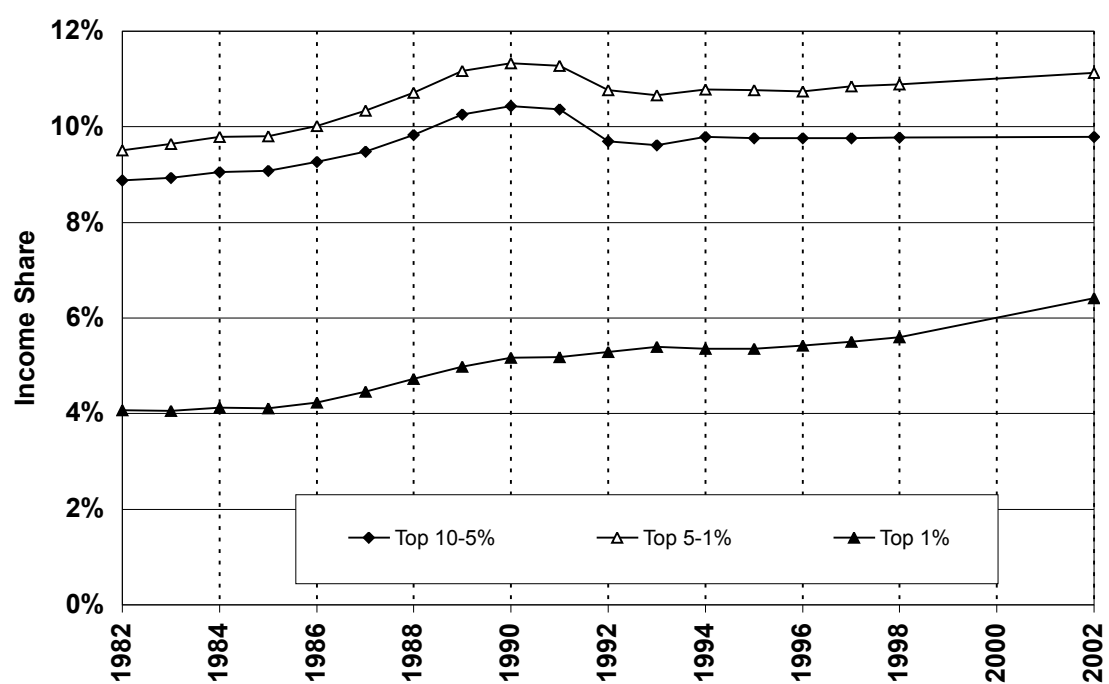
Source: Madrid Stock Market Index from Globalfinance data.

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

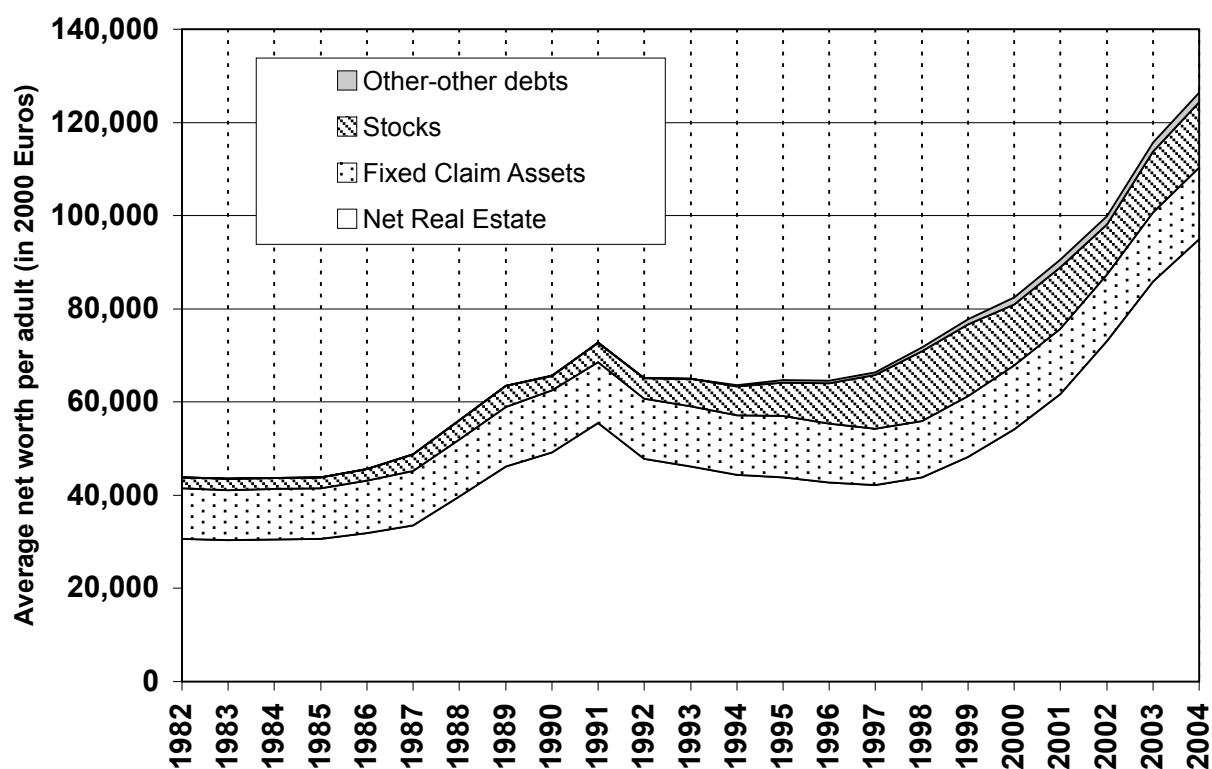
The vertical axis measures the logarithm of the Madrid Stock Market Index and the logarithm of the top 1% capital gains.





**FIGURE 8**  
Top Wage Income Shares in Spain, 1982-2002

Source: Table D, columns Top 10-5%, Top 5-1%, Top 1%.



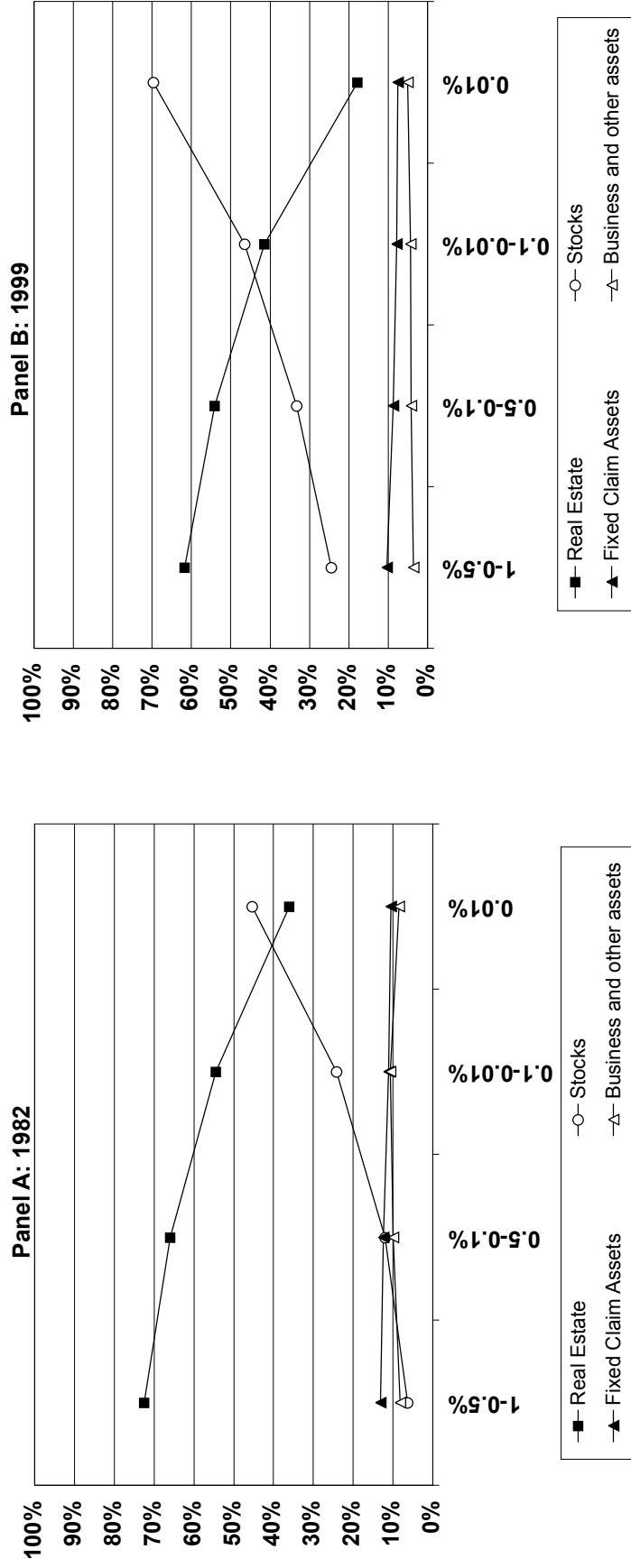
**FIGURE 9**  
Average Net Worth and Composition, 1982-2004

Source: Table A2.

Net real estate is defined as total household real estate wealth net of mortgage debt

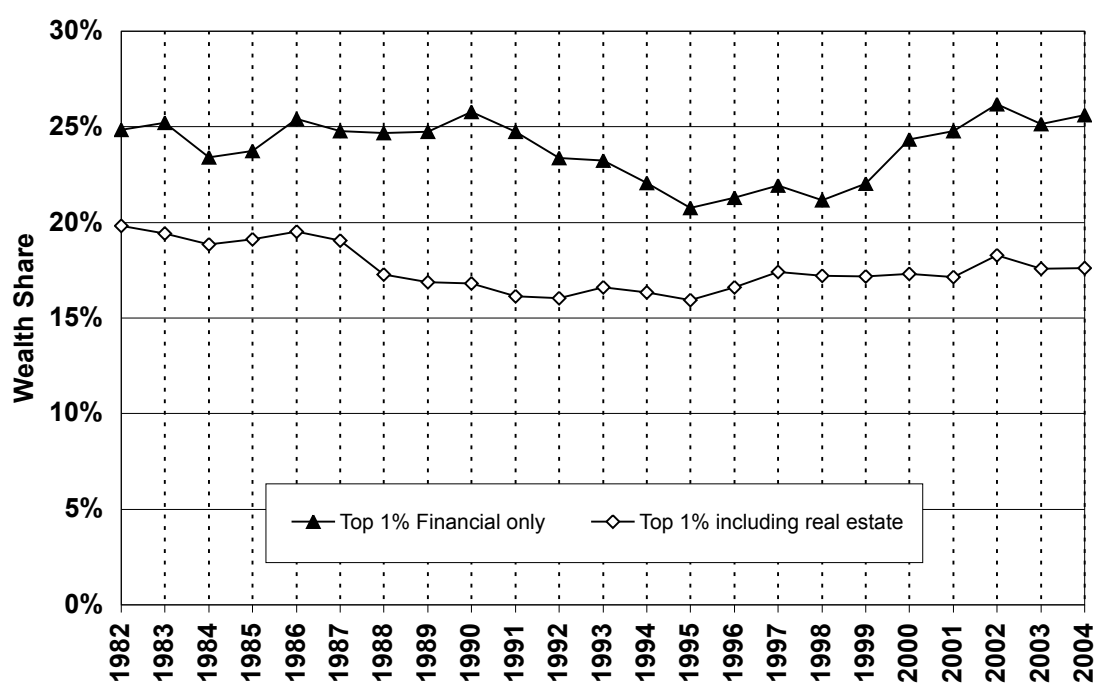
Fixed claim assets are cash, deposits, and bonds.

