UNIVERSITAT DE BARCELONA

Tax System and Redistribution: the Spanish Fiscal Transition (1960-1990)

Sara Torregrosa-Hetland

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PhD in Economic History

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Tax System and Redistribution: the Spanish Fiscal Transition (1960-1990)

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"Se ha discutido por algunos sectores la oportunidad de esta reforma, que, una vez más, juzgan inoportuna. Pero [...] la vieja y gastada regla de que pague más el que más tenga va a ser la regla de oro de la nueva Hacienda española."

Francisco Fernández Ordóñez,
in the defence of the first tax reform law in Parliament
(25th October 1977).

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List of Abbreviations

AEAT	Agencia Estatal de la Administración Tributaria
AETR	Average Effective Tax Rates
AP	Alianza Popular
BNE	Biblioteca Nacional de España
CCAA	Comunidades Autónomas
CGE	Cuenta General del Estado
CGR	Contribución General sobre la Renta
CIS	Centro de Investigaciones Sociológicas
CNE	Contabilidad Nacional de España (=Spanish NA)
ECHP	European Community Household Panel (=PHOGUE)
EEC	European Economic Community
EMU	Economic and Monetary Union
EPF	Encuesta de Presupuestos Familiares (=HBS)
HBS	Household Budget Survey (=EPF)
ICGI	Impuesto de Compensación de Gravámenes Interiores (Import Tax)
IEF	Instituto de Estudios Fiscales
IEPPF	Impuesto Extraordinario sobre el Patrimonio de las Personas Físicas (Wealth Tax)
IGAE	Intervención General de la Administración del Estado
IGRPF	Impuesto General sobre la Renta de las Personas Físicas
IGTE	Impuesto General sobre el Tráfico de Empresas (Turnover Tax)
INE	Instituto Nacional de Estadística
INP	Instituto Nacional de Previsión
IRPF	Impuesto sobre la Renta de las Personas Físicas (=PIT)
IRTP	Impuesto sobre la Renta del Trabajo Personal (Labour Tax)
ISOC	Impuesto de Sociedades (Corporation Tax)
ISSP	International Social Survey Program
IVA	Impuesto sobre el Valor Añadido (=VAT)
MP	Member of Parliament
NA	National Accounts
NOS	Net Operating Surplus
PCE	Partido Comunista de España
PHOGUE	Panel de Hogares de la Unión Europea (=ECHP)
PIT	Personal Income Tax (=IRPF)
PP	Partido Popular
PSOE	Partido Socialista Obrero Español
RS	Reynolds-Smolensky index
UCD	Unión de Centro Democrático
VAT	Value Added Tax (=IVA)

Chapter 1

Introduction

1.1 Motivation

Research on the welfare state is a fruitfully developed area in social sciences. Scholars have discussed the evolution of protective legislation, social insurance systems, poverty relief, and inequality. They have suggested several responses as to which are the determinants of the growth in social protection, from economic development and the social changes induced by industrialization (Wilensky, 2002), to corporatist arrangements, democratization, and working-class mobilization (Esping-Andersen, 1990; Korpi and Palme, 1998; Lindert, 1994).

Relatively lower attention, however, has been paid to taxes, in spite of their essential role in levying funds for the state functions, and themselves clearly having distributive consequences. Tax revenue growth has been explained by factors such as warfare effects on tax collection and attitudes towards social solidarity (Peacock and Wiseman, 1961; Scheve and Stasavage, 2012), or to the use of increasingly efficient revenue techniques (first personal income taxation, then value added taxes – Lindert, 2004 makes this argument in the opposite direction). These tax innovations may be tightly connected to societal and economic developments reducing collection costs, such as alphabetization (Aidt and Jensen, 2009a) or information technologies and business size (Kleven et al., 2015 underline the role played by corporations in withholding for governments).

Taxes have also been related to the extension of political rights: they can be understood as a reflection of power struggles, where different groups in a society attempt to shift the burden onto others (e.g. Mares and Queralt, 2015), or as part of a contract by which taxpayers acquire certain leverage on the state – which would make us expect a correspondence between both sides of the budget (Timmons,

2005). The recently emerged "new fiscal sociology" attempts to bridge some of the gaps between research on taxes and other developments in social, economic and political history (see e.g. the works compiled in Martin et al., 2009).

In the following pages, I investigate the changes in taxation that accompanied the transition to democracy in Spain. The idea behind this research is to infer from the effective operation of the tax system some features of the political reform. How did democracy affect the taxes that Spaniards paid? Did an increase in political equality lead to a similar increase in economic equality? What were the social demands about taxes? How were tax reform decisions taken? And how compliant were citizens with the new system?

The thesis thus intends to contribute to four different strands of literature. It first adds a case study to the empirical literature on tax incidence, where a country is followed over some years using an homogeneous methodology. Providing more observations is important for this literature, where comparison is still quite limited precisely because of lack of adequate data – specially in historical terms. Research has very often focused only on direct taxes from, and transfers to households, thus leaving aside consumption taxation (Wang and Caminada, 2011; Whiteford, 2008); remarkable exceptions are Garfinkel et al. (2006), and Prasad and Deng (2009).

Secondly, this work is inserted in the discussion about the development of the welfare state and redistribution, and about the relation of tax structures to different social preconditions and outcomes, in the spirit of Steinmo (1989) or Aidt and Jensen (2009b). The Spanish case in the second half of the 20th Century, moreover, allows to explore the effects of a regime change on taxation, thus contributing to the scholarly discussion about democratic transitions and their distributional consequences (Acemoglu and Robinson, 2001; Boix, 2003; Boylan, 1996; O'Donnell et al., 1986).

Finally, this thesis also aims to contribute to the historiography of this period, where tax history would ideally go hand in hand with that of political institutions, labour conflicts, or international integration (Cotarelo, 1992; García Delgado, 1990; Molinero, 2006; Trullén, 1993; Tusell and Soto, 1996) .

1.2 Theoretical framework

The academic debate on democratic transitions and the determinants of redistribution is rich and diverse. The classic reference is Meltzer and Richard (1981)'s model, that predicts an increase in redistribution following an extension of the franchise, applying the theory of the median voter. These authors' framework was followed by the analyses of Alesina and Rodrik (1994) and Persson and Tabellini (1994), who showed a negative correlation between inequality and growth, interpreting it as a result of the negative effects of redistributive taxes on capital accumulation. The link between inequality and redistribution underlying these studies has been questioned by later work, which suggests more complex causal connections (e.g. Perotti, 1996; Saint Paul and Verdier, 1996). My research aims at contributing to this line of analysis, focusing specifically on revenues.

The aim of this thesis is to explore, further away from the basic cleavage dictatorship-democracy, into the effective operation of institutions. Several models about regime change and distributive conflict are available in the literature. Acemoglu and Robinson (2001; 2008) underline the possibility that the elite may *de facto* block the implementation of aggressive redistributive policies, with the threat of economic or even political reversal. Boix (2003) also considers high redistribution as a potentially destabilising factor for democracy: thus, democratic transitions would be more likely under low levels of inequality, and higher capacity of capital in the country to escape from taxation. Albertus and Menaldo (2014) suggest that redistribution will only make significant progress after a transition if the elite's power was effectively challenged in the process, which is not always the case. In a survey of empirical works, Gradstein and Milanovic (2004) find some evidence of increase in redistribution after democratization, although not always with the corollary of reductions in inequality. Transitions might have also triggered other changes pushing in the opposite direction (notably in the ex-communist countries).

Most analyses of regime change take the redistributive preferences of citizens and social groups as given. Following canonical economic models, agents are supposed to favour these policies that provide them the highest (immediate) benefit in terms of income. In this way, low income individuals would always vote for redistribution and those with high incomes would always oppose it. While the income ladder is indeed related to political cleavages, reality is clearly more complex.

In that sense, the literature on preferences for redistribution has provided with a wide range of possible motives to demand redistributive policies.[1] Self-interest is the most obvious cause for the less well-off in society, and has been backed by various empirical studies, among which Fong (2001), Corneo and Grüner (2002) or Isaksson and Lindskog (2007). With this force at work, inequality and democratization would be expected to increase demand for redistribution.

Several elements, nonetheless, push in the opposite direction, making even the poor less prone to redistribution: social mobility (Alesina and La Ferrara, 2005; Bénabou and Ok, 2001; Piketty, 1995), status considerations in the low-middle class relative to the low end of the social strata (Grüner and Corneo, 2000), or the awareness about efficiency costs of redistribution (as is the rationale in Alesina and Rodrik, 1994; Persson and Tabellini, 1994, and Cremer et al., 1996). Opposition to progressive taxation can therefore be found not only among the well-off. Fiscal resistances have been suggested to be more acute in the case of direct taxes, and specially those on personal income, while indirect taxation, because of its lower salience, would trigger less strong reactions (Wilensky, 1975). The high strata of society are expected to defend their own self-interest and vote for less redistribution, but also to use economic arguments of the kind put forward in the "efficiency costs of redistribution" literature.

In this context, the poor can also not vote strongly for redistribution because of lack of adequate knowledge of the actual levels of inequality or its consequences (as suggested by Cruces et al., 2013), or because of mistrust in the government and its ability to pursue their interests (as suggested in Kuziemko et al., 2013, and Svallfors, 2013). They may also hold inconsistent attitudes, as has been put forward by Bartels (2005) for the case of the US – but contested by Edlund (2003) when dealing with Swedish data, and Singhal (2013) for the OECD in general.

Altruism and egalitarian values, on the other hand, could boost support for redistribution even in social groups that would not benefit from it directly. This hypothesis has found empirical support in several studies, such as Fong (2001) or Corneo and Grüner (2002). This tends to be related to the beliefs about the causes of economic inequalities: societies or individuals who believe that current income depends closely on effort tend to be less supportive of redistribution, while the opposite is true when luck is thought to be an important determinant. Such has been suggested by Alesina et al. (2001) as one of the reasons behind the

[1] An exhaustive review can be found in Harms and Zink (2003), although they fail to include ideological considerations.

differences between the US and Europe (see also Alesina and Angeletos, 2005; Bénabou and Tirole, 2006).

Recently, Giuliano and Spilimbergo (2009) posited that individual demand for redistribution might be influenced by the economic context experienced during youth, with individuals growing up in a crisis environment being more prone to equalization policies. This might be related to perceptions of bad luck affecting incomes, or to a demand of social insurance, as underlined by Moene and Wallerstein (2001) and found for contemporary Spain by Backus and Esteller-Moré (2014).

1.3 The Spanish transition to democracy

A wide literature has developed around the return of democracy to Spain in the 1970s. Together with international discussions on transition theory and the "third wave" of democratization, scholars have discussed the role of economic development, elites and opposition from below. My research is embedded in this discussion, and aims at providing with a new piece for the puzzle, focusing in this case on the distributive *results* of the transition.

At the time of Franco's death in November 1975, the country was clearly heading towards a multi-dimensional crisis. Opposition movements to the dictatorship had developed during the previous decades, increasing their strength specially since the 1960s (Molinero and Ysàs, 2008; Saz, 2010). In the ruling block, some discrepancies had grown visible, with factions recognising the difficulties to maintain the regime after Franco's death and some talks about limited liberalization of "political associations" (while others were in favour of continuity). The economic context was worrisome, with the first oil crisis putting an abrupt end to the growth cycle of the previous decade.

In the usual interpretation, the transition was the product of the incapacity of both sides to take full control of the situation. Colomer (1998) mentions in this sense the considerations of Przeworski about uncertainty during political transitions, bringing stances towards moderation (Przeworski, 1986). Martínez-Alier and Roca Jusmet (1988) also point to the fear of a military coup as the cause for moderation in labour unions and leftist parties, leading them to a cooperative attitude in the political and economic pacts. The correlation of forces gave rise to a

"reforma pactada" ("agreed reform"), an intermediate path between full continuity and democratic breakout. As is well known, the process was orchestrated by Adolfo Suárez and its main cornerstones were the *Ley de Reforma Política* of 1976 (which initiated the dismantling of the old francoist institutions without violating the existing legal framework), the return of democratic elections in June 1977, and the elaboration of a new Constitution to be approved in December 1978. Opposition parties were successful in their demands of constitutional talks and full legalisation – although, in the case of the communist party PCE, this came quite late and probably impacted negatively on their electoral results. The old powers, on the other hand, were given satisfaction with a Senate (upper chamber) and an electoral system with majoritarian and conservative biases (Lago and Montero, 2005).

The 1977 elections were won by Suárez's coalition *Unión de Centro Democrático*, UCD. This was an heterogeneous group, where liberals, Christian democrats and social democrats had joined together in the preceding months. In the left wing of this coalition, tax reform was seen as a priority.

1.4 The tax reform of 1977

The tax changes that were established in the first decade of democracy had been envisaged long time before. They followed the model extended in Europe during the 20th century, which introduced progressive rates and gave personal income taxation a central role as a revenue source (Steinmo, 2003). In Spain, prominent economists had been advocating for tax reform during the last years of the dictatorship, in front of obvious problems in the existing system, namely rigidity, regressivity, and limited revenue capacity. The last aspect was clearly an obstacle for the ability of the state to provide some essential functions, such as spending on education and infrastructure to promote growth.

The reform proposals were reflected in various projects by the *Instituto de Estudios Fiscales* (a research and training institution related to the Ministry of Public Finance), under the lead of Enrique Fuentes Quintana. These suggested the adoption of a European taxation model in Spain, where personal income taxation would be at the centre, together with wealth, inheritance, and value-added taxes. This system was to be fairer, more efficient and also more flexible, providing with higher revenue, which was needed to allow the State to meet the needs of a higher

stage of development, in the minds of its proponents. It also meant convergence with Europe, and thus would facilitate the long-desired process of integration in the EEC.

The first proposal of the institute (Instituto de Estudios Fiscales, 1973) was rejected when presented by Minister Alberto Monreal to Franco's government, in April 1973: the plan was hidden from public knowledge and Monreal was dismissed. After this episode, Fuentes Quintana and his group became convinced that a modernising tax reform of this sort could never be passed under Franco's dictatorship. Democratisation was a required prerequisite.[2] After the dictator's death, a second project, very similar to the first, was presented by Minister Villar Mir, only to be also postponed (Instituto de Estudios Fiscales, 1976). Lagares (1999), another economist involved, provides a detailed account of the process.

In Spanish history, tax changes have normally taken place in times of profound political disruption. Such was the case of the tax reform of 1845 that put in place the "liberal" system in the country, following the French model (Comín, 2010b; Fuentes Quintana, 1990). The same pattern repeated itself in the 1970s, when transition to democracy finally made the tax reform possible. After the first elections, Fuentes Quintana was appointed by Suárez as Economics Minister and Vice-president in the first democratic government, and his collaborator Francisco Fernández Ordóñez, who had joined Suárez's coalition UCD, was the new Public Finance Minister. These men had already designed their reform a decade earlier. The central points of their program were shared, at least in the surface, by the main political parties, and as such were introduced in the Moncloa Pacts as progressive measures to counteract the negative distributive effects of economic stabilization (Comín, 2007; Fuentes Quintana, 2004).

Precisely, the first law of the new democratic Parliament, in November 1977, was the beginning of this reform. Fernández Ordóñez had presented a comprehensive project, consisting of a first "urgent" set of measures, a reform of direct taxation around the personal income tax, and of indirect taxation around a value added tax. All these were understood as part of the same process of change, but not all of them could be passed during the first parliamentary terms. The first law (Law of Urgent Tax Reform Measures, *Ley de Medidas Urgentes de Reforma Fiscal*) introduced a wealth tax and a set of measures to fight tax evasion: lifting of banking secrecy, introduction of tax offence, and related issues – together with granting a

[2] Fuentes Quintana made this point for example in *ABC*, 19th May 1977, p. 65: *"La reforma fiscal será inviable sin un sistema democrático"*. He also recalls it in Fuentes Quintana (1990).

tax amnesty. The idea was to provide a fresh start for the relationship between taxpayers and the tax administration, ending with the culture of widespread evasion. Shortly after, the income tax project arrived to Parliament and was passed in September 1978. This was the main milestone of the reform, meant to have a prominent role in raising revenue for welfare state development – and following the prevailing ideas on fairness.

Fernández Ordóñez was a proponent of progressivity (or, at least, a significant decrease in the regressive nature of the existing system) and the expansion of public services. He also placed huge importance on fighting tax evasion, not only in legal terms, but by fostering voluntary compliance, introducing a new era in the relations between the (now) citizens and the (now democratic) state, based on responsibility and fair exchange. In his mindset, reducing inequality through the tax system was less conflictive than attempting to do it in the wage bargaining process, and this equity objective was crucial for the legitimation of a market economy, particularly in the context of the prevailing crisis: *"The fragile Spanish economy is going through difficult times, and we think that adequate restructuring will only be possible if there is fairness in the distribution of sacrifices and the part of effort that we all must share. As much as we respect the market economy as the main instrument for obtaining resources, we firmly demand the public sector's correcting action through the tax system and redistributive expenditure"*.[3]

Pan-Montojo (1996) has identified a period of "tax counter-reform" after these first developments. The politics of consensus was replaced by the politics of competition once the constitution was passed and new elections were on their way (1979). The following projects were delayed and never made it through Parliament (see also Comín, 2007). The application of the reforms was faulty because of lack of administrative capacity and obstruction by financial institutions. The second phase of the tax reform, that of indirect taxation, did not come about until the second half of the eighties, under socialist party governments. The main innovation now was the introduction of the value added tax in 1986 (a condition for the accession to the EEC), and efforts to improve tax administration. Other reforms were of limited importance. For instance, the wealth tax had symbolic power but scarce real effects, being transitory until new regulations were set in place in 1991. Similarly, a new inheritance tax was delayed until 1987.

[3]Fernández Ordóñez (1980), p. 60. When he wrote "we", he meant the members of his Social Democratic Party, one of the groups forming UCD in 1977.

The reform measures, nevertheless, brought about a substantial modernization of public finances, and allowed an increase in revenues and the funding of a nascent Welfare State (see e.g. Albi, 1990; Fuentes Quintana, 1990 or Espuelas, 2013).

Social Security is also part of this story. Under Francoist rule, a contributory "Bismarckian" system was introduced in 1963-67, which increased the tax burden on labour during the following years in order to fund pensions and health care.[4] By the end of the seventies, the Social Security system had a budget as big as that of all other Public Administrations, and its reform was also planned (although it did not fall under the responsibility of the same Ministry as ordinary taxes). Social contributions are also a tax, despite being earmarked revenues. And they were strongly regressive, since they were not assessed on full wages, but on "bases" established by decree for different workers' categories, which meant very low caps for high salaries. Other problems of the social security system were its high complexity, the strong differences between regimes, its possible negative effects on employment, and the low level of pensions.[5] The main demand at the time was to integrate the Social Security system with the public budget, in order to fund its expenditure, in part or wholly, with general taxes. But changes did not go that far during the first decade of democracy: an administrative reorganisation in 1978 improved transparency and the minimum pensions were increased during the following years, but the contributive system remained very much unchanged until the end of the eighties.

It has been said that the tax reform program was shared by all the main political parties in Parliament, and widely by the Spanish society (Fuentes Quintana, 2004; Lagares, 1999). My own research, as will be shown, agrees with this assertion but qualifies it to some extent. It is true that during the first years of democracy no real alternatives to the reform were put on the table: the pages of the conservative newspaper *ABC* are a clear example that immobility was not popular in the exceptional years of the transition. But much of the agreement seems to have been superficial and based on a very wide understanding of some concepts. As soon as the parties had to sit down in Parliament and discuss concrete measures, differences showed up, foreseeing the program of "reform of the reform" during

[4]During the sixties, the system had considerable surpluses, which were used to finance investment projects, given the insufficiency of tax revenues (Subsecretaría de la Seguridad Social, 1977).

[5]Pensions had decreased with respect to the country's standard of living during the preceding years, because in the context of rising salaries the tax bases had remained fixed or grown less than real wages, in order to avoid strong increases in labour costs.

the eighties. The new tax ideas, placing the emphasis on efficiency, – on the negative effects or progressivity on savings and labour effort – were soon added to the main taxes in the system, and are particularly visible in the evolution of the personal income tax.

The story of the tax reform has been analysed from several perspectives, besides the accounts of some of the lead actors of the day (Fernández Ordóñez, 1980; Fuentes Quintana, 1990, 2004; Lagares, 1999). Valiño (1989) provides a review of the legislative innovations from the point of view of a public finance scholar. Gandarias (1999) adds the insights of a political scientist. Pan-Montojo (1996) and Comín (2007) apply the approach of the historian. This thesis offers a quantitative analysis of the real effects of the reform on the income distribution and the funding of welfare state efforts. Only a tax incidence study can answer our research questions: *"Was the tax system made progressive?"*, *"Did it reduce income inequality in the country?"*, *"How did tax evasion evolve and what was its incidence?"*. The answers to these will lead me to provide a tentative interpretation: *"What were the constraints on tax progressivity and redistribution in the early democratic period?"*

1.5 Structure of the thesis

This thesis has been written as a collection of articles, which can be read independently but share the same general objective. Chapter 2, *"The evolution of income inequality"* is the result of my confrontation with the sources for the analysis of the income distribution in Spain in the second half of the 20th Century. After reading extensively about their problems and biases, I decided that it was preferable to work with a corrected version. The exercise turned out to provide some interesting insights about the evolution of inequality itself.

Chapter 3, *"The distribution of the tax burden"*, is the main core of the thesis. It deals with imputation of Spanish tax revenue in three different years, showing how the changing tax system impacted on the different income levels of the population. The bottom of the distribution was over-burdened, specially at the beginning of the period, and less so after the tax reforms. As a result of the legal innovations, the tax burden was pushed upwards, although it remained regressive when all taxes are considered. Increased tax revenues, nevertheless, provided funding for expanding redistributive social expenditure.

In chapter 4, *"Fraud and base erosion in personal income taxation"*, I further qualify the findings of the previous chapter. I suggest that fraud and under-reporting worked in the opposite direction of increased progressivity. Concealment of incomes from self-employment and capital (to a greater extent than those from labour, which were better controlled) was slow to confront, and affected very negatively the introduction of general, progressive, personal income taxation in the country.

An explanation of these results of the tax reform process is sought in the pages of chapter 5, *"Public opinion and political institutions"*, where I analyse the available data on social preferences for redistribution (mainly on the basis of surveys) and explore the paths of their translation onto policies, with specific attention to internal political institutions and external constraints.

The concluding remarks summarize the results and point towards lines of further research.

Chapter 2

The evolution of income inequality

This chapter investigates the evolution of income inequality in Spain during its transition to democracy, suggesting a method for the correction of under-reporting of earnings and profits in the Household Budget Surveys' data. The contribution is twofold: the methodological proposal, based on income-expenditure discrepancy and scaling-up to National Accounts, improves on previous work, and can be convenient for similar historical sources in other countries. Secondly, its application results in an alternative history of the distribution of income in this case, changing the levels and also the observed trend. Previous literature asserted a substantial equalization, related to the democratization process, while after the adjustment inequality in disposable income is shown to have been quite persistent.[1]

2.1 Introduction

Income inequality is at the centre of many debates. Political power, economic development or taxation are all related to the distribution of resources in any given country – or the world. This study takes a dynamic national perspective, and investigates how inequality changed during a period of transition from dictatorship to democracy.

