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

*Facundo Alvaredo and Emmanuel Saez*

## 10.1 INTRODUCTION AND SUMMARY

The evolution of income and wealth inequality during the process of development has attracted much attention in the economics literature. Recent studies have constructed series for shares of income accruing to upper income groups for various countries using income tax statistics (Atkinson and Piketty 2007). The countries studied include Anglo-Saxon countries (United Kingdom, Ireland, United States, Canada, New Zealand, and Australia), continental European countries (Finland, France, Germany, the Netherlands, Sweden, and Switzerland), and large Asian countries (China, India, Indonesia, and Japan). This chapter focuses on the Spanish experience. Spain is an interesting country to analyse 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 analysed 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, but those studies focus on the effects of taxes on global inequality indices rather than top incomes as we do here.<sup>1</sup> Survey-based studies point to a reduction in income or expenditure inequality in the 1970s followed by relative stability in the

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<sup>1</sup> See Rodríguez and Salas (2006) for a recent example.

1980s and 1990s,<sup>2</sup> while tax-based results display a worsening in income inequality in 1982–91 and 1995–8.<sup>3</sup> More recently, Prados de la Escosura (2006a, 2008) has constructed long historical series on income inequality using macroeconomic series. Those series offer the best evidence to date on inequality trends in Spain from a historical perspective. Our study constructs long-run series of income concentration using primarily individual tax statistics, a source that has not been fully exploited by previous studies. 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 from broader and macro-based measures of inequality.

Second, up to the 1950s, Spain was still largely an agricultural economy with a GDP per capita around \$4,000 (in dollars of today) similar to developing countries such as Pakistan or Egypt today.<sup>4</sup> Indeed, because of the civil war shock and the poor economic performance during the first decade 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 per cent 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 analyse income concentration during the stagnation years and during the economic boom starting in the late 1950s to reassess 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 military coup led by General Franco in 1936, followed by a three-year civil war, transformed Spain into a dictatorship from 1939 till the death of Franco in 1975. Since then, Spain has returned to democracy and has implemented redistributive 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 income concentration.

Our results show that income concentration was much higher during the 1930s than it is today. The top 0.01 per cent income share was twice higher in the 1930s than in recent decades. The top 0.01 per cent income share fell sharply during the first decade of the Franco dictatorship, and has increased slightly since the 1970s,

<sup>2</sup> Garde, Ruiz Huerta, and Martínez (1995) provide a survey of the literature until 1995 and Ayala and Sastre (2005) present more recent findings. A summary of existing studies on inequality in Spain can be found in Appendix 10G.

<sup>3</sup> See Ayala and Onrubia (2001), Castañer (1991), and Lasheras, Rabadán, and Salas (1993).

<sup>4</sup> Prados de la Escosura (2003, 2006b, 2007) has constructed historical GDP and growth series for Spain. He emphasizes that, before the economic stagnation of the 1930–52 period, Spain had experienced significant economic growth since 1850, in particular from 1850 to 1883 and in the 1920s. Maddison (2001, 2003) also reproduces these historical series of real GDP per capita in Spain in his international compilation.

and especially since the mid 1990s. Interestingly, both the level and the time pattern of the top 0.01 per cent 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 1933–71, especially the decades after the Second World War. These 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 in Spain before 1980 was much less prevalent than previously thought *at the top of the distribution*. Our analysis on the criteria required for successful income tax enforcement on top incomes shows that income tax statistics, even at an early stage of development such as Spain in the 1930s or 1940s, are a valuable primary data source for analysing income concentration. Our in-depth analysis of income tax enforcement also provides support to the reliability of top income studies gathered in Atkinson and Piketty (2007).

Although Spain had to wait till the return of democracy in 1975–7 to start implementing a modern welfare state and redistributive tax policies, our findings show that, perhaps contrary to previous views, income concentration in Spain was quite low from the early 1950s and this possibly played a role in the stability and longevity of the dictatorship regime.

Since 1981, 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, as real estate wealth is less concentrated than financial wealth and real estate prices have increased dramatically, netting these out, very top wealth shares (including both financial and real estate wealth) have declined during the period 1982–2005.

Our series can be fruitfully used to evaluate the effects of tax reforms on the economic behaviour and tax avoidance of the affluent. In particular, our series show that the wealth tax exemption of stocks for owner-managers introduced in 1994 has gradually and substantially eroded the wealth tax base, especially at the very top. Our empirical results, interpreted using a simple theoretical model of tax avoidance, show evidence of strong shifting effects whereby wealthy business owners were able to reorganize their business ownership and activities in order to take advantage of the reform. This implies that this tax reform, while reducing the redistributive power of the progressive wealth tax, also generated efficiency costs, as business owners were taking costly steps to qualify for the exemption.

The chapter is organized as follows. Section 10.2 describes our data sources, outlines our estimation methods, and discusses the issue of income tax evasion in Spain. In section 10.3 we present and analyse the trends in top income shares since 1933 as well as the composition of top incomes since 1981. Section 10.4 focuses on top wealth shares and composition since 1982. Section 10.5 uses the

wealth series to analyse the efficiency costs of the wealth tax exemption of 1994. The complete details on our data and methods, as well as the complete sets of results are presented in the appendices.

## 10.2 DATA, METHODOLOGICAL ISSUES, AND CONTEXT

### 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 1981–2005 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 10.2 and throughout the text in section 10.3. Complete details on the methodology are provided in the appendices.

Before 1981, because of very high exemption levels, only a very small fraction of individuals had to file individual tax returns, and therefore we must restrict our analysis to the top 0.1 per cent of the income distribution (and for 1933–47 even the top 0.01 per cent). From 1981 on, we can analyse the top 10 per cent of the income distribution. Spain has adopted an annual personal wealth tax since 1978. Detailed statistics on the ‘new’ income and wealth tax were first published in 1981 and 1982 respectively.<sup>5</sup> The progressive wealth tax has high exemption levels and only the top 2 per cent or 3 per cent wealthiest individuals file wealth tax returns. Thus, we limit our analysis of wealth concentration to the top 1 per cent and above, and for the period 1982 to 2005. For 1981 to the present, estimates are based on Spain excluding two autonomous regions, País Vasco and Navarra, because they manage the income and wealth taxes directly and hence are excluded from the statistics. Those two regions represent about 10 per cent of Spain in terms of population and income.<sup>6</sup>

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 actually filed). 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 1981–7 using the micro-data (which allow us to compute both

<sup>5</sup> 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 that make the data non usable.

<sup>6</sup> In the old regime, from 1933 to 1935, estimates are based on all Spain; Navarra is excluded since 1937 and Alava (one of the three provinces in the País Vasco) since 1943.

family and individual income after the reform) in order to account for this change in law.<sup>7</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 not before). In order to create comparable series before and after 1979, we also estimate series excluding capital gains for the period 1981–2005. Our income definition is before personal income taxes and personal payroll taxes but after the deduction of 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 per cent in the top bracket for very large wealth holdings.<sup>8</sup> In general, real estate wealth is not taxed according to its market value but according to its registry value for property tax purposes. Market prices are about three times as high as registry value on average. Real estate wealth is a very large component of wealth in Spain, especially after the surge in housing prices since 1995. Therefore, we use two definitions of wealth, one including real estate wealth evaluated at market prices and one excluding real estate wealth (and excluding also mortgage debt on the passive side) which we call financial wealth. Total wealth is clearly a better measure of wealth but is not directly measured in the wealth tax statistics and hence requires making large adjustments. Financial wealth is 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 in many of the top income studies presented in Atkinson and Piketty (2007).<sup>9</sup> In the case of Spain, income tax micro-data are available since 1982 allowing us to check the validity of our estimations based on published tax statistics. We find that our

<sup>7</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 1940–71 period because, at the very top of the distribution, we expect spouses' incomes to be small during that period when very few married women worked.

<sup>8</sup> The wealth tax is individually based since 1988 and family based before. We correct for this discontinuity assuming that wealth shares from 1987 to 1988 grew at the average rate of 1986 to 1987 and 1988 to 1989 (see appendices). Our earlier draft did not correct for this change and Durán and Esteller (2007) pointed out to us this omission.

<sup>9</sup> The mean split histogram method has been used to estimate top shares in the cases of Australia, Finland, the Netherlands, New Zealand, and the UK in Atkinson and Piketty (2007) and Norway (Chapter 9) and Singapore (Chapter 5) in this volume.

tabulations-based estimates are almost always very close (within 2 and 5 per cent) to the micro-data-based estimates, giving us confidence that the errors due to interpolation are fairly modest.<sup>10</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 and the GDP series created by Prados de la Escosura (2003) for the pre-1979 period. For the recent period 1981–2005, 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 per cent of Social Transfers from National Accounts (as pensions, which represent about half of such transfers, are taxed under the income tax), (3) 66.6 per cent of unincorporated business income from National Accounts (as we estimate that about one-third 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). Our denominator for the 1981–2005 period is around 66 per cent of Spanish GDP (excluding País 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 of lack of personal income series in the National Accounts series, we define our denominator as 66 per cent of GDP.<sup>11</sup> Similarly we use estimates of aggregate financial net wealth and real estate wealth from the Bank of Spain statistics to compute wealth shares.

### 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 underestimate actual incomes.<sup>12</sup> A careful analysis of the income tax statistics

<sup>10</sup> We do not have micro data in the case of the wealth tax to check the accuracy of our interpolation method. However, Durán and Esteller (2007) have constructed bounds on the top 1% average wealth and shown that those bounds are tight (within 3% in all years).

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

<sup>12</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 1940–90. For the view that income tax evasion was very high in the pre-1979 period, see Breña Cruz et al. (1974), Castillo López (1992), Instituto de Estudios Fiscales (1973), and Martí Basterrechea (1974).

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 per cent of all adults—and throughout the 1950s and 1960s the number of taxpayers rarely exceeded 40,000—about 0.2 per cent of all adults—(Table 10D.3). 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 per cent of GDP in 1933 and 0.22 per cent of GDP in 1978 (Table 10A.4). 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 pesetas, i.e. sixty-six times the average income per adult (equal to around 1,500 pesetas based on our estimated denominator described in section 10.2). Our series 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, the number of filers and income reported at the very top are not unreasonably low.

The second argument that enforcement was poor also needs to be qualified. It is undoubtedly true that the 1964–7 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* was acceptable under the old income tax. First, historically, early comprehensive 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 or financial institutions 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>13</sup> Therefore, the Spanish income tax was small because it was a tax limited to the very rich and this should not be interpreted as the consequence of poor enforcement.<sup>14</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 per cent and hence significantly higher than today (Table 10A.2 and Table 10A.3). It is likely that audit rates were even higher for the top 2,000 income earners in the top 0.01 per cent.

Second, when the progressive income tax was started, Spain had already set in place schedular income taxes on wages and salaries, rents, corporate profits, business profits, and capital income.<sup>15</sup> As a result, most of the income components of the rich were already being taxed through these schedular taxes with a system of withholding at source,<sup>16</sup> which offered a robust way to verify the incomes of the rich.<sup>17</sup> Furthermore, like France, Spain also adopted and used presumptive income taxation based on external signs of wealth (ownership of cars, planes, vessels, and number of domestic workers) when the administration suspected tax evasion or avoidance.<sup>18</sup>

<sup>13</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 less advanced than Spain in the 1930s could successfully enforce a tax on the rich (Moriguchi and Saez 2008 and Chapter 3 of this volume). The Spanish case follows this general pattern as well.

<sup>14</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 chosen was 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 emergencies such as the world wars, and this required a very large administrative effort.

<sup>15</sup> The time series of the revenue raised by each of those schedule taxes are compiled and reported in Table 10A.4.

<sup>16</sup> For an account of the evolution of tax withholding at source for the different schedule income taxes, see García Caracuel (2004).

<sup>17</sup> Cross checking 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 on 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>18</sup> According to Albiñana et al. (1974), Castillo López (1992), and Martí Basterrechea (1974), extraordinary deductions were among the main sources for tax evasion after the reform of 1964. 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.

Third, the administration also threatened to make public the list of taxpayers in order to shame prominent tax evaders (Albiñana 1969a). Such lists were published for tax years 1933 to 1935 in the official state bulletin and 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 the income tax.<sup>19</sup>

Contemporaneous observers (Albiñana 1969a, 1969b; Gota Losada 1970) suggest that enforcement deteriorated during the last decade of Franco's regime.<sup>20</sup> This view is based primarily on the fact that the 1964–7 reform virtually eliminated exemptions and legally transformed the income tax into a mass tax, linked to schedular 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-twentieth 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>21</sup> However, this does not mean that the Spanish income tax was not properly enforced on very top incomes, and all the 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.

Since the return to democracy, Spain has successfully extended the income tax, which now covers a large fraction of income earners (see Table 10C.2). Spain uses tax withholding at source for wages and pensions and has third party reporting requirements for most types of income (such as interest and dividends), making it very difficult to evade taxes on income paid through large businesses or

<sup>19</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* (16 October 1932). Carrión (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). Furthermore, 92% of proprietors with more than 1,000 hectares (60 out of 65 people) are present in the tax lists. Note that this does not imply that the missing 8% were necessarily evaders; in most cases their ascendants paid the income tax, which might reflect different timing between land ownership transfers and nobility title transfers. Additionally, inspection of the income tax lists shows that over one tenth of all taxpayers in 1933–5 were either *Grandes* or close relatives.

<sup>20</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 examined the list of top taxpayers. Strikingly, the top of the list consisted of 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 retold over time. As just discussed, the published lists of taxpayers in 1933–5 provide hard evidence that goes in the opposite direction.