Stocks include publicly traded and closely held stock, directly or indirectly held.



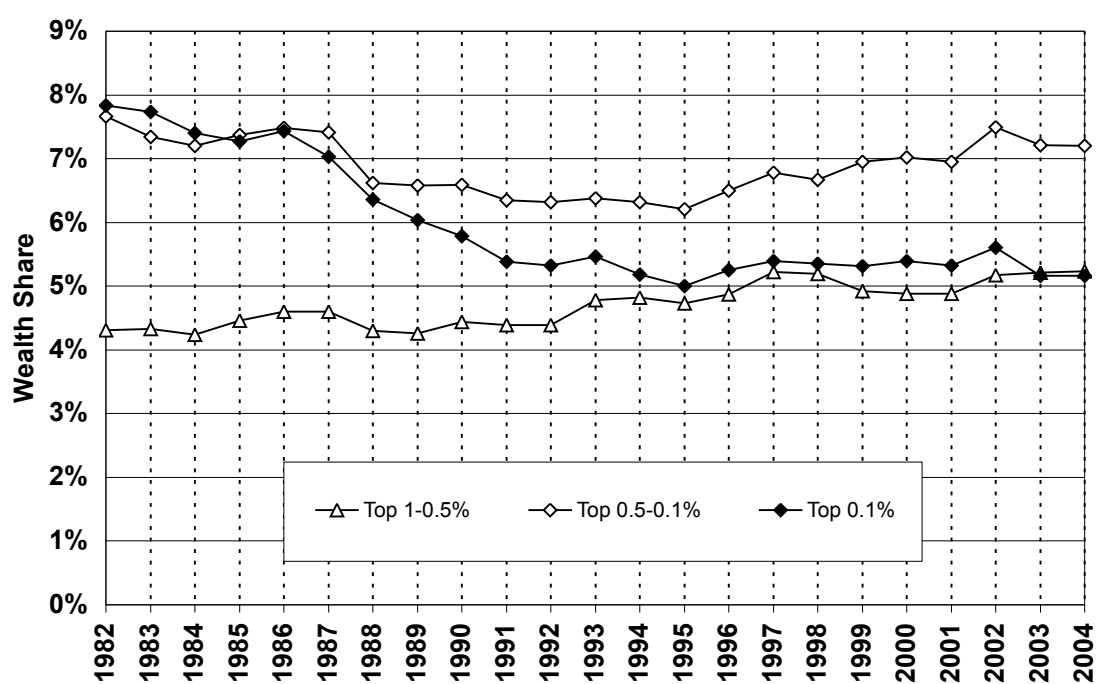
**FIGURE 10**  
Income Composition of Top Groups within the Top Decile in 1982 and 1999

Source: Table E2, rows 1982 and 1999.



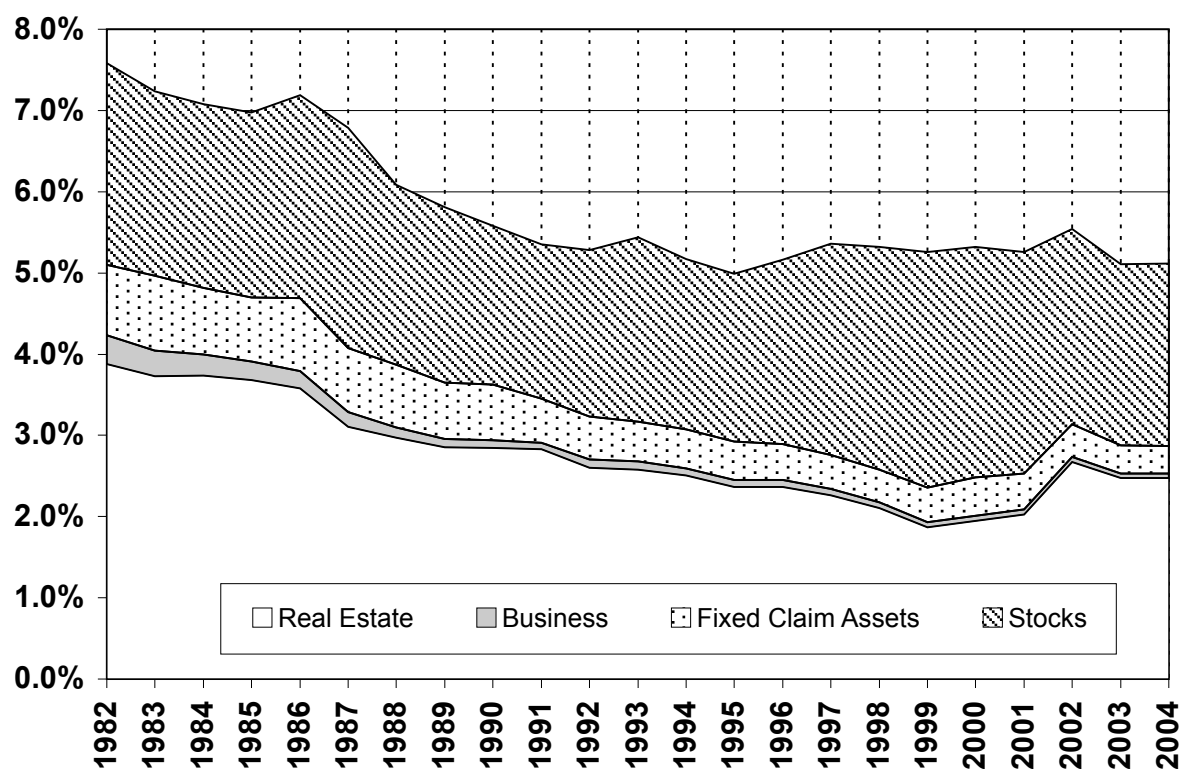
**FIGURE 11**  
Top 1% Wealth Share in Spain, 1982-2004

Source: Table E1, column top 1%.



**FIGURE 12**  
Top Wealth Shares (including real estate) in Spain, 1982-2004

Source: Table E1

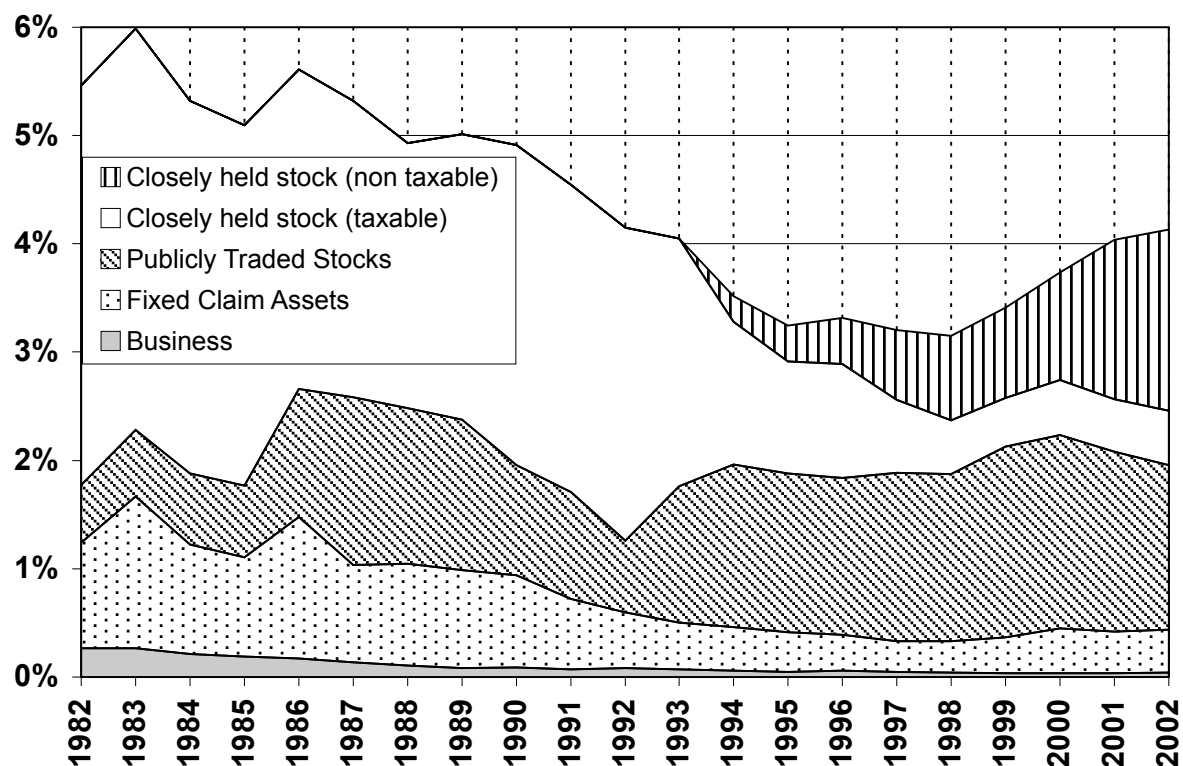


**FIGURE 13**

The Top 0.1% wealth Share and Composition in Spain, 1982-2004

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.