The contribution of the chapter is twofold. On the one hand, it is inserted in the debate about the distributional consequences of political transitions, providing an example where income inequality did not substantially decrease after democratization. Secondly, it does so by applying a correction methodology to the main

[1] An adapted version of this chapter has been published in *Revista de Historia Económica*, 2015, under the title "Sticky income inequality in the Spanish transition (1973-1990)".

historical source, namely the Household Budget Surveys, which leads to results challenging the prior consensus.

The literature on income distribution has undertaken many changes in the last decades. After the popularization of Kuznets (1955)'s theory about structural change and the decrease in inequality in advanced industrial countries, recent work has pointed at a new upsurge. Among its causes, globalization and skill-biased technological change hold pre-eminent places (Atkinson, 2000; Easterly, 2004; Krugman, 2000). The slowdown of economic growth after the oil crises and the rise of unemployment could also have played a role in certain contexts; along these lines, Piketty (2011) has suggested that inherited wealth might have more relevance in a slow-growth economy, compared with self-generated wealth.

This phenomenon, however, cannot be analysed as a purely economic issue. On the contrary, it is connected to political developments, such as the rise of neo-liberalism and the deep crisis in social democracy in post-industrial societies. Levy and Temin (2007) argue that the widening of income inequality in the US since 1980 is largely related to the institutional context, which is shaped politically. Labour market regulation, the education system and fiscal redistribution all have strong distributive effects, as has also been underlined by Piketty (2003) for the latter.

In this context, transitions from dictatorship to democracy are expected to bring about a decrease in income inequality, as a result of the higher influence of the distributive goals of lower classes (Meltzer and Richard, 1981 and related literature). But, as Acemoglu et al. (2013) note, the issue of transition might be complex and nuanced: the new regime can be "captured" by the elites and not result in fully democratic policies, and it can also lead to economic liberalization and increased market inequalities. For example, Gradstein and Milanovic (2004) suggest the importance of taking into account ideology, discussing the recent experience in post-communist countries, while Mulligan et al. (2004) do not find significant differences between the public policies of democratic and non-democratic regimes.

The Spanish transition (1976-82) is an interesting example for this discussion. Democratization came when the oil crises hit the country, and the early period of the new regime was marked by industrial restructuring and international integration, as well as by an unprecedented and dramatic increase in unemployment. The intensification of structural transformation and the development of welfare-state functions brought about by the ascent of social democracy to power could

have pushed the income distribution in different directions. So which force prevailed? Was democratization a strong enough driver for equality?

Generally, studies on Spanish income inequality for the period 1970-90 have found that differences between the poor and the rich shrank very substantially (e.g. Alcaide, 2000; Ayala et al., 2006). This result is consistent with a positive impact of the political transition and the subsequent development of the Welfare State in the country. This work, however, reaches different conclusions.

The main data source for the income distribution in this period are the Household Budget Surveys. These suffer from a widely known problem of under-reporting of earnings, particularly those coming from self-employment and capital, which can potentially bring about a misrepresentation of the real levels of inequality.[2] I address the issue with an upwards correction of household incomes by revenue sources, using both internal and external information, and ultimately adjusting the flows to the National Accounts. Similar approaches have been widespread in Latin American studies (Barreix et al., 2009; ECLAC, 1991; Engel et al., 1999), and are also recently applied by an extensive literature on inequality measurement issues in several rich countries (Accardo et al., 2009; Fixler and Johnson, 2012; McColl et al., 2010; Neri and Zizza, 2010).[3] The majority of these works, however, are very recent, and focus on the latest years available. This chapter makes a step forward by adopting a historical perspective, and measuring the inequality trend over several decades.

After scaling up the income data, I find inequality to be higher than in the original data, and to have experienced only a slight decrease during the decades considered. This suggests that, in Spain, the democratic transition was not sufficiently strong to impact positively on distributional dynamics. It also implies that underreporting has to be taken into account in the study of income distribution and its changes over time. Differential rates of concealment of household revenues by source will not only mean higher inequality than that directly observed, but may also affect its trend, fundamentally in the presence of significant changes in the factorial distribution.

[2]This problem has been signalled by the literature as a reason to use tax data for the top incomes, which would allow to perform an upwards correction of the inequality indices (Alvaredo, 2011; Atkinson, 2007).

[3]This orientation can be traced back to the NBER Conference on Research in Income and Wealth of 1975 (Budd and Radner, 1975).

The rest of the chapter is organized as follows. Section 2.2 discusses the procedures and conclusions of previous literature on the topic, while also presenting the main data source used, the Household Budget Surveys. The methodology and process of correction of the data are exposed in section 2.3, with the results and some of their implications reported in section 2.4. I conclude in section 2.5.

2.2 The story of personal income equalization

Literature has shown a widespread consensus on the fact that inequality decreased very substantially in Spain between the 1970s and the 1990s. This has been related to structural economic change and to an increase in the redistributive role played by the State in the second half of the period, due to democratization.

The studies are generally derived from the Household Budget Surveys (henceforth HBSs). These are consumption and income investigations conducted by the National Statistical Institute (INE, from now on) more or less on a ten-year basis since 1964.[4] They provide information on socio-economic classes, total household disposable income and expenditure in different categories of goods and services. The detail and quantity of information have improved over time: since 1973-74 the sampling procedure was more accurate and the data have a higher level of disaggregation, with 170 different groups of goods and services, and income distributed in several components (labour, property, benefits, and so on – but not among the different household members until 1980). Estimations of home consumption and imputed income from owner-occupied housing are also provided (thus indicating if the family rents or owns their house), as are the households' size and some information on their age composition. The income data always refers to disposable income, so each component is net of direct taxes: this is also the definition used all along this chapter.

There are significant differences in the results obtained from this source. Some studies use the original income data provided by the surveys, while other rely on different correction procedures, since some troubling problems are widely known to be present in the HBSs. I will first review the results based on the original data,

[4] It is not possible to rely on personal income tax statistics to study income distribution in the general population, given that until 1979 they covered only a very small part of it. As a depiction of top incomes, they have been used by Alvaredo and Saez (2009). Other work has relied on macroeconomic indicators (Prados de la Escosura, 2008).

and then proceed to discuss the quality issues in the surveys. Finally, I will show the corrections proposed by previous literature.

2.2.1 Working with the raw HBS data

The studies which rely on the original HBS data are surveyed in table 2.1. They observe a significant reduction of inequality along these decades, attaining by 1990 levels comparable to those of other developed European countries. Many of these studies acknowledge the problems in the data, such as under-reporting, and therefore call for caution or test for possible impacts with techniques such as trimming (Cowell et al., 1999) or a comparison with National Accounts (Oliver et al., 2001).

The values of inequality indices vary depending on each author's methodological choices, such as the income definition, the equivalence scale applied, or the weighting unit. All these are important conceptual decisions to be made by the researcher. My own choice would be an income definition as wide as possible (TDI in the table, which includes in kind elements such as imputed owner-occupier income – but, recall, excludes direct taxation), and individual weighting. This last aspect implies giving the same value in our calculations to all individuals (while weighting by households effectively means attaching less importance to people living in big families). In any case, these choices do not change the qualitative result here: a decrease in inequality along with the political transition.

Alternatively, many authors are interested in working with inequality of consumption instead of income, or along with it (e.g. Del Río and Ruiz-Castillo, 1996; Goerlich and Mas, 2001; Gradín, 2002; Gradín et al., 2008; Martín-Guzmán et al., 1996). They generally also find a decrease in inequality during the decades of 1970-90.[5] The rationale for this approach is that, in the context of the life-cycle and permanent income theory, consumption is a better indicator of welfare. An excellent survey of the debate is given by Gradín et al. (2008), who compare the results of using income or consumption. Morelli et al. (2014) argue that income

[5]Martín-Guzmán et al. (1996), for example, obtain a Gini of per capita expenditure of 35.7, 35.0 and 34.2 respectively for the three HBSs (this includes non-monetary items and is weighted by household). Goerlich and Mas (2001) find 32.7, 31.4 and 30.3 with total equivalized expenditure. Gradín (2002)'s calculations result in 35.9, 33.2 and 31.7 (OECD's equivalence scale), slightly over his values for income (35.2, 32.7 and 30.6). Some works on expenditure inequality have also been done with the data provided by another survey, the *Encuesta Continua de Presupuestos Familiares*, generally obtaining lower levels; see e.g. Gradín et al. (2008) or Pijoan-Mas and Sánchez-Marcos (2010).

TABLE 2.1: Income inequality in studies using the raw HBSs

Study	Income definition	Equivalence scale	Weights	Income Gini 1973	1980	1990
Ayala et al. (1996)	MDOI	OECD	H	-	33.7	31.2
	MDOI	OECD	I	-	33.0	30.5
Martín-Guzmán et al. (1996)	TDI	per capita	H	35.8	35.2	33.0
Cowell et al. (1999)	TDI	SR	I	-	31.3	30.0
Goerlich and Mas (2001)	TDI	B(0.5)	I	32.1	31.0	29.3
	TDI	no	H	36.2	34.2	33.0
	TDI	per capita	I	34.2	33.7	31.6
Oliver et al. (2001)	TDI	OECD	H	-	33.1*	29.3
Ayala et al. (2006)	MDI	B(0.5)	H	35.3	33.3	31.7
	MDI	OECD	H	35.4	33.9	31.7
	MDI	OECD mod.	H	35.0	33.4	31.4

Income definition: TDI is Total Disposable Income, MDI is Monetary Disposable Income, MDOI includes only ordinary monetary revenues. Equivalence scales: SR means square root of household size, B(0.5) Buhmann et al. (1988)'s scale with elasticity of 0.5, 'no' means total household income is used with no adjustment, 'per capita' involves dividing it by real household size. Weighting: I stands for individual, H for household.

(*) Oliver et al. (2001)'s source is not the HBS, but a different survey (*Encuesta Continua de Presupuestos Familiares*) which started to be conducted in 1985. The value for that year is introduced in the '1980' column in the table.

is conceptually a better indicator, since it measures potential consumption and therefore does not lead to confuse need with chosen frugality (following Sen, 1992); furthermore, current consumption may not mirror permanent income in presence of obstacles to lifetime smoothing (especially borrowing constraints).[6]

The use of consumption can also arise from the acknowledgement that income is under-assessed, and therefore reported consumption would actually be closer to real income than the stated revenue amounts. Expenditure data is not free of measurement issues, such as the difficulty to correctly capture durable goods consumption. But income is truly known to be under-estimated in many surveys, and remarkably in our case. I turn to this now.

2.2.2 Biases in the sources

The quality of the HBSs data is highly uneven. There are no micro-data available for the 1964-65 survey, so it is only possible to work with aggregate results published by INE. In the other cases, micro-data are available online (1973-74, 1980-81 and 1990-91).[7] In this work, I am using the files provided by Carlos III University, which undertook a project to facilitate their usage.[8]

Several issues on the reliability of HBSs (as that of their counterparts in other countries) have been put forward by the literature, starting with the publications of INE itself. As may be seen in table 2.2, household surveys underestimate inequality for a number of reasons. Some of them seem more worrying than others: the exclusion of the homeless might be quite insurmountable, but its quantitative impact is limited. Undistributed profits can be considered as part of the economic capacity of the individuals they accrue to, but may be left aside from an annual income analysis (as is indeed most common in the literature).[9]

[6] Attanasio (1999), with cohort data from the US and the UK, shows how the variability of disposable income over the life cycle is mirrored by that of consumption, although in a less pronounced way in the case of equivalent non-durables. Borrowing constraints have been found significant for low income households in several studies, e.g. Cutanda (2003).

[7] The surveys always covered a 12-month period, but it did not coincide with the calendar year.

[8] Please see http://www.eco.uc3m.es/investigacion/epf.html.

[9] The bias associated to this exclusion would grow, however, given that National Accounts depict an increase in corporations' share of capital income with respect to households'.

TABLE 2.2: Biases in the Household Budget Surveys

	Problem	Effect on inequality
Universe	Excludes the homeless	-
Income definition	Excludes undistributed profits	-
Sampling procedure	No oversampling	-
Non-response	Bigger in dynamic urban areas	-
Under-reporting	Bigger in non-salary income	-

Source: Author's compilation, based on Garde et al. (1996).

The remaining issues appear more troubling. Oversampling the higher-income strata (urban areas with wealthy inhabitants) would have helped to provide better estimates of income for rich families, since the variability among them is usually higher (this is a common method in modern statistics). On the other hand, non-response and under-reporting entail a likely under-representation of the rich both in quantity and income levels. Not correcting for these effects implies a potentially important bias. It has to be kept in mind that these are not tax data, so the term under-reporting does not equal tax base fraud: it could be related to evasion, but also to lack of accounting control in the families, mistakes and forgetfulness, or errors in calculating yearly totals from the questions. The problem is relatively common in this kind of surveys.

Trying to confront the issue, some statistical work was already undertaken during the 1970s. At least part of the unit non-response bias was corrected by INE with the scaling-up factors provided with the results, which give higher population weights to observations in strata where unit non-response was more acute.[10] But under-reporting clearly remains an issue. A simple comparison of the data on total income and expenditure (plus net savings) tells us that something is wrong: only 30-40% of the households spend less than their yearly income, while around 10% would consume more than twice its level (table 2.3; see also the distribution disaggregated by decile in Appendix B.1).

Certainly, not all families in a given year spend less than they earn, but the high

[10]Unit non-response is total lack of answer from a selected household, due to refusal or inability to contact it; it is different from item non-response, which arises when one household participates in the survey but fails to provide answers to specific questions. The re-weighting procedure does not eliminate the whole problem, as it can be argued for example that non-response correction should take into account also the income level of households' strata, which affects the probability of response, as suggested by Mistiaen and Ravallion (2003). Pérez-Duarte et al. (2010), however, show that for the Finnish wealth survey the non-response bias was not substantially reduced after applying more refined re-weightings and calibrations using further variables.

TABLE 2.3: Households and budget constraint: distribution according to the ratio (Expenditure + Net Savings) / Income

	0 - 1	1 - 2	2 - 4	>4	Total
1973-74	30.8%	57.4%	10.7%	1.1%	100%
1980-81	37.2%	53.5%	8.4%	0.8%	100%
1990-91	41.9%	48.5%	8.8%	0.8%	100%

Source: author's calculations based on Household Budget Surveys.

Note: households in the first column spend within their budget constraint. A ratio of 2, for example, means that the family reported to spend twice as much as her yearly income.

ratios in the table seem implausible, specially given that total net household savings in those years were positive, according to the Spanish National Accounts.

In fact, another possible evidence of under-reporting is a comparison with National Accounts data, which normally are taken as a more reliable source for the aggregates. Disposable income totals are contrasted in table 2.4 (a disaggregated examination can be found in Appendix B.3). Disposable incomes in the surveys are only around 70% of those estimated in national accounting for the household sector, which reinforces our suspicion that in the HBSs they are under-assessed to a considerable extent. The fact that this problem affects richer areas and non-salary income to a greater degree (as stated by e.g. Alcaide and Alcaide, 1974 and Sanz, 1995) should warn us against the use of these data without enough criticism. The under-estimation of incomes in the surveys seems more acute in the seventies than in 1990, which could indicate an improvement in the accuracy of the source and therefore a non-homogeneous bias over time – thus potentially affecting inter-temporal comparisons.[11]

[11]Other household surveys have been contrasted with the magnitudes from National Accounts with similar results. Pou and Alegre (2002) made the exercise for the *Encuesta Continua de Presupuestos Familiares*, a rotating panel stretching from 1985 to 1996, and found that the ratio in gross terms was around 62-69%, with a slight improvement over the period. (This ratio is not directly comparable to those given in the last column of table 2.4, which are obtained from the net magnitudes. In the case of the HBSs, the corresponding gross values would be 66.8%, 74.7% and 80.2% for the three years respectively: the ECPF thus appears more unreliable for the study of income inequality than the benchmark year surveys I am using here). Andrés and Mercader-Prats (2001) engaged in similar calculations with the 1994 European Community Household Panel (*PHOGUE*). They present ratios for the different income sources which show the high reliability of wages and salaries data, and the troubles with incomes from self-employment and capital. This result coincides with our further exploration of HBSs in section 2.3.

TABLE 2.4: Disposable Income in HBSs and National Accounts

	HBSs (1)	Nat. Acc. (2)	(1)/(2)
1973	2,209,839	3,099,302	65.5%
1980	7,703,772	11,049,326	69.7%
1990	25,079,849	33,387,093	75.1%

Millions of nominal pesetas. Household sector.
Source: author's calculations and Pena and Callealta (1996).

2.2.3 Literature with correction of HBSs

The problems surveyed in the previous subsection were known by both INE and the research community at the time. As a result, some corrections were attempted in the data. Table 2.5 displays the original distribution from the HBSs, together with the main adjusted estimates available.

The original distributions show a constant increase in the shares of the bottom five deciles, together with a decrease in the part accruing to the top (deciles 9-10). The Gini index corresponds to that given by Goerlich and Mas (2001) in their second row in table 2.1. According to these data, the period of the democratic transition was very positive for the Spanish poor and middle classes.

The other columns in the table present distributions corrected for under-reporting with different procedures. J. Alcaide was the first researcher to tackle the issue, contemporaneously to the surveys. In Alcaide (2000) he showed an abrupt decrease in disposable income inequality starting at some point between 1973 and 1980, and continuing with less intensity in the following years. His corrections on the HBSs are based on the difference between total income and total expenditure data, taking the latter as more reliable (since they adjust better to the National Accounts and households may have felt less reluctant to report them). His first step thus consisted of an upwards adjustment of income to expenditure, with data aggregated by socio-economic groups, and later he scaled-up the corrected income figures to National Accounts.[12] These results have been widely accepted since, and are included in the *Estadísticas históricas de España. Siglos XIX-XX* (Carreras et al., 2005). Table 2.5 shows that his procedure provided higher inequality figures than the raw HBSs data. Since the difference was much larger for 1973-74,

[12]The methodology is best explained in Alcaide and Alcaide (1974), where there is reference to other sources used, such as INE's wage surveys, and to a Pareto simulation in the upper tail of the distribution.

TABLE 2.5: Distribution of disposable income across household deciles (percentage over total)

	Original HBSs			Alcaide			INE	Estruch	Pena et al		
	1973-74	1980-81	1990-91	1973-74	1980-81	1990 (*)	1973-74	1990-91	1973-74	1980-81	1990-91
Decile 1	2.07	2.48	2.71	1.76	2.41	2.69	1.8	3.91	2.58	2.57	2.80
Decile 2	3.90	4.07	4.33	3.18	3.98	3.47	3.1	4.39	4.03	4.16	4.49
Decile 3	5.26	5.43	5.64	4.47	5.20	5.22	4.2	5.94	5.06	5.25	5.58
Decile 4	6.51	6.69	6.78	5.11	6.31	6.32	5.3	8.09	6.07	6.26	6.54
Decile 5	7.76	7.94	7.95	6.34	7.38	7.66	6.5	9.91	7.11	7.29	7.60
Decile 6	9.06	9.25	9.23	8.04	8.80	8.48	7.9	9.96	8.32	8.46	8.74
Decile 7	10.55	10.67	10.65	9.06	10.01	9.75	9.8	10.27	9.78	9.88	10.10
Decile 8	12.51	12.57	12.51	10.09	11.53	11.78	12.6	12.16	11.76	11.76	11.89
Decile 9	15.63	15.55	15.49	12.38	15.05	15.08	16.9	15.93	15.02	14.96	14.91
Decile 10	26.75	25.35	24.70	39.57	29.23	28.35	31.9	19.42	30.78	29.41	27.35
Gini index	36.2	34.3	33.0	44.6	36.3	34.7	42.5	29.3	38.66	37.57	34.96

Sources: author's calculations on the basis of HBSs, Alcaide (2000), Instituto Nacional de Estadística (1977), Estruch (1996) and Pena and Callealta (1996).

The unit of analysis is the household and the income definition used corresponds to total disposable income (not per capita, not equivalized); except for Pena's study, where it is income per capita. The Gini indices given in the cited studies are calculated out of the aggregated data, and thus underestimated with respect to those obtainable from micro-data.

(*) Alcaide's calculations for 1990 are based on a different survey, the *ECPF*, and therefore not strictly comparable to those of the HBS I am analysing here.

his calculations depict a more powerful retreat of inequality during the years of the political transition than in the following decade. Estruch (1996) used a very similar methodology, applying it to the 1990-91 data, in his work about public spending.

Alternatively, it can be accepted as economically normal that some households consume above their yearly income, up to a certain extent. Such an approach was taken by INE's study of the 1973-74 survey, for the volume *La Renta Nacional y su Distribución 1976* (Instituto Nacional de Estadística, 1977): they accepted as "honest" those households where the difference between total expenditure (plus net savings) and income was not bigger than 5%.[13] With those, a log-log relationship was estimated between consumption and income and used to correct the under-reported incomes. The result was also a more unequal distribution. The authors themselves considered it as a lower bound of inequality, since "honest" families were found mostly in the poorer deciles: if expenditure-income elasticity is not constant but decreasing, the concentration of income would be bigger than estimated.

A similar procedure was applied by Pena and Callealta (1996). They first obtained under-reporting correction factors by socio-economic categories, again derived from the relationship of declared income with consumption (ranging from 1.63 to 1.11). But these were not applied directly on the total income of the household: 1.06 was assigned to salaries and 1.03 to public benefits, following the results in Díaz and Fernández (1993); which implies that the correction factors for other income sources resulted higher as a consequence. In a second step, they applied a uniform adjustment to the National Accounts.[14] Their result is also higher inequality than in the original surveys, with a lower reduction over time than according to Alcaide.[15]

In the next section I present an alternative procedure to deal with income under-reporting, which leads to different conclusions.

[13] Argimón et al. (1987), for their study on indirect taxation in 1980, followed the same assumption. They used, however, provincial-level data, since the micro-data were not yet available at the time of their work. I have not therefore included their estimation in the table.

[14] Pena's procedure was followed with slight modifications in Marchante Mera et al. (2002). The focus of this study is not income inequality but consumption and savings by age group, which is why it is not surveyed here.

[15] It should be noted that the reported distribution in Pena and Callealta (1996) is of income *per capita*, so the comparison with the other columns is not straightforward.

2.3 Adjusting Household Surveys

My methodology is similar to Alcaide's and Pena's in the basic intuitions, namely using income-expenditure discrepancy and scaling-up to National Accounts. But the specific calculations differ, and so do the results. I first follow Pissarides and Weber (1989) and Martínez-López (2013) to obtain the relative level of under-reporting of the self-employed, using only information from the surveys. Then I resort to comparison with National Accounts, but instead of employing the aggregate disposable income I make separate contrasts for the different sources of household revenue, as suggested by Oliver (1997). This allows to obtain particular adjustment factors and therefore a more realistic view of the distribution.