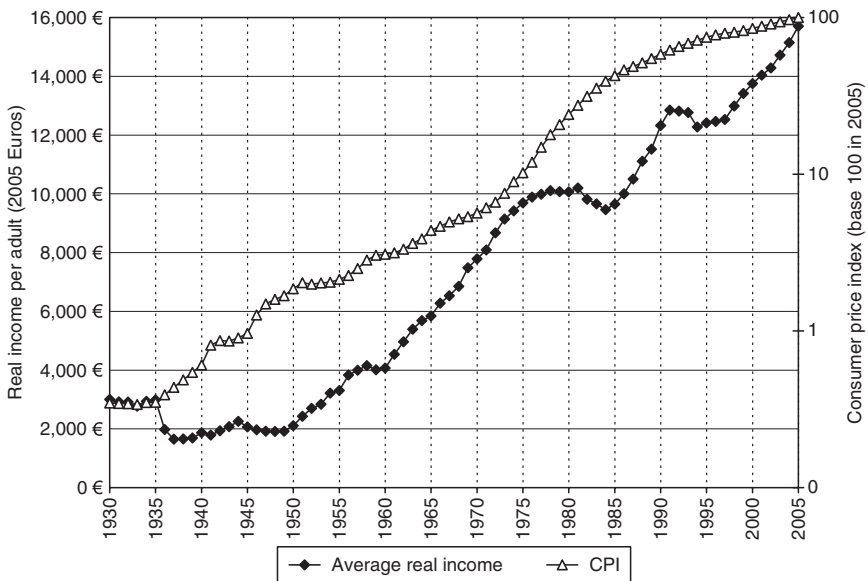
<sup>21</sup> Fiscal inspectors were very competent, well compensated, and highly regarded. Many of them have extensively written on income tax issues, including Albiñana (1969a, 1969b), Albiñana et al. (1974), Breña Cruz et al. (1974), Gota Losada (1966, 1970), Martí Basterrachea (1974).

financial institutions.<sup>22</sup> As a result and as in most OECD countries, tax evasion is concentrated among the self-employed, especially in the informal sector where businesses do not use formal and verifiable accounts. Therefore, evasion within the top 10 per cent is expected to be relatively modest. The wealth tax is also systematically enforced using the official cadastral values for real estate and information from the income tax for financial assets. Strikingly, as we show in Appendix 10F, top wealth holders report substantially more wealth for wealth tax purposes than in the first wealth survey recently run by the Bank of Spain for year 2002.

### 10.3 TOP INCOME SHARES AND COMPOSITION

#### Top Income Shares

Figure 10.1 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 2005. As discussed

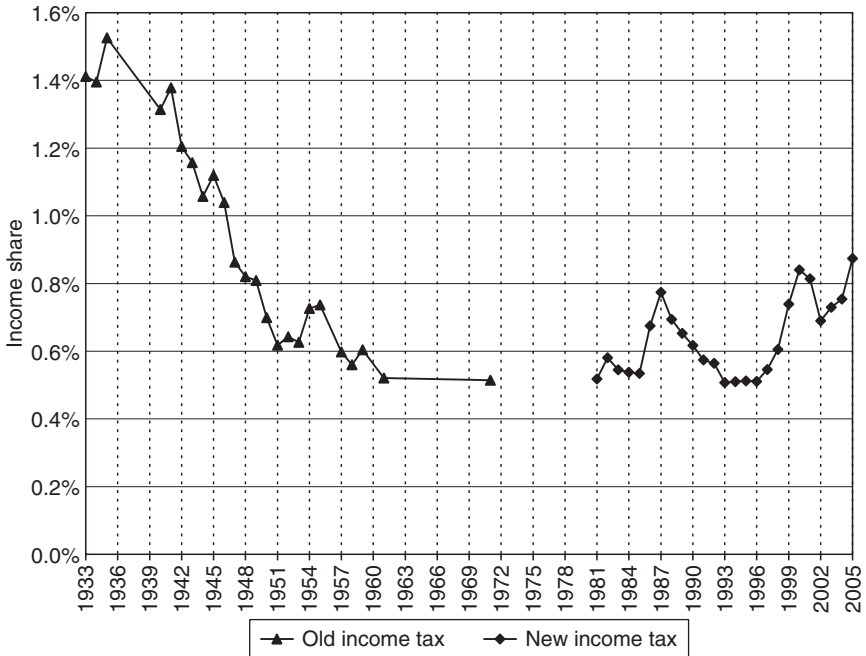


**Figure 10.1** Average real income and consumer price index in Spain, 1930–2005

Notes: Figure reports the average real income per adult (aged 20 and above), expressed in real 2005 euros. CPI index is equal to 100 in 2005.

Source: Table 10C.2.

<sup>22</sup> For an account of the improvements in the third party reporting requirements over the last thirty years, especially on income from financial assets, see Castillo López (1992).



**Figure 10.2** The top 0.01% income share in Spain, 1933–2005

*Notes:* For 1933 to 1971, estimates based on the old income tax statistics.

For 1981 to 2005, estimates based on income excluding realized capital gains (for homogeneity with old income tax.)

*Sources:* 1933–1971 from Table 10D.3 (column top 0.01%), 1981–2005 from Table 10D.2 (column top 0.01%).

in the introduction and as shown in Prados de la Escosura (2003, 2006b, 2007), 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 in the first years of the democracy from 1975 to 1985, and then resumed again. Average income per adult in 2005 is around 15,700 euros. As discussed above, average income is estimated primarily from National Accounts and hence is largely independent of our tax statistics and not biased downwards because of tax evasion or avoidance. 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.

Figure 10.2 displays the top 0.01 per cent income share from 1933 to 2005. 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 per cent share was around 1.5 per cent 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>23</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>24</sup> Interestingly, tax statistics providing the composition of reported top incomes show that taxpayers in 1941 (representing the top 0.03 per cent) obtained about 20 per cent of their income from returns on real estate (rents), 35 per cent from returns on financial assets, 25 per cent from non-farm business income, 5 per cent from farm business income, and about 15 per cent from employment income (Table 10D.6). 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 per cent income share from 1.4 per cent in 1941 to 0.6 per cent in the early 1950s, during the first decade of the Franco dictatorship. We have argued in section 10.2 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 hit top incomes particularly hard 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 per cent to 9 per cent while the fraction of farm business income has increased from less than 5 per cent to over 20 per cent.<sup>25</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 per cent from 1953 to 1971, the last year for which old income tax statistics are available, suggesting that the high economic growth starting in 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

<sup>23</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>24</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.

<sup>25</sup> The share of capital income from financial assets drops from 36% to 29% and the share of labour income increases from 13% to 19% from 1941 to 1953 (Table 10D.6).

concentration. Comparing the change in income composition in the top 0.05 per cent from 1961 to 1981 is interesting: in the capital income category, there is a dramatic shift away from 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.

Interestingly, our results display a striking asymmetry: the civil war shock and the subsequent economic mismanagement in the 1940s crippled the economy and reduced drastically the concentration of income. However, the fast economic growth after 1950 was not accompanied with a resurgence of income concentration. These findings are in line with the results from other countries (see Atkinson and Piketty 2007) suggesting that large but accidental shocks, rather than the natural economic growth process, are the main factors affecting top incomes. In the case of Spain, it is conceivable that the low level of income concentration since the 1950s contributed to the stability and longevity of the dictatorship.

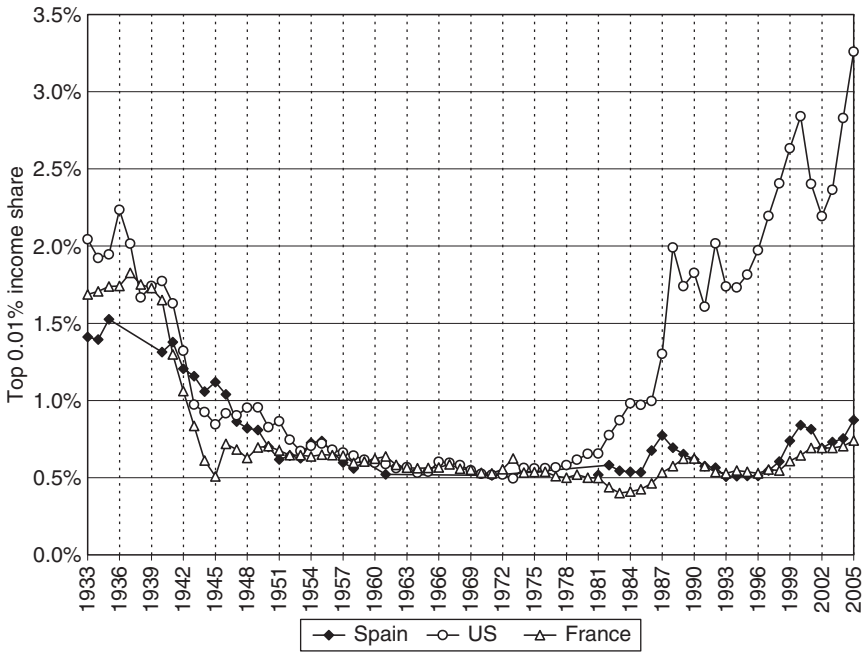
Finally, Figure 10.2 shows that there are fluctuations in very top income concentration since 1981 with sharp increases in the late 1980s and since the late 1990s. The top 0.01 per cent income share in 2005 is the highest since 1946.

In light of our discussion in the introduction about the specific economic and political trajectory of Spain relative to other Western countries analysed previously, it is interesting to compare the trends in income concentration between Spain and other countries. Figure 10.3 displays the top 0.01 per cent 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 the Second World War. 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 experience is actually closer to that of continental Europe countries such as France than to Anglo-Saxon countries such as the United States.<sup>27</sup>

<sup>26</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).

<sup>27</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 displayed either no or small increases in income concentration.



**Figure 10.3** The top 0.01% income share in Spain, USA, and France, 1933–2005

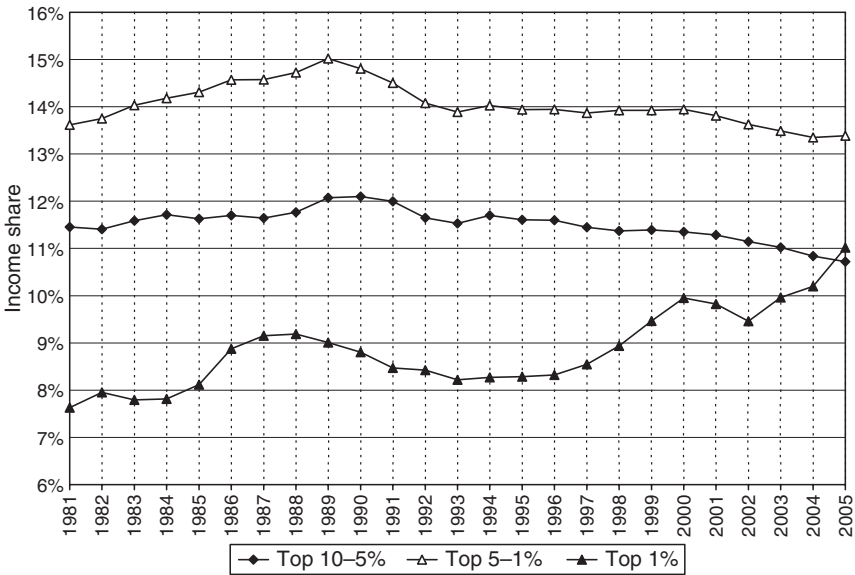
*Note:* Top 0.01% income share excludes realized capital gains.

*Sources:* US: Piketty and Saez (2003); France: Piketty (2001) and Landais (2007); Spain: 1933–71 from Table 10D.3 (column top 0.01%), 1981–2005 from Table 10D.2 (column top 0.01%).

### 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 per cent since 1981. Figure 10.4 displays top income shares for three groups within the top decile: the bottom half of the top decile (top 10–5 per cent), the next 4 per cent (top 5–1 per cent), and the top percentile. In contrast to Figure 10.2, we now include realized capital gains in the top income shares.<sup>28</sup> The figure shows that those top income shares have evolved quite differently: the top 1 per cent increased very significantly from 7.7 per cent in 1981 up to 11 per cent in 2005. In contrast, the top 10–5 per cent and the top 5–1 per cent shares actually slightly declined from 1981 and in 2005, with very modest fluctuations throughout the

<sup>28</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 10.2 and 10.3 for the period 1981–2005.



**Figure 10.4** The top 10 5%, top 5 1%, and top 1% income share in Spain, 1981 2005

*Note:* Income includes realized capital gains.

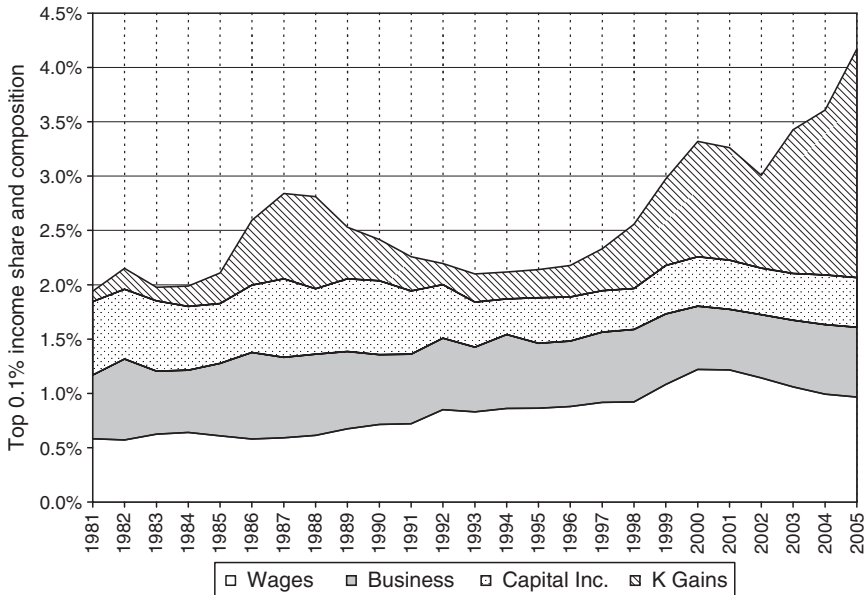
*Source:* Table 10D.1, columns top 10–5%, top 5–1%, and top 1%.

period. Therefore the increase in income concentration which took place in Spain since 1981 has been a phenomenon concentrated within the top 1 per cent 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 per cent.

In order to understand the mechanisms behind this increase in income concentration at the top, which has been happening within the top percentile, we next turn to the analysis of the composition of top incomes. Figure 10.5 displays the share and composition of the top 0.1 per cent income fractile from 1981 to 2005. The figure shows that the top 0.1 per cent share more than doubled from 2 per cent in 1981 to 4.1 per cent in 2005. The figure also shows that the increase in the top 0.1 per cent income share is due solely to two components: realized capital gains (noted K Gains) and wage income. The remaining two components, business income and capital income, have stayed about constant. The figure shows that the 1987, 2000, and 2005 spikes were primarily a capital gains phenomenon.<sup>29</sup> In contrast, the wage income increase has been a slow but persistent effect, which has taken place throughout the full period.