**TABLE A1. Reference Totals for Population, Income, and Inflation, 1981-2004**

Tax Units and Population			Total Income			Inflation		Taxes	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Adults	Number of	(2)/(1)	Total income	Fraction income	Total income	Average income	CPI	Top Marginal	
('000s)	tax returns	(%)	(millions 2000	reported by	over GDP	(2000 Euros)	(2000 base)	Tax Rate	
	('000s)		Euros)	tax filers (%)	(%)			(%)	
1981	22,857	27.5	198,986	57.8	65.2	8,706	32.238	65.09	
1982	23,242	26.9	194,719	56.7	65.3	8,378	36.818	68.47	
1983	23,635	27.1	194,859	57.1	64.5	8,244	41.560	65	
1984	24,036	27.2	194,172	57.6	63.7	8,078	45.911	66	
1985	24,445	29.0	201,392	59.6	63.3	8,239	49.926	66	
1986	24,760	31.9	211,410	63.1	65.0	8,538	54.289	66	
1987	25,082	32.0	224,903	62.9	66.0	8,967	57.162	66	
1988	25,410	35.2	241,032	63.2	66.5	9,486	60.119	56	
1989	25,745	38.2	253,218	66.4	67.2	9,836	64.116	56	
1990	26,087	42.0	274,393	69.1	66.6	10,518	68.359	56	
1991	26,335	44.0	288,873	69.3	68.4	10,969	72.494	56	
1992	26,673	46.3	291,862	71.3	69.3	10,942	76.647	56	
1993	27,015	47.4	294,440	70.8	69.7	10,899	80.307	56	
1994	27,360	49.6	286,709	74.6	69.8	10,479	84.021	56	
1995	27,710	51.0	293,658	74.8	67.8	10,598	87.682	56	
1996	28,114	52.0	299,045	75.2	66.8	10,637	90.825	56	
1997	28,523	52.6	305,151	75.0	65.9	10,698	92.989	56	
1998	28,938	53.3	320,948	75.5	64.8	11,091	94.485	56	
1999	29,359	47.0	336,126	71.5	64.5	11,449	96.701	48	
2000	29,785	47.4	349,707	72.5	64.7	11,741	100.000	48	
2001	30,016	49.1	359,825	73.6	64.1	11,988	103.196	48	
2002	30,249	50.9	368,802	73.9	63.5	12,192	106.598	48	
2003	30,482	52.4	383,132	74.6	63.2	12,569	109.794	45	
2004	30,718	53.6	397,268	74.9	63.2	12,933	113.299	45	

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 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 details).



**TABLE A2. Aggregate Net Worth and Composition, 1981-2004**

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	(2)/(1)	Total Net	Average	Total Net	Average	Real Estate	Mortgage	Fixed Claim	Stocks	Other	Other	CPI	Top Marginal
	wealth tax	returns	Financial Wealth		Wealth			Debt	Assets			Debits	(2000 base)	Tax Rate
('000s)	('000s)	(%)	(millions 2000 Euros)	(2000 Euros)	(millions 2000 Euros)	(2000 Euros)								(%)
1981	22,857	509	303,847	13,293	1,011,740	44,264	78.8	-8.8	24.6	5.4	4.3	-4.3	32.238	2.5
1982	23,242	492	305,952	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	308,664	13,060	1,027,782	43,486	78.8	-8.8	24.6	5.4	4.3	-4.3	41.560	2.5
1984	24,036	535	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	322,142	13,178	1,072,658	43,880	78.8	-8.8	24.6	5.4	4.3	-4.3	49.926	2.5
1986	24,760	781	339,170	13,698	1,129,358	45,612	78.8	-8.8	24.6	5.4	4.3	-4.3	54.289	2.5
1987	25,082	887	385,176	15,357	1,224,357	48,814	77.2	-8.6	24.1	7.3	4.2	-4.3	57.162	2.5
1988	25,410	756	414,973	16,331	1,423,393	56,017	78.7	-7.9	22.0	7.2	3.9	-3.9	60.119	2.5
1989	25,745	855	446,285	17,335	1,633,730	63,458	79.9	-7.2	20.1	7.2	3.5	-3.6	64.116	2.5
1990	26,087	974	427,684	16,395	1,711,295	65,600	82.2	-7.1	20.4	4.8	3.5	-3.7	68.359	2.5
1991	26,335	1,033	455,006	17,278	1,916,839	72,787	83.0	-6.7	18.0	5.6	3.5	-3.4	72.494	2.5
1992	26,673	863	464,271	17,406	1,738,372	65,173	80.8	-7.5	20.0	6.6	4.0	-3.9	76.647	2.5
1993	27,015	928	507,817	18,798	1,754,037	64,928	78.5	-7.4	20.0	9.0	3.9	-3.9	80.307	2.5
1994	27,360	809	527,371	19,275	1,740,097	63,600	77.2	-7.5	20.2	9.6	4.3	-3.8	84.021	2.5
1995	27,710	783	577,725	20,849	1,791,832	64,664	75.2	-7.5	20.4	11.1	4.3	-3.6	87.682	2.5
1996	28,114	825	614,864	21,870	1,814,867	64,554	73.9	-7.8	19.6	13.4	4.3	-3.5	90.825	2.5
1997	28,523	892	688,512	24,139	1,892,367	66,345	72.0	-8.4	18.2	17.5	4.0	-3.3	92.989	2.5
1998	28,938	946	805,178	27,824	2,074,459	71,686	70.2	-9.0	16.8	20.9	4.1	-3.1	94.485	2.5
1999	29,359	981	867,394	29,544	2,284,269	77,805	71.6	-9.6	16.7	19.9	4.4	-3.0	96.701	2.5
2000	29,785	869	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	866,099	28,855	2,718,915	90,582	78.1	-9.9	15.4	14.6	4.3	-2.5	103.196	2.5
2002	30,249	884	811,934	26,842	3,022,333	99,915	83.2	-10.0	14.3	10.7	4.2	-2.3	106.598	2.5
2003	30,482	896	911,035	29,888	3,527,016	115,708	84.1	-10.0	12.8	11.4	3.8	-2.1	109.794	2.5
2004	30,718	920	968,109	31,516	3,882,692	126,398	85.6	-10.5	12.2	11.0	3.6	-2.0	113.299	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), 1981-2004**

	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
2003	34.47	23.45	9.96	7.09	3.43	1.24	11.02	13.49	2.87	3.67	2.19	1.24
2004	34.39	23.55	10.20	7.33	3.61	1.30	10.84	13.35	2.87	3.73	2.31	1.30

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) 1981-2004**

	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	33.56	21.80	7.61	4.89	1.85	0.54	11.76	14.19	2.73	3.04	1.31	0.54
1985	33.72	22.03	7.75	4.99	1.90	0.53	11.69	14.28	2.76	3.09	1.37	0.53
1986	34.66	22.82	8.21	5.36	2.16	0.68	11.84	14.61	2.85	3.20	1.48	0.68
1987	34.85	23.05	8.40	5.52	2.26	0.77	11.80	14.65	2.88	3.26	1.48	0.77
1988	35.05	23.14	8.36	5.46	2.17	0.69	11.91	14.78	2.91	3.28	1.48	0.69
1989	35.67	23.49	8.47	5.52	2.19	0.65	12.18	15.02	2.95	3.33	1.53	0.65
1990	35.35	23.17	8.37	5.45	2.14	0.62	12.19	14.80	2.92	3.31	1.53	0.62
1991	34.58	22.53	8.08	5.23	2.03	0.57	12.06	14.45	2.84	3.20	1.46	0.57
1992	33.93	22.25	8.21	5.34	2.06	0.56	11.68	14.05	2.86	3.28	1.50	0.56
1993	33.19	21.61	7.83	5.06	1.92	0.51	11.58	13.78	2.77	3.14	1.41	0.51
1994	33.55	21.82	7.89	5.10	1.95	0.51	11.73	13.92	2.79	3.15	1.44	0.51
1995	33.38	21.71	7.89	5.12	1.96	0.51	11.66	13.83	2.77	3.16	1.45	0.51
1996	33.45	21.79	7.93	5.16	1.98	0.51	11.66	13.86	2.77	3.18	1.47	0.51
1997	33.29	21.77	8.03	5.25	2.07	0.55	11.52	13.75	2.77	3.19	1.52	0.55
1998	33.36	21.90	8.17	5.39	2.17	0.61	11.47	13.72	2.78	3.22	1.56	0.61
1999	33.95	22.45	8.62	5.78	2.41	0.74	11.50	13.83	2.84	3.37	1.68	0.74
2000	34.19	22.69	8.84	6.00	2.57	0.84	11.50	13.85	2.84	3.43	1.73	0.84
2001	34.03	22.60	8.80	5.95	2.51	0.81	11.44	13.80	2.84	3.44	1.70	0.81
2002	33.41	22.13	8.54	5.75	2.39	0.69	11.28	13.59	2.80	3.36	1.70	0.69
2003	33.30	22.07	8.59	5.82	2.45	0.73	11.22	13.48	2.77	3.37	1.72	0.73
2004	33.03	21.97	8.62	5.87	2.49	0.75	11.07	13.34	2.75	3.39	1.73	0.75

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 (2)	Fraction filing (%) (2)/(1)	Total income (mns of 2000 Euros) (4)	Fraction of income reported on tax returns (%) (5)	CPI (base 2000) (6)	Top 0.1% (7)	Top 0.05% (8)	Top 0.01% (9)	Top 0.1-0.05% (10)	Top 0.05-0.01% (11)	Top 0.01% (12)
1933	14,488	1,446	0.010	33,232	1.412	66.231			1.41			1.41
1934	14,652	1,792	0.012	35,624	1.539	68.081			1.40			1.40
1935	14,818	2,465	0.017	36,674	1.984	68.345			1.53			1.53
1940	15,677	3,222	0.021	28,532	1.823	118.359			1.31			1.31
1941	15,892	5,231	0.033	23,580	2.371	158.265			1.38			1.38
1942	16,110	5,123	0.032	25,878	2.013	169.203			1.21			1.21
1943	16,331	5,538	0.034	28,019	2.086	168.222			1.16			1.16
1944	16,555	5,849	0.035	30,984	1.943	175.690			1.06			1.06
1945	16,782	6,629	0.040	28,742	2.194	187.911			1.12			1.12
1946	17,012	8,223	0.048	27,708	2.233	246.600			1.04			1.04
1947	17,245	7,983	0.046	27,359	1.805	290.202			0.86			0.86
1948	17,481	9,067	0.052	27,668	1.864	309.740		1.83	0.82	1.01	1.01	0.82
1949	17,721	10,111	0.057	28,138	1.930	326.487		1.82	0.81	1.01	1.01	0.81
1950	17,964	12,419	0.069	31,320	1.886	361.941		1.63	0.70	0.93	0.93	0.70
1951	18,134	13,597	0.075	36,433	1.690	396.038		1.42	0.62	0.80	0.80	0.62
1952	18,307	15,427	0.084	40,870	1.820	388.193		1.45	0.64	0.81	0.81	0.64
1953	18,481	16,545	0.090	43,475	1.833	394.454		1.43	0.63	0.80	0.80	0.63
1954	18,657	21,332	0.114	49,673	2.812	399.358	2.63	1.82	0.73	0.81	1.09	0.73
1955	18,834	26,716	0.142	51,583	3.308	415.426	2.77	1.90	0.74	0.87	1.16	0.74
1957	19,194	41,637	0.217	63,511	3.460	487.165	2.27	1.53	0.60	0.73	0.94	0.60
1958	19,377	48,921	0.252	66,635	3.490	551.512	2.13	1.45	0.56	0.68	0.89	0.56
1959	19,561	54,143	0.277	65,012	3.805	592.247	2.23	1.52	0.60	0.71	0.92	0.60
1961	19,950	38,520	0.193	75,007	2.617	613.747	1.88	1.29	0.52	0.59	0.77	0.52
1971	22,129	338,989	1.532	148,219	7.200	1,193.09	1.86	1.24	0.51	0.62	0.73	0.51

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

Total number of tax units defined as the number of adults aged 20 and over.