2.3.1 Relative under-reporting of the self-employed

It is widely believed that the self-employed under-report their incomes both in tax assessments and income surveys. Pissarides and Weber (1989) were the first to suggest an estimation of this concealing of incomes by means of contrasting their expenditure levels (in food) with those of wage earners in household surveys. Their idea rested on the basic assumptions of accurate reporting of: (a) the incomes of wage earners and (b) the food expenditures of both kinds of households. The intuition is that wage earners can more easily know their exact income (because of its regularity) and have also less tax-fraud incentives to hide it in a survey (since they have less capacity to evade anyway, given withholding at source). On the other hand, expenditures are known to be better declared than income in household surveys, and specially in the case of food, with ratios near 90-100% with respect to National Accounts.

Pissarides and Weber (1989) obtained for Britain in 1982 that incomes reported by the self-employed should be multiplied by a factor of 1.55 to obtain their true earnings. After them, a wide literature has undertaken similar calculations for other countries and time-periods, with some further methodological contributions (Engström and Holmlund, 2009; Hurst et al., 2010; Johansson, 2005; Lyssiotou et al., 2004; Martínez-López, 2013; Tedds, 2010). Here I follow Engström and Holmlund (2009), who calculated a factor of 1.30 for Sweden around the year 2000, and Martínez-López (2013), who estimated 1.25 for Spain in 2006-2009. Martínez-López stressed that this coefficient was *relative* to the wage earners' own under-reporting rate – something which is important in the Spanish case

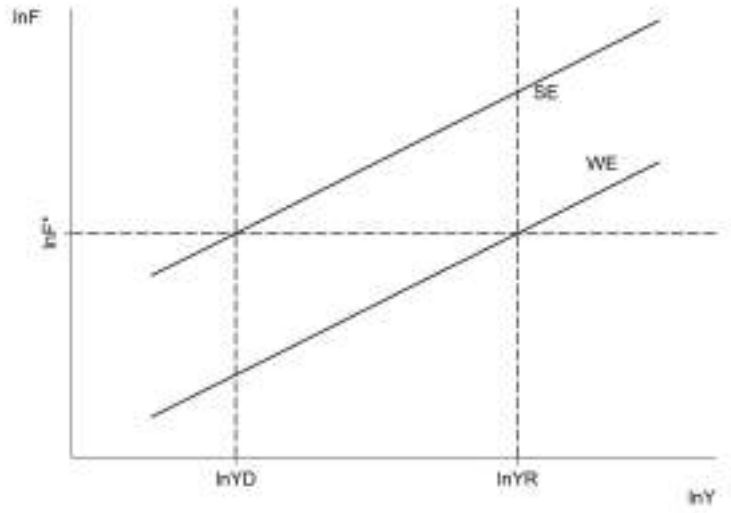
and in a historical analysis, where salaried workers might not be completely reliable.

The procedure is based on the estimation of an Engel curve with the following form:

$$lnF = \alpha + \beta lnY^D + \gamma SE + \delta Z + u, \tag{2.1}$$

F being declared food expenditure, α the subsistence level, Y^D total declared income, SE a dummy for self-employed households (defined as those where at least the household head or the spouse is so), Z a vector of control variables (family size, town size, and so on), and u the error term. γ is expected to be positive, implying an apparent higher consumption of food among the self-employed, which is interpreted as income under-reporting. The idea can be seen in figure 2.1, where γ would be the vertical difference between both regression lines, β the slope (estimated elasticity) and lnF^* the log of reported food consumption by two households with the same real incomes Y^R, but different reported incomes Y^D.

FIGURE 2.1: Pissarides-Weber's model



Source: adapted from Engström and Holmlund (2009).

The difference between real income Y^R and declared income Y^D (in logs, horizontal distance between both vertical lines in the graph) is given by:

$$lnY^R - lnY^D = \frac{\gamma}{\beta}, \tag{2.2}$$

because of the formula to calculate the slope of the regression line in figure 2.1 ($\beta = \gamma/(lnY^R - lnY^D)$). Then we can further obtain:

$$\frac{Y^R}{Y^D} = exp\left(\frac{\gamma}{\beta}\right) \equiv k, \tag{2.3}$$

k being the factor by which the self-employed's reported income should be multiplied in order to obtain their real income (under the assumption that the wage earners' reporting is correct – i.e., relative to it).

Food expenditure is used as the dependent variable for various reasons: it is one of the most accurately reported expenditures in the surveys (in terms of the adjustment with National Accounts of total resulting consumption), and we can safely assume that it is less affected by preferences than other goods. Rural households are excluded from the estimation, since they might obtain a significant part of their food supply out of the market and not report it correctly. The variable F is defined as expenditure in food (excluding alcohol and tobacco) plus foodstuff self-supply and free meals provided by companies to their employees. It is thus supposed to capture total food consumption, except for meals at restaurants and similar establishments.

In order to make the results more robust, I have made an alternative estimation with energy consumption as the dependent variable. In the surveys, this item was asked for as the last bill, so it could be easier to report correctly, without the need to note down and control purchases that is associated with food expenditure questions. It is also less affected by the issue of eating at the firm, out of home and so on. The energy consumption reported is only that of the household as a family: i.e. explicitly excluding expenditures associated with unincorporated businesses.

The results of the estimation are shown in table 2.6. Taking the average k derived from both models, for each year, the self-employed would under-report their incomes by around 14-20% more than the recipients of salary income.[16] This could be applied directly to the data, estimating the effects of the differential under-reporting of the self-employed independently from the other issues identified (see Appendix B.2). The impact, however, is limited. My preferred calculation

[16]My results are slightly below Martínez-López (2013)'s estimation for later years. However, this should not be directly interpreted as an increase in under-reporting, since the factor is relative to the wage-earners' behaviour. A constant reporting rate of the self-employed in surveys with increased reliance of the salaried households would also be consistent with the results.

retains this coefficient, underlining its relative nature, to integrate it in the next exercise.

TABLE 2.6: Regression for relative under-reporting of the Self-Employed

	1973		1980		1990	
	(1) ln(Food)	(2) ln(Energy)	(3) ln(Food)	(4) ln(Energy)	(5) ln(Food)	(6) ln(Energy)
lnY	0.268***	0.438***	0.207***	0.368***	0.167***	0.280***
	(0.00841)	(0.0106)	(0.00960)	(0.0124)	(0.0100)	(0.0137)
SE	0.0407***	0.102***	0.0446***	0.0892***	0.0185*	0.0558***
	(0.00999)	(0.0135)	(0.0107)	(0.0145)	(0.0109)	(0.0148)
Obs.	14,442	14,297	12,624	12,619	10,360	10,242
R^2	0.371	0.236	0.315	0.200	0.312	0.133

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Controls include: household size, age of household head, dummies for municipality size and survey seasonality, meals in restaurants in columns (1), (3) and (5), a dummy for cold climate in columns (2), (4) and (6), and a constant.

k	1.16	1.26	1.24	1.27	1.12	1.22
$\overline{k}$	1.21		1.26		1.17	

Source: author's calculations.

2.3.2 Scaling-up to National Accounts

The other source of correction is external information: a comparison of the totals for each type of income obtained from the surveys with those in National Accounts, which are considered more reliable for the aggregate results, and supposed to capture at least a part of the black economy. This micro-macro contrast of aggregates is a common and desirable practice, as stated by the Canberra Expert Group (2011).[17] Such a step is usual in analysis of survey data in other countries, as can be seen, for instance, in ECLAC's reports, Engel et al. (1999) and Barreix et al. (2009).

Complete income accounts for households are available in the Spanish National Accounts since 1980 (the different macroeconomic flows are disaggregated by

[17] *"Most users of household income distribution statistics would expect the producers to have undertaken reconciliation between the macro aggregate of household income and the micro income statistics suitably grossed up to population totals. Even if this is not possible, the data producer should provide clear explanations when differences are known to exist"* (Canberra Expert Group, 2011, p.5).

sectors, one of which are the households, together with private non-profit institutions). Data for 1973 is taken from Pena and Callealta (1996), with the exception of capital incomes, which have been approximated using the percentage of dividend and interest income in "incomes from property and enterprise" in the household sector in 1969 and 1980 (the two closest available years).[18]

There are some coverage differences between the surveys and the National Accounts data: namely, in the latter households appear aggregated with private non-profit institutions, and they also include people living in collective arrangements (e.g. retirement homes), who are not present in the surveys. For an extensive discussion, see Sanz (1995). These differences are considered minor and not dealt with here.[19]

The adjustment procedure needs to take into account that Household Surveys provide incomes net of taxes, while the figures in National Accounts are gross. The corresponding taxes have therefore been subtracted from the latter before calculating the relationship between magnitudes, in net terms. Imputed incomes are not corrected, since they do not mostly derive from the respondents' answers but were estimated by INE; hence, they are also extracted a priori from both sources.[20] Scaling-up factors for each source of income have been calculated with the following formula:

$$m_i = (X_{i,NA} - I_i - T_i)/(X_{i,HBS} - I_i), \tag{2.4}$$

with $X_{i,NA}$ meaning the gross amount in National Accounts, I_i the imputed (non-monetary) incomes in category i if there are, T_i the associated taxes, and $X_{i,HBS}$ the net amount given by the Household Budget Survey. See table 2.7 for the correspondence between magnitudes in both sources.

The basic procedure, however, is modified for Net Operating Surplus (NOS) and Transfers. NOS includes self-employment monetary income, self-employment imputed income (not corrected) and income from real estate rentals. A total

[18] In Pena and Callealta (1996), capital incomes seem to be underestimated. I have thus used this information provided in the National Accounts publications of the pre-1970 base (where only some household flows are present).

[19] There is an additional problem with interest income, which is defined in the surveys in net terms (interest incomes received minus interests paid for loans). This is consistent with an economic concept of yearly income, but not with the distribution of gross revenues of this kind across households. The fiscal concept is different, since only certain interest payments are deductible.

[20] These are non-monetary flows accruing to households, related either to wage-earning activities (in-kind compensation and meals at the workplace) or to self-employment (home consumption and housing services in owner-occupied housing).

TABLE 2.7: Matching Household Surveys with the Household Sector in National Accounts

Household Surveys (net)	**Direct Taxes**	**National Accounts (gross)**
Self-Employment monetary income Income from real estate rentals Self-Employment imputed income	Self-Employed Social Contributions Real Estate tax (80%) Income tax from mixed income	Net Operating Surplus
Wages and salaries Employment imputed income	Income tax employment income Workers' and Employers' Soc. Contr.	Workers' Remuneration
Capital income	Income tax from capital income	Interests Land rents Dividends
Social Benefits Private transfers	Unemployed Social Contributions	Social Benefits Private transfers Insur. compensation

Source: Author's compilation, based on Sanz (1995) and Pena and Callealta (1996). Figures from National Accounts always refer exclusively to the household sector.

adjustment to National Accounts would be incorrect, since these include undistributed profits of unincorporated enterprises, which are not present in the surveys (recall section 2.2.2): the procedure applied here yields a difference of around 20% under total adjustment. It is based on the factor for self-employment obtained in subsection 2.3.1: m_{SE} is the product of the previously estimated k and the up-scaling factor for Labour income (since the equation yielded under-estimation relative to wage-earners). The same coefficient has been applied to rental incomes, which make part of the same category in National Accounts.[21]

Regarding transfers, from the surveys of 1973 and 1980 it is only possible to obtain a joint correction factor for the total (which includes social benefits together with all sorts of private flows). However, applying this number to all households equally would underestimate inequality, because benefits are better reported than the rest of transfers, and both kinds of revenue have very distinct distributions (as shown by the 1990 data). To account for this problem, I have used a different correction factor for each decile, based on the results in 1990. Since for this year the survey provides both variables, it allows to obtain a different "general transfer factor" (total corrected transfers / total reported transfers) in each decile, the variation of which responds to the composition between private and public ones. The changing relation of this factor with the total m_{TR} (1.65 in 1990) is used to generate variation in the factors to apply in 1980 and 1973. This entails that the correction factor of transfers increases with income.[22]

The resulting scaling-up factors m_i are shown in table 2.8. As can be seen, they tend to decline over time, showing what seems to be the increasing reliability of the surveys.

However, this is not the case with capital income, which has the highest estimated factors (together with private transfers). This may be a reflection of structural and regulatory change. A decrease in capital income concentration could be accompanied by growing non-reporting: a rising number of households receiving small quantities of capital income and neglecting to include them in the surveys' questionnaires.[23] On the other hand, the increase in the associated tax burden and

[21] Income from real estate rentals is in fact only available separately for 1990. For the previous surveys, I have approximated it using the relation to total capital income by deciles in that year.

[22] Obviously, such a procedure is not completely accurate, since the distribution of both kinds of transfers, and specially public benefits, may have changed across the period. It is however preferred to applying a single factor to all households. Alternative estimations are shown in Appendix B.5.

[23] This source of misrepresentation of incomes in HBSs is dealt with in Engel et al. (1999) with a random imputation procedure (by deciles), the effect of which would presumably be a slight

TABLE 2.8: Correction factors by sources of income

	1973	1980	1990
Wages & salaries	1.35	1.19	1.12
Self-employment & Rental income	1.63	1.51	1.31
Capital income	4.35	3.40	6.85
Private transfers	2.51	2.05	4.02
Social benefits			1.43

Source: Author's calculations.

The table displays the factors m_i, obtained with expression (2.4), which serve to scale-up the income data to the totals in National Accounts.

financial sophistication could have implied higher concealing of such incomes.[24]

The application of these coefficients to each type of income, at the micro-data level, yields a different composite correction factor to each household, as well as to every possible socio-economic sub-group, because of the distribution of income sources. Table 2.9 shows the resulting factors by deciles. The profiles have a J-shape, being lower at the middle part of the distribution and attaining the highest values at the very top.

2.4 The evolution of the Spanish income distribution (1973-1990): an alternative picture

The final outcome of the correction is a set of higher inequality estimates, compared with those resulting from the original INE data, as was originally expected. Table 2.10 displays the Gini indices obtained following two different calculations.

decrease in measured inequality. However, this choice is not taken here because it would be necessary to establish first what share of total misrepresentation corresponds to each problem (under-reporting versus non-reporting).

[24] Another possible explanation for the rise in m would be that the total reference gross magnitudes used in 1973 and 1980 are underestimated, but it seems unlikely. An examination of the factor shares shows that the weight of capital income in household revenues increased during the decades considered here, from 5.5% in 1973 to 6.2% in 1980 and 10% in 1990. The joint accounts for both households and non-financial enterprises show a similar trend. Nevertheless, it is possible that the data for 1973 reflect an extraordinary, circumstantial situation, since wage remuneration was increasing strongly in national income during the first half of the seventies and profits were decreasing. The 1980 data can also be thought of as depicting an economy with low profits, given the context of crisis.

TABLE 2.9: Correction factors by deciles

	1973	1980	1990
Decile 1	1.73	1.50	1.33
Decile 2	1.59	1.51	1.28
Decile 3	1.54	1.40	1.26
Decile 4	1.51	1.38	1.27
Decile 5	1.49	1.37	1.25
Decile 6	1.48	1.36	1.27
Decile 7	1.49	1.37	1.28
Decile 8	1.51	1.40	1.29
Decile 9	1.57	1.40	1.33
Decile 10	1.75	1.45	1.55
Top 1%	2.06	1.69	2.40
Total	1.57	1.41	1.31

Source: author's calculations.

Mean factor applied (weighted average among households). Deciles are built on the corrected resulting disposable income.

The first row shows inequality of disposable income across households, with no adjustment for household size and using them as the unit of analysis (thus giving the same importance in the index to a 1-member household and to a 6-member one); the second uses equivalent income and individual weights (i.e., each person is assigned the equivalent per capita income of its household and has the same importance in the estimation). The latter approach provides a better measure of inequality between individuals, but it requires some assumptions about the distribution of resources within the family and economies of scale in consumption.[25] Unsurprisingly, inequality is lower between individuals than between households, because larger families tend to have higher aggregate incomes.[26]

As can be seen, the correction of under-reporting also implies a change in the observed trend of inequality. While the unadjusted data and the corrections from

[25]It is assumed that all members of a household are entitled to the same level of material well-being (that they share their income equally). Regarding the elasticity of "needs" to household size and composition, here I use the OECD scale, which attaches value 1 to the first adult, 0.7 to the subsequent ones and 0.5 to the minors in the household (up to 14 years old). The choice is consistent with empirical results based on Spanish data (Bosch-Domenech, 1991; Duclos and Mercader-Prats, 1999; Labeaga et al., 2004).

[26]The general result of higher inequality after scaling-up is not present in the 1980 data with household weighting (first row): in this case, the Gini index for adjusted incomes is slightly lower than the original one. This should be attributed to the approximate methods and the plausible under-adjustment in rental incomes and interest incomes. In any case, our main focus is inequality between individuals.

TABLE 2.10: Spanish income inequality (1973-1990): Gini index in scaled-up data

	1973	1980	1990
Disposable total income (households)	36.8	33.5	34.8
Disposable equivalent income (individuals)	34.6	32.6	33.0

Source: Author's calculations on HBSs.

Equivalent incomes are obtained using the OECD scale (which attaches value 1 to the first adult, 0.7 to the remaining adults, and 0.5 to the members of the household under 14).

previous literature reviewed earlier showed an abrupt improvement in the distribution over time, the new corrected incomes show a much more slight change across these decades (around 1.5 Gini points), and coming to a halt in the eighties. We can thus talk about considerable persistence in inequality. This result contrasts with most of the literature presented in section 2.2, but is not necessarily at odds with studies based on tax or macroeconomic data, which are reviewed in Appendix B.6.

In the rest of the chapter I make a further analysis of my results. I look at the shares of income accruing to each decile and offer their decomposition into revenue sources. To conclude, I consider the increase in absolute income differences. The concept of inequality is indeed complex, and so is its depiction.

2.4.1 Relative inequality and its composition

The inspection of decile shares based on the corrected disposable income data allows a deeper analysis of the distributive evolution. In table 2.11 inequality among households is shown to have been quite stable over these decades (consistent with the Gini indices in the first row of table 2.10). Interpersonal inequality, which is approached by the distribution of equivalent income in columns 5-7, is slightly lower. In any case, the absence of a clear trend remains. The bottom-half deciles increased their share, but the changes are small and erratic.

It is nonetheless most likely that the *roots* of inequality in the economy changed during these decades. The capital share had been decreasing in the last years of the dictatorship as a short-term response to the crisis, and could have increased again later because of liberalization. Most advanced industrial economies have experienced a recent increase in wages and salaries dispersion. These trends, together with the increase in unemployment, could have counteracted to some

TABLE 2.11: Shares of disposable income among deciles

	Total income - households			Equivalent income - individuals		
	1973	1980	1990	1973	1980	1990
Decile 1	2.38	2.84	2.79	3.01	3.00	3.22
Decile 2	4.09	4.45	4.33	4.51	4.74	4.83
Decile 3	5.23	5.60	5.49	5.55	5.85	5.84
Decile 4	6.31	6.71	6.52	6.52	6.82	6.74
Decile 5	7.42	7.81	7.61	7.50	7.82	7.72
Decile 6	8.64	8.98	8.84	8.62	8.90	8.72
Decile 7	10.14	10.41	10.23	9.98	10.23	9.95
Decile 8	12.15	12.25	12.06	11.88	12.04	11.65
Decile 9	15.41	15.14	15.02	14.73	14.78	14.45
Decile 10	28.23	25.80	27.13	27.69	25.80	26.87
Top 1%	6.47	6.03	7.15	6.65	6.14	7.30

Source: Author's calculations.

All data given in percentages. Equivalent incomes are obtained using the OECD scale.

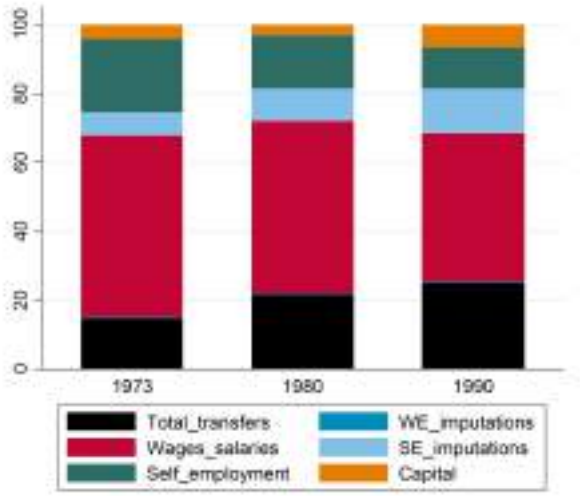
extent the equalizing force of public benefits expansion and the introduction of progressivity in the tax system (as will be seen in the next chapter).[27]

Entering such debate in depth is out of the scope of this paper. But the decomposition of disposable income in figure 2.2 can provide an idea of the forces behind inequality change. Apart from wages, self-employment income, capital income and transfers, two kinds of imputed incomes are included. These are non-monetary flows accruing to households, which were given an approximate value in the survey. 'WE imputations' (those related to wage-earning activities) include in-kind compensation and meals at the workplace, while 'SE imputations' (related to self-employment) are home consumption and housing services in owner-occupied housing.[28]

[27] On the other hand, it should be noted that our three observations are to a certain extent also a result of short-term fluctuations: 1973 was the culmination of the pre-oil-shock growth in the country, while 1980 was a period of economic distress, and in 1990 the country was back on the ascending side of the cycle. We cannot make strong conclusions out of them. Unfortunately, these are the only data available for the period. The *Encuesta Continua de Presupuestos Familiares*, a yearly rotating panel starting in 1985, might have complemented the image, but it is known to have an even more serious income under-assessment problem. Recall the results in Pou and Alegre (2002) and the comments in Eurostat (1999).

[28] The imputation of income from owner-occupied housing is conceptually important but empirically complicated. Measuring standards of living excluding this item can be highly misleading if renters coexist with owner-occupiers, which is of course the case here (although around 80% of the households fall in the second category). The variable in the survey is an approximation to the rent a household would pay if it rented its house. The calculations are certainly not flawless, and moreover it should only be imputed in the percentage that the house is paid (i.e., 100% if the family totally owns its house, 50% if half of it is still owed to the bank). This adjustment is

FIGURE 2.2: Composition of disposable income



Source: Author's calculations, using sgini module for STATA by Philippe van Kerm.