<sup>29</sup> Capital gains fluctuate from year to year as they follow closely the large stock market swings, explaining the peaks in 1987, 2000, and 2005 (Figure 10.11).





**Figure 10.5** The top 0.1% income share and composition in Spain, 1981-2005

*Notes:* 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.

*Sources:* Table 10D.1, top 0.1% income share and Table 10D.7, composition columns for top 0.1%.

### 10.4 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 10.6 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 2005. These 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 2005 is 3.15 times higher than in 1982 while average income in 2005 is only 1.6 times higher than in 1982. Second, real estate is an extremely large fraction of total wealth. It represents about 80 per cent of total wealth on average over 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.

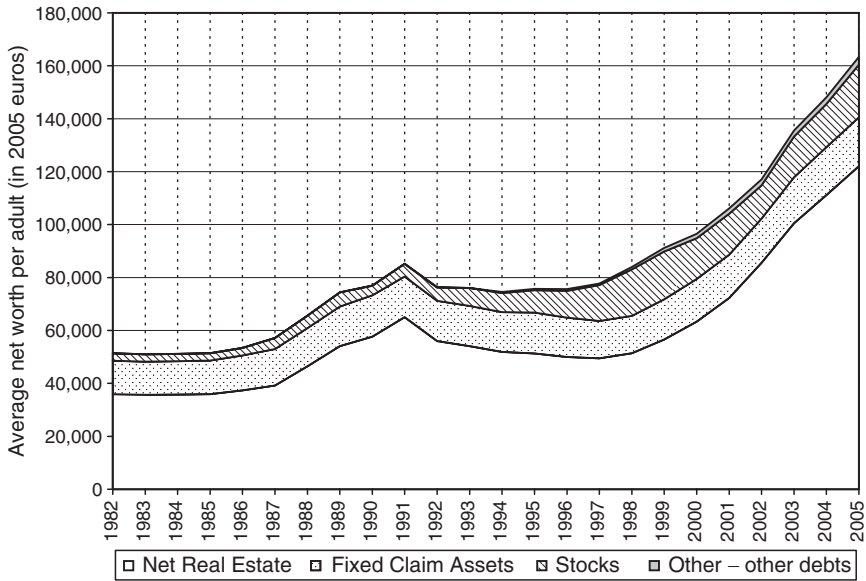


Figure 10.6 Average net worth and composition, Spain, 1982–2005

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

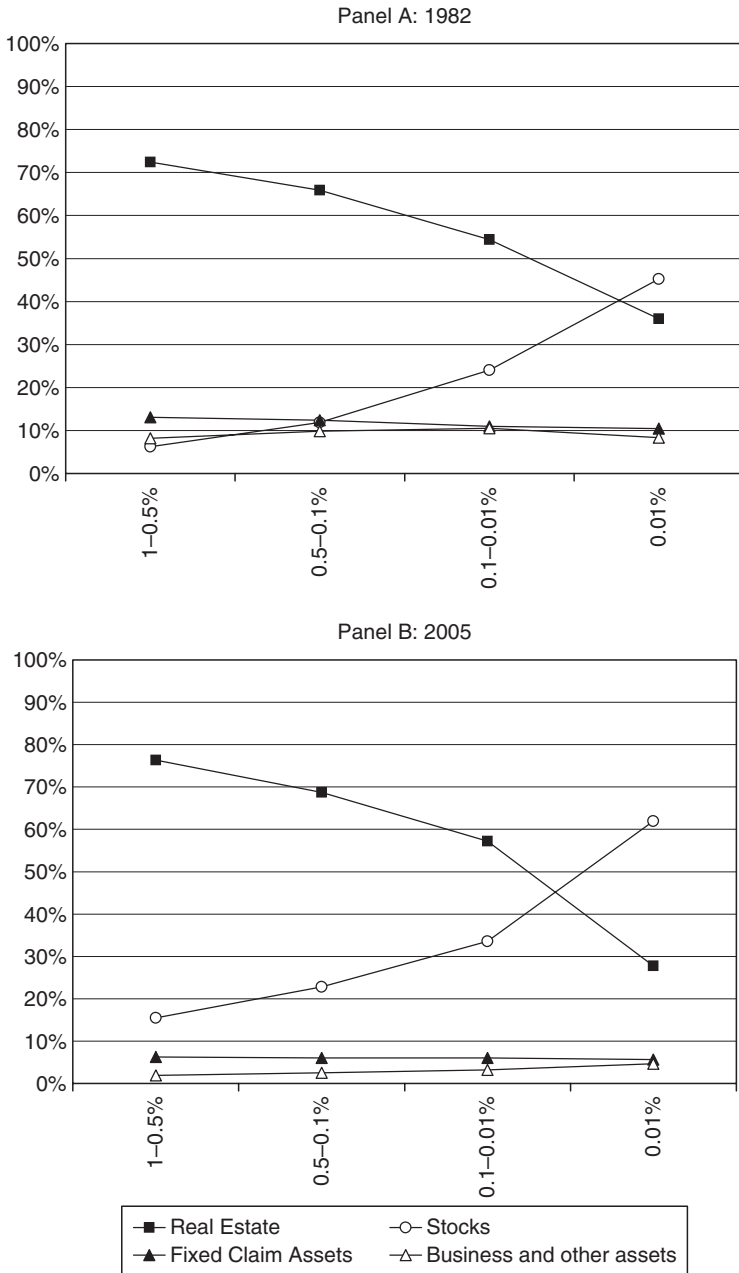
Fixed claim assets are cash, deposits, and bonds.

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

Source: Table 10C.1.

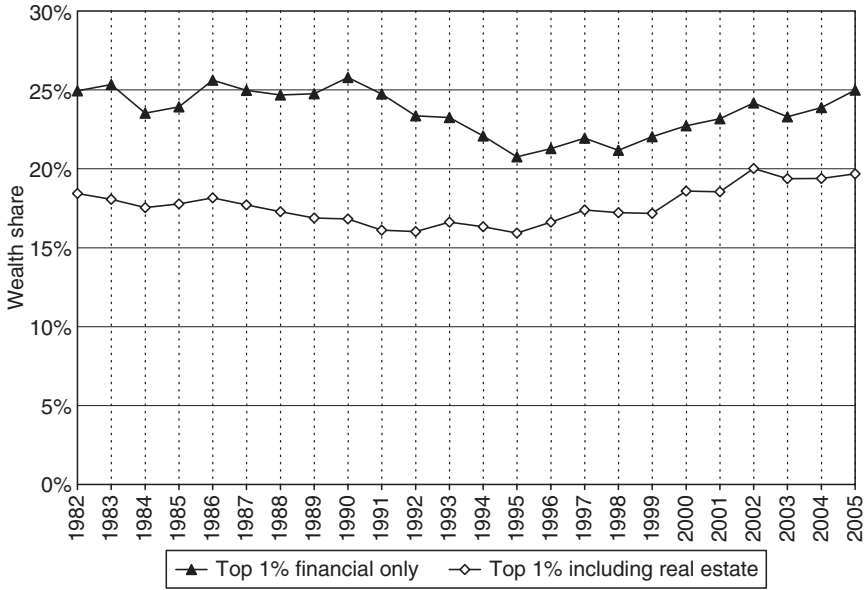
Figure 10.7 displays the composition of wealth in top fractiles of the wealth distribution in 1982 and 2005. As one would expect, the share of real estate is declining and the share of stocks is increasing as we move up the wealth distribution. It is notable that real estate still represents over 60 per cent 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 2005 are quite similar except that the level of stock ownership is higher across the board in 2005, 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 10.8 displays the top 1 per cent wealth share (net worth including real estate wealth) along with the top 1 per cent 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 per cent from 1982 to 1990, decreases to about 21 per cent from



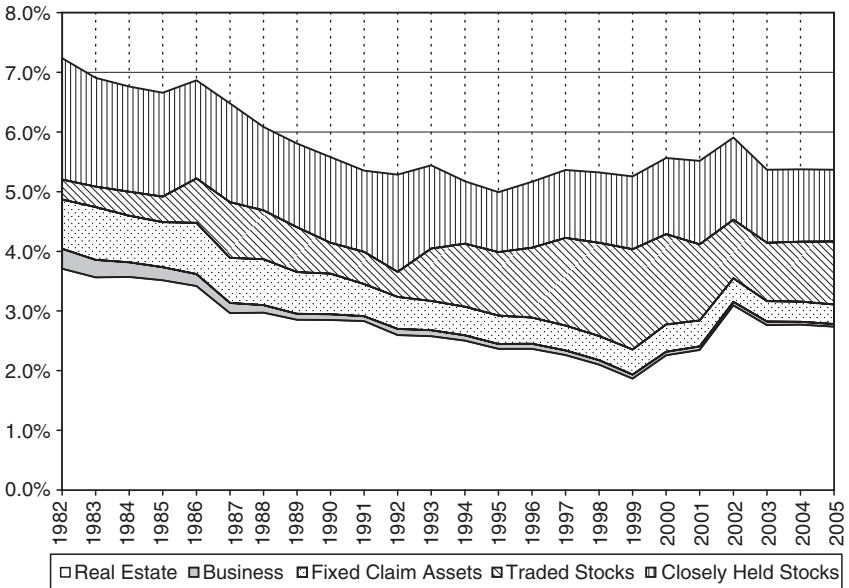
**Figure 10.7** Wealth composition of top groups within the top decile in Spain in 1982 and 2005

Source: Table 10D.9, rows 1982 and 2005.



**Figure 10.8** Top 1% wealth share in Spain, 1982-2005

Source: Table 10D.8, column top 1%.



**Figure 10.9** The top 0.1% wealth share and composition in Spain, 1982-2005

Notes: The figure displays the wealth share of the top 1% tax units, and how the top 0.1% wealth holdings are divided into five components: real estate, business assets, fixed claim assets (cash, deposits, bonds), and publicly traded stocks and closely held stocks.

Sources: Tables 10D.8 and 10D.9, column top 0.1%.

1990 to 1995, and then increases again to about 25 per cent by 2005. Top wealth concentration decreases from 19 per cent in 1982 to 16 per cent in 1992 and then increases to almost 20 per cent in 2005.

Figure 10.9 displays the wealth composition of top 0.1 per cent wealth holders from 1982 to 2005. In contrast to the top 1 per cent, it shows that the top 0.1 per cent has fallen substantially from over 7 per cent in 1982 to less than 5.5 per cent in 2005. Therefore, at the very top of the wealth distribution, the surge in stock prices has not been enough to compensate for the dramatic increase in real estate prices, which benefits upper (but not very top) wealth holders.

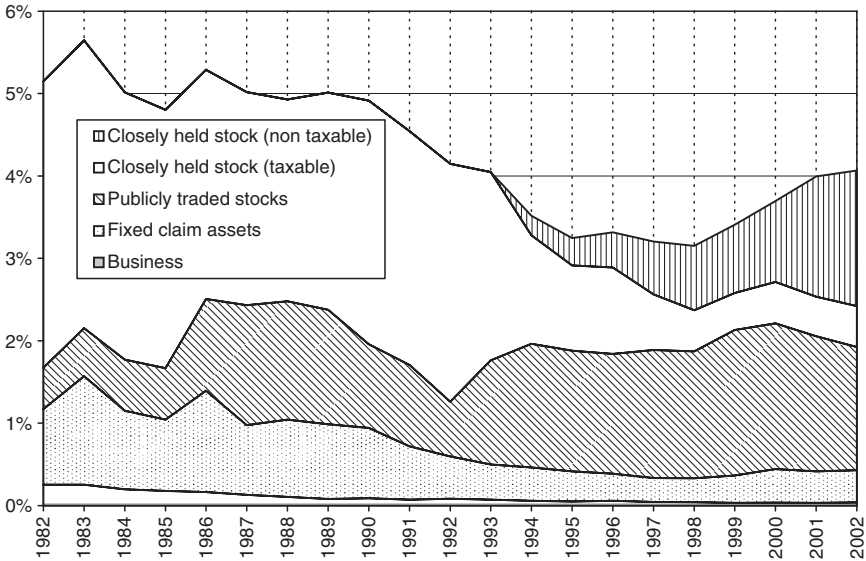
### 10.5 THE EROSION OF THE WEALTH TAX BASE

The series we have constructed and described in the previous sections can fruitfully be used to analyse the effects of tax reforms. In this section, we analyse the 1994 wealth tax reform, which introduced an exemption for business owners substantially involved in the management of their business. More precisely, stocks of corporations where the individual owns at least 15 per cent, or the individual and family own at least 20 per cent, and where the individual is substantially engaged in this business activity (getting over 50 per cent of his labour and business income from this activity) are 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. Importantly for the empirical analysis below, the exemption criteria were relaxed for tax year 1995 (when the individual ownership requirement was lowered from 20 per cent to 15 per cent) and in tax year 1997 (when the 20 per cent family ownership criteria was introduced).<sup>30</sup>

In principle, the 1994 wealth tax reform could have two effects. First, the tax cut might spur business activity in the exempted sector—a 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—a shifting effect. For example, business owners could increase their share of stock in the company in order to meet the 15 per cent 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.

Figure 10.10 displays the composition and share of financial wealth held by the top 0.01 per cent wealth holders. Closely held stocks are now divided into two components: taxable and exempted. In 1994, the first year the exemption was introduced, exempted stock represents only about 15 per cent of total closely held stock reported by the top 0.01 per cent. By 2002, the fraction has grown to

<sup>30</sup> Starting in 2003, the individual ownership requirement was further reduced from 15 to 5%.



**Figure 10.10** The top 0.01% financial wealth share and composition in Spain, 1982–2002

*Notes:* 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.

*Sources:* Table 10D.8 and 10D.9, and direct computations based on wealth tax statistics.

77 per cent. Presumably, in 1994, individuals did not have time to reorganize substantially their business activity. Therefore, the 15 per cent 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 behavioural response to the introduction of the exemption.<sup>31</sup> The fraction of business exempt wealth grows enormously from 1994 to 2002, 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 suggesting 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 first present a simple model to capture those two effects that we then estimate empirically.<sup>32</sup>

<sup>31</sup> Those would be businesses for which the cost of shifting  $q$  was zero because the businesses already met the criteria.

<sup>32</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., Gordon and Slemrod 2000). Such shifting occurs because businesses meeting specific criteria (number of shareholders) can elect to be taxed directly at the individual level.