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

Total income is defined as 66% of GDP (expressed in millions of 2000 Euros), Navarra is excluded since 1937. Alava is excluded since 1943.

**Table B4. Marginal Tax Rates by Income Groups, 1982-2002**

	Top 10% (1)	Top 5% (2)	Top 1% (3)	Top .5% (4)	Top .1% (5)	Top .01% (6)	Top 10-5% (7)	Top 5-1% (8)	Top 1-.5% (9)	Top .5-.1% (10)	Top 1-.01% (11)	Top .01% (12)
1982	26.38	29.21	38.04	42.96	56.29	65.74	21.01	24.34	29.25	35.12	52.75	65.74
1983	27.94	31.01	40.20	44.99	56.66	63.68	22.15	26.07	32.00	38.52	54.39	63.68
1984	30.03	33.50	43.52	48.63	60.41	65.39	23.46	28.12	34.70	41.83	58.51	65.39
1985	31.00	34.67	45.27	50.49	61.35	63.03	23.95	28.98	36.32	44.33	60.65	63.03
1986	33.14	37.38	49.02	54.32	63.48	64.72	24.87	30.94	39.75	49.01	63.00	64.72
1987	34.36	38.84	51.00	56.35	63.60	65.25	25.45	31.87	41.19	51.79	62.92	65.25
1988	34.88	38.41	48.24	52.11	54.84	55.67	28.13	32.84	40.94	50.30	54.52	55.67
1989	35.93	39.65	49.38	52.60	54.51	53.73	28.80	34.10	43.18	51.80	54.80	53.73
1990	37.07	41.03	51.19	54.27	55.45	55.95	29.69	35.29	45.36	53.48	55.23	55.95
1991	37.58	41.56	51.71	54.49	55.19	55.76	30.30	35.99	46.68	54.07	54.99	55.76
1992	36.80	40.95	50.80	53.86	54.93	55.23	29.23	35.38	45.18	53.20	54.82	55.23
1993	37.80	41.89	51.67	54.33	55.45	55.91	30.35	36.33	46.72	53.61	55.25	55.91
1994	38.06	42.13	51.83	54.33	55.33	55.66	30.65	36.59	47.11	53.69	55.19	55.66
1995	38.20	42.26	51.83	54.29	55.14	55.47	30.77	36.77	47.24	53.73	55.00	55.47
1996	37.95	42.08	51.57	54.17	55.09	55.03	30.27	36.52	46.50	53.53	55.12	55.03
1997	37.64	41.88	51.68	54.08	54.85	54.87	29.63	36.01	46.95	53.54	54.85	54.87
1998	38.84	42.91	52.08	53.69	54.00	53.75	30.92	37.18	48.72	53.46	54.12	53.75
2002	37.39	41.36	45.59	45.89	45.24	44.72	29.15	38.41	44.89	46.44	45.51	44.72

Source: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982-1998) and income tax survey (IEF, Muestra de Declarantes IRPF 2002). Individuals are ranked according to gross income. The average marginal tax rate is weighted by gross income. See appendix for details.

**Table B5. Top Income Shares in Spain (including Capital Gains) from income tax panel 1982-1998 and survey 2002**

	Top 10% (1)	Top 5% (2)	Top 1% (3)	Top .5% (4)	Top .1% (5)	Top .01% (6)	Top 10-5% (7)	Top 5-1% (8)	Top 1-.5% (9)	Top .5--1% (10)	Top .1-.01% (11)	Top .01% (12)
1982	32.37	20.38	7.03	4.53	1.72	0.46	11.98	13.35	2.50	2.81	1.26	0.46
1983	32.50	20.44	6.96	4.42	1.61	0.38	12.05	13.48	2.54	2.80	1.23	0.38
1984	32.38	20.78	7.09	4.52	1.69	0.46	11.60	13.68	2.58	2.82	1.24	0.46
1985	32.13	20.70	7.06	4.48	1.66	0.47	11.42	13.64	2.58	2.82	1.19	0.47
1986	32.69	21.21	7.38	4.72	1.77	0.48	11.48	13.83	2.66	2.94	1.29	0.48
1987	33.23	21.69	7.72	5.02	1.99	0.57	11.54	13.97	2.70	3.03	1.42	0.57
1988	34.58	22.76	8.29	5.43	2.18	0.60	11.82	14.47	2.85	3.25	1.58	0.60
1989	35.16	23.13	8.47	5.59	2.32	0.76	12.03	14.66	2.88	3.27	1.56	0.76
1990	34.97	22.82	8.28	5.44	2.21	0.68	12.15	14.53	2.85	3.23	1.53	0.68
1991	34.43	22.32	7.95	5.13	1.95	0.52	12.11	14.37	2.82	3.18	1.43	0.52
1992	33.58	21.93	8.05	5.23	2.00	0.52	11.65	13.88	2.81	3.23	1.48	0.52
1993	33.24	21.70	7.99	5.21	2.05	0.64	11.54	13.71	2.78	3.17	1.41	0.64
1994	33.87	22.11	8.17	5.36	2.12	0.64	11.77	13.94	2.81	3.24	1.47	0.64
1995	33.53	21.89	8.10	5.30	2.09	0.64	11.64	13.79	2.80	3.21	1.45	0.64
1996	33.09	21.74	8.16	5.42	2.23	0.78	11.35	13.58	2.74	3.18	1.46	0.78
1997	33.33	22.01	8.36	5.58	2.29	0.71	11.32	13.65	2.79	3.28	1.58	0.71
1998	33.88	22.60	8.82	5.98	2.57	0.82	11.28	13.78	2.84	3.40	1.75	0.82
2002	34.32	23.16	9.51	6.64	3.05	1.04	11.17	13.64	2.88	3.59	2.01	1.04

Source: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982-1998) and income tax survey (IEF, Muestra de Declarantes IRPF 2002)

**Table B6. Top Income Shares in Spain (excluding Capital Gains) from income tax panel 1982-1998 and survey 2002**

	Top 10% (1)	Top 5% (2)	Top 1% (3)	Top .5% (4)	Top .1% (5)	Top .01% (6)	Top 10-5% (7)	Top 5-1% (8)	Top 1-.5% (9)	Top .5-.1% (10)	Top .1-.01% (11)	Top .01% (12)
1982	32.18	20.19	6.86	4.39	1.63	0.43	11.99	13.33	2.47	2.75	1.21	0.43
1983	32.34	20.28	6.83	4.31	1.56	0.38	12.06	13.45	2.52	2.75	1.17	0.38
1984	32.15	20.54	6.91	4.35	1.59	0.41	11.60	13.64	2.55	2.77	1.18	0.41
1985	31.90	20.48	6.88	4.32	1.56	0.41	11.43	13.60	2.55	2.76	1.15	0.41
1986	32.30	20.81	7.06	4.46	1.61	0.41	11.49	13.75	2.61	2.84	1.21	0.41
1987	32.79	21.25	7.36	4.71	1.78	0.48	11.55	13.89	2.65	2.93	1.30	0.48
1988	33.67	22.20	7.86	5.07	1.96	0.52	11.48	14.34	2.78	3.11	1.44	0.52
1989	34.11	22.58	7.96	5.14	1.99	0.54	11.53	14.61	2.82	3.15	1.45	0.54
1990	34.00	22.33	7.83	5.02	1.89	0.49	11.67	14.50	2.81	3.13	1.40	0.49
1991	33.65	21.94	7.66	4.89	1.80	0.46	11.70	14.28	2.77	3.10	1.34	0.46
1992	32.76	21.49	7.76	5.01	1.88	0.49	11.27	13.73	2.75	3.13	1.40	0.49
1993	32.36	21.25	7.71	5.00	1.93	0.59	11.10	13.54	2.71	3.07	1.34	0.59
1994	32.80	21.59	7.80	5.05	1.91	0.52	11.21	13.79	2.75	3.14	1.39	0.52
1995	32.49	21.41	7.80	5.06	1.96	0.57	11.08	13.62	2.73	3.10	1.39	0.57
1996	32.05	21.19	7.75	5.07	1.99	0.60	10.86	13.43	2.69	3.08	1.38	0.60
1997	32.02	21.39	7.94	5.23	2.10	0.64	10.64	13.45	2.71	3.13	1.46	0.64
1998	31.79	21.61	8.13	5.40	2.20	0.65	10.18	13.48	2.73	3.20	1.56	0.65
2002	33.25	22.03	8.53	5.75	2.41	0.73	11.23	13.50	2.78	3.34	1.69	0.73

Source: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982-1998) and income tax survey (IEF, Muestra de Declarantes IRPF 2002)