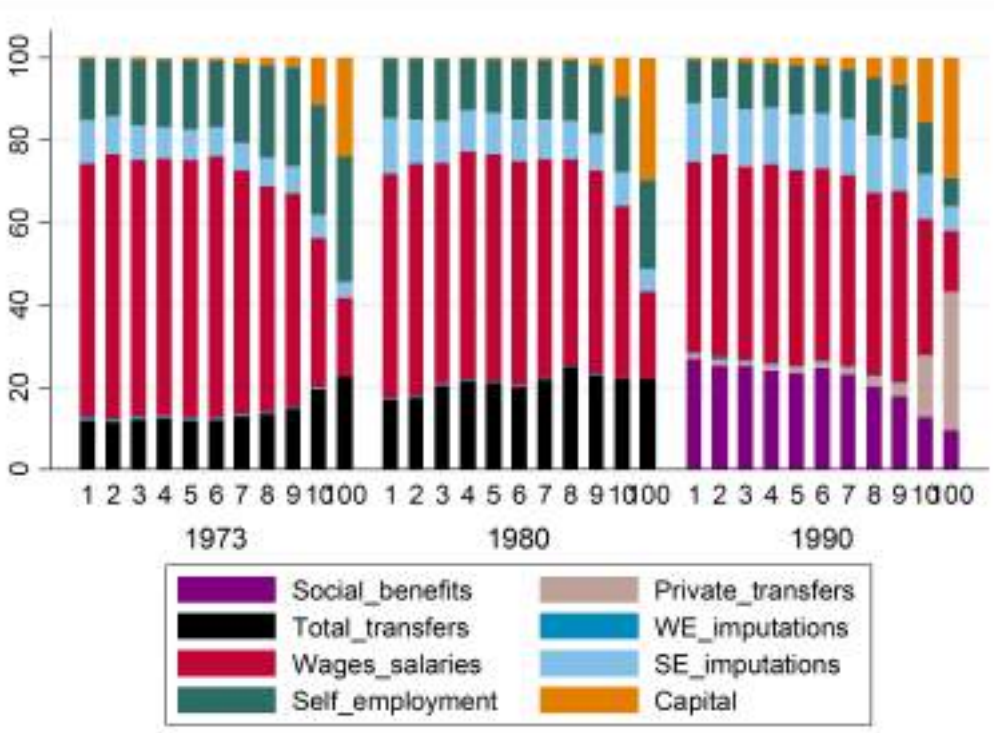
Employment incomes were clearly the main components of disposable household resources. But their share decreased over time (accounting each year for 53%, 50% and 43%, respectively). The items gaining weight were mainly transfers (due to the development of the welfare state: total transfers increased from 14% to 25%) and capital income (from 4% to 7%). Because capital income is concentrated at the top, while public benefits accrue mainly to the bottom, both changes could have counteracting effects on total inequality. Also self-employment imputations had a growing participation (from 7% to 13%), mainly due to the imputed rentals from owner-occupied housing.

This general composition of disposable income is of course very variable along the social ladder, as can be seen in figure 2.3. In the bottom deciles transfers and salary income make up most revenues. Social benefits and private transfers are regrettably not disaggregated in the 1973 and 1980 data, but the progressive nature of the first can be seen clearly in 1990. Wages reach maximum participation in the middle deciles, and self-employment income was somewhat skewed to the top in the first years. Revenues from capital are the most concentrated: almost absent in the lower classes, they constitute over 10% of income for the upper decile and around 30% for the top 1%. This pattern is similar in other countries

not possible here because of lack of data. However, I consider necessary to include this element, specially in a context marked by rising prices of dwelling and with the housing bubble in the horizon.

(e.g. Piketty, 2003).

FIGURE 2.3: Disposable income composition by deciles

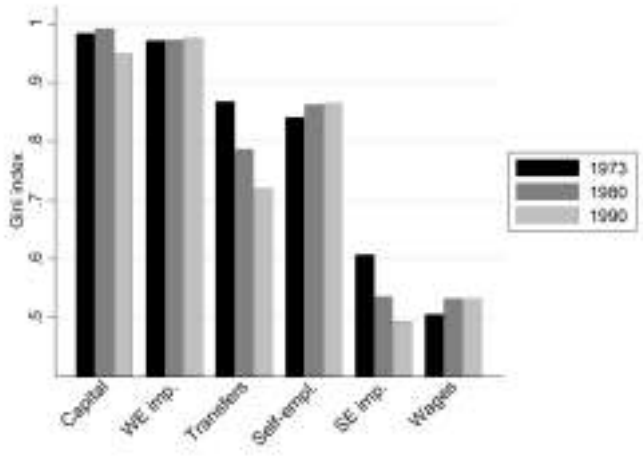


Source: author's calculations, using sgini module for STATA by Philippe van Kerm.
In all cases incomes are equivalised by household size, using the OECD scale. The last bar of each year represents the top 1%.

Figure 2.4 plots inequality for each component of income, following the decomposition method originally developed by Lerman and Yitzhaki (1985). It shows that employment incomes got slightly more concentrated over the period: wages and salaries went from 50.6 to 53.2 Gini points, and self-employment income from 84.1 to 86.5.[29] The element with the most uneven distribution is capital income (99-95 Gini points), the increasing participation of which also pulled up total inequality. These forces were offset by a more homogeneous distribution of self-employment imputations and transfers, income sources which, as we have seen, experienced substantial growth over the period.

[29]Recall that this is the Gini index for each component *over the whole population*, not only over the households which do have each kind of income. If we considered only families with salary income, for example, we would get a quite constant Gini index of 34-36. Both computations are showing different facts (and none of them is wage inequality among the workforce, which would correspond to individual-level data).

FIGURE 2.4: Gini indices for components of disposable income



Source: Author's calculations, using sgini module for STATA by Philippe van Kerm.

In all cases incomes are equivalised by household size, using the OECD scale. 'WE imp.' means imputed incomes from labour activity, while 'SE imp.' refers to non-monetary self-employment incomes such as that from owner-occupied housing.

2.4.2 Inequality in levels

As we can see, the near stability of the Gini index does not imply the absence of several interesting distributive changes. A further image emerges if we take a look at the levels of income: in order to do so, table 2.12 displays mean disposable per capita equivalent income by deciles, in constant 1990 pesetas. All groups experienced an increase in their purchasing power during the period.[30] The profiles of income growth were dissimilar in the two sub-periods: while during the seventies it was higher at the lower-mid levels, in the nineties it was the extremes which benefited the most (pointing towards the expansion in Welfare State's transfers in the case of the low-income households). If we look at the top 1%, we even find stagnation in the first sub-period (the oil-crisis decade) and a very significant recovery in the second. The ratios in the last rows confirm the same impression of a weak decrease in economic distances.

Let us recall that the Gini index and other related indicators measure *relative* inequality (i.e., independent from the scale: constant if all incomes were multiplied by the same factor). If absolute differences in income within a society are also

[30] It should be borne in mind that disposable income is still subject to indirect taxes, so changes in consumption taxation also affected final material well-being.

TABLE 2.12: Levels and growth of Disposable Equivalent Income

	Mean (constant 1990 ptas)			Increase		
	1973	1980	1990	1980/73	1990/80	1990/73
Dec. 1	257,168	279,276	359,219	8.6%	28.6%	39.7%
Dec. 2	385,927	440,857	540,182	14.2%	22.5%	40.0%
Dec. 3	475,042	543,928	652,221	14.5%	19.9%	37.3%
Dec. 4	558,261	633,925	754,046	13.6%	18.9%	35.1%
Dec. 5	640,977	727,475	863,084	13.5%	18.6%	34.7%
Dec. 6	737,294	826,796	974,459	12.1%	17.9%	32.2%
Dec. 7	854,088	950,880	1,111,928	11.3%	16.9%	30.2%
Dec. 8	1,015,400	1,119,565	1,302,864	10.3%	16.4%	28.3%
Dec. 9	1,260,337	1,373,365	1,615,610	9.0%	17.6%	28.2%
Dec. 10	2,369,292	2,399,594	3,004,124	1.3%	25.2%	26.8%
Top 1%	5,691,256	5,705,531	8,444,164	0.3%	48.0%	48.4%
Total	855,313	929,507	1,117,712	8.7%	20.2%	30.7%
Dec. 10/1	9.21	8.59	8.36	0.15	0.88	0.68
Dec. 10/5	3.70	3.30	3.48	0.09	1.35	0.77
Dec. 5/1	2.49	2.60	2.40	1.57	0.65	0.87

Source: Author's calculations, using GDP deflators from Prados de la Escosura (2003).
Deciles of individuals based on Disposable equivalent income, obtained with the OECD scale.

thought to be important, we can calculate an absolute Gini, which is the same index without normalization to the mean (as put forward by Ravallion, 2003). Doing this exercise with the three years, we get an increase in the absolute inequality index of 24% between 1973 and 1990. Relative economic distances did not change that much, but they did in absolute terms, in actual consumption capacity.[31]

2.5 Conclusions

In this chapter I have analysed the sources available on disposable income distribution in Spain during the years surrounding the transition to democracy. The main data come from the Household Budget Surveys conducted by the INE, which contain very rich information but need to be used with caution. It is widely known that they suffer from severe under-reporting – and, furthermore, that this is not homogeneous across income sources. Such a problem entails that

[31] The issue is more complicated. Taking into account diminishing utility of incomes, it could be argued that absolute differences in income would be more accurately expressed after some kind of functional transformation to reflect it.

the under-estimation of incomes is not homogeneous across income levels, biasing the inequality indices readily obtained from the data.

I have performed a two-step correction procedure, trying to identify under-reporting first with an Engel's curve approach (contrasting the self-employed with the wage-earners in their incomes and food/energy expenditure) and then with an aggregate adjustment to the magnitudes of the household sector given in National Accounts. The results allow to question the conventional wisdom that inequality strongly diminished in Spain during these decades. The Gini indices of all surveys are pulled up by the correction, and the trend across the years significantly weakens.

This leads directly to asking another question. Did transition to democracy not introduce significant distributive improvements? Political economy theory would expect from democracy an inclination to favour the lower classes (at least, relative to a right-wing dictatorship as Spain had recently suffered), via labour market regulation, welfare state benefits, and progressive taxation. We do witness an increase in the importance of transfers received by the households at the bottom of the distribution, reflecting Welfare State development in the years after 1977. But they did not outdo forces pulling in the opposite direction. The tax system did not turn out progressive, as the next chapter will show. Absolute gains from growth went both to the lower and the upper classes.

Economic growth and decline in inequality in the years after 1950 were suggested to facilitate the transition in the 1970s. Prados de la Escosura (2008) interpreted in this way the elimination of absolute poverty and the growth of the middle class, which would have permitted the stabilization of democracy, contrary to what happened in the interwar period. But that evolution does not seem to have gone much further. Liberalization brought about new distributive forces, while in the context of general economic distress in Europe, the new political system did not turn out to disproportionately favour the less well-off. At least, it could not effectively counteract market forces towards growing inequality.

This is, of course, a political choice, reflecting the equilibrium between classes or interest groups in the young parliamentary state. In that sense, the lack of economic equalization could be enlightening about the access to political power. In the next chapter, I explore the role played by the tax system, as a reflection of power structures and as a distributive instrument.

Chapter 3

The distribution of the tax burden

The relationship between democracy, inequality and redistribution has inspired extensive research, but consensus is still elusive. In order to contribute to this discussion, the author analyses the Spanish case, where transition to democracy was accompanied by a comprehensive tax reform, aiming at increasing progressivity and revenue. But how effectively did it change the distribution of the tax burden? Was there a 'fiscal revolution'?

The results show that persistent regressivity (albeit decreasing) exacerbated income inequality, failing to attain convergence with more developed countries. The joint effect of the fiscal system, however, was slightly positive due to progressive social spending.[1]

3.1 Introduction

> *"Do you think that, generally, taxes are fairly collected? That is, that the ones who own more pay more?"*[2]

During the last thirty years, approximately 80% of Spanish citizens would answer no to this question according to annual opinion polls (Alvira and García, 2005). Spaniards do not seem to believe that their tax system is progressive, contrary to what was proclaimed as an objective during the political transition. Are they right? And what could that tell us about the effects of democratization on distribution?

Redistribution and progressivity are commonplace today in the debate about taxation, but the force of these ideas has changed strongly over history. They were

[1] An adapted version of this chapter has been published in *European Review of Economic History* in August 2015, under the title "Did Democracy bring Redistribution? Insights from the Spanish tax system (1960-1990)".

[2] Question posed in surveys by the *Centro de Investigaciones Sociológicas*, an official sociological research center.

brought by evolving economic thought and political scenarios at the turn of the 20th Century, to become gradually accepted by democratic states. However, after the development of Welfare States their validity has been questioned, especially since the economic conditions of the 1970s-80s motivated a stronger emphasis on the disincentive effects of redistributive taxation. So is redistribution an automatic side effect of inequality, under a democracy? If it were, we would expect the impact of taxes and benefits to change drastically as a result of a regime transition – if this entails an effective modification of power and decision-making institutions, and social preferences support redistribution. In this chapter, I investigate the case of Spain during the years surrounding the coming of democracy, to shed some light on the issue.

Empirical investigation on tax incidence originated in the mid 20th Century, with the path-breaking studies of Barna (1945) and Nicholson (1965) for the UK and Musgrave (1951), Musgrave et al. (1974), and Pechman and Okner (1974) for the USA. The basics of this approach are still followed today by academia (e.g. Piketty and Saez, 2007) and official statistical institutions. Other studies have focused on public expenditure, or encompassed both aspects (Barnard et al., 2011; Breceda et al., 2009), although many leave aside indirect taxation (e.g. Wang and Caminada, 2011). The literature is wide, but it lacks a common methodological framework and shows no consensus in the relation with political economic variables.

For the case of Spain, most of the available analyses focus on specific taxes (especially the personal income tax, e.g. Argimón and Marín, 1989; Onrubia et al., 2007).[3] Some general estimations were performed in the late period of Franco's regime (e.g. Instituto de Estudios Fiscales, 1973; Lagares, 1975; Perona, 1972; Pérez Morales, 1974; Valle, 1970, 1974) and also for 1978 (Confederación Española de Cajas de Ahorros, 1978) and 1990 (Manresa and Calonge, 2001). Regrettably, these are not directly comparable due to methodological differences: so far, we do not have a long run description of the distribution of the tax burden in the country, to contrast with political events. Obtaining it, and comparing it with other cases, is the primary goal of this chapter. The preliminary hypothesis, arising from prior empirical literature and the analysis of the revenue structure, is

[3]Other works have dealt with all of direct contributions (Martínez, 2009), the indirect side of the budget (Argimón et al., 1987; Avellaneda and Sánchez, 2002; Edo Hernández, 1992; Mayo and Salas, 1993), or social contributions (Argimón and González-Páramo, 1987; Castellano, 1977). This is not an exhaustive list.

that the tax system underwent a transition from a regressive to a somewhat proportional system.

This study is necessary for the historical interpretation of the Spanish transition to democracy. As soon as 1977 a broad tax reform was initiated, having among its central goals an improvement in equity. Progressivity and redistribution were explicitly introduced, even in the new Constitution. I analyse to what extent such policy orientation was effectively applied in practice. The main finding is that regressivity was not eradicated from the tax system, although it was attenuated, after having increased during the 1960s. As a result, taxation effected an inverse redistribution of income, contradicting the political discourse and leaving the country far from convergence with the European Welfare State model.

The rest of the chapter is organised as follows: section 2 introduces the theoretical framing, and section 3 describes the Spanish tax system and its main reforms. In section 4 I expose the methodology, while section 5 presents the results, ultimately addressing an international comparison. The conclusion sums up the main contributions and comments on further paths for research on the topic.

3.2 Democracy and fiscal redistribution

As has been previously mentioned, classic political economy models predicted that an extension of franchise would be followed by an increase in redistribution (Meltzer and Richard, 1981). Applied to the theory of political transitions, the basics of the argument are also found in Acemoglu and Robinson (2001) and Boix (2003): democratic countries will be (more?) redistributive, and the threat of such a policy may hinder the achievement or consolidation of democracy.

The logic of these arguments has failed to be consistently backed by empirical work. Aidt and Jensen (2009b)'s results pointed to a significant impact of franchise expansion on the adoption of progressive income taxes. Scheve and Stasavage (2012), however, failed to confirm this hypothesis regarding inheritance taxation. On the other hand, the positive impact of democratization has been established for the expenditure side by Lindert (1994), but research examining differences between the socio-economic policies of democracies and non-democracies

normally does not get the expected results (Mulligan et al., 2004).[4]

In this regard, a line of literature has called for a nuanced interpretation of political transitions and regimes. Acemoglu et al. (2013) discuss several channels through which democracy may not result in income equalization: increased structural transformation, or the preeminence of the interests of the elite or the middle class. In their empirical exploration, they find no robust effect of democracy on inequality. Albertus and Menaldo (2014) posit that a relationship between democracy and redistribution only arises when a revolutionary threat hampers the elite's control of the democratic transition. Their data, however, measure redistribution only indirectly.

We therefore lack a solid consensus about the effects of democratization on redistribution. This paper proposes Spain as a significant case study. After a four-decade dictatorship, the country underwent a political transition since 1976, accompanied by a profound tax reform that was the basis for the development of the Welfare State and reinforced international integration. However, a historical quantitative study of the distributive changes along the period is still not available.

The interest of the study lies in several points. First, Spain is an example of a peaceful transition: arguably a desirable feature, whose results could be enlightening to compare to other processes. Its political history has many similarities with those of Portugal and Greece, which also suffered dictatorships in the second half of the 20th century, while the rest of Western Europe was under democratic rule. Whether they followed similar paths during and after democratisation could be a good starting point to place the experience analysed here, using Italy as a contrast with longer-standing parliamentary institutions. Several Latin American countries, on the other hand, also experienced recent democratic transitions, though at different levels of economic development and inequality.

The international context is very relevant here: "third wave" democratizations took place at a time of crisis, after the golden age of fordism, growth and redistribution in Western countries, and surrounded by increasing global integration. This scenario influences the range of policies available. International mobility of assets has been signalled by several scholars as an obstacle to redistribution,

[4]The relationship between inequality and redistribution has also been challenged: while Milanovic (2000) found support for it (leaving aside indirect taxation), others suggest a "Robin Hood paradox", redistribution being more extensive where it is less needed (Lindert, 2004).

given the reinforced leverage of their owners (Bates and Lien, 1985; Freeman and Quinn, 2012).

A specific point of this work is the focus on the revenue side of the budget – although some attention is paid to household benefits as well. Most of the studies in the political economy tradition have concentrated on disposable income or social expenditure, i.e., indirect or incomplete indicators of redistribution. Tax progressivity, however, is often a social demand in itself, and it is the result of the two-sided budget that matters. Furthermore, the interactions between both dimensions are of interest: in this sense, Timmons (2005) argued that there is a correspondence between the regressivity of taxation and the service to the interests of the poor (leaving little space for effective vertical redistribution), while Steinmo (1989) and Lindert (2004) suggested that more progressive systems tend to be smaller and therefore less redistributive as a whole. To investigate these issues further, better historical data on tax incidence is highly convenient.

To sum up, while early studies suggested a direct relationship between democratization and redistribution, this idea has been elusive empirically and challenged by new theory. My hypothesis is that the Spanish tax system went from regressivity to near-proportionality during the political transition, thus failing to attain progressivity – which was an explicit objective. This 'insufficiency' affected the redistributive capacity of the joint tax-and-transfer system. The confirmation of these insights would pose our case study as an advocate for the nuanced interpretation of political transitions in the distributive arena.

3.3 Reforms and persistence in the tax system

Two tax systems may be distinguished in modern Spain's history. Both were born in times of political change: in 1845, shortly after parliamentary politics stabilized under dominance of the moderate party; again in 1977, as Franco's dictatorship gave way to a new democratic regime. This coincidence provides a motivation for the paper, following Schumpeter's insight that *"The public finances are one of the best starting points for an investigation of society, especially though not exclusively of its political life"* (Schumpeter, 1954).

The main features of the 1845 system were the predominance of indirect taxes (especially excises), the design of direct taxation as factor-specific taxes,[5] and a scarce revenue potential, tending to stagnate (Comín, 2010b). The structure was completed in the turn of the century adding taxes on capital and labour.[6] Further changes were the introduction of the first income tax during the 2nd Republic (1932) – as a limited super-tax on very high incomes – and some reforms under Franco's dictatorship, which did not affect the fundamentals of the model (Comín and Martorell, 2013). Nearest to our period, Navarro Rubio's reforms in 1957 and 1964 were related to a major turn in economic policy: the abandonment of autarchic orientation with the 1959 Stabilization Plan.[7] The first reform pursued an increase in revenues, together with the extension of incentives to investment, while in 1964 the alleged objective was redistributive. However, in spite of the propaganda filling the Minister of Finance's speeches, redistribution did not find its way under the dictatorship. Collection procedures actually took a step backwards with the generalization of presumptive collective assessment of taxable bases, due to the lack of capacity in the tax administration.

Despite the lack of fundamental tax reform, there were some significant changes in the financing of public administrations in Franco's Spain. Social Security was introduced in a 1963 law as the result of integration of different social insurance programs, taking off in practice in 1967 (Comín, 2010a).[8] As a consequence, in the final years of the dictatorship public budgets did grow noticeably, but without a (politically complicated) 'tax' reform, using an independent contributory system that increased pressure on labour. Figure 3.1 shows the share of social contributions in total tax revenue progressively growing during late Francoism, to become

[5]This type of taxation is directed upon each specific source of income regardless of the taxpayer's characteristics, as opposed to personal taxation, which aims to jointly consider economic capacity from all sources.

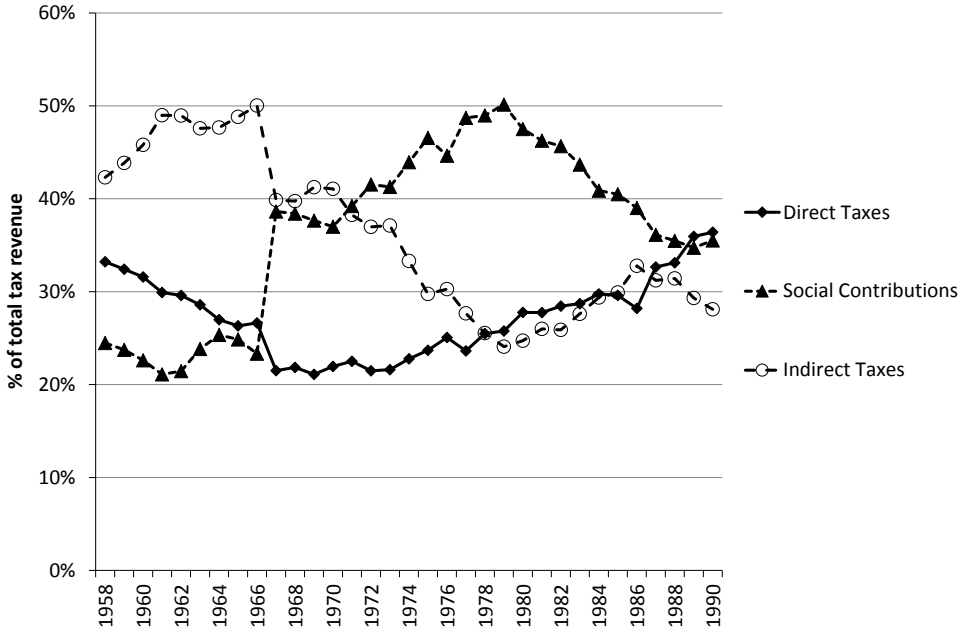
[6]The government also attempted to introduce progressive rates in the Inheritance tax, something which was rejected at the Senate (but finally passed in a similar fashion in 1910). The debate in Parliament shows the full validity of the idea of proportionality at the time: increasing rates were not defended as a redistributive tool (a socialist, subversive idea), but because of their revenue-increasing effect or, in any case, as a compensation for regressivity in other taxes (San Julián, 2011).

[7]A deflationary programme put forth in time of critical economic imbalances, meant to start internal and external liberalization.