## Conceptual Model

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 profits. Those costs represent labour input costs (including the labour 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 and the welfare analysis.<sup>33</sup> 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 business ownership to 15 per cent or the opportunity costs of dropping outside work activities to meet the labour income requirement. Let  $P(q)$  be the cumulated distribution of  $q$ . A fraction  $P_0 = P(q = 0)$  of businesses meet those criteria even in the absence of the tax preference.

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  $\epsilon_l = ((1 - \tau_l)/z_l) \partial z_l / \partial (1 - \tau_l) = h'(z_l) / (z_l h''(z_l))$ .

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

<sup>33</sup> Including income effects would not change the qualitative nature of our findings but would complicate the presentation. 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 wealthy business owners would not be working).

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  $W = (1 - P^*) V_0 + \int_0^{V_1} (V_1 - q) dP(q)$  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 in the absence of any behavioural 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 behavioural responses).<sup>34</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 taxation in the taxable sector. In contrast, equation (2) shows that shifting effects decrease the marginal deadweight burden of taxation 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  $\tau_1 = 0$ ,  $\partial SW / \partial \tau_1 = P^* \tau_0 z_0 / P^*$ : social surplus increases with an increase in  $\tau_1$  no matter how large the supply side effect in the tax-exempt sector is.<sup>35</sup> 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 (with no effect in the taxable sector). This effect is measured through the supply side elasticity  $e$ . 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

<sup>34</sup> This follows from  $\partial V_1 / \partial \tau_1 = z_1$ , which is a direct consequence of the envelope theorem.

<sup>35</sup> As we discussed above, exempt business owners are exempt from the wealth tax, but still pay income taxes on the profits so that  $\tau_1 > 0$ .



the exempt sector coming at the expense of reported business wealth in the taxable sector. We propose an empirical estimation using our wealth composition series below.

### Empirical Estimation

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  $z = z(1 - \tau)^e$ , where  $\tau$  is the total tax rate (including income and wealth taxes) on profits,  $e$  is the supply side elasticity, and  $z$  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 wealth group (such as the top 1 per cent or the top 0.01 per cent), after the reform, we observe (1) exempt closely held stocks  $P_a z_a (1 - \tau_0)^e$  and (2) non-exempt closely held stock  $(1 - P_a) z_a (1 - \tau_1)^e$ . Before the reform, we observe (3) the total closely held stocks held by the top group  $P_b z_b (1 - \tau_0)^e + (1 - P_b) z_b (1 - \tau_0)^e$ , 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 per cent for the top 1 per cent wealth holders and 40 per cent for top 0.01 per cent holders. We assume that the wealth tax rate (when the business is taxable) is 0.8 per cent of the value of assets for the top 1 per cent and 1.3 per cent for the top 0.01 per cent.<sup>36</sup> We convert wealth tax rates into an implicit tax on profits assuming a return rate on assets equal to 5 per cent. Therefore, the total tax rates on profits for non-exempt businesses are 46 per cent and 66 per cent for the top 1 per cent and top 0.01 per cent 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  $z_a$  and  $z_b$  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 overestimate  $P_b$ , hence

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

underestimate 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 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 estimate 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 per cent. In that case,  $z_a = (1 + g) \cdot z_b$  where  $1 + g$  is taken as the ratio of other financial assets held by the top 1 per cent 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 10.1 presents those key parameters for the top 1 per cent (left panel) and for the top 0.01 per cent (right panel) for various choices for the pre-reform base year and the post-reform year.

With those two assumptions, we can estimate the behavioural parameters  $e$ ,  $P_a$  and  $P_b$  (Panel B) as well as evaluate the tax and efficiency consequences (Panel C). 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 two-thirds for the top 1 per cent. The shifting is even more extreme for the top 0.01 per cent and goes from 37 per cent exempt to over 80 per cent exempt. It is important to reiterate that this represents the pure shifting effect (controlling for the supply side effect).<sup>39</sup> Such a large shifting effect is not surprising in light of Figure 10.10 which showed a striking drop in taxable closely held wealth compensated by an increase in exempt 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

<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.

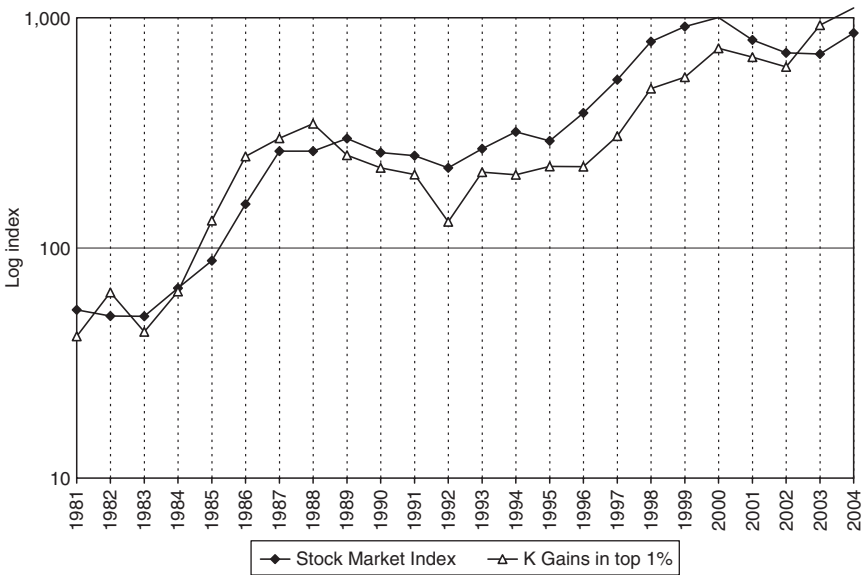
<sup>38</sup> For example from 1982 to 1993, among the top 1%, the (real) growth of other financial assets was 63% while the growth of closely held stocks was 44%. However from 1987 to 1993, closely held stock (in the top 1%) grew faster (36%) than other financial assets (16%).

<sup>39</sup> Such shifting effects are 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 unlikely 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.

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 behavioural 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 per cent wealth holders is larger than the loss in tax revenue assuming no behavioural response. When the supply side elasticity estimate is smaller, the loss in tax revenue with behavioural responses can be three to four times larger than with no behavioural responses. As our theoretical model showed, the difference between actual changes in tax revenue and predicted changes in tax revenue (absent the behavioural response) are a measure of the efficiency costs of the tax change.<sup>41</sup> The last row in Table 10.1 displays such an estimated change in total surplus due to the tax change.

Therefore, our estimates suggest that the wealth tax exemption was an inefficient way to provide tax relief: the welfare gain to taxpayers was substantially smaller than the loss in tax revenue because taxpayers dissipate resources to meet the tax exemption criteria, creating deadweight burden.



**Figure 10.11** Madrid stock market index and capital gains at the top, Spain, 1981–2004

*Notes:* 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.

*Sources:* Table 10C.2, Table 10D.7, and Madrid Stock Market Index from Globalfinance data and authors' computations.

<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.

Table 10.1 Estimating behavioural responses from the 1994 wealth tax exemption in Spain

	Top 1% wealth holders			Top 0.01% wealth holders		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Observed variables and assumptions</b>						
Before the reform (base year)	1993	1993	1990	1993	1993	1990
Imputed exempt closely held stock ( $E_b$ )	17,073	17,073	16,726	5,039	5,039	5,160
Imputed taxable closely held stock ( $T_b$ )	34,161	34,161	33,465	8,478	8,478	8,681
After the reform (post year)	2002	2001	2002	2002	2001	2002
Exempt closely held stock ( $E_a$ )	66,274	58,791	66,274	15,280	14,426	15,280
Taxable closely held stock ( $T_a$ )	26,942	27,668	26,942	4,615	4,753	4,615
Growth in other financial wealth from base year to post year (g)	56.9%	70.6%	73.1%	77.8%	102.0%	74.3%
Total tax rate on profits for non exempt closely held businesses ( $\tau_n$ )	46%	46%	46%	66%	66%	66%
Total tax rate on profits for exempt closely held businesses ( $\tau_e$ )	30%	30%	30%	40%	40%	40%
<b>B. Estimates of key behavioural 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 behavioural responses	183	199	198	99	113	100
Change in tax revenue including behavioural responses	201	421	328	286	389	289
Estimated change in total social surplus	18	222	130	187	276	189

Notes: All amounts are in millions of 2005 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%.

## APPENDIX 10A: THE INCOME AND WEALTH TAXES IN SPAIN

### 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>42</sup> Taxable income included income from real estate, capital, rural and mining activities, commercial and industrial business, labour, 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 per cent to 11 per cent (Table 10A.1). In 1933 there were only 1,446 tax returns and income tax collection represented 0.03 per cent of GDP and 0.35 per cent of total tax collections (Table 10A.2 and Table 10A.4). 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 repay 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 per cent for incomes above 1,000,000 pesetas. It also raised the taxes on lower incomes, with the minimum tax rate jumping from 1 per cent to 7.5 per cent. It introduced family deductions and a supplementary 30 per cent surtax for single individuals. The new law applied to 1941 incomes. From 1940 on, the income tax was based on family income.

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' (those which could not be explained by declared income flows) for audit purposes helped improve the inspection results, and had a positive impact on tax collection.

<sup>42</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 fifteenth century. At the time of the second republic, 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 1936–9 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).

By the mid 1960s the *Contribución* had been pushed down in the fiscal agenda.<sup>43</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>44</sup> Consequently, the personal income tax completely lost its autonomy. Theoretically there were no minimum thresholds to file; however, the usual obligation began at 200,000 300,000 pesetas. Tax rates ranged from 15 per cent to 61.4 per cent, with an average maximum rate of 50 per cent. 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 per cent with an average maximum rate of 40 per cent. 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.

### The Modern Income Tax

The modern income tax was established in 1979 (Law 44/1978), with two major reforms in 1991 and 1998. Albi Ibáñez (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 per cent; however the average tax rate could not exceed 46 per cent. In 1988 the tax scale was completely restructured downwards; the top marginal rate decreased from 66 per cent to 56 per cent, but the 46 per cent limit was eliminated (Table 10C.2, 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). The joint filer tax scale disappeared, so that the same scale has applied to everybody since that year. The reform also provided a general rate reduction in the marginal rates. The drops ranged from 2 per cent (from 20 per cent to 18 per cent for the bottom bracket) to 8 per cent (from 56 per cent to 48 per cent for the top bracket). It also reduced the number of brackets from eight to six and eliminated the 0 per cent rate for the lowest income.

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 2005, a distinction was made between short run (or 'regular', meaning assets held less than one year) capital gains

<sup>43</sup> A result of this diminishing relevance is the non existence of official detailed statistics about the individual income tax between 1961 and 1979.

<sup>44</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 status quo of the taxation scheme. See, for example, Albiñana (1969b) and Vallejo Pousada (1995), for details on how some private banks sketched income tax codes to be imposed to the government.

and long run (or ‘irregular’) capital gains. Short run capital gains are added to the main income and taxed according to the tax scale.

Since 1994, long run capital gains from assets purchased before 1994 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 up to 1996 (real estate, 5.26 per cent per year; stock: 11.11 per cent per year; 7.14 per cent per year for other assets). Finally, the tax was computed as the maximum of (a) adding 50 per cent 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 per cent of the irregular gains. Since 1996 the average tax rate affecting irregular capital gains could not exceed 20 per cent.

From 1997 to 1998, long run capital gains from assets held between one and two years continued to follow the rules described above. For those held more than two years, a 20 per cent rate was applied only to any amount beyond 200,000 pesetas. Since 1999 only gains for sales of assets held more than two years are considered ‘irregular’ and consequently taxed in a different way from the rest of income, at a 20 per cent rate (18 per cent for 2002 and 15 per cent since 2003). All capital gains (with the exception of the reductions mentioned above) are reported and thus included in our estimations, irrespective of whether they have been taxed based on the marginal tax scale or the flat tax rate.

We report in Table 10A.4 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).

### 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. Since 1988, married couples can file individually.

Concerning taxable wealth and valuation rules: (a) urban real estate was valued at property registry values, corrected by coefficients which depended upon the year of construction; (b) rural real estate value was the result of capitalizing at 4 per cent the amount fixed by the local real estate tax; (c) chequing, 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 per cent of wealth below 20 million pesetas and 5 per cent 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) chequing, savings accounts, and time deposits, valued at the highest of the final balance or the fourth quarter average balance; (c) bonds and traded stock, at the average of market price during the fourth 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 per cent;<sup>45</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 were not taxed. The top marginal rate was set at 2 per cent in 1977 and raised to 2.5 per cent in 1991; however, the wealth tax plus the income tax should not exceed 70 per cent of the taxable income (60 per cent since 2003). The main residence was exempted up to 25 million pesetas (150,253.03 euros) since 2000 (Law 6/2000).

Of particular importance for section 10.5 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 per cent of his total labour, business, and professional income from it;
  - (ii) the individual owns at least 20 per cent 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 per cent (Law 42/1994) for the individual, and set to 20 per cent 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 per cent (Law 51/2002).<sup>46</sup>

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

<sup>45</sup> Capitalization rate was raised to 20% in 1999 (Law 50/1998).

<sup>46</sup> In 1994 the fiscal authorities found it difficult to predict the results of the new exemptions (Memoria de la Administración Tributaria 1994: 124).



Table 10A.1 Income tax rates, Spain, 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 income exceeds 1,000,000: first 1,000,000 excess		7.70 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 income exceeds 1,000,000: first 1,000,000 excess		8.20 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

(continued)

**Table 10A.1** Income tax rates, Spain, 1933 1973

Income level (pesetas)		Tax rate (%)
from	to	
<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 10A.2 Total number of tax returns and inspections, Spain, 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 10A.3** Number of tax inspections, Spain, 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

Sources: Agencia Tributaria, Memoria de Actividades, several years.