**Table C. Income Composition in Top Income Groups, 1981-2004**

	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	24.3	3.0	30.0	30.2	34.8	5.0	16.8	32.9	41.9	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	22.4	4.9	26.6	34.6	29.9	8.9	15.1	37.1	33.5	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	22.8	3.3	31.6	29.3	32.8	6.3	18.2	30.3	41.2	10.3
1984	79.0	10.9	9.1	1.0	75.0	12.7	10.8	1.6	59.9	19.5	17.0	3.6	51.5	22.9	20.6	5.0	32.2	28.8	29.6	9.4	18.2	27.8	36.5	17.5
1985	77.0	11.6	8.9	2.5	72.3	13.9	10.4	3.4	55.9	21.3	15.9	6.9	47.3	24.9	19.1	8.8	28.9	31.6	26.1	13.4	17.3	33.2	31.9	17.6
1986	73.5	13.5	9.1	3.9	68.0	15.8	10.7	5.5	49.2	23.0	16.4	11.4	39.8	26.2	19.1	14.8	22.4	30.7	23.9	23.0	13.3	26.8	24.6	35.3
1987	72.9	14.0	8.9	4.2	67.2	16.2	10.7	5.9	48.3	22.5	16.8	12.4	38.9	24.7	19.9	16.5	20.8	26.0	25.5	27.6	11.4	21.9	26.1	40.6
1988	72.6	14.3	8.6	4.5	66.9	16.9	10.0	6.3	47.0	24.4	15.2	13.4	37.9	26.7	17.7	17.7	21.8	26.6	21.4	30.2	11.8	21.3	20.7	46.2
1989	73.5	13.9	9.1	3.5	68.1	16.4	10.7	4.8	49.6	24.0	16.9	9.5	41.4	26.4	20.1	12.2	26.6	28.2	26.4	18.9	18.0	26.0	29.6	26.5
1990	73.6	13.2	10.3	3.0	68.4	15.6	12.0	4.0	51.2	22.5	18.4	7.9	43.7	24.5	21.7	10.1	29.5	26.7	28.1	15.7	21.5	26.5	31.1	20.9
1991	74.1	12.8	10.3	2.9	69.0	15.3	11.8	3.9	52.8	22.4	17.5	7.3	45.4	24.9	20.5	9.2	31.9	28.3	25.8	13.9	23.0	29.9	28.6	18.5
1992	73.1	14.3	10.5	2.1	68.4	16.7	12.3	2.7	56.6	22.7	16.3	4.5	50.7	25.3	18.4	5.7	38.7	30.0	22.5	8.9	29.0	33.6	25.1	12.3
1993	73.2	13.2	10.4	3.3	68.6	15.2	11.8	4.4	56.8	20.9	14.9	7.5	51.0	23.5	16.5	9.0	39.5	28.4	19.7	12.4	30.8	31.6	21.9	15.8
1994	74.8	13.3	8.4	3.5	70.2	15.6	9.6	4.5	58.2	22.4	11.9	7.5	52.4	25.6	13.2	8.9	40.7	32.2	15.5	11.6	25.6	39.6	18.6	16.3
1995	75.3	12.7	8.5	3.6	70.5	14.7	10.0	4.8	58.0	20.7	13.5	7.9	52.0	23.3	15.4	9.3	40.3	28.1	19.5	12.1	26.4	30.8	25.6	17.2
1996	76.3	11.8	8.5	3.4	71.7	13.8	10.0	4.5	59.0	20.0	13.3	7.7	52.9	22.6	15.1	9.4	40.4	27.7	18.7	13.3	25.8	30.9	22.8	20.5
1997	76.5	12.1	6.9	4.6	71.5	14.2	8.3	6.0	58.3	20.2	11.5	10.0	52.2	22.6	13.2	12.0	39.3	27.7	16.4	16.6	25.2	31.3	18.2	25.3
1998	74.6	12.0	6.2	7.2	69.0	14.1	7.6	9.3	54.8	19.7	10.9	14.6	48.6	21.7	12.4	17.3	36.0	26.1	14.8	23.1	27.5	22.7	15.3	34.6
1999	73.6	12.1	7.4	6.9	68.5	14.0	8.8	8.8	54.7	18.7	11.8	14.8	48.7	20.1	13.1	18.1	36.4	21.9	15.0	26.8	28.3	17.4	14.7	39.6
2000	73.0	11.2	7.7	8.2	67.6	12.8	9.0	10.6	53.5	16.5	11.9	18.1	48.0	17.2	12.9	21.9	36.8	17.5	13.7	32.0	29.7	13.5	12.8	44.0
2001	74.1	11.1	8.2	6.6	68.9	12.7	9.6	8.9	55.2	16.1	12.4	16.3	49.6	16.8	13.3	20.4	37.3	17.1	13.9	31.7	30.3	13.3	13.1	43.3
2002	74.6	11.2	8.1	6.1	69.4	13.0	9.4	8.2	55.7	17.0	12.3	15.0	49.8	18.2	13.3	18.7	38.0	19.4	14.2	28.4	29.7	16.0	12.2	42.1
2003	74.1	10.5	7.2	8.3	68.1	12.3	8.4	11.3	51.9	16.3	11.0	20.8	44.8	17.3	12.0	25.9	30.9	18.0	12.5	38.6	19.9	15.6	10.7	53.9
2004	72.8	10.4	7.5	9.4	66.4	12.1	8.7	12.8	49.2	16.0	11.5	23.3	42.0	17.0	12.4	28.6	27.5	17.8	12.7	42.1	17.9	16.7	10.4	55.0

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 C (continued). Income Composition in Top Income Groups, 1981-2004

	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	41.9	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	33.5	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	41.2	10.3
1984	87.1	7.2	5.7	0.0	83.7	8.8	7.1	0.3	75.6	13.2	10.2	1.1	64.0	19.1	14.8	2.2	38.9	29.3	26.2	5.6	18.2	27.8	36.5	17.5
1985	86.7	7.1	5.8	0.5	82.1	9.4	7.1	1.4	72.5	14.3	9.9	3.3	59.4	20.5	14.4	5.7	33.9	30.9	23.6	11.6	17.3	33.2	31.9	17.6
1986	85.3	8.7	5.5	0.6	80.0	11.2	7.1	1.7	68.7	16.4	10.6	4.2	53.4	22.7	15.5	8.5	27.7	33.0	23.5	15.8	13.3	26.8	24.6	35.3
1987	85.2	9.1	5.1	0.6	79.7	12.1	6.6	1.6	68.5	17.8	10.1	3.7	54.3	23.5	15.2	7.0	27.3	28.9	25.1	18.7	11.4	21.9	26.1	40.6
1988	84.3	9.1	5.7	0.9	79.3	12.2	6.7	1.8	66.4	19.7	9.9	4.1	51.1	26.8	14.6	7.6	28.1	29.9	21.8	20.2	11.8	21.3	20.7	46.2
1989	84.2	8.8	6.1	1.0	79.2	11.8	7.0	2.0	66.2	19.4	10.4	4.0	52.1	25.1	15.5	7.4	30.7	29.2	24.9	15.2	18.0	26.0	29.6	26.5
1990	83.7	8.4	7.1	0.9	78.5	11.6	8.2	1.8	66.2	18.4	11.9	3.5	53.7	23.1	17.1	6.2	33.0	26.7	26.8	13.5	21.5	26.5	31.1	20.9
1991	83.8	7.9	7.4	0.9	78.5	11.1	8.5	2.0	67.0	17.6	11.9	3.5	54.6	22.5	16.9	6.0	35.7	27.7	24.7	12.0	23.0	29.9	28.6	18.5
1992	81.8	10.0	7.2	1.1	75.3	13.2	9.9	1.6	67.6	17.7	12.3	2.4	58.3	22.3	15.8	3.6	42.5	28.5	21.4	7.6	29.0	33.6	25.1	12.3
1993	82.1	9.3	7.5	1.0	75.5	11.8	10.1	2.6	67.6	15.8	11.8	4.7	58.4	20.4	14.4	6.8	42.8	27.2	18.9	11.1	30.8	31.6	21.9	15.8
1994	83.5	8.9	6.1	1.5	77.3	11.7	8.3	2.8	69.3	16.3	9.7	4.8	59.9	21.3	11.6	7.2	46.3	29.5	14.4	9.9	25.6	39.6	18.6	16.3
1995	84.3	8.7	5.6	1.4	78.0	11.1	7.9	2.9	69.3	15.6	9.8	5.3	59.6	20.2	12.7	7.5	45.5	27.0	17.3	10.2	26.4	30.8	25.6	17.2
1996	85.1	7.8	5.8	1.3	79.3	10.1	8.0	2.6	70.9	14.8	9.9	4.4	61.1	19.3	12.7	6.9	46.0	26.5	17.1	10.5	25.8	30.9	22.8	20.5
1997	86.2	7.9	4.1	1.8	79.7	10.5	6.2	3.6	70.4	15.3	8.3	6.1	61.2	19.0	10.9	8.9	45.0	26.3	15.7	13.0	25.2	31.3	18.2	25.3
1998	85.9	7.6	3.4	3.1	78.2	10.5	5.5	5.9	67.7	15.6	7.7	9.1	57.8	18.6	10.6	13.0	40.4	28.0	14.7	17.0	27.5	22.7	15.3	34.6
1999	84.2	8.2	4.7	2.9	77.8	10.8	6.7	4.8	68.2	15.4	9.0	7.5	59.0	18.6	11.5	10.9	40.8	24.3	15.2	19.8	28.3	17.4	14.7	39.6
2000	84.6	7.7	4.8	2.9	77.6	10.2	6.9	5.3	66.7	14.7	9.7	9.0	58.1	17.0	12.1	12.8	40.9	20.1	14.4	24.6	29.7	13.5	12.8	44.0
2001	84.9	7.7	5.4	1.9	78.5	10.3	7.6	3.6	68.6	14.5	10.3	6.7	60.6	16.5	12.7	10.2	41.4	19.5	14.6	24.5	30.3	13.3	13.1	43.3
2002	85.2	7.7	5.4	1.8	78.9	10.2	7.4	3.5	69.3	14.3	10.0	6.4	59.7	17.1	12.6	10.6	42.2	21.1	15.3	21.5	29.7	16.0	12.2	42.1
2003	86.8	6.7	4.6	1.9	80.1	9.3	6.4	4.2	69.4	13.7	8.7	8.2	57.8	16.8	11.5	14.0	37.2	19.3	13.6	30.0	19.9	15.6	10.7	53.9
2004	86.7	6.5	4.7	2.1	79.5	9.2	6.6	4.7	67.8	13.5	9.2	9.5	55.9	16.3	12.2	15.6	32.9	18.4	13.9	34.8	17.9	16.7	10.4	55.0

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 panel of tax returns 1982-2002**

	Total number of employees (‘000s)	Total income (millions of 2000 Euros)	CPI (base 2000)	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 10-5%	Top 5-1%	Top 1-0.5%	Top 0.5-0.1%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(11)
1982	8,614	130,566	36,818	22.47	13.58	4.08	2.45	0.78	8.88	9.51	1.63	1.67
1983	8,558	129,996	41,560	22.63	13.70	4.06	2.41	0.75	8.93	9.64	1.65	1.66
1984	8,305	125,575	45,911	22.96	13.91	4.12	2.46	0.78	9.06	9.78	1.66	1.68
1985	8,370	127,945	49,926	23.00	13.92	4.11	2.45	0.79	9.08	9.81	1.66	1.67
1986	8,645	132,199	54,289	23.52	14.26	4.24	2.53	0.79	9.27	10.02	1.71	1.74
1987	9,060	140,830	57,162	24.29	14.81	4.46	2.69	0.87	9.48	10.34	1.77	1.82
1988	9,440	151,014	60,119	25.26	15.44	4.73	2.86	0.96	9.83	10.71	1.86	1.90
1989	9,964	159,103	64,116	26.41	16.16	4.99	3.02	1.01	10.26	11.17	1.97	2.01
1990	10,441	171,909	68,359	26.94	16.51	5.17	3.18	1.07	10.43	11.34	2.00	2.11
1991	10,653	180,661	72,494	26.82	16.46	5.18	3.20	1.09	10.37	11.28	1.98	2.11
1992	10,425	182,197	76,647	25.76	16.06	5.29	3.32	1.19	9.70	10.77	1.98	2.13
1993	10,138	179,779	80,307	25.67	16.06	5.40	3.44	1.35	9.61	10.66	1.96	2.09
1994	10,102	175,524	84,021	25.92	16.13	5.35	3.38	1.23	9.79	10.78	1.98	2.14
1995	10,346	179,861	87,682	25.91	16.14	5.36	3.39	1.24	9.77	10.77	1.97	2.15
1996	10,480	182,682	90,825	25.92	16.16	5.43	3.45	1.31	9.76	10.74	1.97	2.14
1997	10,889	190,323	92,989	26.11	16.35	5.51	3.55	1.34	9.76	10.84	1.96	2.20
1998	11,348	201,283	94,485	26.25	16.48	5.59	3.60	1.37	9.77	10.89	1.99	2.23
2002	12,998	230,840	106,598	27.33	17.54	6.41	4.25	1.73	9.79	11.13	2.16	2.52

Source: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982-1998) and income tax survey (IEF, Muestra de Declarantes IRPF 2002).  
See Appendix for details.