[8]In all the thesis, Social Security contributions will be considered as a tax. This is based on the extent to which the system functions as an insurance or not: compulsory or voluntary nature, the level of budgetary autonomy, the actuarial or pay-as-you-go administration, the proportionality between contributions and benefits, or the existence of non-contributory pensions. Bandrés and Cuenca (1996) showed that in 1992 the 'transfer' component in Spanish public pensions was around 50% of the benefit received, and not homogeneous across professional regimes, so the tax-benefit approach is justified.

the main source of funding in the beginning of the 1970s. The shares of direct and indirect taxation got closer over these years, with both lines almost coinciding since 1978. This was an objective of the reform, but to know its implications in terms of progressivity a deeper analysis is required.

FIGURE 3.1: Main categories as percentage of Spanish tax revenue



Source: *Cuentas de las Administraciones Públicas* (see Appendix A for details on the inner disaggregation).

There is a break in the series in 1967, due to the coming into force of the 1963 Social Security law, which entailed the unification of the public social insurance system, the incorporation of some private insurance institutions and an improvement in aggregate accounting. The change in trend due to the reforms in 1977-78 can be clearly seen.

Transition to democracy brought about a comprehensive transformation of the tax system, thought of as a basic aspect of the regime change. The main political parties shared the core of a reform program put forward by the Institute for Fiscal Studies, a centre related to the Ministry of Public Finance (Instituto de Estudios Fiscales, 1973, 1976): it aimed at attaining a balance between direct and indirect taxes, thus improving the fairness of the system, and at increasing revenue to finance the development of the Welfare State in response to social demands. All this meant a convergence with the European model. It was made possible only a

few years after Franco's death, as part of the negotiations in the Moncloa Pacts.[9]

As an immediate effect, the new personal income tax (hereafter, PIT) substituted a progressive structure for the previous range of factor taxes, and became central in public revenues, unlike its old precedents. A Wealth tax was introduced during the same years, but always provided a small share of the public budget, as did the Inheritance tax. Both have gradually become irrelevant; a process related to widespread fraud and, in the last case, to the cession to Autonomous Communities (Durán-Cabré and Esteller-Moré, 2010a). Social contributions also experienced changes in the contributory scheme and administrative reorganisation, but important differences across regimes remained (i.e., between "general" workers and those of special sectors: agrarian, self-employed, or others).

The consensus period, however, did not last long, and gave way to what some have called the "fiscal counter-reform" (Comín, 2007; Pan-Montojo, 1996). The culmination of projected changes was delayed, especially in indirect taxes: VAT was not introduced until 1986, at the time of accession to the European Economic Community, replacing a Transactions tax and the Luxury tax. Generally, indirect taxation followed the lead of international integration and harmonization in the construction of the common market (also affecting excises, public monopolies and tariffs).[10]

After 1978 public budgets experienced a significant expansion, which funded the nascent Welfare State (together with an increase in public deficits; see Comín and Díaz, 2005).[11] The process of convergence with more advanced countries remained nevertheless incomplete: as shown in figure 3.2, total tax revenue in terms of GDP approached that of the EU core, but a significant differential stayed in place, and the path was reversed by the economic crises of the early 1990s' and 2008, indicating its vulnerability (a somewhat different story would arise if our reference were the other OECD countries, which Spain has slightly surpassed). Understanding the unfinished convergence with Western Europe's model will require taking into account the regime transition in Spain together with the change in economic conditions since the original development of Welfare States. The oil

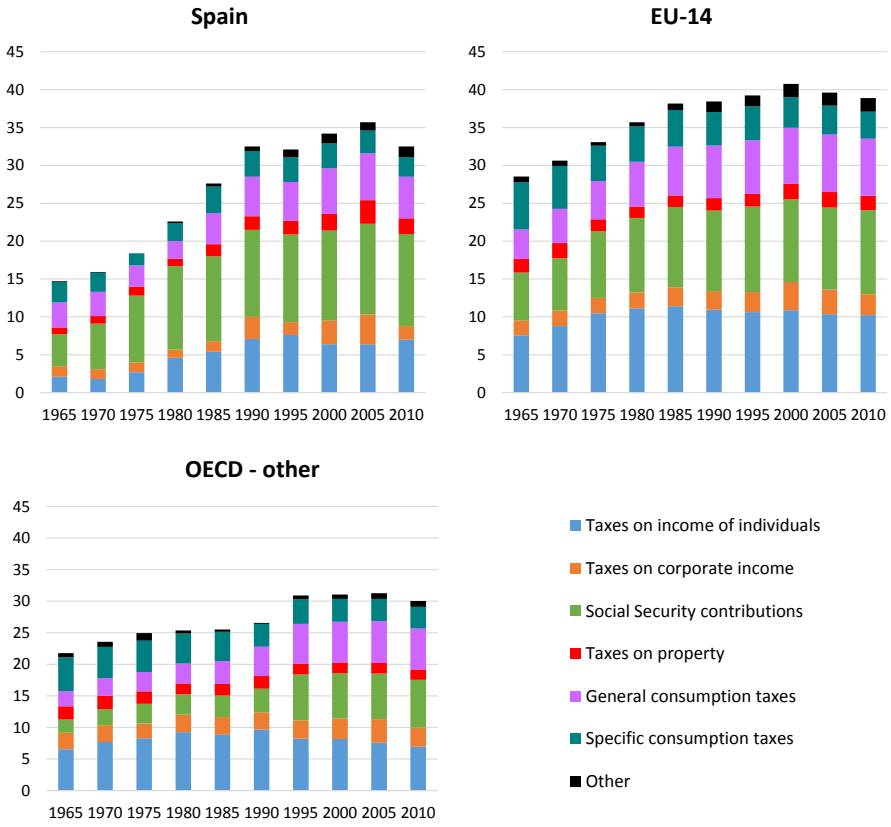
[9] Agreements reached in the autumn of 1977 by the main political parties. They focused on setting a policy response to the economic crisis, but included also several points on taxation (Comín, 2007).

[10] Tariffs had a considerable importance in the sixties (a common feature of underdeveloped countries), lost due to commercial liberalization. State monopolies, banned by EU legislation, were replaced by excises.

[11] Resources were also obtained through seigniorage and financial repression, estimated by Repullo (1992) as 1.7% of GDP in average during the eighties.

shocks and the turn taken by economic policies in the eighties moved emphasis from equity to efficiency.

FIGURE 3.2: Tax revenue as percentage of GDP



Source: *OECD Statistics* (unweighted average).

EU-14: European Union of 15 members excluding Spain. OECD-other excludes all EU-15 countries. This last series is not homogeneous over time, since prior to 1995 data is not available for a number of countries (Chile – pre-1990, Czech Republic, Estonia, Hungary, Israel, Korea – 1972, Poland, Slovak Republic, Slovenia).

Since 1990 no global redesign has been undertaken, although partial modifications have been abundant, affecting PIT (1991, 1998, 2006)[12], the corporation tax (1995, 2006) and VAT (1992, 1995, 2010, 2012). Increases in VAT rates have several times been implemented in conjunction with reductions in social security contributions. The democratic period also involved decentralisation in favour of regional governments, both of expenditure and revenue. This process finally entailed the transfer of regulatory capacities in 1996, which brought about a partial differentiation among regions and a "race to the bottom" in some cases like the Inheritance tax (Durán-Cabré and Esteller-Moré, 2010a). A thorough approach

[12]Introduction of optional separate filing for married couples in 1989, modifications in the allowance structure in 1998, partial dualization in 2006.

to the reforms up to the mid 2000s can be found in Martínez-Vázquez and Sanz-Sanz (2007).

Was there a transition into progressivity as a result of these changes? In spite of the stated objectives and the classic political economy models, aspects such as the constantly high share of social contributions or the more intense taxation of wages and salaries in PIT (related to the bigger possibilities of fraud in other sources, as will be seen in chapter 4) sustain our hypothesis of a still regressive or near-proportional incidence in 1990, as Manresa and Calonge (2001) obtained. This culmination of the tax reform process is not consistent with the discourses emanating from the government, nor with the most extended opinion among citizens about fairness in taxation (which are analysed in chapter 5).

3.4 Calculating progressivity

Tax incidence analysis proceeds by imputation of tax revenue to the social groups assumed to have borne the corresponding burden (Fullerton and Metcalf, 2002). I use the results of previous theoretical and empirical literature to assign tax payments and obtain effective tax rates by percentiles, and indices of progressivity and redistribution.[13] The methodology is briefly reviewed here; for further details, see Appendix C.1.

Some limitations of this work are the uncertainty on the economic incidence of several taxes and the non-inclusion of possible dynamic effects.[14]

3.4.1 Time span of the analysis

I have chosen the years 1970, 1982 and 1990 as representative of the evolution of the tax system during these decades, spanning from the latter years of Franco's regime to after the consolidation of democracy.[15]

[13] Progressivity is the increase in the tax rate as income grows, while redistribution is the difference in inequality caused by taxation.

[14] For a discussion on the latter, see Onrubia et al. (2005). Here I take pre-tax incomes as given, without considering the impact that taxes could have on them through labour market/investment decisions.

[15] The choice of 1982 is due to the availability of PIT micro-data starting then: "PANEL PURO Y EXTENDIDO IRPF 1982/1998 IEF-AEAT (Declarantes)". These data have been used for the years 1982 and 1990 (tax returns filed in 1983 and 1991).

My analysis takes an annual approach, as is usual in most of the literature. There are, however, other options, suggested by several scholars to tackle the variability of income across the life cycle: using yearly taxes on "permanent income" or applying a lifetime perspective.

In the first case, permanent income is normally obtained with an econometric estimation or proxied by the level of current consumption (Poterba, 1989). Such an approach would be valid in the presence of perfect capital markets; nonetheless, taking this as a baseline assumption seems rather unrealistic to the author.

The lifetime-income-lifetime-burden perspective is conceptually different. It attempts to calculate the total amount earned and paid in taxes by an individual throughout her life (Davies et al., 1984; Fullerton and Rogers, 1993). Given the inconsistency of tax policy in such a long term, this exercise reflects only a hypothetical scenario. However, if it is thoroughly undertaken, the lifetime analysis would allow disentangling *interpersonal* from *inter-temporal* redistribution: its results would correspond only to the first one (Bengtsson et al., 2015).[16] Nonetheless, income smoothing is also an important dimension in the Welfare State, taken into account in the present research with the annual calculations. This framework is also less demanding in terms of data (a hard constraint in our case) and more consistent in a context of changing tax policy.

It should also be noted that this paper does not consider any dynamics: when discussing the effects of the tax system on income inequality, it is always inside the annual benchmark, between different "phases" of income defined in the main text. I am not trying to assess the effects of taxation in one year on inequality in subsequent years.

3.4.2 Incidence hypotheses

As is well known, the long-term economic incidence of taxes does not necessarily coincide with the legal one. Regrettably, this is a matter which theoretical and empirical works still have not completely clarified. I have only considered one hypothesis regarding income, wealth and consumption taxes, since there is quite a wide consensus about their real incidence in applied literature. On the other hand, alternative possibilities are calculated for the most controversial cases: social contributions, the corporation tax and real estate taxes (see table 3.1).

[16] I am referring to inter-temporal "life-cycle" redistribution, not between generations.

TABLE 3.1: Tax incidence hypotheses

	BASELINE	ALTERNATIVES
Income	No shifting	-
Wealth	No shifting	-
Real Estate	Occupier	50% Owner - 50% Occupier
Social Contributions	Worker	50% Worker - 25% Employer - 25% Consumption
Corporate	34% Capital - 33% Labour - 33% Consumption	a) 100% Capital b) 30% Capital - 70% Labour c) 70% Capital - 30% Consumption
Consumption	Consumer	-
Stamp Duties	Purchaser	-

Source: Author's compilation.

Social contributions have been the centre of important debate in the country, specially in relation to the causes of unemployment. The question whether employers' contributions are borne by them or by the worker (via a smaller net salary) remains unsolved. International literature concludes that workers would eventually assume the whole burden (Gruber, 1997; Gruber and Krueger, 1991), but studies with Spanish data show no consensus. Most cited is Argimón and González-Páramo (1987), which states a 100% impact on workers; however, others have reached different results: for Toharia (1981) there would be shifting to prices, Escobedo (1991) found incidence on salaries around 40% and finally Melguizo (2007) concluded that the cost was borne by enterprises.

The institutional framework in which Social Security was introduced in the country, together with evidence on the scarce initial resistance of employers to the contributions (Molinero and Ysàs, 1998) point towards incidence on workers. According to theory, this would be the result with rigid labour supply, which is close to the findings of international and national empirical work (Blundell and MaCurdy, 1999; Fernández Val, 2003). I therefore use this as the baseline hypothesis, but in combination with a mixed alternative, since several studies point to social contributions among the causes of high unemployment in the country (something that would not be the case if they were completely paid by workers). The political and institutional change might have favoured a decrease in shifting, given that workers' bargaining power grew with the legalization of labour unions. Towards the end of the 1970s businesses started to make noisier complaints about the burden of social contributions (Cabrera and Del Rey, 2002). The

alternative hypothesis imputes 50% of the tax to employees, 25% to the employer and 25% to consumers (these calculations are available in Appendix C.3.2).[17]

Concerning the Corporation tax, there is barely any empirical evidence for Spain: only a study from the seventies that concluded shifting to prices, related to oligopolization (Lagares, 1976). The conventional assumption is that in an economy with fixed capital supply, this factor will bear the burden, while a portion would pass on to labour if that condition is relaxed (effects on savings or international capital mobility). The openness of the Spanish economy was increasing during our period of study, but departing from a very low level; it could therefore be considered plausible that shifting towards labour was weak. The lack of solid evidence, however, makes me turn to a balanced incidence between the three possible bearers of the tax (Appendix C.3.3 includes alternative estimations).

There has also been discussion in the case of Real Estate taxes. They can be considered a tax on housing services, borne by the tenant in rented properties; it has also been maintained that a part of the tax could be falling on the owners and potentially shifted to other forms of capital (Mieszkowski, 1972). Applied literature has mostly imputed it on occupiers, be them owners or tenants. Nevertheless, the rigid regulation of the Spanish housing market since the 1920s (freeze on rental prices until liberalization in 1985), leads me to consider an alternative estimation with 50% of the tax paid by owners (see Appendix C.3.4).

The estimation of tax payments consists in allocating the revenue of each tax using the distribution of the corresponding tax base across households. It generally relies on the implicit assumption that fraud is uniformly distributed (not that it is non-existent, given the use of real tax revenue instead of legal simulation according to income). This has been a necessary simplification. It may be argued that the direction of the bias is an overestimation of progressivity, because tax evasion was historically concentrated on high incomes (Comín et al., 1995) and in recent work it has been found to be more extended in capital and self-employment incomes (see Domínguez et al., 2016 and also the results of chapter 4).

[17] The same incidence hypotheses are applied to both workers' and employers' social contributions. Although studies have always considered the first paid by workers, it is inconsistent with incidence theory to make a distinction.

3.4.3 Data and income concepts

To make the results representative for the whole of the tax system, I use data from all Public Administrations: central State, Social Security and sub-central governments (accrual basis). A complete list can be found in Appendix A. Non-tax public revenue is not included. Full disaggregation is not available, specially for local taxes at the beginning of the period (when the tax system was more complex and statistics are of less quality). All in all, the study covers over 90% of tax revenue.

Regarding the distribution of tax bases, I employ the Household Budget Surveys (HBSs) as previously adjusted for under-reporting in chapter 2. Income is used to impute tax payments and also as an indicator of economic capacity by which to rank households. The following phases are distinguished:

- PRE-TAX INCOME = Gross Monetary Income (Net Monetary Income + Factor Taxes & Social Contributions) + Imputed Income (Self-production + Owner-occupied housing)
- NET FACTOR INCOME = Pre-Tax Income – Factor Taxes & Social Contributions
- POST-TAX INCOME = Net Factor Income – Consumption Taxes
- DISPOSABLE INCOME = Net Factor Income + Public Benefits + Private Transfers
- POST-TAX-AND-TRANSFER INCOME = Disposable Income – Consumption Taxes

Factor taxes are those falling on the households' production factors (e.g. wages or capital income), while consumption taxes are paid in the process of acquiring goods or services. This distinction is close to the legal definition of direct and indirect taxes, but does not match it exactly, since consumption taxes include the share of direct taxes of businesses that are shifted onto prices.

Post-tax income is a statistical construction, not directly perceived by the households but necessary for the goal of this paper: the distributive effects of the total tax system, *before* adding public benefits. Inequality of Disposable income and Post-tax-and-transfer income will also be shown, as a reflection of consumption capacity and to evaluate joint tax-and-transfer incidence.

A further word has to be said about public benefits. The capitalization component in them corresponds to Pre-tax income, while the redistributive part is a transfer from the State and belongs only to Disposable income. It is out of the scope of this

paper to distinguish among both: I have considered all the amount as transfers.[18] Nonetheless, an alternative estimation is performed in Appendix C.3.2 placing pensions as part of Pre-tax income.

3.4.4 Indicators, equivalization and weighting

- Average Effective Tax Rates by income range:

$$AETR = \frac{\sum_{h=1}^{n} (T_h/Y_h) W_h}{\sum_{h=1}^{n} W_h}, h = 1...n, \tag{3.1}$$

  where T_h is total tax payments by household h, Y_h her total pre-tax income, W_h her weight in the calculation (product of sampling weight ρ and the household's real size S_h), and n is the total number of households in the range. If the profile of $AETR$ is increasing in income, the tax (system) is progressive (Musgrave and Thin, 1948).

- Kakwani index: progressivity indicator, obtained as the difference between the concentration of tax payments C_T and the Gini of Pre-tax income G_Y:

$$K = C_T - G_Y \tag{3.2}$$

  It takes value 0 for a proportional tax, positive for a progressive one.

- Reynolds-Smolensky index: redistribution indicator. G_Y being the Gini index for Pre-Tax income and G_{Y-T} the corresponding Gini for Post-tax income, it is defined as:

$$RS = G_Y - G_{Y-T} \tag{3.3}$$

  A tax is redistributive if RS>0. This change in inequality can be decomposed as follows:

$$G_Y - G_{Y-T} = (G_Y - C_{Y-T}) - (G_{Y-T} - C_{Y-T}) = VE - RR, \tag{3.4}$$

  where C_{Y-T} is the concentration of Post-tax income with households ranked by Pre-tax incomes. VE captures the Vertical Effect (redistribution among households with their ranking fixed) and RR is Re-Ranking (if households

[18] Recall the findings of Bandrés and Cuenca (1996).

get re-ordered, VE overestimates (underestimates) the decline (increase) in inequality caused by taxation).[19]

RS is related to the progressivity index K in the following way:

$$RS = \frac{t}{(1-t)}K - RR \tag{3.5}$$

Redistribution is a combined result of progressivity (K) and the average tax rate (level effect given by t) – and the possible re-ranking. This relation will be important to keep in mind.

I take equivalent pre-tax incomes as a reference for all calculations.[20] Since between the different scenarios both the base distribution and tax regulations change, the evolution in all indices is a joint effect (proposals such as Dardanoni and Lambert, 2002 or Kasten et al., 1994 aim to disentangle both components). The same issue, of course, is present when comparing tax systems in different countries.

Following the standard in welfare literature, all income data are equivalized before calculating inequality indices. An equivalence scale is a transformation of household incomes to obtain an adjusted "per capita" value that takes into account economies of scale within the family (and assumes that all members share their income equally). I use the OECD scale, which gives value 1 to the first adult, 0.7 to the subsequent ones and 0.5 to minors (up to 14 years old). This choice is consistent with empirical results based on Spanish data (Bosch-Domenech, 1991; Duclos and Mercader-Prats, 1999; Labeaga et al., 2004).

Households are then weighted by their real size. This implies that the results are given in terms of inequality among individuals, not households: attributing the same importance to all persons regardless of the family they belong to (but I provide some indices with household weighting as well).

[19] All indices have been calculated in Stata, using the 'progres' module (Peichl and Van Kerm, 2007).

[20] Making a sequential analysis is misleading, since the order of the calculations has an impact on the results; many taxes are simultaneously paid, so it would be an arbitrary choice. This point is made by Onrubia et al. (2013).

3.5 Results

I first show my main results for tax imputation in the years 1970, 1982 and 1990. The following subsection includes a consideration of monetary household benefits, so as to display the effects of the joint tax-and-transfer system. Then, I compare these data with similar estimations for other countries. Finally, I provide some insights about the evolution during the sixties, which was not possible to include in the main calculations because of data deficiencies.

3.5.1 The tax system between 1970 and 1990

Average Effective Tax Rates by deciles are shown in tables 3.2, 3.3 and 3.4. The top is further disaggregated, because of the huge dispersion in it, and the fact that these taxpayers concentrate a significant portion of total income and tax payments.

TABLE 3.2: Average Effective Tax Rates in 1970

	Direct	Social Contributions	Indirect	Total	Indirect over Disp. Income
Decile 1	11.22	5.92	87.21	104.40	*11.01*
Decile 2	3.11	11.53	13.65	28.31	*12.52*
Decile 3	3.17	12.86	11.53	27.57	*11.70*
Decile 4	3.41	12.76	10.88	27.06	*11.57*
Decile 5	3.55	11.85	10.72	26.12	*11.69*
Decile 6	3.79	11.38	10.00	25.19	*10.98*
Decile 7	3.90	10.64	9.55	24.10	*10.60*
Decile 8	4.20	9.23	9.27	22.71	*10.26*
Decile 9	4.70	7.94	9.31	21.96	*10.31*
Decile 10	6.09	5.80	8.10	19.98	*8.91*
Top 5%	6.91	4.78	7.39	19.06	*8.07*
Top 1%	8.87	2.55	4.99	16.37	*5.45*

Source: Author's calculations.

Deciles of individuals ranked by Equivalent pre-tax income. Pre-tax household income is the denominator in all except the last column.

'Direct' includes all taxes paid on income and wealth (of which the main are the Corporation tax and the Labour tax), 'Social Contributions' includes those of employers, workers, civil servants and the self-employed. 'Indirect' means taxes incurred in the consumption of goods and services (the main being Tariffs, the Luxury tax and the General Sales tax). For a complete list, see Appendix A.

In all tables, total tax rates faced by households are bigger in the first deciles that in the upper ones. Rates estimated for the lower levels of income are very high, even above 100% in some cases, because there are households with very

TABLE 3.3: Average Effective Tax Rates in 1982

	Direct	Social Contributions	Indirect	Total	Indirect over Disp. Income
Decile 1	19.31	11.44	98.36	129.12	*7.77*
Decile 2	6.62	18.39	18.55	43.56	*10.11*
Decile 3	7.22	16.59	11.56	35.37	*10.93*
Decile 4	7.81	17.28	10.45	35.54	*11.29*
Decile 5	8.10	18.14	9.37	35.61	*10.89*
Decile 6	8.38	18.26	9.14	35.78	*11.01*
Decile 7	8.73	18.12	8.64	35.49	*10.73*
Decile 8	9.03	18.04	8.11	35.18	*10.24*
Decile 9	9.49	18.10	7.56	35.15	*9.74*
Decile 10	11.97	16.54	6.41	34.92	*8.57*
Top 5%	13.73	14.43	6.13	34.29	*8.22*
Top 1%	18.32	9.35	4.62	32.29	*6.20*

Source: Author's calculations.

Deciles of individuals ranked by Equivalent pre-tax income. Pre-tax household income is the denominator in all except the last column.