**Table 10A.4** Structure of tax revenues, Spain, 1930-1979

National government tax receipts as % of GDP													
Direct taxes							Indirect taxes				Total taxes		
Entrepre- neurial income	Capital income	Wage income	Personal income	Corporate tax	Gifts and estate	Total (1) (7)	Customs (9)	Tax stamp (10)	Consumption (11)	Luxury (12)	Total (9) (12) (13)	Direct plus indirect taxes (14)	Total taxes
Rents (1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(14)
1930	1.08	0.60	0.39		0.36	3.63	1.70	1.04	0.98		3.72	7.35	
1931	1.12	0.60	0.40		0.40	3.77	1.51	0.99	1.03		3.53	7.30	
1932	1.21	0.66	0.41		0.32	3.80	1.66	1.08	1.16		3.91	7.70	
1933	1.31	0.69	0.43	0.03	0.37	4.12	1.50	1.19	1.08		3.76	7.88	
1934	1.20	0.62	0.44	0.04	0.27	3.82	1.37	1.04	0.94		3.36	7.18	
1935	1.22	0.61	0.47	0.04	0.31	3.91	1.32	1.11	0.94		3.37	7.28	
1936													
1937													
1938													
1939													
1940	0.99	0.51	0.52	0.04	0.19	3.95	0.47	0.85	0.97		2.29	6.24	
1941	1.12	0.82	0.62	0.06	0.61	4.71	0.48	0.93	1.44	0.79	3.64	8.34	
1942	1.25	0.74	0.66	0.15	0.71	4.92	0.71	0.51	1.64	0.71	3.57	8.49	
1943	1.19	0.71	0.75	0.17	0.75	4.91	1.01	0.94	2.10	0.81	4.85	9.76	
1944	1.07	0.63	0.72	0.18	0.71	4.41	0.81	0.85	1.96	0.81	4.44	8.85	
1945	1.15	0.67	0.81	0.19	0.85	4.92	0.53	0.83	1.82	0.88	4.06	8.98	
1946	0.81	0.43	0.73	0.18	0.74	3.92	0.62	0.84	1.67	0.49	3.63	7.55	
1947	0.86	0.44	0.77	0.17	0.80	4.26	0.68	0.91	1.76	0.43	3.77	8.04	
1948	0.83	0.42	0.81	0.18	0.87	4.28	0.69	0.88	2.02	0.42	4.00	8.28	
1949	0.81	0.40	0.86	0.19	1.01	4.53	0.54	0.89	2.73	0.41	4.56	9.09	
1950	0.79	0.30	0.78	0.17	0.97	3.96	0.46	0.79	2.10	0.42	3.77	7.73	
1951	0.65	0.34	0.73	0.13	0.88	3.67	0.37	0.72	1.89	0.41	3.39	7.06	
1952	0.64	0.34	0.75	0.15	1.12	3.98	0.43	0.79	2.26	0.41	3.88	7.87	
1953	0.68	0.35	0.87	0.18	1.34	4.38	0.45	0.79	2.30	0.44	3.98	8.36	
1954	0.68	0.30	0.81	0.17	1.14	4.03	0.42	0.57	2.10	0.44	3.54	7.57	
1955	0.72	0.30	0.71	0.10	1.21	4.10	0.44	0.59	2.20	0.49	3.72	7.81	
1956	0.62	0.24	0.67	0.11	1.18	3.90	0.57	0.59	2.02	0.48	3.67	7.56	

(continued)

Table 10A.4 Continued

National government tax receipts as % of GDP														
Direct taxes							Indirect taxes							
Entrepreneurial income			Wage income		Personal income		Corporate tax		Gifts and estate		Total		Total	
Rents (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Customs (9)	Tax stamp (10)	Consumption (11)	Luxury (12)	Total (9) (12) (13)	Direct plus indirect taxes (14)
1957	0.54	0.22	0.78	0.13	1.20	0.59	3.95	0.35	0.71	2.09	0.46	0.46	3.60	7.55
1958	0.48	0.32	0.74	0.13	1.15	0.63	3.94	0.48	0.68	1.81	0.73	0.73	3.70	7.64
1959	0.44	0.40	0.76	0.17	1.24	0.67	4.06	0.51	0.72	1.84	0.93	0.93	4.00	8.05
1960	0.50	0.42	0.87	0.18	1.20	0.68	4.26	1.09	0.73	2.02	1.05	1.05	4.88	9.14
1961	0.42	0.39	0.82	0.16	1.15	0.66	3.99	1.64	0.71	1.80	1.03	1.03	5.18	9.17
1962	0.40	0.49	0.38	0.16	1.12	0.66	4.02	1.87	0.69	1.66	1.03	1.03	5.25	9.27
1963	0.35	0.46	0.32	0.16	0.97	0.66	3.67	1.89	0.71	1.54	1.04	1.04	5.18	8.85
1964	0.33	0.46	0.31	0.16	0.88	0.65	3.52	2.08	0.87	1.37	1.17	1.17	5.50	9.02
1965	0.31	0.47	0.38	0.15	0.92	0.55	3.43	2.26	1.18	0.91	1.29	1.29	5.64	9.08
1966	0.25	0.45	0.32	0.14	0.96	0.56	3.50	2.53	1.32	0.77	1.34	1.34	5.96	9.45
1967	0.25	0.47	0.33	0.15	0.98	0.60	3.59	2.19	1.41	0.88	1.43	1.43	5.91	9.50
1968	0.22	0.48	0.34	0.16	0.92	0.60	3.46	1.96	1.44	0.85	1.43	1.43	5.67	9.13
1969	0.23	0.45	0.34	0.15	1.05	0.64	3.67	2.07	1.53	0.86	1.55	1.55	6.01	9.67
1970	0.26	0.46	0.36	0.14	1.02	0.66	3.78	2.05	0.44	0.89	1.57	1.57	4.95	8.74
1971	0.28	0.47	0.39	0.17	1.05	0.70	4.07	1.83	1.66	0.91	0.56	0.56	4.96	9.03
1972	0.29	0.43	0.38	0.16	1.05	0.75	4.15	2.08	1.64	0.84	1.55	1.55	6.12	10.26
1973	0.28	0.39	0.38	0.17	1.06	0.84	4.41	2.16	1.68	0.76	1.61	1.61	6.21	10.62
1974	0.30	0.38	0.33	0.13	1.05	0.85	4.45	2.00	1.73	0.64	1.42	1.42	5.79	10.24
1975	0.28	0.42	0.45	0.14	1.10	0.79	4.78	1.96	1.47	0.54	1.39	1.39	5.36	10.13
1976	0.25	0.37	0.68	0.178	1.12	0.74	5.08	1.71	1.33	0.45	1.39	1.39	4.88	9.96
1977	0.23	0.36	0.68	0.209	1.05	0.72	5.26	1.82	1.31	0.38	1.43	1.43	4.94	10.20
1978	0.22	0.32	0.73	0.22	0.92	0.74	5.87	1.45	1.29	0.45	1.46	1.46	4.64	10.51
1979	0.03	0.20	0.31	1.14	2.52	0.73	6.08	1.41	1.37	0.37	1.55	1.55	4.70	10.78

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. Source: Comin (1985).

**Table 10A.4 (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	1.00	1.28	1.28	2.83	6.39	12.03
1981	4.34	0.08	1.12	0.11	0.17	1.00	1.61	1.61	3.11	7.33	13.15
1982	4.24	0.07	1.09	0.08	0.11	1.10	1.18	1.18	2.86	6.32	11.90
1983	4.56	0.06	1.24	0.09	0.11	1.16	1.27	1.27	3.51	7.22	13.28
1984	4.84	0.03	1.25	0.03	0.09	1.11	1.59	1.59	3.21	7.51	13.75
1985	4.98	0.03	1.37	0.02	0.09	1.22	1.52	1.52	3.52	7.78	14.27
1986	4.67	0.03	1.57	0.02	0.07	0.79	4.17	1.38	2.07	8.41	14.77
1987	6.43	0.03	1.77	0.02	0.05	0.94	4.81	1.91	0.88	8.54	16.85
1988	6.25	0.04	1.95	0.00	0.05	0.92	4.93	1.86	0.82	8.53	16.82
1989	7.07	0.03	2.71	0.04	0.00	0.81	5.00	1.82	0.49	8.12	17.97
1990	6.67	0.04	2.76	0.03	0.00	0.65	4.79	1.90	0.45	7.79	17.27
1991	7.18	0.04	2.40	0.02	0.00	0.51	4.70	2.19	0.14	7.54	17.14
1992	7.54	0.04	2.05	0.00	0.00	0.34	5.07	2.35	0.22	7.98	17.60
1993	7.48	0.04	1.78	0.00	0.00	0.14	4.36	2.50	0.16	7.17	16.47
1994	7.25	0.04	1.61	0.00	0.00	0.14	4.73	2.68	0.15	7.70	16.61
1995	7.03	0.04	1.70	0.00	0.00	0.16	4.55	2.58	0.18	7.47	16.24
1996	6.68	0.04	1.75	0.00	0.00	0.13	4.60	2.62	0.14	7.48	15.95
1997	6.62	0.04	2.51	0.00	0.13	0.29	4.79	2.48	0.19	7.60	16.89
1998	5.57	0.04	2.59	0.00	0.00	0.15	4.86	2.67	0.24	7.93	16.13
1999	5.42	0.05	2.52	0.00	0.00	0.15	5.30	2.67	0.23	8.34	16.34
2000	5.27	0.05	2.73	0.00	0.00	0.15	5.30	2.56	0.23	8.24	16.29
2001	5.44	0.05	2.53	0.00	0.00	0.14	5.09	2.44	0.29	7.96	15.98
2002	4.57	0.00	2.94	0.00	0.00	0.13	4.76	2.22	0.24	7.35	14.87
2003	4.32	0.00	2.80	0.00	0.00	0.13	4.68	2.16	0.23	7.19	14.32
2004	3.79	0.00	3.10	0.00	0.00	0.15	4.68	2.09	0.22	7.14	14.03
2005	4.12	0.00	3.59	0.00	0.00	0.16	4.77	1.99	0.23	7.16	14.87

Note: Total tax receipts reduction in 2002 due to partial transfers of tax collections to Autonomous Regions.

Source: Instituto de Estudios Fiscales, BADESPE-Base de Datos Económicos del Sector Público Español.

## APPENDIX 10B: REFERENCES ON DATA SOURCES FOR SPAIN

### 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 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 covering total tax returns filed annually between 1963 and 1974 together with the distribution of tax returns by income brackets for 1971.

Much more detailed data describe the evolution of the income and wealth taxes between 1981 and 2005: 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, 1982-3, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006*.

### Wages and Salaries

Results displayed in Table 10D.12 are based on the panel of individual income tax returns 1982-98 (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 return. Therefore, Table 10D.12 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 1982-7 along the same lines as explained in Appendix 10A.

Table 10B.1 summarizes the references on data sources for Spain.



**Table 10B.1** Data sources, Spain

Author	Title	Year (if applicable)
<b>A. Income and wealth numerators</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 89	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, 2006
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

(continued)

**Table 10B.1** Continued

Author	Title	Year (if applicable)
<b>B. Income and Wealth Denominators</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 Prelimi- nares	
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	

C. Other

Comín, Francisco (1985), Monografía n.40, Instituto de Estudios Fiscales	Fuentes Cuantitativas para el Estudio del Sector Público en España 1801 1980	1982 1998
Instituto de Estudios Fiscales	Panel IRPF AEAT 1982 1998	2002
Instituto de Estudios Fiscales	Muestra de Declarantes de IRPF 2002	
Instituto de Estudios Fiscales	Base de Datos del Sector Público Español	1987
Ministerio de Economía y Hacienda, Dirección General de Inspección Financiera y Tributaria	Memoria de las Actuaciones de la Inspección de los Tributos durante 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>	

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## APPENDIX 10C: WEALTH AND INCOME DENOMINATORS

### 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 Espana (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 Espana (2004), *Encuesta financiera de las familias (EEF): descripción, métodos y resultados preliminares*, Boletín Económico 11/2004.
- (c) Banco de Espana, *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 fourth quarter between 1987 and 2005.
- (d) Ministerio de Economía y Hacienda, Dirección General de Catastro, *Estadísticas catastrales 1990-2005*.
- (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 versión 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 fourth quarter, covering the period 1989-2005.

In order to estimate the financial wealth for the period 1982-8, we proceeded in the following way. The GDP shares of deposits and currency holdings, insurance contracts net of pensions, other fixed claim assets, and debts were rather stable for the first years for which data exist (1989-92); consequently we fixed the ratios for 1982-8 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 1986-8, we applied the 1989 stock and investment funds/GDP ratio corrected by the evolution of the stock market index during the fourth quarter (highest minus lowest values). For 1982-5 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 per cent 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 per cent 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 per cent to 45 per cent. 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. Real estate wealth is taken from Banco de España, *Indicadores del mercado de la vivienda*. Data correspond to the fourth quarter and cover years 1987 to 2005. 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 1982–6 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.

Results are displayed in Table 10C.1.

### Total Number of Individuals

For the period 1933–71, the total number of adult 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 10D.3, column 1. Column 2 indicates the total number of tax returns (with positive taxable income) actually filed and column 3 reports the fraction of adult population filling a tax return.

For the period 1982–2005, 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 10C.2, 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*.

### **Total Income Denominator**

For the period 1981–2005 total income is defined as wages and salaries from National Accounts net of social contributions plus 50 per cent of social transfers, plus 66.6 per cent of unincorporated business income (excluding Navarra and País Vasco), plus all non business, non labour income reported on tax returns (as capital income is very concentrated, non filers receive a negligible fraction of it).<sup>47</sup> The total denominator series expressed in 2005 euros is reported in column 4 of Table 10C.2. The average income per adult is reported in column 7 while the CPI index (base 100 in year 2005) is reported in column 8.

For the period 1933–71, we use as denominator 66 per cent of the Spanish GDP from Prados de la Escosura (2003). The number 66 per cent is chosen to be consistent with our denominator for the recent period, which fluctuates between 63 per cent and 69 per cent of Spanish GDP (excluding País Vasco and Navarra). Our denominator for the 1933–71 period is reported in Table 10D.3, column 4, converted to euros 2005.

Table 10C.3 gives thresholds and average incomes for a selection of fractiles for Spain in 2005.

<sup>47</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.