**Table E1. Top Wealth Shares in Spain, 1982-2004**

	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)
<b>A. Top Wealth Shares Including Real Estate</b>								
1982	19.81	15.50	7.83	2.58	4.31	7.66	5.25	2.58
1983	19.41	15.08	7.74	2.68	4.33	7.35	5.05	2.68
1984	18.85	14.61	7.40	2.46	4.24	7.20	4.94	2.46
1985	19.11	14.64	7.27	2.37	4.46	7.37	4.90	2.37
1986	19.52	14.92	7.43	2.55	4.60	7.49	4.88	2.55
1987	19.04	14.44	7.03	2.31	4.60	7.41	4.72	2.31
1988	17.28	12.98	6.36	2.04	4.30	6.62	4.32	2.04
1989	16.88	12.62	6.04	1.92	4.26	6.58	4.11	1.92
1990	16.82	12.38	5.79	1.78	4.44	6.60	4.01	1.78
1991	16.12	11.73	5.39	1.59	4.39	6.34	3.79	1.59
1992	16.02	11.63	5.32	1.60	4.39	6.32	3.72	1.60
1993	16.62	11.84	5.46	1.66	4.78	6.38	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	16.62	11.75	5.25	1.56	4.88	6.50	3.69	1.56
1997	17.39	12.17	5.39	1.59	5.23	6.78	3.81	1.59
1998	17.22	12.03	5.36	1.61	5.19	6.67	3.74	1.61
1999	17.17	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	7.03	3.81	1.58
2001	17.16	12.28	5.32	1.60	4.88	6.95	3.72	1.60
2002	18.27	13.10	5.60	1.57	5.18	7.49	4.03	1.57
2003	17.59	12.38	5.17	1.44	5.21	7.22	3.73	1.44
2004	17.61	12.37	5.17	1.44	5.24	7.21	3.73	1.44
<b>B. Top Financial Wealth Shares (excluding real estate)</b>								
1982	24.85	21.36	13.16	5.46	3.49	8.20	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
2003	25.13	19.77	10.43	3.98	5.36	9.34	6.45	3.98
2004	25.61	20.21	10.76	4.22	5.40	9.44	6.55	4.22

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

Table E2. 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	Busi-ness	Fixed claim	Stock	Other	Debits	Real estate	Busi-ness	Fixed claim	Stock	Other	Debits	Real estate	Busi-ness	Fixed claim	Stock	Other	Debits	Real estate	Busi-ness	Fixed claim	Stock	Other	Debits
1982	75.3	4.9	13.6	6.5	3.6	-3.9	67.6	5.6	12.7	12.2	4.5	-2.6	55.8	5.2	11.3	24.7	5.6	-2.5	36.8	2.9	10.7	46.2	5.6	-2.2
1983	73.2	5.1	14.5	7.0	3.6	-3.4	67.2	5.4	12.9	12.8	4.6	-2.9	56.3	4.8	11.6	23.8	5.7	-2.2	35.0	2.5	12.8	39.6	13.3	-1.1
1984	73.9	4.6	14.0	7.1	3.5	-3.1	68.7	4.8	12.2	12.5	4.6	-2.7	58.2	4.1	11.0	23.3	5.6	-2.1	33.0	2.3	11.2	45.4	7.1	-1.1
1985	73.2	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	35.5	2.2	10.6	46.0	6.8	-1.1
1986	71.6	4.2	14.0	9.5	3.9	-3.2	66.9	4.1	12.1	15.0	4.8	-2.8	55.7	3.3	10.8	27.1	5.7	-2.5	33.9	2.0	14.6	46.2	5.6	-2.3
1987	70.6	4.1	13.9	10.7	4.2	-3.5	66.1	3.9	12.3	15.9	4.9	-3.1	52.3	2.9	11.1	30.4	6.0	-2.8	27.5	1.8	11.5	55.2	6.6	-2.6
1988	68.7	3.3	13.3	12.9	4.7	-2.8	62.9	2.7	12.3	19.2	5.5	-2.6	54.8	2.3	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	53.3	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	57.3	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	12.8	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	2.6	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	32.9	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	32.6	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	10.5	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	64.9	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
2003	73.4	1.3	8.7	16.9	1.3	-1.6	66.6	1.3	7.7	24.3	1.9	-1.6	55.4	1.3	7.0	35.5	2.6	-1.8	28.3	0.7	5.8	63.4	3.8	-1.9
2004	74.2	1.2	8.2	16.7	1.3	-1.6	67.3	1.2	7.4	24.0	1.8	-1.7	56.1	1.1	6.9	35.2	2.6	-1.9	27.0	0.6	5.9	64.8	3.8	-2.0

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 E3. Aggregate Net Worth and Composition, Households Wealth Survey 2002 vs. Tax Statistics**

	Units	Total Financial Wealth		Total Wealth		Wealth Composition						
	Adults	Total Net Financial Wealth	Average	Total Net Wealth	Average	top shares	Real Estate	Fixed Claim Assets	Stocks	Business	Other	Debts
	(‘000s)	(millions 2000 Euros)	(2000 Euros)	(millions 2000 Euros)	(2000 Euros)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<b>Total from tax stats.</b>												
	30.249	811.933	26.842	3.022.332	99.915							
<b>Total from survey</b>												
	32.339	387.417	11.980	1.977.929	61.163		88,07	6,60	5,39	8,52	0,96	-9,55
<b>A. Including real estate. Individual distribution from tax returns</b>												
top 1%	302			552.180	1.825.449	18,27	61,48	8,52	28,25	1,31	2,17	-1,72
top 0.5%	151			395.774	2.616.777	13,10	57,79	7,90	32,37	1,26	2,43	-1,74
top 0.1%	30			169.311	5.597.244	5,60	47,74	7,18	42,87	1,07	2,99	-1,84
top 1-0.5%				156.406		5,18						
top 0.5-0.1%				226.463		7,49						
top 0.1%				169.311		5,60						
<b>B. Excluding real estate. Individual distribution from tax returns</b>												
top 1%	302	197.592	653.218			24,34						
top 0.5%	151	154.722	1.022.989			19,06						
top 0.1%	30	81.372	2.690.070			10,02						
top 1-0.5%		42.870				5,28						
top 0.5-0.1%		73.350				9,03						
top 0.1%		81.372				10,02						
<b>C. Including real estate. Individual distribution from the survey assuming that all wealth belongs to the head of household</b>												
top 10%	3.234	324.673	100.398	1.252.960	387.450	63,35	78,06	6,03	7,67	11,96	1,14	-4,86
top 5%	1.617	278.134	172.013	902.939	558.428	45,65	72,93	5,65	9,80	14,69	1,42	-4,49
top 1%	323	176.129	544.639	401.837	1.242.592	20,32	58,55	4,76	16,80	20,62	2,22	-2,94
top 0.5%	162	144.511	893.734	292.866	1.811.243	14,81	52,70	4,59	20,29	22,33	2,62	-2,53
top 0.1%	32	90.772	2.806.910	137.602	4.255.030	6,96	35,19	3,40	30,65	31,18	1,02	-1,44
top 10-5%		46.540		350.020		17,70						
top 5-1%		102.005		501.102		25,33						
top 1-0.5%		31.618		108.971		5,51						
top 0.5-0.1%		53.739		155.264		7,85						
top 0.1%		90.772		137.602		6,96						
<b>D. Excluding real estate. Individual distribution from the survey assuming that all wealth belongs to the head of household</b>												
top 10%	3.234	369.197	114.166			95,30						
top 5%	1.617	323.762	200.232			83,57						
top 1%	323	208.686	645.316			53,87						
top 0.5%	162	165.658	1.024.520			42,76						
top 0.1%	32	102.122	3.157.898			26,36						
top 10-5%		45.436				11,73						
top 5-1%		115.075				29,70						
top 1-0.5%		43.029				11,11						
top 0.5-0.1%		63.536				16,40						
top 0.1%		102.122				26,36						
<b>E. Including real estate. Individual distribution based on the survey assuming that wealth is divided equally between spouses</b>												
top 10%	3.234	292.241	90.369	1.006.744	311.313	50,90	74,88	5,96	8,91	13,66	1,39	-4,79
top 5%	1.617	244.438	151.174	716.443	443.088	36,22	69,26	5,70	11,33	16,19	1,55	-4,03
top 1%	323	151.786	469.365	328.579	1.016.058	16,61	56,70	4,52	18,15	21,23	2,74	-3,35
top 0.5%	162	130.652	808.025	234.869	1.452.558	11,87	46,75	4,29	22,99	25,65	3,12	-2,80
top 0.1%	32	80.162	2.478.835	109.222	3.377.463	5,52	27,86	3,04	32,87	36,65	1,11	-1,53
top 10-5%		47.803		290.301		14,68						
top 5-1%		92.651		387.864		19,61						
top 1-0.5%		21.134		93.710		4,74						
top 0.5-0.1%		50.490		125.646		6,35						
top 0.1%		80.162		109.222		5,52						
<b>F. Excluding real estate. Individual distribution based on the survey assuming that wealth is divided equally between spouses</b>												
top 10%	3.234	339.119	104.865			87,53						
top 5%	1.617	288.455	178.396			74,46						
top 1%	323	178.137	550.848			45,98						
top 0.5%	162	143.099	885.002			36,94						
top 0.1%	32	86.684	2.680.503			22,37						
top 10-5%		50.664				13,08						
top 5-1%		110.318				28,48						
top 1-0.5%		35.038				9,04						
top 0.5-0.1%		56.415				14,56						
top 0.1%		86.684				22,37						

Source: Computations based on tax returns and Bank of Spain, Encuesta Financiera de las Familias 2002.