'Direct' includes all taxes paid on income and wealth (of which the main are PIT and the Corporation tax), 'Social Contributions' includes those of employers, workers, civil servants and the self-employed. 'Indirect' means taxes incurred in the consumption of goods and services (the main being the General Sales tax, Excises and Tariffs). For a complete list, see Appendix A.

scarce or null market income. But leaving the first decile aside, the downward slope is still present all over the period: from the second to the tenth deciles, in 1970 the AETRs go from 28% to 20%, in 1982 from 44% to 35% and in 1990 from 70% to 46%. The tax system was regressive, placing more burden on low-income classes. This conclusion is also clear at the tail of the distribution: the top 1% paid 16% of their pre-tax income in taxes in 1970, 32% in 1982 and 44% in 1990 – i.e., significantly below the rates faced at the bottom.

This result was driven by social contributions and consumption taxes. The latter fell overwhelmingly on the poor in spite of mitigating aspects such as the Luxury tax or the different tax rates in VAT.[21] This feature is an unsurprising effect of consumption being less unequally distributed than income. Over disposable income (last column of each table) the rates appear less markedly decreasing, but are still so because of the different propensities to save and consume.

[21]Initially, 6% for foodstuff and other favourably treated goods, 12% for general goods and 33% for certain sumptuous consumption items. The higher rate was abolished in 1992, while the general one grew progressively up to 21% and the reduced rate was split in two (at present, 4 and 10%).

TABLE 3.4: Average Effective Tax Rates in 1990

	Direct	Social Contributions	Indirect	Total	Indirect over Disp. Income
Decile 1	42.18	8.33	182.41	232.92	*17.88*
Decile 2	17.16	16.52	37.03	70.71	*21.01*
Decile 3	13.50	17.64	22.15	53.29	*20.22*
Decile 4	12.89	18.96	18.26	50.11	*19.98*
Decile 5	13.54	19.04	16.61	49.19	*19.70*
Decile 6	14.15	18.87	14.15	47.17	*17.75*
Decile 7	14.75	19.46	13.47	47.68	*17.47*
Decile 8	15.53	19.01	12.57	47.11	*17.13*
Decile 9	16.79	18.17	10.86	45.83	*15.04*
Decile 10	20.73	16.39	9.35	46.47	*13.74*
Top 5%	22.63	15.33	7.96	45.91	*12.01*
Top 1%	29.66	9.49	5.24	44.39	*7.73*

Source: Author's calculations.

Deciles of individuals ranked by Equivalent pre-tax income. Pre-tax household income is the denominator in all except the last column.

'Direct' includes all taxes paid on income and wealth (of which the main are PIT and the Corporation tax), 'Social Contributions' includes those of employers, workers, civil servants and the self-employed. 'Indirect' means taxes incurred in the consumption of goods and services (the main being VAT and Excises). For a complete list, see Appendix A.

Regarding social contributions, their burden was largely determined by the distribution of salary income, but not proportionally. The amount to be paid was up to 1972 assessed upon a legal base set for ten categories in the workforce, with a regressive effect (there were ten of these for industry and services workers, something which obviously did not correctly reflect differences in pay). During the seventies reforms brought the base progressively closer to real salaries, but never fully. Since 1978, the taxable base is the salary (but not all of its components) up to an upper cap for each category, which still distorts proportionality for the better paid workers.[22]

Direct taxes, on the other hand, had a progressive behaviour.[23] This was already true in 1970, albeit at low rates (near 6% at the top while for almost all the rest it laid under 4%); more so in 1982 and 1990 (top decile rates had gone up to 12% and 21% respectively). This shows the effects of the reform undertaken during the political transition. Several works had already established the progressivity

[22] A good description of the Social Security contributory system can be found in Monasterio (1992). See section 5.3.1 for further analysis of the changes in social contributions during the 1980s.

[23] The first decile is an exception, as a result of low pre-tax incomes combined with the shifting of real estate and corporation taxes on the prices of goods.

of PIT, the central tax in this category (e.g. Onrubia et al., 2007).[24]

Progressivity and redistribution indices in table 3.5 confirm and clarify these observations. The tax system became less regressive (the Kakwani index is negative, but its absolute value got smaller), due to the reform in direct taxation and the changes in the Social Security contributory system. On the other hand, indirect taxes became more regressive, even during the seventies in the absence of significant reform. Such a result can be attributed to some extent to changes in the underlying structure of consumption: more households started consuming items subject to Luxury tax, and a reduction in expenditure inequality (favoured by the development of State benefits in the second sub-period) paradoxically had the same effect.[25] Combined tax regressivity was mitigated but persisted, being more intense at both ends of the income distribution.

TABLE 3.5: Progressivity and redistribution over the period

		1970		
	Direct	Soc. Contr.	Indirect	Total
K	0.1227	-0.1479	-0.1288	-0.0849
AETR	4.78	8.88	9.73	23.40
RS	0.0059	-0.0170	-0.0163	-0.0332
		1982		
	Direct	Soc. Contr.	Indirect	Total
K	0.1040	-0.0303	-0.1796	-0.0274
AETR	10.25	16.86	8.53	35.64
RS	0.0115	-0.0110	-0.0182	-0.0239
		1990		
	Direct	Soc. Contr.	Indirect	Total
K	0.0784	-0.0311	-0.2355	-0.0485
AETR	17.57	17.37	13.53	48.46
RS	0.0147	-0.0103	-0.0414	-0.0667

Source: Author's calculations.
Pre-tax equivalent incomes, weighting by household size.

AETRs for each category are displayed in the second row to show how direct taxation was powerless to impact positively on the income distribution, when compared to the weight of the other components. Social contributions grew a lot, and consumption taxes were reinforced in 1986: the regressive elements outdid

[24]This tax, however, was affected during the eighties by significant fiscal drag, which made it less progressive (by bringing up mostly the rates of taxpayers at the bottom), but also more redistributive (because of the increase in the average tax rate). See e.g. Salas (1997).

[25]The Gini index for total consumption among individuals was 35.09 in 1970 and had gone down to 33.13 by 1982 and 32.06 by 1990. Increasing regressivity in indirect taxation was already observed by Argimón et al. (1987). A similar observation on increasing negative impact of indirect taxation was made for the case of the UK in the 1980s and 1990s by Glennerster (2006).

the progressive ones. All in all, this means that taxation effected an *inverse* redistribution not only in 1970 but also in 1982 and 1990, in the first years of the new parliamentary regime and after it was consolidated. The Reynolds-Smolensky index became larger in absolute value, because of the increase in the tax burden: in 1970 taxation increased the Gini index in around 3.3 points, 2.4 in 1982, and 6.7 in 1990.

These results seem unexpected at first sight. They are at odds with the stated objectives of the reform and the equalization demands we would expect a democratic country to fulfil. There was no fiscal revolution: we can confirm our hypothesis about the transition not sustaining a deep enough change in tax incidence. The first stage of the reform, that of direct taxation, was quite successful in expanding redistribution, but faced some significant obstacles (notably persistent tax evasion – see chapter 4). The original joint plan, moreover, did not get fulfilled. It included, among other, new inheritance and wealth taxes and the introduction of VAT: these further developments were not possible after the breaking of the initial consensus period around 1979 – after the Constitution had been passed the year before. The tax reform is connected to the crisis of the governing UCD (*Unión de Centro Democrático*, Suárez's party), which ultimately led to its division and loss of electoral support. Internal and external criticism from the right was becoming intense.[26] A prominent role was played by the entrepreneurs' association CEOE (*Confederación Española de Organizaciones Empresariales*), lobbying for policies in favour of savings and private investment (Mella, 1992).

This scenario inspired the term "fiscal counter-reform" (Pan-Montojo, 1996). The initial phase of consensus in the critical moments of the transition was followed by increased organization and lobbying capacity in the right (employers' unions and growth of the right-wing party *Alianza Popular*). The elections in 1982 brought to government the social-democratic party PSOE (*Partido Socialista Obrero Español*): it would stay in power until 1996, culminating some aspects of the plan. In this sense, table 3.3 represents the first phase of tax developments, and table 3.4 the results of the first PSOE administrations.

[26] In the words of L. Calvo Sotelo, prime minister in 1981-82: *"Fernández Ordóñez and his tax reform attracted very soon the anger of the right: 'You are making left-wing politics with votes you got from the right'"* (Calvo Sotelo, 1990, p. 163). A similar perception is transmitted by E. Fuentes Quintana (architect of the reform, Vice-president of the government and Minister of Economic Affairs in 1977-78), in an interview published in the 1990s: *"The reform measures were effectively stopped. A big part of the tax changes were paralysed by vested interests"* (Fuentes Quintana, 2004).

During this period, however, the political and economic context had changed, with support for progressivity considerably weakened. Significantly, the adjustments made in the PIT schedule during the eighties reduced the number of brackets and cut down top marginal tax rates.[27] This makes it difficult to read changes in tax incidence as a reflection of strongly opposed party positions. Indirect taxation was not only modernized but also reinforced, specially affecting the lower classes, at the same time that Welfare state transfers and services were expanded.[28]

To directly assess the effects of taxation (and transfers) on inequality, table 3.6 displays the Gini index for the previously defined income phases. The difference between pre-tax and post-tax income Gini indices equals the RS index shown above. In 1970, even factor taxes caused inequality to increase (difference between columns 1 and 2), while in the later years the improvement in the redistributive effect of direct taxation comes through. The general impact on Post-tax incomes, nevertheless, is still negative: what the tax system did in one phase, it undid in the following.

TABLE 3.6: Taxation and income inequality (Gini index)

	PRE-TAX	NET F.I.	POST-TAX	DISP.I.	P-TRANS
1970	38.04	38.99	41.36	34.66	36.19
1982	42.12	41.51	44.51	32.96	34.49
1990	42.50	40.83	49.17	32.88	37.26

Source: Author's calculations.

Equivalent income, weighted by household size. 'P-TRANS' stands for Post-tax-and-transfer income.

Of course, this does not mean that the overall effect of the public sector towards the lower classes was extractive. Welfare State development was the other side of the coin to this augmented taxing power. Benefits were extended and public education and health systems were funded, so the expenditure side of the budget allowed for improvements in income distribution and towards equality of opportunity. I turn to this now.

[27] There were 28 brackets in 1978 (maximum of 34 in 1982), which were brought down to 16 in 1988. At the same time, the top marginal tax rate was set at 56% (it had been over 68%).

[28] This evolution can be related to the previously mentioned insights of Timmons (2005) about the correspondence in both sides of the budget, or Lindert (2004) in that tax progressivity and fiscal redistribution need not go hand in hand. The issue will be taken up in chapter 5.

3.5.2 Considering the effect of benefits

Table 3.6 shows that the distribution of disposable income decreased very slightly in the period, as was obtained in chapter 2. Disposable income is the result of adding to net factor incomes *both* public and private transfers (recall that they are not disaggregated in the HBSs until 1990, so e.g. remittances sent by emigrants would be included). These flows caused a decrease in inequality of around 4 Gini points in 1970, 8.5 in 1982 and 8 in 1990 (difference between columns 2 and 4). So, what the fiscal system did in one phase, it undid in the following?[29]

Post-tax-and-transfer income is the net result of all these flows, the inequality finally existing in the country in terms of net consumption capacity. The total tax-benefit system had an equalizing effect (respectively, 1.7, 7.5 and 4.5 Gini points in 1970, 1982 and 1990). This final income has grown more unevenly distributed over the decades under study, but considerably less than market incomes (1.1 vs. 4.5 Gini points).

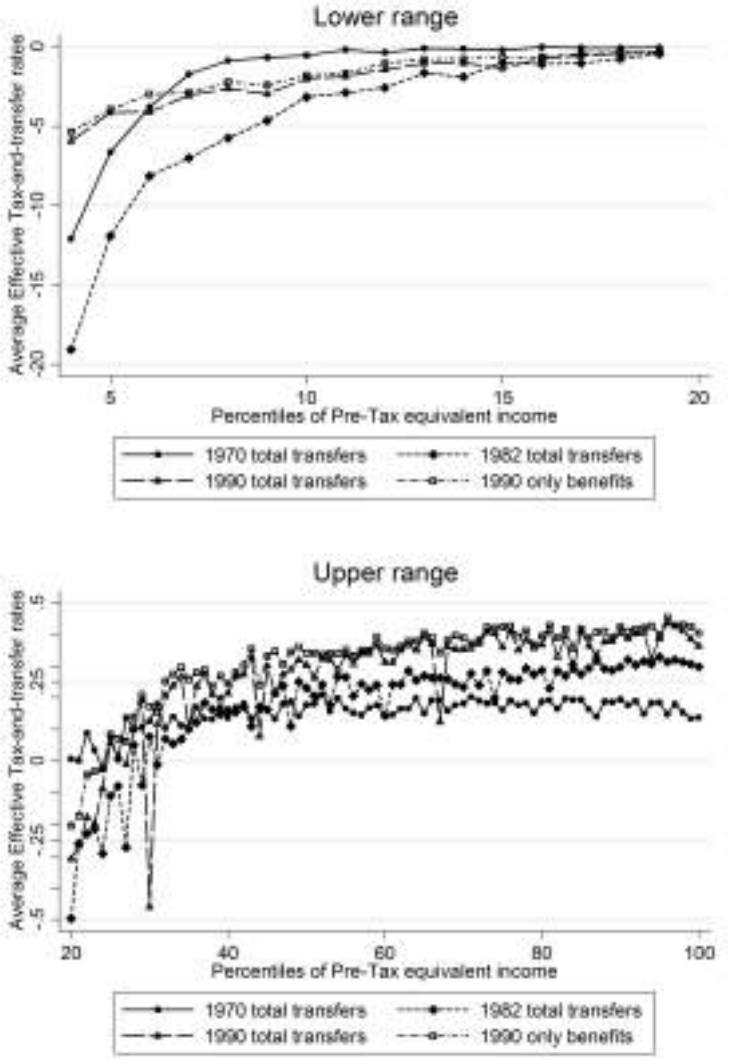
Figure 3.3 tries to cast some further light on the issue, by plotting tax rates that include transfers as a negative tax. Here, percentiles with positive rates are net contributors: approximately the upper 70-75% of individuals. The ones with rates under zero, on the contrary, received more money than they paid in taxes. These rates are growing with income, entailing that the joint *fiscal* system did provide redistribution (as was shown above).

The fiscal system in 1970 was clearly less progressive than in later years, since the profile is flatter and the line crosses 0 earlier (i.e., households being net contributors back then were poorer than their counterparts in the following decades, both in relative and in absolute terms). Among net-recipient households, the rates were lower in 1982 than in 1990. This is presumably an effect of the increase in tax rates for the poorer families which followed the introduction of VAT, thus reinforcing the convenience of analysing together the distribution of tax payments and what they are financing.[30] At the top, where in 1970 we find a negative-slope stretch, in the next years there is a flat plateau or slightly increasing rates. The

[29] In 1990, public benefits were 89.5% of total transfers received by households according to the HBSs. This percentage was likely lower in earlier years, so "redistribution" shown by the Gini indices would be overestimated, with the bias probably decreasing over time.

[30] In fact, and quite surprisingly, if we compare the mean of post-tax-and-transfer real incomes by deciles between 1982 and 1990 we can see that the poorest households actually *lost* net purchasing power during the decade. This does not seem so when looking at disposable income figures, but it comes through once taking into account indirect taxation.

FIGURE 3.3: Average Effective Tax-and-Transfer Rates



Source: Author's calculations.

The lowest percentiles are not included because of their extreme values. For 1990 I show two calculations: one with the total (comparable to the previous years) and one considering only public benefits (a better representation of the tax-and-transfer system in place).

change is significant, but tax-and-transfer progressivity was rather weak after the middle of the income scale.

These calculations do not include in-kind benefits (mainly, health and education), which are also inequality-reducing. Thorough approaches to the incidence of total social public expenditure can be found in the literature. According to Bandrés (1993), in-kind social expenditure would have reduced the Gini index in 3.61 points in 1980; 3.99 in 1994 following Calero (2001). These impacts are in any case smaller than those of monetary benefits, which stand between 6 and 15 Gini

points in the same studies.[31]

It can therefore be said that the public sector as a whole impeded the increase in market-given inequality to be completely translated onto post-tax-and-transfer incomes. But it certainly does not seem to have done so by means of the tax system, and did not manage to effectively counteract the trend of rising inequality.

3.5.3 How different was Spain from other countries?

The international comparison will show if the objective of convergence with the developed European neighbours was attained, and will also contrast this experience with that of other countries with similar or differing political histories. The following discussion is however deeply dependent on the availability of comparable calculations: studies on income redistribution are often not general, but focused on PIT (often along with social contributions) and household benefits.

The first question is whether Spain converged to the developed countries, taken as a model at the time of the reform. In order to investigate the issue, figure 3.4 plots direct AETRs (including social contributions) for the United States, Sweden, the United Kingdom, France and Spain (UK and France only available in 1970).[32]

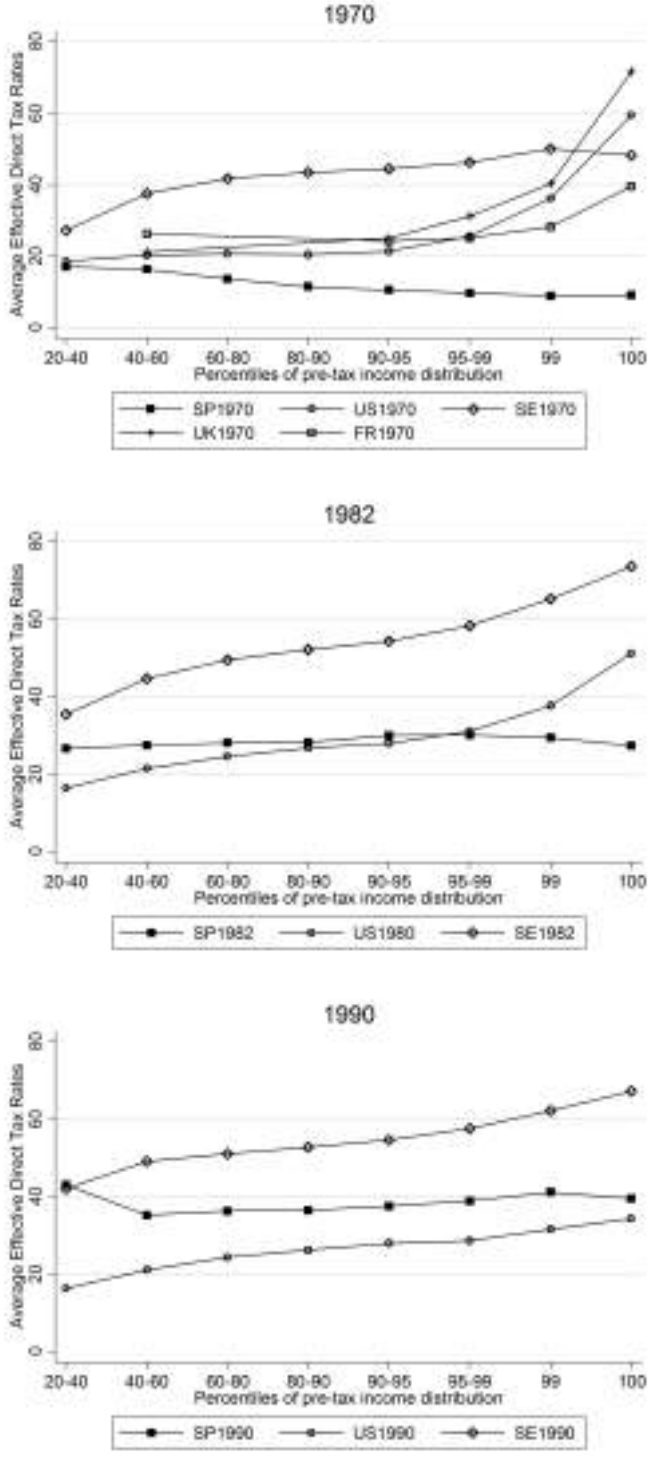
Spain stands out for its regressivity in 1970 and 1982. There is partial convergence, driven by changes in both sides: loss of progressivity in Sweden and the US combined with the opposite path in Spain, which by 1990 had near-proportional *direct* taxation. Higher rates arrived first to the middle-upper class and later – incompletely – to the top. The evolution towards progressivity, delayed by the dictatorship, did not fully reach the levels seen in these other countries.

What about other nations, and specially those experiencing democratization in similar periods? In figure 3.5 I attempt a comparison with Portugal, Greece and Italy. The first two underwent resembling political upheavals, while Italy has economic and cultural parallels but has enjoyed unbroken democracy since the mid 20th Century. I have also included the mean of EU-11 (other EU-15) and

[31] The cited works make an imputation of monetary public transfers that goes far beyond my simple exercise above. Regrettably, their results are not readily integrated with mine because of methodological differences.

[32] The Spanish case includes PIT (for 1970: taxes on labour and capital income), social contributions, and taxes on corporations, inheritance and wealth. Corporate taxation is not considered in the calculations for France, UK and Sweden. The AETRs for Spain shown in the figure are different from my baseline results because, out of coherence, the weighting unit is the household and pre-tax income excludes imputations from owner-occupied housing.

FIGURE 3.4: Direct Tax Rates. International comparison



Source: see Appendix C.4.

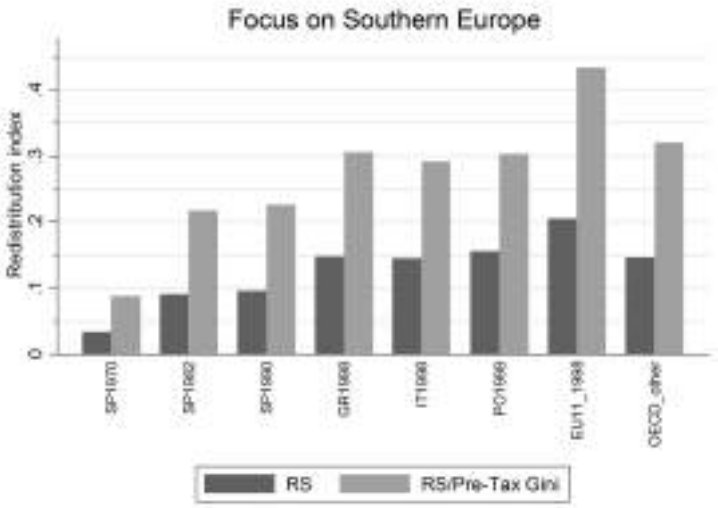
Abbreviations: SP (Spain), US (United States), SE (Sweden).

(1) In the data for France, P40-60 is P0-90.

(2) In the data for France, the US and the UK, the last two values represented are respectively those for P99-99.5 and the mean of rates for P99.5-99.9, P99.9-99.99, and P99.99-100. Similarly, for Sweden the first value is P0-40 and the last two values P99-99.9 and P99.9-100. This means that my top rates refer to relatively lower percentiles, and might therefore be slightly underestimated (overestimated) if there is progression (regression). Because of the imprecision of calculating such very disaggregated rates in my data, this presentation has been deemed preferable.

other OECD countries as a benchmark. Regrettably, data on total redistribution is not available, and the exercise is limited to direct taxes plus public benefits.[33]

FIGURE 3.5: Redistribution by Direct Taxes and Transfers



Source: see Appendix C.4.