**Table 10C.1** Aggregate net worth and composition, Spain, 1981-2005

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 ('000s)	Number of wealth tax returns ('000s)	(2)/(1) (%)	Total net financial wealth (millions euros) 2005	Average (2005) euros	Total net wealth (millions euros) 2005	Average (2005) euros	Real estate	Mortgage debt	Fixed claim assets	Stocks	Other	Other debts	CPI (2005 base)	Top marginal tax rate (%)		
1981	22,857	509	355,939	15,572	1,185,193	51,853	78.8	8.8	24.6	5.4	4.3	4.3	27.520	2.5		
1982	23,242	492	358,404	15,421	1,193,403	51,347	78.8	8.8	24.6	5.4	4.3	4.3	31.430	2.5		
1983	23,635	541	361,581	15,299	1,203,985	50,941	78.8	8.8	24.6	5.4	4.3	4.3	35.478	2.5		
1984	24,036	535	369,319	15,365	1,229,746	51,163	78.8	8.8	24.6	5.4	4.3	4.3	39.192	2.5		
1985	24,445	675	377,370	15,438	1,256,554	51,403	78.8	8.8	24.6	5.4	4.3	4.3	42.619	2.5		
1986	24,760	781	397,317	16,047	1,322,975	53,432	78.8	8.8	24.6	5.4	4.3	4.3	46.344	2.5		
1987	25,082	887	451,211	17,989	1,434,261	57,183	77.2	8.6	24.1	7.3	4.2	4.3	48.797	2.5		
1988	25,410	756	486,116	19,131	1,667,419	65,621	78.7	7.9	22.0	7.2	3.9	3.9	51.321	2.5		
1989	25,745	855	522,796	20,307	1,913,817	74,337	79.9	7.2	20.1	7.2	3.5	3.6	54.733	2.5		
1990	26,087	974	501,006	19,205	2,004,679	76,846	82.2	7.1	20.4	4.8	3.5	3.7	58.355	2.5		
1991	26,335	1,033	533,012	20,240	2,245,462	85,265	83.0	6.7	18.0	5.6	3.5	3.4	61.885	2.5		
1992	26,673	863	543,866	20,390	2,036,398	76,347	80.8	7.5	20.0	6.6	4.0	3.9	65.430	2.5		
1993	27,015	928	594,877	22,020	2,054,749	76,060	78.5	7.4	20.0	9.0	3.9	3.9	68.554	2.5		
1994	27,360	809	617,783	22,580	2,038,419	74,504	77.2	7.5	20.2	9.6	4.3	3.8	71.725	2.5		
1995	27,710	783	676,770	24,423	2,099,024	75,750	75.2	7.5	20.4	11.1	4.3	3.6	74.849	2.5		
1996	28,114	825	720,276	25,620	2,126,008	75,621	73.9	7.8	19.6	13.4	4.3	3.5	77.533	2.5		
1997	28,523	892	806,550	28,277	2,216,794	77,720	72.0	8.4	18.2	17.5	4.0	3.3	79.380	2.5		
1998	28,938	946	943,218	32,594	2,430,104	83,976	70.2	9.0	16.8	20.9	4.1	3.1	80.657	2.5		
1999	29,359	981	1,016,100	34,609	2,675,884	91,144	71.6	9.6	16.7	19.9	4.4	3.0	82.549	2.5		
2000	29,785	869	988,226	33,179	2,875,706	96,549	75.7	10.1	16.6	16.0	4.6	2.8	85.365	2.5		
2001	30,016	874	1,014,583	33,801	3,185,046	106,112	78.1	9.9	15.4	14.6	4.3	2.5	88.093	2.5		
2002	30,249	884	951,132	31,443	3,540,482	117,045	83.2	10.0	14.3	10.7	4.2	2.3	90.997	2.5		
2003	30,482	896	1,067,223	35,012	4,131,688	135,545	84.1	10.0	12.8	11.4	3.8	2.1	93.726	2.5		
2004	30,718	920	1,134,082	36,919	4,548,341	148,068	85.6	10.5	12.2	11.0	3.6	2.0	96.718	2.5		
2005	30,956	957	1,260,976	40,734	5,057,193	163,367	86.0	11.3	11.3	12.1	3.3	1.5	100.000	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 País Vasco and Navarra).

Total wealth from flow of funds accounts and other sources (see Appendix 10C).

Consumer Price Index is the official CPI index.

**Table 10C.2** Reference totals for population, income, and inflation, Spain, 1981-2005

	Tax units and population			Total income			Inflation		Taxes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Adults ('000s)	Number of tax returns ('000s)	(2)/(1) (%)	Total income (millions 2005 euros)	Fraction income reported by tax filers (%)	Total income over GDP (%)	Average income (2005 euros)	CPI (2005 base)	Top marginal tax rate (%)	
1981	22,857	6,296	27.5	233,100	57.8	66.6	27.520	65.09	
1982	23,242	6,262	26.9	228,102	56.7	64.8	31.430	68.47	
1983	23,635	6,397	27.1	228,265	57.1	64.2	35.478	65	
1984	24,036	6,544	27.2	227,461	57.6	62.5	39.192	66	
1985	24,445	7,081	29.0	235,919	59.6	63.3	42.619	66	
1986	24,760	7,896	31.9	247,654	63.1	63.0	46.344	66	
1987	25,082	8,028	32.0	263,460	62.9	62.8	48.797	66	
1988	25,410	8,954	35.2	282,355	63.2	63.4	51.321	56	
1989	25,745	9,845	38.2	296,630	66.4	63.4	54.733	56	
1990	26,087	10,965	42.0	321,435	69.1	65.5	58.355	56	
1991	26,335	11,584	44.0	338,398	69.3	66.7	61.885	56	
1992	26,673	12,341	46.3	341,899	71.3	66.1	65.430	56	
1993	27,015	12,794	47.4	344,919	70.8	67.6	68.554	56	
1994	27,360	13,578	49.6	335,863	74.6	64.9	71.725	56	
1995	27,710	14,119	51.0	344,003	74.8	64.2	74.849	56	
1996	28,114	14,620	52.0	350,314	75.2	63.9	77.533	56	
1997	28,523	15,000	52.6	357,467	75.0	62.7	79.380	56	
1998	28,938	15,424	53.3	375,971	75.5	62.8	80.657	56	
1999	29,359	13,797	47.0	393,751	71.5	62.8	82.549	48	
2000	29,785	14,123	47.4	409,661	72.5	62.8	85.365	48	
2001	30,016	14,734	49.1	421,513	73.6	62.4	88.093	48	
2002	30,249	15,410	50.9	432,030	73.9	62.2	90.997	48	
2003	30,482	15,978	52.4	448,816	74.6	61.7	93.726	45	
2004	30,718	16,465	53.6	465,376	74.9	61.7	96.718	45	
2005	30,956	17,105	55.3	486,108	76.2	62.0	100.000	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 País 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 País Vasco), plus all non-business, non-labour income reported on tax returns.

Consumer Price Index is the official CPI index (see Appendix 10C for details).



**Table 10C.3** Thresholds and average incomes in top income groups in Spain, 2005

Percentile threshold (1)	Income threshold		Income groups		Number of adults (aged 20+)		Average income in each group	
	(2)		(3)		(4)		(5)	
<b>A. Income including realized capital gains</b>								
Top 10%	29,471 €		Full Adult Population		30,956,000		15,703 €	
Top 5%	39,576 €		Top 10 5%		1,547,800		33,666 €	
Top 1%	79,609 €		Top 5 1%		1,238,240		52,561 €	
Top 0.5%	109,520 €		Top 1 0.5%		154,780		91,951 €	
Top 0.1%	261,709 €		Top 0.5 0.1%		123,824		153,837 €	
Top 0.01%	1,063,140 €		Top 0.1 0.01%		27,860		446,709 €	
			Top 0.01%		3,096		2,528,354 €	
<b>B. Income excluding realized capital gains</b>								
Top 10%	28,806 €		Top 10 5%		1,547,800		32,906 €	
Top 5%	38,100 €		Top 5 1%		1,238,240		49,827 €	
Top 1%	73,259 €		Top 1 0.5%		154,780		82,065 €	
Top 0.5%	94,069 €		Top 0.5 0.1%		123,824		126,971 €	
Top 0.1%	192,743 €		Top 0.1 0.01%		27,860		289,289 €	
Top 0.01%	618,110 €		Top 0.01%		3,096		1,302,608 €	

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 2005 euros.

Column (2) reports the income thresholds corresponding to each of the percentiles in column (1). For example, an annual income of at least 29,471 euros (including realized capital gains) is required to belong to the top 10% tax units, etc.

## APPENDIX 10D: ESTIMATING TOP SHARES

### Basic Pareto Interpolation

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

The first step consists then in estimating the income thresholds corresponding to each of the percentiles P90, P95, P99, . . . , P99.99 that define our top income groups. For each percentile  $p$ , we look first for the published income bracket  $[s, t]$  containing the percentile  $p$ . We estimate then the parameters  $a$  and  $k$  of the Pareto distribution by solving the two equations:  $k = s p^{(1/a)}$  and  $k = t q^{(1/a)}$  where  $p$  is the fraction of tax returns above  $s$  and  $q$  the fraction of tax returns above  $t$ .<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 10C.2, column 4). Average incomes and income shares for intermediate fractiles (P90-5, P95-9, etc.) are obtained by subtraction.

### Adjustments to Raw Pareto Interpolations

*Period 1933-1971:* 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

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

tax filers by assuming that, in each bracket, average income per current year taxpayer in 1935 and 1940 is the same as in 1934. Our estimates are slightly overestimated 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 per cent of tax returns were reported separately and only in the aggregate. As the average income for those 14 per cent returns is extremely close to the average for remaining returns, we assume that those 14 per cent 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 bracket by bracket. The average number of children is fairly stable over time 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 tax payers: 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 per cent of labour 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 per cent of reported incomes each within the top 0.1 per cent. We assume that the level of deductions is the same as in 1958 in years 1954-7 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, labour income, etc.) before the extraordinary deductions and the deductions for dependent children. However, the deduction for labour income has been netted out of the labour income component. Because there is no information of labour income by brackets, we assume that the fraction of labour income within the top 0.1 per cent is 20 per cent (which was the corresponding number in 1961, the closest year where this information is available). The labour income deduction is also about 5 per cent of total income in the top 0.1 per cent in 1971.

*Period 1981-2005:* Exclusions from the income tax: Statistics are presented by brackets of income net of the labour income 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.

*Series excluding capital gains:* Since 1981, capital gains are included in taxable income (see Appendix 10A 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 per cent 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 per cent of capital gains amounts instead of 100 per cent 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.

*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 1988, 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 2005, 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 incomes 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 1981–7 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 per cent.

The estimates of top income shares between 1981 and 2005 are presented in Table 10D.1 (including capital gains) and Table 10D.2 (excluding capital gains). Table 10D.3 reports top shares between 1933 and 1971. Top income levels for a selection of fractiles between 1981 and 2005 are displayed in Table 10D.4 (including capital gains) and Table 10D.5 (excluding capital gains).

*Top wealth shares estimation:* Top wealth shares for the period 1982–2005 are also estimated using the same Pareto interpolation technique. The wealth tax has always been assessed at the individual level except for married couples with joint tenancy before 1988. There is no

specific breakdown of amounts reported by each spouse on family tax returns. Therefore, we simply assume that the (log) growth of each top wealth share from 1987 to 1988 (when the law changes) is equal to the average (log) growth between 1986 to 1987 and 1988 to 1989. We then correct top income shares for each year from 1981 to 1987 by the same multiplicative factor.

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. Our initial estimates did not correctly adjust for the real estate deduction since 2000. We thank Durán and Esteller (2007) for pointing out this mistake.

We estimate two top wealth shares series: series excluding real estate and series including 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. Results are presented in Table 10D.8.

*Estimation of wealth and income composition series:* We have constructed income and wealth composition series for each of our top groups for the period 1981–2005 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 10D.7 indicate for each upper income group the fraction of total income (including capital gains) that comes from the various types of income. We consider four 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 makes more than 5 per cent 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 10D.9 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, chequing 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 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.

### **Estimating Top Shares from Individual Income Tax Panel**

We also computed top income shares with and without capital gains (Tables 10D.10 and 10D.11) and top wage shares (Table 10D.12) using the micro data from the panel of income tax returns 1982–98 (*Panel IRPF AEAT*) and the 2002 sample of income tax files (*Muestra de declarantes de IRPF 2002*). The panel is composed of approximately 2 per cent 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 identify 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.

**Table 10D.1 Top income shares in Spain (including capital gains), 1981–2005**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 10 5%	Top 5 1%	Top 1 0.5%	Top 0.5 0.1%	Top 0.1 0.01%	Top 0.01%
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
2005	35.12	24.41	11.02	8.09	4.17	1.61	10.72	13.39	2.93	3.92	2.56	1.61

*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 10D.2 Top income shares in Spain (excluding capital gains), 1981-2005**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 10 5%	Top 5 1%	Top 1 0.5%	Top 0.5 0.1%	Top 0.1 0.01%	Top 0.01%
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
2005	33.21	22.17	8.79	6.03	2.62	0.87	11.05	13.38	2.76	3.41	1.75	0.87

*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 10D.3 Top income shares in Spain from older income tax statistics, 1933-1971

Total number of tax units ('000s) (1)	Tax returns (2)	Fraction filing (%) (2)/(1) (3)	Total income (mns of euros) (4)	Fraction of income reported		CPI (base 2005) (6)	Top 0.1% (7)	Top 0.05% (8)	Top 0.01% (9)	Top 0.1 (10)	Top 0.05 (11)	Top 0.01% (12)
				on tax returns (%) (5)	on tax returns (%) (5)							
1933	14,488	1,446	38,930	1.412	56.538	1.41						1.41
1934	14,652	1,792	41,731	1.539	58.117	1.40						1.40
1935	14,818	2,465	42,961	1.984	58.343	1.53						1.53
1940	15,677	3,222	33,423	1.823	101.037	1.31						1.31
1941	15,892	5,231	27,622	2.371	135.103	1.38						1.38
1942	16,110	5,123	30,314	2.013	144.440	1.21						1.21
1943	16,331	5,538	32,822	2.086	143.603	1.16						1.16
1944	16,555	5,849	36,296	1.943	149.978	1.06						1.06
1945	16,782	6,629	33,670	2.194	160.410	1.12						1.12
1946	17,012	8,223	32,459	2.233	210.510	1.04						1.04
1947	17,245	7,983	32,049	1.805	247.731	0.86						0.86
1948	17,481	9,067	32,411	1.864	264.410	0.82					1.01	0.82
1949	17,721	10,111	32,962	1.930	278.706	0.81					1.01	0.81
1950	17,964	12,419	36,689	1.886	308.971	0.70					0.93	0.70
1951	18,134	13,597	42,679	1.690	338.078	0.62					0.80	0.62
1952	18,307	15,427	47,876	1.820	331.381	0.64					0.81	0.64
1953	18,481	16,545	50,928	1.833	336.726	0.63					0.80	0.63
1954	18,657	21,332	58,189	2.812	340.912	0.73			0.81		1.09	0.73
1955	18,834	26,716	60,426	3.308	354.628	0.74			0.87		1.16	0.74
1957	19,194	41,637	74,399	3.460	415.869	0.60			0.73		0.94	0.60
1958	19,377	48,921	78,059	3.490	470.798	0.56			0.68		0.89	0.56
1959	19,561	54,143	76,158	3.805	505.572	0.60			0.71		0.92	0.60
1961	19,950	38,520	87,866	2.617	523.925	0.52			0.59		0.77	0.52
1971	22,129	338,989	173,630	7.200	1,018.48	0.51			0.62		0.73	0.51

Sources: 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 2005 are equivalent to 56,538 Ptas in 1933, ..., 1,018.48 Ptas in 1971.