Notes: The number of total adults for the tax-based statistics (30,249 million) is smaller than the number of total adults for the survey-based statistics (32,339 million) because the former excludes Pais Vasco and Navarra.

TABLE F1. Income Tax Rates 1933-1973

Income level (pesetas)		Tax Rate
from	to	(%)
<b>1933-1935</b>		
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
<b>1936-1940</b>		
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
<b>1941</b>		
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
<b>1942-1953</b>		
60,001	100,000	7.50
100,001	150,000	18.00
150,001	250,000	20.00
250,001	500,000	27.00
500,001	1,000,000	33.00
over 1,000,000		44.00
<b>1954-1956</b>		
100,001	125,000	2.50
125,001	150,000	2.90
150,001	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
over 1,000,000		33.00
<b>1957-1965</b>		
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
<b>1966-1973</b>		
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 and Inspections: 1933-1974**

	# Tax returns (1)	# Tax returns with positive taxable income (2)	# Inspected Files (3)
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	1,147
1945	11,817	6,629	1,140
1946	13,189	8,223	2,096
1947	17,897	7,983	1,964
1948	16,649	9,067	2,933
1949	19,755	10,111	3,294
1950	22,930	12,419	3,403
1951	23,887	13,597	3,524
1952	26,373	15,427	2,772
1953	27,653	16,545	1,118
1954	89,460	21,332	2,638
1955	98,604	26,716	1,915
1956	109,026		1,074
1957	119,618	38,493	1,306
1958	175,172	35,581	1,794
1959	190,791	42,246	
1960	197,842		
1961	222,593	26,623	
1962	240,179		
1963	296,701		3,183
1964	323,223		3,231
1965	347,434		2,947
1966			2,536
1967			4,612
1968	199,592	5,777	6,595
1969	228,132	13,709	8,979
1970	263,181	20,072	7,813
1971	338,989	22,556	4,045
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;

Gota Losada (1966); Instituto de Estudios Fiscales (1973); Martí Basterrechea (1974).

**Table F3. Number of Tax Inspections: 1986-2002**

	Income Tax		Wealth Tax	
	# Tax Returns (‘000s)	# Inspected Files (‘000s)	# Tax Returns (‘000s)	# Inspected Files (‘000s)
1986	7,896	34.90	781	
1987	8,028	33.75	887	9.34
1988	8,954	25.04	756	6.97
1989	9,845	16.45	855	5.40
1990	10,965	28.05	974	9.58
1991	11,584	21.31	1,033	7.04
1992	12,341	33.39	863	9.61
1993	12,794	31.93	928	7.46
1994	13,578	25.77	809	4.89
1995	14,119	21.28	783	3.26
1996	14,620	18.97	825	2.23
1997	15,000	15.34	892	1.73
1998	15,424	10.06	946	1.21
1999	13,797	10.90	981	1.14
2000	14,123	9.67	869	1.07
2001	14,734	8.34	874	0.99
2002	15,410	8.25	884	0.92

Source: Agencia Tributaria, Memoria de Actividades



TABLE G. Structure of Tax Revenues, Spain 1930-1979

National Government Tax Receipts as % of GDP													
Direct Taxes							Indirect Taxes						
Rents	Entrepreneuria Income	Capital Income	Wage Income	Personal Income	Corporate Tax	Gifts and Estate	Total (1)+(7)	Customs	Tax Stamp	Consumption	Luxury	Total (9)+(12)	Total plus Indirect Taxes (14)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1930	1.08	0.60	0.58	0.39	0.36	0.62	3.63	1.70	1.04	0.98		3.72	7.35
1931	1.12	0.60	0.62	0.40	0.40	0.64	3.77	1.51	0.99	1.03		3.53	7.30
1932	1.21	0.66	0.60	0.41	0.32	0.59	3.80	1.66	1.08	1.16		3.91	7.70
1933	1.31	0.69	0.65	0.43	0.37	0.64	4.12	1.50	1.19	1.08		3.76	7.88
1934	1.20	0.62	0.63	0.44	0.27	0.63	3.82	1.37	1.04	0.94		3.36	7.18
1935	1.22	0.61	0.63		0.31	0.62	3.91	1.32	1.11	0.94		3.37	7.28
1936													
1937													
1938													
1939													
1940	0.99	0.51	0.44	0.52	0.19	1.28	3.95	0.47	0.85	0.97		2.29	6.24
1941	1.12	0.82	0.50	0.62	0.61	0.98	4.71	0.48	0.93	1.44	0.79	3.64	8.34
1942	1.25	0.74	0.52	0.66	0.71	0.89	4.92	0.71	0.94	1.64		3.57	8.49
1943	1.19	0.71	0.46	0.75	0.75	0.88	4.91	1.01	0.94	2.10	0.81	4.85	9.76
1944	1.07	0.63	0.39	0.72	0.71	0.71	4.41	0.81	0.85	1.96	0.81	4.44	8.85
1945	1.15	0.67	0.47	0.81	0.85	0.79	4.92	0.53	0.83	1.82	0.88	4.06	8.98
1946	0.81	0.43	0.36	0.73	0.74	0.67	3.92	0.62	0.94	1.67	0.49	3.63	7.55
1947	0.86	0.44	0.44	0.77	0.80	0.78	4.26	0.68	0.91	1.76	0.43	3.77	8.04
1948	0.83	0.42	0.38	0.81	0.87	0.78	4.28	0.69	0.88	2.02	0.42	4.00	8.28
1949	0.81	0.40	0.60	0.86	1.01	0.67	4.53	0.54	0.89	2.73	0.41	4.56	9.09
1950	0.79	0.30	0.34	0.78	1.01	0.97	4.61	0.46	0.79	2.10	0.42	3.77	7.73
1951	0.65	0.34	0.34	0.73	0.88	0.59	3.67	0.37	0.72	1.89	0.41	3.39	7.06
1952	0.64	0.34	0.35	0.75	1.12	0.63	3.98	0.43	0.79	2.26	0.41	3.88	7.87
1953	0.68	0.35	0.36	0.87	1.34	0.61	4.38	0.45	0.79	2.30	0.44	3.98	8.36
1954	0.68	0.30	0.35	0.81	1.14	0.58	4.03	0.42	0.57	2.10	0.44	3.54	7.57
1955	0.72	0.30	0.42	0.71	1.21	0.63	4.10	0.44	0.59	2.20	0.49	3.72	7.81
1956	0.62	0.24	0.49	0.67	1.18	0.58	3.90	0.57	0.59	2.02	0.48	3.67	7.56
1957	0.54	0.22	0.50	0.78	1.20	0.59	3.95	0.35	0.71	2.09	0.46	3.60	7.55
1958	0.48	0.32	0.48	0.74	1.15	0.63	3.94	0.48	0.68	1.81	0.73	3.70	7.64
1959	0.44	0.40	0.37	0.76	1.24	0.67	4.06	0.51	0.72	1.84	0.93	4.00	8.05
1960	0.50	0.42	0.41	0.87	1.20	0.68	4.26	1.09	0.73	2.02	1.05	4.88	9.14
1961	0.42	0.39	0.39	0.82	1.16	0.66	3.99	1.64	0.71	1.80	1.03	5.18	9.17
1962	0.40	0.49	0.38	0.80	1.12	0.66	4.02	1.87	0.69	1.66	1.03	5.25	9.27
1963	0.35	0.46	0.32	0.76	0.97	0.66	3.67	1.89	0.71	1.54	1.04	5.18	8.85
1964	0.33	0.46	0.31	0.73	0.88	0.65	3.52	2.08	0.87	1.37	1.17	5.50	9.02
1965	0.31	0.47	0.38	0.66	0.92	0.55	3.43	2.26	1.18	0.91	1.29	5.64	9.08
1966	0.25	0.45	0.32	0.80	0.96	0.56	3.50	2.53	1.32	0.77	1.34	5.96	9.45
1967	0.25	0.47	0.33	0.83	0.98	0.60	3.59	2.19	1.41	0.88	1.43	5.91	9.50
1968	0.22	0.48	0.34	0.74	0.92	0.60	3.46	1.96	1.44	0.85	1.43	5.67	9.13
1969	0.23	0.45	0.34	0.79	1.05	0.64	3.67	2.07	1.53	0.86	1.55	6.01	9.67
1970	0.26	0.46	0.36	0.89	1.02	0.66	3.76	2.05	0.44	0.89	1.57	4.95	8.74
1971	0.28	0.47	0.39	1.01	1.05	0.70	4.07	1.83	1.66	0.91	1.57	4.96	9.03
1972	0.29	0.43	0.38	1.09	1.05	0.75	4.15	2.08	1.64	0.84	1.55	6.12	10.26
1973	0.28	0.39	0.38	1.28	1.06	0.84	4.41	2.16	1.68	0.76	1.61	6.21	10.62
1974	0.30	0.38	0.33	1.41	1.05	0.85	4.45	2.00	1.73	0.64	1.42	5.79	10.24
1975	0.28	0.42	0.45	1.60	1.10	0.79	4.78	1.96	1.47	0.54	1.39	5.36	10.13
1976	0.25	0.37	0.68	1.78	1.12	0.74	5.08	1.71	1.33	0.45	1.39	4.88	9.96
1977	0.23	0.36	0.68	2.09	1.15	0.72	5.26	1.82	1.31	0.38	1.43	4.94	10.20
1978	0.22	0.32	0.73	2.73	0.92	0.74	5.87	1.45	1.29	0.45	1.46	4.64	10.51
1979	0.03	0.20	0.31	1.14	1.16	0.73	6.08	1.41	1.37	0.37	1.55	4.70	10.78

Source: Comin, F. (1985)

Notes

1930-1957:  
Tax on Rents: Contribución Rústica y Pecuaria, Contribución Urbana, Tax on Entrepreneurial Income: Contribución Industrial y de Comercio, Tax on Capital Income: Contribución sobre las Utilidades Procedentes del Capital, Tax on Wage Income: Contribución sobre las Utilidades del Trabajo Personal, Corporate Tax: Contribución sobre las Utilidades del Trabajo y del Capital, Personal Income Tax: Contribución General sobre la Renta (since 1932), Gift and Estate Tax: Contribución sobre Derechos Reales y Transmisión de Bienes

1958-1979:  
Tax on Rents: Contribución Rústica, Contribución Urbana, Tax on Entrepreneurial Income: Licencia Fiscal, Cuota de Beneficios, Tax on Capital Income: Impuesto sobre las Rentas del Capital, Tax on Wage Income: Impuesto sobre los Rendimientos del Trabajo Personal, Corporate Tax: Impuesto sobre las Sociedades, since 1975: Cuota sobre la Renta Global de las Sociedades, Personal Income Tax: Impuesto General sobre la Renta, Personal Income Tax: Impuesto General sobre la Renta, Gift and Estate Tax: Contribución sobre Derechos Reales y Transmisión de Bienes