Abbreviations: SP (Spain), GR (Greece), IT (Italy), PO (Portugal). The "other OECD" average includes Australia, Canada, Czech Republic, Estonia, Iceland, South Korea, Norway, Poland, Slovenia, Slovakia and the US; mostly calculations for the year 2004.

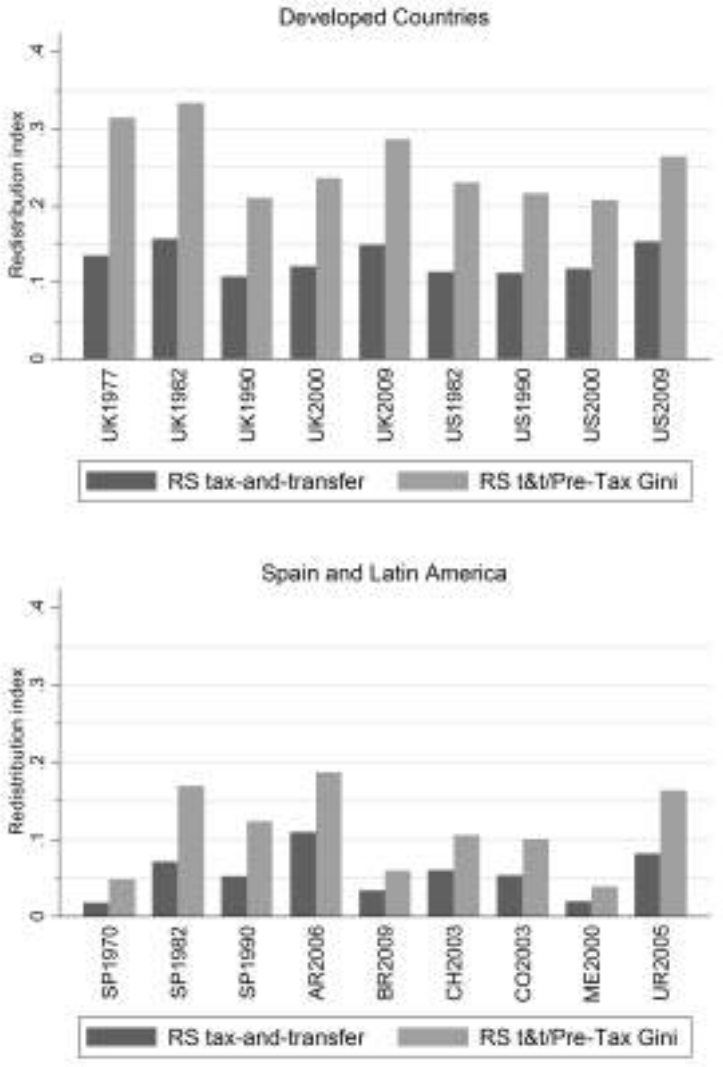
The graph shows my historical estimations for Spain together with more recent ones for the rest of the countries. Our trend seems consistent with the situation in the other Southern European countries at the end of the nineties, and their levels appear near to those of the EU-11 core – but a significant differential remained if we look at relative redistribution (equalization of incomes with respect to the need for it). The data, however, need to be interpreted with caution. Immervoll et al. (2007), the source for European countries, use a simulation procedure which does not account for the revenue effect of tax evasion: given that this problem more acute in the South, redistribution in this area is likely overestimated with respect to the EU-11.

Interestingly, Italy does not appear different from the other, in spite of its long standing democracy. In fact, during the seventies the country underwent tax reforms with similar spirit than the Spanish ones, related to the construction of the European common market.

[33]The comparison is thus affected by the relative weight of indirect taxation, which according to OECD data has historically been higher in Portugal and Greece.

In figure 3.6 I deal with total monetary redistribution (i.e., now considering also indirect taxes). Again it can be seen that Spain in 1970-90 stands clearly behind the UK or the US in the same years. Convergence with these countries (small, liberal welfare states) was not attained throughout the period of analysis. Regrettably, I have not found such data for other cases in Europe.[34]

FIGURE 3.6: Redistribution in Tax-Benefit systems



Source: see Appendix C.4.

Abbreviations: SP (Spain), AR (Argentina), BR (Brazil), CH (Chile), CO (Colombia), ME (Mexico), UR (Uruguay), UK (United Kingdom), US (United States of America).

[34]The comparison with the US is not completely accurate, since general sales taxes collected by the states are not included. Those have nevertheless lower rates than VAT, generally well under 10%. It should also be mentioned that in-kind transfers might change the conclusion; see Garfinkel et al. (2006).

With Latin America, similarities are stronger. Today's Chile or Uruguay display levels of redistribution quite close to the Spanish ones in 1990. The recent trend towards increased redistribution in this region is comparable to the Spanish reform studied here (Lustig, 2011). A new "fiscal pact" is sought to contribute to a more equitable society, after the eighties witnessed the introduction of VAT and the flattening of income tax schedules. These early changes contributed to strengthen the tax administration, which may be a positive legacy (Bird and Zolt, 2013). The order is contrary to that of Spain, where direct taxation was reformed first, following the economic thought of the sixties, and to a certain extent lacked the capacity to be enforced.

3.5.4 Some insights into the 1960s

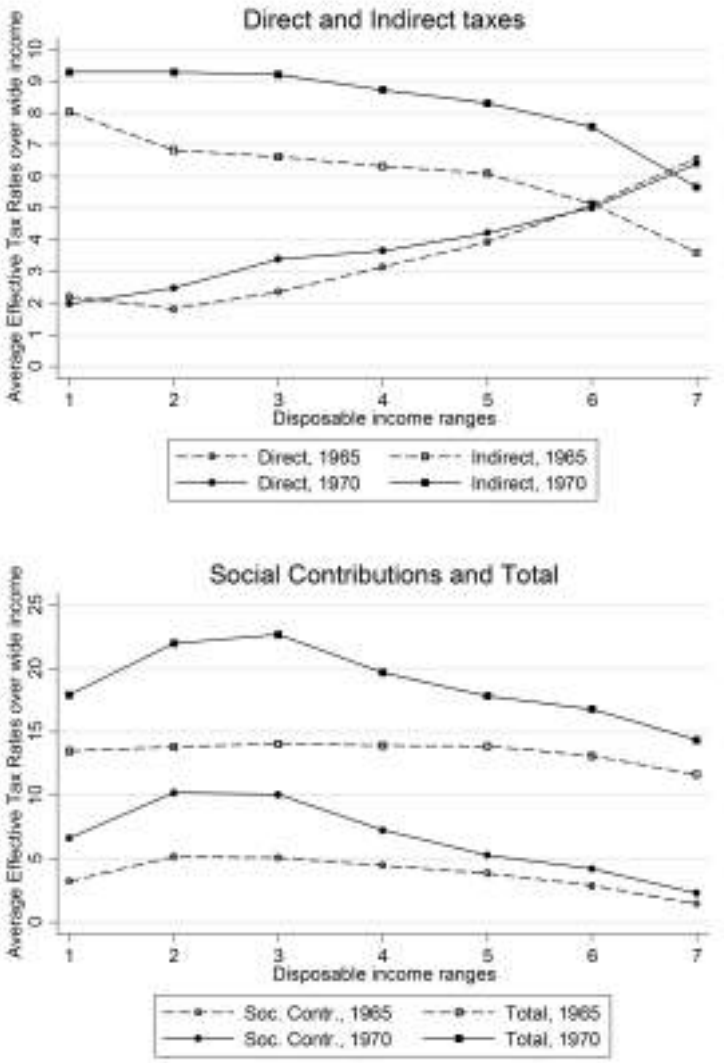
We have insufficient information to include these years in the main estimation, but some conclusions about the trends during the decade are allowed. Regressivity probably increased, due to two concurrent changes. On the one hand, a growth of indirect relative to direct taxation: the balance between both went from 68.9% to 53.3% in 1960-70 (likely related to a loss of efficiency in direct taxation, because of evasion and defective tax base estimation procedures). Another composition effect arose from the major increase in social contributions. Because these taxes were borne by labour, they had an undoubtedly negative impact on the distribution of net incomes (notwithstanding their being the basis to finance more generous pensions in the decades to come).

A comparison with the work by Perona (1972) for 1965 allows getting a little closer. In figure 3.7 I plot tax rates by income ranges for 1965 and 1970; the latter have been obtained replicating Perona's methodology, so they are not directly comparable to my main results. Here, I have left aside non-central taxes, used "wide" pre-tax income as denominator (includes all public and private transfers), established the household as the weighting unit, and grouped them according to disposable income.[35]

We can see lack of significant change in direct taxes (neither in their profile nor in the average level), while indirect tax rates grew over all ranges. Social contributions also experienced a very significant increase, specially affecting the lower

[35] I have replicated the ranges in Perona's work by keeping the same percentage of households in each group. Approximately, range 1 corresponds to the first decile, range 2 to deciles 2 and 3, range 3 to deciles 4 to 7, range 4 to deciles 8 and 9, and the three upper ranges to the top decile.

FIGURE 3.7: Average Effective Tax Rates over the 1960s



Source: for 1965, Perona (1972); for 1970, author's calculations.
Households are ranked by disposable income, but the denominator for the tax rates is wide income (pre-tax plus all transfers).

income classes. As a joint result, regressivity in terms of total tax rates had been strongly exacerbated.[36]

3.6 Conclusions

During the years under study, fundamental political changes took place in Spain. After forty years, dictatorship reluctantly gave way to parliamentarism. At the same time, a tax reform was initiated, promising to bring the country closer to its European neighbours and towards progressivity. But how big a change did it entail in terms of tax burden distribution? Was convergence reached? Did the political transition have a fiscal counterpart?

I have shown that the tax system was regressive in 1970, and still so twenty years later, albeit a lot less. The evolution was thanks to the reforms in direct taxation (fundamentally PIT) and social contributions (which nevertheless remained regressive), while indirect taxation had an increasingly negative impact, given changes in the underlying distribution of consumption. The lack of overall tax progressivity contradicts the predominant political discourse about the objectives and effects of the tax reform.[37]

The tax system exacerbated income inequality: it effected inverse redistribution. Moreover, this unequalising impact grew bigger over time, due to the increase in average tax rates (the expansion of public revenues, from 18% of GDP in 1970 to 33% in 1990, is one of the most important features of the period).[38] Both pre-tax and post-tax incomes grew more unequal. Disposable income inequality, however, was quite constant, and post-tax-and-transfer income remained significantly less concentrated. This means that private and, especially, public transfers counteracted the growth in market inequality and the increasingly negative effect

[36] Recall that rates are calculated here over "wide" income: over pre-tax incomes the systems will look more regressive, since transfers represent a bigger percentage of income for the lower ranges.

[37] To be found in official documentation, such as the Moncloa Pacts or the Spanish Constitution (art. 31), but also e.g. in press testimonies: according to F. Fernández Ordóñez, minister of Public Finance between 1977 and 1979, the reform had the goal of *"paying better; that is, in a fair way, following the old principle and desire that those who have more pay more. [...] Tax progressivity has been extended completely to all revenues, whichever their origin and size, radically altering the pre-existing situation"* (Fco. Fernández Ordóñez: "La reforma fiscal, ¿un ademán solitario?", *El País*, 18th June 1980).

[38] GDP from Prados de la Escosura (2003).

of taxation. The study of public expenditure reveals itself as an essential complement.

The Spanish experience is thus an example of a "third wave" democratization that was followed by a very significant tax reform, which nevertheless failed to radically alter the distribution of the burden. As a result, inequality was not effectively reduced, challenging again the classic Meltzer and Richard (1981) model. There was no 'fiscal revolution': the path was hindered by changes in the political and economic environment. Similar situations might be found in other late-democratising Southern European countries – but also, significantly, in Italy.[39]

Some questions are still open. As has been explained, these calculations do not account for the distributive impact of tax evasion, which is expected to erode progressivity: therefore, the introduction of this aspect would reinforce the results obtained here, which could be read as an upper bound. In the next chapter I study the topic with respect to the personal income tax.

Moreover, the explanation of the findings in a political economy framework, with a comparative perspective, is also required. An in-depth study of attitudes towards taxation and redistribution, and of their transmission to public policies, will follow in chapter 5 – helping us understand why Spain did not reach convergence with its more developed neighbours, and continued to fund its public sector with regressive taxation.

[39]However, the comparisons presented here are only preliminary, until more homogeneous data are available.

Chapter 4

Fraud and base erosion in personal income taxation

In this chapter I estimate under-assessment of incomes in the Personal Income Tax during the years following its introduction in Spain. The methodology combines an analysis of discrepancy with National Accounts and an econometric exercise, which follows and slightly modifies the Feldman and Slemrod (2007) procedure, based on the relation of reported charitable donations with the composition of income in tax micro-data.

Both calculations show that concealment of income differed substantially across sources and levels, with better compliance at the bottom of the distribution of taxpayers. Because of this, fraud made the tax less progressive than it was on paper. Compliance improved over the next decades, but the overall levels were still far from those attained in developed countries, because of lack of administrative capacity or political will to enforce the new regulation. In this way, general, comprehensive income taxation was hardly a reality twenty years after its introduction.[1]

4.1 Introduction

Personal income taxation was at the centre of developed countries' tax systems in the second half of the 20th Century. It provided a significant share of revenues and occupied a pivotal place in the tax debate. In theory, it was designed to follow the "ability to pay" principle, and for that reason rested on two pillars: generality (affecting all citizens over a given income threshold) and comprehensive

[1] An adapted version of this chapter has been published as IEB Working Paper no. 2015/31 in November 2015, under the title "Bypassing progressive taxation: fraud and base erosion in the Spanish income tax, 1970-2001".

income definition. These traits made it something different from *Ancien Régime* taxation, the realm of privileges, and also from 19th Century factor taxes, which targeted each revenue source independently. Generality and a comprehensive income definition, together with the consideration of personal circumstances in the tax, make it possible to introduce effective progressivity and redistribution.

However, in the presence of fraud and base erosion, practice might differ considerably from theory. That was the sense of Gunnar Myrdal's tough critique of the Swedish income tax in 1978. He argued that high marginal tax rates created incentives to avoid and evade taxes, and hence equity – specially horizontal equity – was not at place. According to Björklund et al. (1995), this opinion influenced his society's views and drove towards reform in 1991.

A corollary to Myrdal's argument was that formal progressivity did not translate itself into redistribution from rich to poor. The Spanish economist Fuentes Quintana thought likewise in the second half of the eighties. He had been a strong advocate of tax reform in the preceding decades, pushing for a central place of a progressive income tax in the system. It was under his guidance that, as we have seen, this model was introduced in Spain in 1977-78, when the country was transitioning into democracy. But in the following years Fuentes was very critical of the result, specially in relation to persistent evasion, and became a proponent of the "flat tax".

One may or may not share this proposal as a solution for evasion. But the concern about fraud – in a broad sense – was and is crucial, since it carries negative consequences on the tax system and society in many dimensions. On the one hand, it reduces tax revenue, imposing heavier spending constraints on the government. It also represents a cost for society because of the effort spent in otherwise unproductive concealment and punishment activities. Horizontal inequity, on the other hand, is likely to erode the perceived legitimacy of the tax system. Finally, fraud also affects vertical equity, if the ability to evade (and maybe the propensity) changes along the income scale. In this paper, I focus on the last issue.

What do we know about how tax evasion is actually distributed? Economic theory has attempted to model the individual decision on whether or not to evade as a choice of the taxpayer in face of risk. In the classical "deterrence model" of Allingham and Sandmo (1972), the individual under-reports her income to a certain extent, to minimize the tax bill, taking into account the possibility of being caught and the heaviness of the sanction. Related literature has abounded on the

relation between marginal tax rates, the income level and evasion. Conclusions are dependent on the specific assumptions about the nature of risk aversion, but tend to point towards higher incentives to evade at higher levels of income and maybe also in front of higher tax rates; since these tend to grow with income, which of the two forces prevails is an empirical question.[2]

These models were shown to predict much higher levels of non-compliance than found in reality. In response to that, further work paid attention to other possible determinants of the reporting behaviour, such as tax morale (Andreoni et al., 1998; Luttmer and Singhal, 2014). The importance of withholding at source and third-party information reporting has been recently underlined as a key factor by Kleven et al. (2011). What about the relation of those with income levels? We do not know much about how tax morale can differ across the income schedule, but, by contrast, it is well known that some kinds of revenue are subject to much stricter control than others, and having distinct distributions: income from labour versus income from capital.

The empirical literature has provided us with several analyses pointing towards a possible positive impact of income on under-reporting, but with considerable uncertainty because of econometric issues. The seminal work of Clotfelter (1983) for the United States and those of Valdés (1982) and Raymond-Barà (1987) for Spain found high-income taxpayers to under-report more, but the effect of income was difficult to disentangle from that of marginal tax rates because of the intense correlation between both.[3] Indeed, Feinstein (1991) contradicted Clotfelter in not finding a significant effect of income on the reporting behaviour.[4]

Work addressed to study the distribution of fraud has also suggested a rate of under-reporting increasing with income. For the United States, the data have been available thanks to the Tax Compliance Measurement Program (later on, the

[2]In Allingham and Sandmo (1972)'s paper, the income level would increase evasion (i.e., the percentage of income non-reported) if relative risk aversion is decreasing with income. The impact of the tax rate was found to be ambiguous in the case of decreasing absolute risk aversion (DARA, the most accepted possibility). Yitzhaki (1974) contemplated the common case where the sanction depends of the evaded tax – as opposed to the under-reported income in Allingham and Sandmo (1972)'s model. His specification does not change the expected effect of income, while it does alter the impact of the tax rate, that would now *decrease* evasion, in presence of DARA. (Allingham and Sandmo's results also stated that with DARA the absolute level of reported income will only increase when the sanction is a factor at least equal to 1).

[3]In spite of this, Raymond-Barà blamed the tax rates and thus made strong policy recommendations.

[4]This kind of empirical analyses have also analysed the effect of other factors, such as age, education level, marital status... The discussion of those is out of the scope of the chapter.

National Research Program), providing samples of randomly audited tax returns. Using them, Johns and Slemrod (2010) found evasion to reach maximums in the top percentiles. This was partially a result of the composition of incomes, but not exclusively.[5] Similar conclusions were obtained by Feldman and Slemrod (2007), who estimated under-reporting with un-audited data:[6] it was increasing with income levels for self-employment non-farm income and for capital income. The analyses closest to mine are Alm et al., 1991; Matsaganis and Flevotomou, 2010 and Benedek and Lelkes, 2011; specially the first one, which estimates total tax base erosion for the case of Jamaica in 1983. To my knowledge, an analysis of the distribution of evasion across the income scale has not yet been undertaken in Spain, although we have some intuitions from studies that will be reviewed in the following section.

My preliminary hypothesis is that evasion in a broad sense (income concealment) was higher at the top of the income scale, and that, therefore, the tax was less progressive *de facto* than *de jure*. This would stem from the easier avoidance and non-reporting of capital incomes, while wages and salaries were most likely withheld at source. If the theoretical models are right, incentives to evade more at higher income levels or tax rates would push in the same direction.

I also propose here a methodological innovation, slightly modifying Feldman and Slemrod (2007)'s model to estimate evasion across filers by income source. Because the calculation is based on the relationship between reported incomes and deducted donations, the regression is performed using a restricted sample (those who itemized donations in a given year). The reason to do this is that the results of a baseline estimation may be biased in a context were donation behaviour is not as widespread as in the United States: in this case, a two-step procedure à la Heckman (1979) might provide better results. This is the first time that such an approach is taken in the tax evasion literature.

The rest of the chapter is organized as follows. In section 4.2 I review previous work about tax evasion in Spain, while some aggregate data about compliance and inspection is presented in section 4.3. I next explain the methodology applied to estimate tax evasion in the personal income tax between 1971 and 2001 (section 4.4) and show the results obtained and the impact of evasion on progressivity

[5] Bishop et al. (2000) used the same kind of data for the 1980s, estimating the changes in the indices of inequality caused by including evaded income. They found that vertical equity was affected, although less than horizontal equity.

[6] Their methodology will be reviewed and closely replicated in section 4.4.2 of this paper.

(section 4.5). Finally, a general summary and some conclusions are presented in section 4.6.

4.2 Previous estimates of income tax evasion

Spain usually scores high among European countries in studies about the underground economy: Schneider (2009)'s estimates of 16%-23% of GDP make the country rank third in his sample in 2009, only after Greece and Italy. National studies generally agree about an increasing shadow economy during the eighties, with a peak around 1993-95, and its inability to fall below 15% of GDP thereafter (Pickhardt and Sardà, 2015).

Tax fraud is directly related to this phenomenon, though not equivalent. Some attempts have been made to estimate evasion in several taxes in the country, such as the Corporation tax (Almunia and Lopez-Rodriguez, 2012; Truyols, 1994) or the Value added tax (Díaz and Romero, 1994; Enterría et al., 1998). In this paper, however, the focus is on personal income taxation, where evasion has been known to be widespread. Gota Losada (1970) underlined this issue in a classic study about the first such tax (the *Contribución General sobre la Renta* introduced in 1932), with data on the fraud discovered by the tax inspection between the forties and the sixties. The problem was addressed in further reports by the Spanish Institute for Fiscal Studies (Instituto de Estudios Fiscales, 1973), but has remained one of the main unresolved issues in the system after the 1978 reform, which introduced the modern Personal Income Tax (Comín, 1994; Fuentes Quintana, 1990).

There are some estimations available. Albi (1975) studied the year 1971 (which corresponds to the *Impuesto General sobre la Renta de las Personas Físicas*, introduced in 1964). He calculated that total under-reporting of income tax bases amounted to 78% of the aggregate tax base declared that year (which meant 33% of Spain's GDP).[7] The so-called personal income tax in Spain was, until 1978, a super-tax: it only affected those whose income exceeded a high threshold (under which incomes were taxed by factor taxes –*"impuestos de producto"*–, targeted at different kinds of revenue separately). Albi's calculation uses the whole group of factor taxes as a reference, adding up their respective tax bases, so his result is not comparable to the specific collection of the income tax per se: this was a negligible part of the total, as we shall see. The most important of those factor taxes during

[7] All calculations involving GDP levels are made with data from Prados de la Escosura (2003).

the seventies was the Labour tax (*Impuesto sobre los rendimientos del trabajo personal*), which can be fairly considered the main real precedent to the current PIT. Fraud in this labour tax was estimated by Santos Peñas (1975) to be around 56% for the years 1964-72 (also in terms of base under-reporting).[8]

In the process of introduction of the modern personal income tax, Alcaide (1980; 1981) performed some analyses on compliance. He shows that around 20% of the obliged households filed a return in 1977, going up to around 59% two years later. In both cases, however, ratios were decreasing with income, which points towards significant under-reporting: reported incomes were around 21% of real estimated household revenues in 1977, and 61% in 1979.[9]

Under the modern *Impuesto sobre la Renta de las Personas Físicas*, concern for this issue did not diminish. Fuentes Quintana (1990) shows how 27.5% of a random sample of returns from 1979 were found fraudulent by inspectors, with the percentage of tax evaders increasing with income, which supports the initial hypothesis in this paper. During the 1980s, a Commission was appointed by the government to estimate evasion in several taxes. The PIT study group yielded results for the years 1979-86, after which its existence was put to an end.[10] Their estimations are shown in table 4.1: levels of compliance generally beneath 70% in all concepts, but increasing over the period. The filing obligation was fulfilled by 52 to 64% of those legally obliged, and 43 to 55% of the total taxable income in the country was reported.[11]

[8]This general estimate conceals acute differences among categories of workers: evasion from civil servants was calculated as 5.6%, in industry workers 28.5%, in service workers 43.1% and finally professionals were found to evade the most, at a rate of 71.0%.