Total income is defined as 66% of GDP (expressed in millions of 2005 euros). Navarra is excluded since 1937. Alava is excluded since 1943.

**Table 10D.4** Top fractiles income levels (including capital gains) in Spain, 1981–2005 (fractiles are defined by total income including capital gains) (incomes are expressed in euros 2005)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	P90	100	P99	100	P99.5	100	P99.9	100	P99.99	100	P99.99	99.99	P99.9	P99.9	P99.5	P99.9	P99.99
1981	33,348	43,328	77,812	101,660	198,145	565,432	23,368	34,724	53,964	77,528	157,328	19,961	27,102	49,247	61,870	111,095	301,181
1982	32,489	42,605	78,058	103,357	211,073	642,896	22,392	33,732	52,759	76,432	163,095	19,199	26,274	48,150	60,637	111,044	334,528
1983	32,255	42,148	75,250	97,849	190,920	573,726	22,378	33,881	52,651	74,589	148,382	18,872	26,224	48,264	60,156	105,184	289,972
1984	31,897	41,619	73,930	95,997	188,145	589,140	22,174	33,553	51,863	72,964	143,582	18,663	25,947	47,661	59,070	102,192	278,698
1985	32,871	43,293	78,364	102,577	203,560	593,984	22,450	34,521	54,151	77,335	160,169	19,009	26,455	49,582	62,034	110,220	320,648
1986	35,157	46,907	88,808	119,478	259,200	925,640	23,408	36,428	54,554	84,554	185,151	19,725	27,791	52,924	66,956	124,017	383,270
1987	37,147	49,846	96,144	131,000	298,372	1,182,611	24,461	38,268	61,288	89,148	200,122	20,557	29,055	55,807	70,562	131,173	442,391
1988	39,641	53,132	102,084	138,669	312,283	1,198,996	26,150	40,894	65,499	95,268	213,759	22,262	31,397	58,508	74,997	141,749	473,424
1989	41,607	55,377	103,813	138,634	291,652	939,085	27,826	43,265	68,993	100,376	219,705	23,642	33,393	61,669	79,018	148,615	456,914
1990	43,999	58,181	108,462	144,097	297,711	900,178	29,816	45,616	72,837	105,691	230,766	25,501	35,502	65,133	83,249	156,559	469,606
1991	44,937	59,028	108,840	143,453	290,024	854,796	30,835	46,578	74,227	106,811	227,266	26,581	36,478	66,468	84,668	156,865	452,765
1992	43,769	57,686	107,949	141,899	281,557	792,809	29,853	45,110	74,008	106,985	224,753	26,105	34,823	66,182	84,599	157,349	435,866
1993	42,949	56,459	104,940	137,369	268,146	731,050	29,439	44,343	72,511	104,669	216,719	25,687	34,296	64,849	82,865	153,264	412,336
1994	41,738	54,743	101,525	132,855	259,736	708,788	28,733	43,045	70,194	101,131	209,845	25,147	33,392	62,820	80,216	147,377	416,716
1995	42,003	55,188	102,891	135,154	265,539	725,979	28,816	43,256	70,628	102,554	214,399	25,213	33,500	63,161	80,882	150,266	417,997
1996	42,200	55,495	103,703	136,895	271,271	750,111	28,906	43,441	70,502	103,299	218,071	25,209	33,673	63,239	81,036	152,050	428,856
1997	42,437	56,179	107,135	142,743	292,209	840,481	28,695	43,444	71,527	105,379	231,290	25,016	33,450	63,758	82,255	156,659	484,014
1998	44,478	59,403	116,123	156,868	332,081	1,049,915	29,552	45,223	75,379	113,068	252,320	25,722	34,537	66,959	87,115	170,757	523,501
1999	46,649	62,735	126,935	175,605	398,817	1,405,418	30,564	46,685	78,263	119,803	286,973	26,292	35,620	69,544	90,791	184,685	639,018
2000	48,480	65,735	136,893	192,673	456,747	1,718,116	31,225	47,946	81,115	126,653	316,596	26,888	36,474	71,685	95,015	198,734	728,415
2001	49,034	66,574	137,941	193,933	458,104	1,699,663	31,695	48,482	81,949	127,891	320,154	27,387	36,947	72,445	95,937	200,888	731,428
2002	48,890	65,940	135,101	188,170	429,702	1,447,816	31,840	48,651	82,031	127,871	316,579	27,571	37,123	72,508	95,842	200,843	707,321
2003	50,753	69,053	146,674	208,855	504,369	1,825,173	32,454	49,647	84,493	134,977	357,613	28,484	37,947	73,968	99,491	219,140	833,392
2004	52,100	71,354	154,504	222,194	546,431	1,962,813	32,846	50,567	86,814	141,134	389,056	28,836	38,477	75,818	102,719	233,586	903,130
2005	55,157	76,648	172,998	254,044	654,873	2,528,354	33,666	52,561	91,951	153,837	446,709	29,471	39,576	79,609	109,520	261,709	1,063,140

Notes: P99 denotes the income threshold required to belong to the top 1% of tax units; P99–100 is the average income of the top 1%; P99–99.5 denotes the average income in the bottom half of the top percentile.

Sources: Authors' computations based on tax statistics.

**Table 10D.5** Top fractiles income levels (excluding capital gains) in Spain, 1981–2005 (fractiles are defined by total income excluding capital gains) (incomes are expressed in euros 2005)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	P90	100	P95	100	P99	100	P99.5	100	P99.9	100	P99.9	99.9	P99.5	99.9	P99.9	P99.5	P99.9
1981	33,195	43,001	76,371	99,214	190,239	527,039	23,368	34,658	53,549	76,458	152,807	19,961	27,080	49,007	61,215	108,736	286,614
1982	32,279	42,108	75,878	99,398	196,158	569,256	22,431	33,655	52,376	75,189	154,700	19,237	26,274	47,921	59,930	107,296	306,762
1983	32,119	41,826	73,810	95,291	181,383	526,394	22,412	33,830	52,329	73,579	143,046	18,906	26,241	48,077	59,648	102,694	272,794
1984	31,651	41,128	71,798	92,194	174,144	506,852	22,174	33,461	51,418	71,706	137,187	18,663	25,916	47,400	58,319	99,033	253,012
1985	32,237	42,122	74,077	95,427	181,871	510,402	22,366	34,126	52,727	73,823	145,376	18,939	26,258	48,651	59,806	102,619	283,278
1986	34,094	44,910	80,819	105,459	212,034	664,464	23,291	35,923	56,166	78,822	161,768	19,621	27,532	51,666	63,558	111,970	304,992
1987	35,965	47,567	86,709	113,929	233,056	798,503	24,350	37,788	59,490	84,135	170,241	20,458	28,809	54,625	67,532	117,686	337,514
1988	38,224	50,474	91,181	118,994	236,970	756,137	25,963	40,297	63,368	89,495	179,282	22,110	31,057	57,137	71,507	126,021	347,813
1989	40,421	53,246	95,951	125,116	247,663	740,375	27,606	42,562	66,797	94,468	192,923	23,455	32,987	60,186	75,439	135,186	380,718
1990	42,958	56,306	101,644	132,459	260,335	749,891	29,610	44,977	70,818	100,490	205,934	25,326	35,131	63,783	80,046	144,283	405,143
1991	43,897	57,183	102,508	132,867	257,781	728,561	30,602	45,859	72,149	101,644	205,473	26,377	36,050	65,021	81,443	145,551	397,621
1992	43,016	56,427	104,018	135,423	261,560	715,044	29,605	44,532	72,603	103,889	211,177	25,885	34,446	65,126	82,569	150,322	401,328
1993	41,827	54,469	98,619	127,471	241,556	638,760	29,194	43,431	69,767	98,953	197,423	25,477	33,805	62,955	79,034	142,253	367,949
1994	40,573	52,765	95,450	123,403	235,604	616,531	28,381	42,090	67,496	95,349	193,271	24,837	32,814	60,918	76,378	137,338	373,151
1995	40,782	53,068	96,363	125,093	239,828	625,989	28,505	42,244	67,625	96,412	196,926	24,940	32,921	61,073	76,739	139,635	372,221
1996	41,053	53,487	97,292	126,555	242,520	627,153	28,612	42,541	68,021	97,563	199,785	24,953	33,146	61,463	77,362	141,453	375,726
1997	40,870	53,469	98,541	129,023	253,527	670,300	28,279	42,195	68,059	97,898	207,220	24,660	32,723	61,298	77,341	142,947	409,822
1998	41,914	55,021	102,673	135,452	272,179	759,383	28,815	43,107	69,894	101,272	218,044	25,082	33,300	62,957	79,395	150,251	415,514
1999	44,077	58,298	111,890	150,186	313,404	959,844	29,856	44,899	73,593	109,385	254,362	25,684	34,527	66,140	84,134	162,042	487,163
2000	45,323	60,152	117,445	159,002	340,265	1,113,476	30,493	45,905	75,287	113,684	254,365	26,258	35,271	67,585	86,738	169,027	528,656
2001	46,441	61,670	120,052	162,514	342,709	1,110,763	31,211	47,074	77,589	117,464	257,378	26,968	36,129	69,466	89,474	173,005	533,007
2002	46,497	61,604	118,912	160,006	332,102	960,654	31,389	47,277	77,818	116,981	262,254	27,181	36,336	69,622	89,329	175,119	527,634
2003	47,396	62,839	122,294	165,636	348,542	1,038,889	31,953	47,975	78,951	119,914	271,843	28,045	37,014	70,296	90,676	180,632	553,939
2004	48,182	64,076	125,767	171,305	362,629	1,099,961	32,289	48,653	80,230	123,476	280,712	28,347	37,422	71,508	92,398	186,448	578,871
2005	49,472	66,039	130,884	179,703	390,620	1,302,608	32,906	49,827	82,065	126,971	289,289	28,806	38,100	73,259	94,069	192,743	618,110

Notes: P99 denotes the income threshold required to belong to the top 1% of tax units; P99–100 is the average income of the top 1%; P99–99.5 denotes the average income in the bottom half of the top percentile.

Sources: Authors' computations based on tax statistics.

**Table 10D.6** Composition of top incomes under old income tax, Spain

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	

Notes: 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%.

Sources: Official income tax statistics.

**Table 10D.7** Income composition in top income groups, Spain, 1981–2005

	Top 10%				Top 5%				Top 1%				Top 0.5%				Top 0.1%							
	Wage		K gains		Wage		K gains		Wage		K gains		Wage		K gains		Wage		K gains					
	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital	Entrep.	Capital				
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
2005	69.9	9.6	7.6	12.9	62.7	11.2	8.8	17.3	44.1	14.4	11.1	30.4	36.8	14.9	11.7	36.6	23.2	15.4	11.0	50.4	15.9	14.7	8.9	60.6

*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 10D.

*Sources:* Computations based on tax return statistics.

**Table 10D.7 (continued) Income composition in top income groups, Spain 1981–2005**

	Top 10–5%			Top 5–1%			Top 1–0.5%			Top 0.5–0.1%			Top 0.1–0.01%			Top 0.01%								
	Wage	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
2005	86.3	6.0	4.9	2.8	78.0	8.6	6.9	6.5	64.1	12.8	9.7	13.4	51.3	14.4	12.4	21.8	27.8	15.9	12.3	44.1	15.9	14.7	8.9	60.6

*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 10D.

*Sources:* Computations based on tax return statistics.

Table 10D.8 Top wealth shares in Spain, 1982–2005

	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 1	Top 0.5	Top 0.1	Top 0.01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>A. Top wealth shares including real estate</b>								
1982	18.43	14.37	7.48	2.48	4.06	6.89	5.01	2.48
1983	18.07	14.00	7.39	2.57	4.08	6.61	4.82	2.57
1984	17.54	13.55	7.07	2.36	3.99	6.48	4.71	2.36
1985	17.78	13.58	6.95	2.27	4.20	6.63	4.67	2.27
1986	18.16	13.83	7.10	2.44	4.33	6.74	4.65	2.44
1987	17.71	13.38	6.71	2.21	4.33	6.67	4.50	2.21
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	18.58	13.21	5.64	1.62	5.38	7.57	4.02	1.62
2001	18.54	13.12	5.59	1.64	5.42	7.54	3.95	1.64
2002	20.02	14.20	5.97	1.62	5.82	8.23	4.35	1.62
2003	19.37	13.37	5.42	1.47	5.99	7.95	3.96	1.47
2004	19.39	13.37	5.43	1.47	6.02	7.94	3.96	1.47
2005	19.68	13.51	5.41	1.41	6.17	8.10	4.00	1.41
<b>B. Top financial wealth shares (excluding real estate)</b>								
1982	24.95	21.12	12.43	5.15	3.82	8.70	7.28	5.15
1983	25.34	21.11	12.59	5.65	4.23	8.51	6.95	5.65
1984	23.53	19.50	11.52	5.02	4.03	7.98	6.51	5.02
1985	23.92	19.56	11.30	4.80	4.36	8.26	6.50	4.80
1986	25.61	20.85	12.10	5.29	4.76	8.75	6.81	5.29
1987	24.97	20.26	11.78	5.02	4.70	8.48	6.76	5.02
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	22.72	18.07	9.72	3.70	4.65	8.35	6.02	3.70
2001	23.17	18.45	10.05	3.99	4.72	8.40	6.05	3.99
2002	24.17	19.31	10.48	4.07	4.86	8.83	6.41	4.07
2003	23.30	18.74	10.16	3.95	4.55	8.58	6.21	3.95
2004	23.88	19.24	10.51	4.19	4.64	8.73	6.32	4.19
2005	24.98	19.95	10.60	4.03	5.04	9.35	6.57	4.03

Sources: Computations by authors on wealth tax return statistics. See details in Appendix 10D.