**TABLE G (continued). Structure of Tax Revenues. Spain 1980-2005**

National Government Tax Receipts as % of GDP												
	Direct Taxes				Indirect Taxes				Total Taxes			
	Personal Income (1)	Wealth Tax (2)	Corporate Tax (3)	Gifts and Estate (4)	Other Taxes (5)	Total (1)-(5) (6)	Customs (7)	VAT (8)	Other Taxes on Consumption (9)	Other Taxes (10)	Total (7)-(10) (11)	Direct plus Indirect Taxes (12)
1980	4.07	0.11	1.14	0.09	0.23	5.64	1.00	1.28	1.28	2.83	6.39	12.03
1981	4.34	0.08	1.12	0.11	0.17	5.82	1.00	1.61	1.61	3.11	7.33	13.15
1982	4.24	0.07	1.09	0.08	0.11	5.58	1.10	1.18	1.18	2.86	6.32	11.90
1983	4.56	0.06	1.24	0.09	0.11	6.06	1.16	1.27	1.27	3.51	7.22	13.28
1984	4.84	0.03	1.25	0.03	0.09	6.25	1.11	1.59	1.59	3.21	7.51	13.75
1985	4.98	0.03	1.37	0.02	0.09	6.49	1.22	1.52	1.52	3.52	7.78	14.27
1986	4.67	0.03	1.57	0.02	0.07	6.36	0.79	4.17	1.38	2.07	8.41	14.77
1987	6.43	0.03	1.77	0.02	0.05	8.31	0.94	4.81	1.91	0.88	8.54	16.85
1988	6.25	0.04	1.95	0.00	0.05	8.29	0.92	4.93	1.86	0.82	8.53	16.82
1989	7.07	0.03	2.71	0.04	0.00	9.85	0.81	5.00	1.82	0.49	8.12	17.97
1990	6.67	0.04	2.76	0.03	0.00	9.48	0.65	4.79	1.90	0.45	7.79	17.27
1991	7.18	0.04	2.40	-0.02	0.00	9.60	0.51	4.70	2.19	0.14	7.54	17.14
1992	7.54	0.04	2.05	0.00	0.00	9.62	0.34	5.07	2.35	0.22	7.98	17.60
1993	7.48	0.04	1.78	0.00	0.00	9.31	0.14	4.36	2.50	0.16	7.17	16.47
1994	7.25	0.04	1.61	0.00	0.00	8.91	0.14	4.73	2.68	0.15	7.70	16.61
1995	7.03	0.04	1.70	0.00	0.00	8.76	0.16	4.55	2.58	0.18	7.47	16.24
1996	6.68	0.04	1.75	0.00	0.00	8.47	0.13	4.60	2.62	0.14	7.48	15.95
1997	6.62	0.04	2.51	0.00	0.13	9.29	0.13	4.79	2.48	0.19	7.60	16.89
1998	5.57	0.04	2.59	0.00	0.00	8.21	0.15	4.86	2.67	0.24	7.93	16.13
1999	5.42	0.05	2.52	0.00	0.00	7.99	0.15	5.30	2.67	0.23	8.34	16.34
2000	5.27	0.05	2.73	0.00	0.00	8.05	0.15	5.30	2.56	0.23	8.24	16.29
2001	5.44	0.05	2.53	0.00	0.00	8.02	0.14	5.09	2.44	0.29	7.96	15.98
2002	4.57	0.00	2.94	0.00	0.00	7.51	0.13	4.76	2.22	0.24	7.35	14.87
2003	4.32	0.00	2.80	0.00	0.00	7.12	0.13	4.68	2.16	0.23	7.19	14.32
2004	3.79	0.00	3.10	0.00	0.00	6.89	0.15	4.68	2.09	0.22	7.14	14.03
2005	4.12	0.00	3.59	0.00	0.00	7.72	0.16	4.77	1.99	0.23	7.16	14.87

Source: Instituto de Estudios Fiscales, BADESPE-Base de Datos Económicos del Sector Público Español  
Note: Total tax receipts reduction in 2002 due to partial transfers of tax collections to Autonomous Regions.

**Table H. Composition of Top Incomes under Old Income Tax**

Year	Top income group fractile	Composition					
		Returns on real estate	Returns on financial assets	Business income (excluding farm)	Farm income	Employment income	Other
1941	Top 0.03%	19.92	35.81	26.43	4.43	12.54	0.87
1942	Top 0.03%	19.58	38.89	15.63	5.32	18.77	1.81
1943	Top 0.03%	19.96	37.79	10.95	6.88	21.77	2.66
1944	Top 0.04%	19.37	38.34	12.66	6.69	20.13	2.80
1945	Top 0.04%	19.34	36.60	12.87	7.51	19.21	4.47
1946	Top 0.05%	16.90	34.52	11.74	13.35	17.62	5.86
1947	Top 0.05%	17.96	32.14	12.14	13.42	19.04	5.30
1948	Top 0.05%	19.29	32.74	9.22	14.18	19.14	5.43
1949	Top 0.06%	19.45	32.94	8.08	13.44	19.90	6.18
1950	Top 0.07%	18.11	28.25	9.27	20.14	18.75	5.48
1951	Top 0.07%	17.34	28.26	9.18	20.48	19.29	5.45
1952	Top 0.08%	17.19	28.43	10.05	21.35	18.30	4.68
1953	Top 0.09%	17.43	28.88	9.20	20.24	18.41	5.84
1958	Top 0.05%	11.48	32.89	11.31	19.04	22.50	2.79
1959	Top 0.05%	11.65	33.26	9.51	18.71	24.10	2.76
1961	Top 0.05%	13.05	30.09	8.38	25.99	17.00	5.50
1981	Top 0.05%	5.00	34.70	34.30	0.40	25.60	

Source: official income tax statistics. For years 1941-1953, the composition statistics are only available in aggregate.

As a result, the size of the corresponding top group varies across those years.

For 1958, 1959, 1961 and 1981, the composition data are available by brackets and are reported in the Table for the top 0.05%.

Table I. Data Sources

Author	Title	Year (if applicable)
<b>A. Income and Wealth Numerator</b>		
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, 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
Instituto de Estudios Fiscales (1973)	Informe sobre el Sistema Tributario Español	
Instituto de Estudios Fiscales, Hacienda Pública Española 1974, (30), pp. 473-489	Estadística	
Ministerio de Economía y Hacienda, Secretaría de Estado de Hacienda	Memoria de la Administración Tributaria	1982-1983, 1984, 1985, 1986, 1987 1988, 1989, 1990, 1991, 1992, 1993 1994, 1995, 1996, 1997, 1998, 1999 2000, 2001, 2002
Ministerio de Economía y Hacienda, Secretaría de Estado de Hacienda y Presupuestos	Memoria de la Administración Tributaria	2003, 2004, 2005
Agencia Estatal de la Administración Tributaria, Departamento de Informática Tributaria	Estadísticas IRPF y Patrimonio	1990, 1991, 1992, 1993, 1994, 1995 1996, 1997, 1998, 1999, 2000
Dirección General de Tributos, Subdirección General de Política Tributaria	El Impuesto sobre la Renta de las Personas Físicas y el Impuesto sobre el Patrimonio en 1999	1999
<b>B. Income and Wealth Denominator</b>		
Instituto Nacional de Estadística	Contabilidad Nacional de España Base 2000	
Instituto Nacional de Estadística	Contabilidad Nacional de España Base 1995	
Instituto Nacional de Estadística	Contabilidad Nacional de España Base 1986	
Presidencia del Consejo de Ministros, Dirección General del Instituto Geográfico Catastral	Censo de la Población de España	1930
Ministerio de Trabajo, Dirección General de Estadística	Censo de la Población de España	1940
Presidencia del Gobierno, Instituto Nacional de Estadística	Censo de la Población de España	1950
	Censo de la Población y las Viviendas de España	1960
	Censo de la Población de España	1970
Instituto Nacional de Estadística	Censo de Población y Viviendas	1980, 1991, 2001
Prados de la Escosura, Leandro (2003)	El Progreso Económico de España 1850-2000	
Banco de España (2004)	Cuentas Financieras de la Economía Española 1990-2005	
Banco de España (2004), Boletín Económico 11	Encuesta Financiera de las Familias: Descripción, Métodos y Resultados Preliminares	
Banco de España	Indicadores del Mercado de la Vivienda <a href="http://www.bde.es/infost/sindi.htm">http://www.bde.es/infost/sindi.htm</a>	
Ministerio de Economía y Hacienda, Dirección General de Catastro	Estadísticas Catastrales 1990-2003 <a href="http://www.catastro.minhac.es/esp/estadisticas1.asp">http://www.catastro.minhac.es/esp/estadisticas1.asp</a>	
Caixa de Catalunya (2004), Informe sobre el Consumo y la Economía Familiar, Junio	Report Monográfico: El Crecimiento del Stock de Riqueza de las Familias Españolas y su Impacto sobre el Consumo en el Período 1995-2003: Una Versión Territorial	
Instituto de Estudios Fiscales (1976)	Datos Básicos para la Historia Financiera de España 1850-1975	
<b>C. Other</b>		
Comín, Francisco (1985), Monografía n.40, Instituto de Estudios Fiscales	Fuentes Cuantitativas para el Estudio del Sector Público en España 1801-1980	
Instituto de Estudios Fiscales	Panel IRPF-AEAT 1982-1998	1982-1998
Instituto de Estudios Fiscales	Muestra de Declarantes de IRPF 2002	2002
Instituto de Estudios Fiscales	Base de Datos del Sector Público Español	
Ministerio de Economía y Hacienda, Dirección General de Inspección Financiera y Tributaria	Memoria de las Actuaciones de la Inspección de los Tributos durante 1987	1987
Secretaría de Estado de Hacienda, Dirección General de Inspección Financiera y Tributaria	Memoria de las Actuaciones de la Inspección de los Tributos	1988
Ministerio de Economía y Hacienda, Secretaría de Estado de Hacienda	Resultados de la Inspección de los Tributos	1989
Dirección General de Inspección Financiera y Tributaria	Memoria de la Dirección General de Inspección Financiera y Tributaria	1990, 1991
Agencia Tributaria, Departamento de Inspección Financiera y Tributaria	Memoria de Actividades	1992, 1993, 1994, 1995, 1996, 1997 1998, 1999, 2000, 2001, 2002
Instituto de Estudios Fiscales	Comisión para Evaluar el Fraude por el Impuesto sobre la Renta de las Personas Físicas	
Ministerio de Hacienda	Informe sobre Gestión Tributaria 1979-1981	
Boletín Oficial del Estado		
Gaceta de Madrid		
Global Find Data	<a href="http://www.globalfinddata.com">http://www.globalfinddata.com</a>	