**Table 10D.9** Composition in top wealth groups, Spain, 1982-2005

	Top 1 0.5%						Top 0.5 0.1%						Top 0.1 0.01%						Top 0.01%					
	Real estate			Business			Real estate			Business			Real estate			Business			Real estate			Business		
	claim	Fixed	Stock	Other	Debits	Stock	Other	Debits	Stock	Other	Debits	Stock	Other	Debits	Stock	Other	Debits	Stock	Other	Debits	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	33.0	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	35.0	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	67.6	1.5	10.0	21.0	1.6	1.7	60.2	1.5	8.8	29.1	2.2	1.8	47.5	1.2	8.0	42.3	3.0	2.0	21.2	0.7	8.5	67.5	4.9	2.8
2001	69.7	1.4	9.9	19.1	1.5	1.6	62.7	1.5	8.7	26.6	2.1	1.7	50.1	1.3	8.0	39.7	2.9	2.0	22.3	0.6	7.2	67.9	4.3	2.4
2002	74.9	1.2	8.7	15.3	1.3	1.4	69.3	1.2	7.5	21.7	1.8	1.5	59.1	1.1	6.7	32.3	2.4	1.6	32.4	0.7	6.3	59.0	3.6	2.0
2003	77.7	1.1	7.3	14.2	1.1	1.4	70.4	1.2	6.8	21.5	1.7	1.5	58.6	1.2	6.5	32.9	2.4	1.7	30.1	0.6	5.6	61.8	3.7	1.8
2004	78.3	1.0	6.9	14.1	1.1	1.4	70.9	1.1	6.6	21.3	1.6	1.5	59.2	1.0	6.4	32.7	2.4	1.8	28.7	0.5	5.7	63.3	3.8	2.0
2005	77.5	0.9	6.3	15.7	1.1	1.4	69.8	1.0	6.1	23.2	1.6	1.6	58.3	0.9	6.1	34.2	2.4	1.9	28.5	0.5	5.8	63.6	4.2	2.6

*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 10D.

*Sources:* Computations based on wealth tax return statistics.



**Table 10D.10** Top income shares in Spain (including capital gains) from income tax panel, 1982-1998, and survey, 2002

	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 10 5%	Top 5 1%	Top 1 0.5%	Top 0.5 0.1%	Top 0.1 0.01%	Top 0.01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(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

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

**Table 10D.11** Top income shares in Spain (excluding capital gains) from income tax panel, 1982–1998, and survey, 2002

	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 10 5%	Top 5 1%	Top 1 0.5%	Top 0.5 0.1%	Top 0.1 0.01%	Top 0.01%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(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

Sources: Computations based on income tax panel (IEF, Panel IRPF IEF--AEAT 1982-98) and income tax survey (IEF, Muestra de Declarantes IRPF 2002).

**Table 10D.12** Top wage income shares in Spain from panel of tax returns, 1982–2002

	Total number of employees (’000s) (1)	Total wages (millions of 2005 euros) (2)	CPI (base 2005) (3)	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%
				(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1982	8,614	152,951	31,430	22.47	13.58	4.08	2.45	0.78	8.88	9.51	1.63	1.67
1983	8,558	152,282	35,478	22.63	13.70	4.06	2.41	0.75	8.93	9.64	1.65	1.66
1984	8,305	147,104	39,192	22.96	13.91	4.12	2.46	0.78	9.06	9.78	1.66	1.68
1985	8,370	149,880	42,619	23.00	13.92	4.11	2.45	0.79	9.08	9.81	1.66	1.67
1986	8,645	154,863	46,344	23.52	14.26	4.24	2.53	0.79	9.27	10.02	1.71	1.74
1987	9,060	164,974	48,797	24.29	14.81	4.46	2.69	0.87	9.48	10.34	1.77	1.82
1988	9,440	176,904	51,321	25.26	15.44	4.73	2.86	0.96	9.83	10.71	1.86	1.90
1989	9,964	186,380	54,733	26.41	16.16	4.99	3.02	1.01	10.26	11.17	1.97	2.01
1990	10,441	201,381	58,355	26.94	16.51	5.17	3.18	1.07	10.43	11.34	2.00	2.11
1991	10,653	211,634	61,885	26.82	16.46	5.18	3.20	1.09	10.37	11.28	1.98	2.11
1992	10,425	213,433	65,430	25.76	16.06	5.29	3.32	1.19	9.70	10.77	1.98	2.13
1993	10,138	210,600	68,554	25.67	16.06	5.40	3.44	1.35	9.61	10.66	1.96	2.09
1994	10,102	205,616	71,725	25.92	16.13	5.35	3.38	1.23	9.79	10.78	1.98	2.14
1995	10,346	210,696	74,849	25.91	16.14	5.36	3.39	1.24	9.77	10.77	1.97	2.15
1996	10,480	214,001	77,533	25.92	16.16	5.43	3.45	1.31	9.76	10.74	1.97	2.14
1997	10,889	222,952	79,380	26.11	16.35	5.51	3.55	1.34	9.76	10.84	1.96	2.20
1998	11,348	235,791	80,657	26.25	16.48	5.59	3.60	1.37	9.77	10.89	1.99	2.23
2002	12,998	270,415	90,997	27.33	17.54	6.41	4.25	1.73	9.79	11.13	2.16	2.52

Sources: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982–98) and income tax survey (IEF, Muestra de Declarantes IRPF 2002). See Appendix 10D for details.

## APPENDIX 10E: COMPUTING MARGINAL TAX RATES

Marginal tax rates displayed in Table 10E.1 were computed using the panel of individual income tax returns 1982–98 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 labour 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 per cent than for the top 0.1 per cent. The reason is the following: consider two individuals in the top 0.01 per cent; the first one has no capital gains and no irregular income; consequently she faces the maximum marginal rate; the second individual has only capital gains; therefore she faces 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 10D.7), it is then possible to find more people at the top subject to relatively smaller marginal rates.

**Table 10E.1** Marginal tax rates by income groups, Spain, 1982-2002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 10 5%	Top 5 1%	Top 1 0.5%	Top 0.5 0.1%	Top 0.1 0.01%	Top 0.01%
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

Sources: Computations based on income tax panel (IEF, Panel IRPF IEF-AEAT 1982-98) 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 10E for details.

## APPENDIX 10F: 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). It is instructive to compare the wealth reported on wealth tax returns with the wealth reported in the survey (Table 10F.1).

To be consistent with our tax estimates we defined net financial wealth as the sum of: chequing accounts, bank deposits, jewellery, 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 10F.1). For the second scenario, we assume that every spouse owns 50 per cent of the household wealth (panels E and F in Table 10F.1). 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.

Three important findings emerge. First, we find that wealth reported on wealth tax statistics for top income groups such as the top 1 per cent is higher than the wealth reported on the survey by the top 1 per cent, even under the assumption that all the household wealth belongs to the head of household. For example, including real estate, the average top 1 per cent 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 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 billion 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).

Table 10F.1 Aggregate net worth and composition, households wealth survey in Spain, 2002, vs. tax statistics

	Units	Total financial wealth			Total wealth			Wealth composition										
		Total Net financial wealth (millions 2005 euros)	Average (2005 euros)	Total net wealth (millions 2005 euros)	Average (2005 euros)	Top shares (%)	Real estate (%)	Fixed claim assets (%)	Stocks (%)	Business (%)	Other (%)	Debts (%)						
<b>Total from tax stats</b>	30,249	951,132	31,443	3,540,482	117,045													
<b>Total from survey</b>	32,339	453,836	14,034	2,317,025	71,649		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			708,734	2,342,999	20.02	65.77	7.57	25.10	1.16	1.93	1.53						
top 0.5%	151			502,642	3,323,364	14.20	61.98	7.12	29.16	1.13	2.18	1.57						
top 0.1%	30			211,331	6,986,392	5.97	51.87	6.61	39.48	0.98	2.76	1.70						
top 1 0.5%				206,091		5.82												
top 0.5 0.1%				291,311		8.23												
top 0.1%				211,331		5.97												
<b>B. Excluding real estate. Individual distribution from tax returns</b>																		
top 1%	302	216,116	714,457			22.72												
top 0.5%	151	171,879	1,136,428			18.07												
top 0.1%	30	92,421	3,055,357			9.72												
top 1 0.5%		44,237				4.65												
top 0.5 0.1%		79,458				8.35												
top 0.1%		92,421				9.72												

(continued)

**Table 10F.1** Continued

	Total financial wealth			Total wealth			Wealth composition					
	Total Net financial wealth (millions euros)	Average (2005 euros)	Total net wealth (millions euros)	Average (2005 euros)	Top shares (%)	Real estate (%)	Fixed claim assets (%)	Stocks (%)	Business (%)	Other (%)	Debits (%)	
<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	117,610	1,467,767	453,874	63.35	78.06	6.03	7.67	11.96	1.14	4.86	
top 5%	1,617	201,503	1,057,739	654,165	45.65	72.93	5.65	9.80	14.69	1.42	4.49	
top 1%	323	638,011	470,728	1,455,622	20.32	58.55	4.76	16.80	20.62	2.22	2.94	
top 0.5%	162	1,046,955	343,075	2,121,763	14.81	52.70	4.59	20.29	22.33	2.62	2.53	
top 0.1%	32	3,288,127	161,192	4,984,513	6.96	35.19	3.40	30.65	31.18	1.02	1.44	
top 10 5%	54,518		410,028		17.70							
top 5 1%	119,493		587,011		25.33							
top 1 0.5%	37,039		127,654		5.51							
top 0.5 0.1%	62,952		181,882		7.85							
top 0.1%	106,334		161,192		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	133,739	432,492	133,739	95.30							
top 5%	1,617	234,560	379,267	234,560	83.57							
top 1%	323	755,949	244,464	755,949	53.87							
top 0.5%	162	1,200,163	194,058	1,200,163	42.76							
top 0.1%	32	3,699,288	119,630	3,699,288	26.36							
top 10 5%	53,225		53,225		11.73							
top 5 1%	134,804		134,804		29.70							
top 1 0.5%	50,405		50,405		11.11							
top 0.5 0.1%	74,428		74,428		16.40							
top 0.1%	119,630		119,630		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	342,343	105,862	1,179,340	364,685	50,90	74,88	5,96	8,91	13,66	1,39	4,79
top 5%	1,617	286,344	177,091	839,270	519,051	36,22	69,26	5,70	11,33	16,19	1,55	4,03
top 1%	323	177,808	549,833	384,911	1,190,251	16,61	56,70	4,52	18,15	21,23	2,74	3,35
top 0.5%	162	153,051	946,553	275,135	1,701,585	11,87	46,75	4,29	22,99	25,65	3,12	2,80
top 0.1%	32	93,905	2,903,806	127,948	3,956,495	5,52	27,86	3,04	32,87	36,65	1,11	1,53
top 10 5%		55,999		340,071		14,68						
top 5 1%		108,535		454,359		19,61						
top 1 0.5%		24,757		109,776		4,74						
top 0.5 0.1%		59,146		147,187		6,35						
top 0.1%		93,905		127,948		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	397,257	122,843			87,53						
top 5%	1,617	337,907	208,981			74,46						
top 1%	323	208,676	645,285			45,98						
top 0.5%	162	167,632	1,036,727			36,94						
top 0.1%	32	101,545	3,140,048			22,37						
top 10 5%		59,350				13,08						
top 5 1%		129,231				28,48						
top 1 0.5%		41,045				9,04						
top 0.5 0.1%		66,087				14,56						
top 0.1%		101,545				22,37						

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 País Vasco and Navarra.

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

## APPENDIX 10G: 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 (Información Comercial Española 1962).

The first households' budget surveys (*Encuesta de Presupuestos Familiares, EPF*) were carried out in 1964/5, 1966/7, 1969/70, 1973/4, and 1980/1. 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 per cent received 36.8 per cent, 41.3 per cent, 40.7 per cent, 39.5 per cent, and 29.2 per cent of income respectively, stressing a decrease in inequality levels from 1973/4 to 1980/1.<sup>50</sup>

In 1963 the INE launched the publication *Salarios*, based on an annual employers' survey for workers legally employed by any firm employing at least ten 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 Ibáñez (1975) computed Gini coefficients from this wage survey between 1963 and 1972, finding an increasing trend in earnings inequality; Cordero, Melis, and Quesada (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 1965-70 and 1971-80), 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.

<sup>49</sup> The differences between National Accounts and household surveys regarding income measurement have been analysed 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 1980/1 survey, the top 10% received 25.4% of income before any correction was made.

<sup>51</sup> See Cordero, Melis, and Quesada (1988) for an account of the limitations of the wage survey since 1981.

Based on the 1980/1 households' budget survey, Ruiz Castillo (1987) studied inequality using the information about expenditure and not income. Bosch, Escribano, and Sánchez (1989) applied the same methodology to compare the 1973/4 and 1980/1 surveys. A new comparison between the 1973/4 and 1980/1 surveys is presented in Ruiz Castillo (1998). Ruiz Castillo and Sastre (1999) added the comparison with the 1990/1 survey. The authors find a considerable drop in inequality between 1973/4 and 1980/1; given the increase of per capita expenditure, they conclude that a rise in welfare took place. For the 1980s decade, they observe an increase in the average expenditure but a stop in the pattern of reduction in inequality that took place during the previous decade. These studies have been extended in Del Rio and Ruiz Castillo (2001a, 2001b). Gradín (2000, 2002) has used the EPFs to analyse polarization and inequality from 1973 to 1991.<sup>52</sup>

Notwithstanding the different levels reported in inequality indexes and the different variable analysed (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 1993–4, a sustained increase in 1994–6, 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 (2007) analyse 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, Ramos, and Raymond (2001) have used this source between 1985 and 1996 and document 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. Castaner (1991) and Lasheras, Rabadán, and Salas (1993) analyse 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 indices. 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 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 analyse 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 Torradella and Pijoan Mas (2006), among others.

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