[9]For the income category of more than 6 million ptas, the ratio returns/households was under 8% and 19% in 1977 and 1979 respectively. It is important to explain that this does not necessarily mean that the wealthiest families did not file a return, but that they probably did not report a significant share of their true income. It should also be noted that such a big improvement in compliance in just two years seems unlikely: the estimations are surely not very precise, since they rely on faulty data on household incomes and their distribution. Many low-income households may have paid their share in the factor taxes and simply not filed a return for PIT, which would maybe not have increased their tax due anyway. The fundamental changes in the system of personal taxation make comparison difficult across regimes.

[10]M.J. Lagares, the head of this Commission, recalled that *"It was not easy [...] to present the results obtained, because these showed a reality far from what had been expected by the Tax Administration, still divorced from the actual magnitudes of our national incomes, and from what could have pleased politicians"* (Lagares, 1999), page 606.

[11]Because of their distinct systems of tax administration, the Commission could not include Navarra and the Basque country in their study. Unfortunately, this data problem is quite common in the area. We do however have an estimation for the Basque provinces in 1983-89 using the same methodology: Sasigain (1993) found a slightly higher level of compliance (60 to 64% in the period) and the same strong contrast between wage incomes (70 to 84%) and that of revenues from capital or self-employment (31-33% with no clear trend).

TABLE 4.1: Compliance in the Spanish income tax according to the *Comisión para el Estudio del Fraude en el IRPF*

	Filing	Tax base reporting		
		Total	Labour	Other
1979	52%	43%	54%	22%
1980	57%	48%	62%	24%
1981	56%	49%	63%	25%
1982	56%	50%	65%	25%
1983	59%	51%	67%	23%
1984	59%	51%	67%	25%
1985	61%	52%	69%	26%
1986	64%	55%	71%	30%

Source: Comisión para el Estudio del Fraude en el IRPF (1988).

Note: only regions under the common fiscal rule (i.e., excluding the Basque Country – only Álava in 1979-80 – and Navarra).

Unsurprisingly, concealment of revenue was significantly more intense in non-labour yields. In a similar way, Díaz and Melis (1993) found that evasion could be very roughly estimated to be around half the real tax base for entrepreneurial incomes in 1989.[12]

Has this situation improved in more recent years? Díaz and Fernández (1993) estimated 6.2% of under-reporting in wages in 1990, down from 11.6% in 1987. Their figures are shockingly different from those obtained by the Commission, because they are based on a different source and method: these authors use withholding data from firms (*Estadística Anual de Retenedores*), which allows disentangling salaries from pensions, and limiting the scope to wages of those actually obligated to file a return. Díaz and Fernández attribute the difference in the results precisely to the incidence of the income threshold, which they seem to think that the Commission did not correctly estimate. Other possible sources of discrepancy are the 85% coverage in their source, or the fact that this estimation isolates the under-reporting of the filers, while the Commission data subsumes the effect of non-filing.

[12] If the taxpayers with this kind of revenue were imputed the average wage reported in tax, and their relatives working with them were imputed the minimum wage, business incomes would be estimated at more than double than the reported magnitudes. The authors state: *"This approximation to personal businesses' under-reporting in PIT, whatever crude, yields an index of concealment equal to the average index obtained by the Tax Inspection in the sample investigation that served as a base for the establishment of assessments for the reform of presumptive taxation"* (p. 189).

In terms of total tax base, Esteller-Moré (2011) also obtained a more positive result for the period 1993-2000, with average compliance estimated at 80%. Using micro-data of the year 2008, Domínguez et al. (2016) have recently calculated under-reporting of non-wage incomes as 40-55%, which is also a favourable evolution from 70% in 1986 (their method is largely replicated in section 4.4.2 of this paper): they assume salary incomes to be completely reported, since having a reliable reference category is a requisite of the estimation method. If this reference income is limited to pensions, wages are found to have a compliance ratio of around 81%.

To sum up, studies point to a decrease in tax evasion, but at the same time to persistent differences in the subjection of incomes to the tax depending on their source. The issue deserves further attention, since it violates basic principles of fiscal equity and also affects tax revenue.

4.3 The struggle for compliance in Spain

The path towards general income taxation in Spain was slow and painful. Initially, the cause was not only persistent lack of compliance, but also a very high threshold.[13] Table 4.2 represents this evolution by showing the number of total returns, and of returns with positive tax due, and putting them in relation to the number of inhabitants and households in the country.[14] Columns (8) and (9) are more illustrative of generality than (5) and (6), because these taxes were during almost the whole period conceived as family taxation, and implied until 1989 joint compulsory filing for married couples.

In figure 4.1 I plot the series of tax filers and taxpayers over the total number of households, for the period 1933-1990 (again, the number of tax filers is that of tax returns, while 'taxpayers' refers only to those who had positive tax due as a result of filing). Filing gradually became more and more widespread until the late 1980s, when the process was quite complete. Several turning points correspond

[13] Under this threshold, individuals were subjected to factor taxation, in general not progressive, as was consistent with the conservatism of the political regime.

[14] Under the old tax regime, returns with no positive tax due correspond to individuals who did not pay any personal income tax in addition to factor taxation (although they were required to file); column (2) therefore represents more closely the concept of 'taxpayer' than column (1). For the modern tax (after 1979), it is important not to mistake "positive tax due" with "positive differential tax due" (*"cuota diferencial a pagar"*): column (2) still represents the number of effective taxpayers, not only those who had to pay an additional quantity during the filing season.

TABLE 4.2: Generality of personal income taxation in Spain
(thousands of returns, adults, households)

Period	Returns (1)	Positive tax due (2)	Pos/ returns (3=1/2)	Adults (4)	Ret/ adults (5=1/4)	Pos/ adults (6=2/4)	House-holds (7)	Ret/ (Hh.) (8=1/7)	Pos/ (Hh.) (9=2/7)
1933-54	19	7	55%	16,794	0.1%	0.0%	6,124	0.3%	0.1%
1955-67	211	65	31%	19,383	0.7%	0.2%	7,779	2.7%	0.8%
1968-79	956	77	7%	22,129	1.4%	0.1%	9,508	9.6%	0.8%
1980-90	7,641	6,020	75%	24,530	31.9%	17.7%	11,140	68.2%	53.2%
1991-00	13,776	11,286	81%	27,981	49.2%	40.2%	12,310	111.8%	91.4%

Source: author's calculations with data about number of returns from Gota Losada (1970), Ministerio de Hacienda (1980, 1981), and Valdés (1982), IEF-BADESPE and PIT microdata. For adults, Alvaredo and Saez (2009), tables in Appendix (population over 20, excluding regions with special regimes). For households, INE (*series históricas*) and Household Budget Surveys, interpolated.

All data are averaged over the periods given by the first column, which correspond to reforms in the tax. 'Hh'= Households.

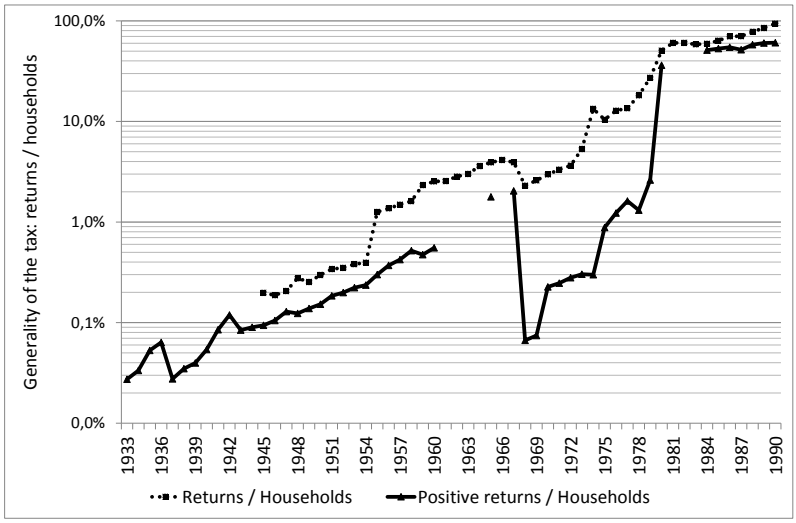
Note: since 1983, the number of returns corresponds only to the regions under the common fiscal rule (i.e., excluding the Basque Country and Navarra).

to major reforms in the tax in 1954, 1967 and 1978. The line of effective taxpayers (solid line) runs parallel to that of filers in the first decades, but then drops very significantly in 1967. During the period of the IGRPF, indeed (that is, until 1978), this tax was filed by an increasing number of taxpayers, but only under 10% of those who filed actually paid some tax: all others had already fulfilled their obligations with the factor taxes. This meant, among other things, that revenue collection through the *IGRPF* was insignificant, and its progressive rates did not generally apply. The reform in personal taxation during the sixties therefore did not have a redistributive impact, as it was presented at the time – it might actually have had just the opposite effect.

Under the modern PIT, on the other hand, 80-90% of tax filers had positive tax due, which was translated to 50-60% of households (since 55-85% of them filed a tax return). During the nineties, the tax attained generality, with returns outnumbering households (separate taxation of married couples was introduced as an option in 1989-91). In the first decade of its existence, nonetheless, there was still considerable distance to 100%. As we shall see, this does not only reflect the legal threshold, but also to failure to comply with the system.

The results of the tax inspection activity can shed further light on evasion. It should be kept in mind, however, that these data show in all cases a lower bound, and their trends do not necessarily coincide with those of actual fraud (since resources and efficiency in tax inspection also play a role in the outcome). In figure

FIGURE 4.1: Generality in Spanish personal income taxation



Sources: same as table 4.2.

The dotted line (Returns/Households) represents the extension of filing, while the solid one (Positive returns/Household), that of effective payment of the personal income tax.

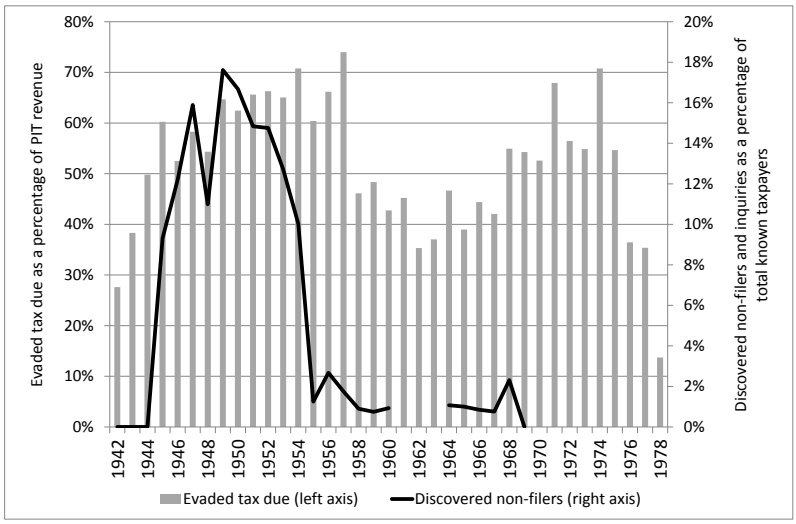
4.2 I depict the relative importance of uncovered tax fraud in the precedents of PIT. Evaded tax due is shown as a percentage of the total tax liquidated in the corresponding year (this, of course, does not mean that all uncovered tax was eventually paid): it stands near 50% of revenue, showing that it should have been indeed a big concern. The relative decrease in the sixties is associated, according to Gota Losada (1970), with the use of presumptive assessment in several of the components of income, which therefore were no longer subject to this tax inspection. It is thus not a clear indicator of improvement.

The same evolution is mirrored in the series of discovered non-filers (as a percentage of filers plus discovered non-filers): in the forties, near 15% of the total number of filers eventually known by the tax administration had failed to make their tax return. The norm was widely overlooked. After 1955, however, this number dropped down to under 3%.[15] Was tax fraud overcome?

Both data series are unfortunately not complete, but the ratios significantly decrease after 1978 (not shown in the graph), when the denominators experienced very significant growth due to the introduction of the modern tax (both in revenue and number of filers). It should not be concluded, however, that the problem

[15]This could be related to the re-introduction of the use of *"signos externos"*, objective criteria for subjection to the tax, like dwellings or vehicles owned, or number of servants. This instrument had been relegated following the Civil War.

FIGURE 4.2: Results of inspection in the personal income tax



Sources: Castillo (1994), Gota Losada (1970), Hacienda Pública Española (1974), Ministerio de Hacienda (1980, 1981), and Torregrosa (2015b).

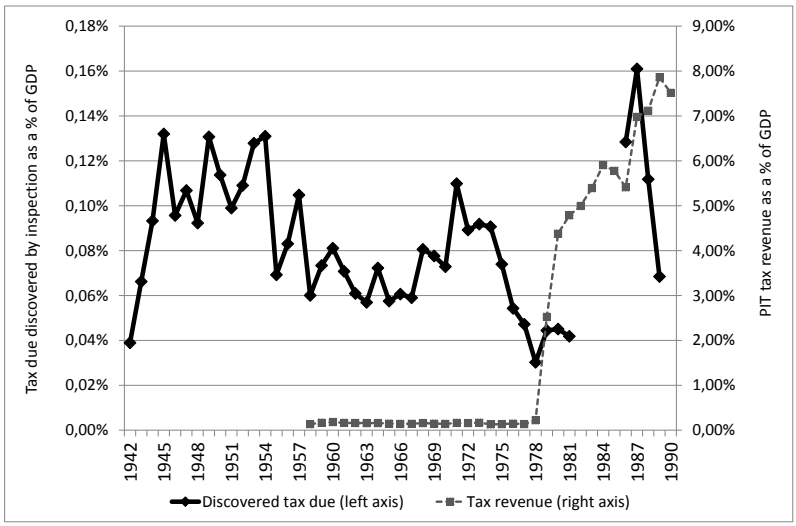
'Evaded tax due' is that discovered by auditors, and shown as percentage of each years' liquidated collection. 'Discovered non-filers' are individuals not presenting a tax return and being caught by inspection; they are displayed as a percentage of the number of filers after including them.

disappeared. If we look at the importance of the discovered evaded tax in terms of GDP, a different picture emerges (figure 4.3): the relative magnitude is around 0.10% of GDP, with no clear difference between the period of the old income taxes (pre-1978) and that of modern PIT, where the tax base was now much wider because of the inclusion of new taxpayers.[16] The fact that the discovered tax bill did not significantly increase after the 1978 reform calls into question the ability of the inspection body to adapt to the new tax, which undoubtedly required higher control resources if it were to be effective.

The lack of capacity in the tax administration is one of the explanatory factors for the historically high levels of fraud in Spanish personal income taxation, together with tax morale or economic structure considerations. Indeed, evasion was for a long time a profitable strategy for taxpayers, given the probability of being investigated and the sanction structure. Lagares (1974) made some calculations on expected income and fines, and obtained that the rational choice for a risk-neutral

[16]The revenue of the old taxes in the period 1958-78 was around 0.2% of GDP, while in 1979-90 it attained 5.7%: i.e., its share had been multiplied by a factor of 28.

FIGURE 4.3: Tax due discovered by inspection, as percentage of GDP



Sources: Same as in fig. 4.2, with GDP from Prados de la Escosura (2003).

individual would be not to declare her income. This was the combined effect of low and un-progressive sanctions, meagre probabilities of detection, and quite high interest rates in the economy.[17] Still in 1986, according to Castillo (1994), this was the optimal strategy for a "rational" citizen.

These observations are of course at odds with the reality, where some tax was paid. In fact, many were constrained to comply due to withholding at source of their (labour) income, while others had the option not to (notably in the case of self-employment and capital incomes). The lack of knowledge of the tax administration about the real incomes of citizens and firms was so notorious that collective presumptive assessment was established as an alternative to the direct estimation of tax bases (i.e. derived from individual accountancy) as late as 1957-64 in several taxes. This model still partially survives in the form of presumptive taxation schemes for self-employment activities, although only in individual terms (*Estimación Objetiva*).

Already in 1940, a Registry of Income and Wealth of individuals was created

[17] The use of a model of risk neutrality (that is, direct maximization of expected income) leads to corner solutions. If we considered a more complex model with risk aversion, the optimal strategy would be less extreme.

by the dictatorial government (*Registro de Rentas y Patrimonios*), to which banks, stock exchange agents and other establishments were supposed to inform about their clients' assets. But this does not mean that third-party information reporting was a reality. In fact, it took several decades to painfully introduce it as an automatic part of economic life. Banking secrecy was abolished by law in 1977, at the same time as tax crime was introduced; however, the first was appealed to the supreme Constitutional Court, paralysing its application for years, while the second had very limited practical results up to at least 1990 (Castillo, 1994).[18]

Some improvements came about during the eighties. The introduction of VAT in 1986 was expected to foster compliance, given the incentives of the different parties involved to report economic activity in order to request refunds (according to the results in table 4.1, this was at least partly effective). At the same time, in 1985 a new law reinforced the withholding and reporting obligations of financial institutions. In the preamble of this law it was acknowledged that labour income had a disproportionate weight in the aggregate tax base, as a result of unequal compliance. The immediate effects of the 1985 regulation, however, were not outstanding. The banking sector found ways to avoid fiscal transparency, with the creation of several opaque instruments that had considerable success during the second half of the decade (notably, the *"primas únicas"* and *"cesiones de crédito"*).[19] It is remarkable that the State issued one also opaque public debt asset, the *Pagarés del Tesoro*, which it swapped in 1991 for another kind of anonymous debt (*Deuda Pública Especial*) granting complete impunity.[20] In this way, the government conceded amnesty to black money, in exchange of finance under market price.

At the same time, reinforcement of the tax administration was taking place, with the proliferation of new offices around the territory, a reform of the structure of tax inspection in 1986 (Castillo, 1994; Pan-Montojo, 2007), and a process of computerization. Finally, the body was given higher autonomy in 1991 with the creation of the AEAT (*Agencia Estatal de la Administración Tributaria*), which was expected to bring higher efficiency with a more flexible operation than that of the

[18] Banking secrecy is further treated in chapter 5.

[19] Descriptions and some data on these assets can be found in Esteve (1990) and Castillo (1994).

[20] The identity of the holders would only be known to the government at the time of expiration, in 1997, when the tax crime could no longer be prosecuted. On these events, see López-Laborda and Rodrigo Sauco (2003).

general public sector.[21] In spite of that, Onrubia (2007; 2012) shows how insufficiencies in terms of personnel and organisation prevailed during the last decades of the 20th Century and are significant even today, compared with other Western European countries.

Withholding at source has been pointed by Kleven et al. (2011) as a key element for enforcing compliance. Financial incomes were not the only revenues where this was hard to introduce. The legal definition of the tax base in 1978 was very comprehensive, also including payments in kind, but there was no regulation of withholding in them. As a consequence, during the next decade fringe benefits came to be a vehicle for avoidance. This situation was tackled in 1989 and remedied in the tax reform of 1991.

Rental incomes have also been difficult to control, with no withholding at all until very recently. A law in 1998 established the obligation of tenants to withhold part of their payments, as a response to widespread non-reporting of these incomes. But the obligation only concerns legal entities and not individuals or households (due to the associated compliance costs to the withholder). Rents of housing between individuals are therefore still lacking automatic control. Indeed, shifting of income from financial to fixed assets in the aftermath of the reforms of the mid 1980s was suggested by Castillo (1994) as one of the elements contributing to the first housing bubble of 1986-89.

4.4 An estimation of the incidence of tax evasion

In the empirical part of this chapter, I estimate under-reporting of income tax bases in the country for selected years between 1971 and 2001, following two different methodologies. While both of them have their shortcomings, a joint examination of the results might reinforce their plausibility. The next section compares my estimates with those of previous works and international cases. I also attempt to go one step further and approximate the impact of fraud on the progressivity of the tax.

Under-assessment of incomes for tax purposes arises in at least three distinct ways, and all three will be considered here (and, from now on, generally referred

[21] Notably, the ability of granting higher salaries to inspectors, to fight the draining of qualified personnel towards the private sector which was an acute phenomenon in the 1980s.

to jointly as "income under-assessment" or "income concealment"; also as tax evasion in a broad sense). The first one is the existence of non-filers: individuals who were legally obliged to pay taxes and file the corresponding tax return, but failed to do so. As we have seen in section 4.3, this was a problem of considerable magnitude in Spain during most of the 20th Century. Unfortunately, there is hardly any available information on them (for the case of the United States, see Erard and Ho, 2001).

The other ways for income to escape taxation are legal under-valuation and (illegal) under-reporting by taxpayers. Both are jointly studied here, since they are difficult to disentangle from the available data. Of course, only under-reporting is fraud from a legal point of view, while the first entails no punishable behaviour. It does, however, limit the capacity of the income tax to be precisely a general contribution falling on all kinds of income equally. Durán-Cabré and Esteller-Moré (2007) already made the point that the government did not target full taxable capacity in the case of wealth taxation. I consider under-valuation to be the result of a base-voidening strategy, where the state implicitly recognises its partial incapacity to tax certain revenues.[22]

In the Spanish case, legal under-valuation arises notably in self-employment activities under certain threshold, which can make use of presumptive standard estimation, and in imputed incomes of owner-occupied housing (included in the tax base as a percentage of the cadastral value of the dwellings). Both procedures are known to have greatly under-assessed market values.[23] Under-valuation of certain revenues, of course, affects equity among taxpayers because they all have different weights in each citizen's total income.

The privileged treatment of capital incomes is a related phenomenon, which grew propelled by international and specially European integration, as e.g. Pérez Royo (1990) explains.[24] Gradually, capital incomes have been offered tax advantages,

[22]This definition includes tax allowances, exemptions and reductions, but not tax credits, which are deducted from the tax bill instead of the base. These instruments can be thought of as similar, but have normally clearly different distributive effects, with tax credits being potentially more progressive.

[23]Regarding housing, the percentage was first set at 3% and downgraded to 2% in 1988; currently 1.1% is applied if the cadastral value was assessed after 1994. Naredo (1993) found that undervaluation with respect to market values increased during the eighties (in a context of growing housing prices), and applied correction factors ranging in 1982 from 2.48 to 3.42 for urban properties and 6.7-8.4 for rural ones. Durán-Cabré and Esteller-Moré (2010b) calculated that cadastral values were 20-30% of market values in the period 1987-2001.

[24]*"A minimally realistic position [...] will have to acknowledge that the trend of our legislation, mainly since the Law 14/85 and RD 2027/85, towards an increasingly effective control and taxation of capital*

culminating in the dualization of PIT, which exceeds our time range. Procedures for the total or partial exemption of these incomes impact on our estimates, while they may be covered only indirectly and imprecisely. Also, because of the special treatment given to collective investment institutions, mobile capital incomes could be shifted to a considerable extent into these arrangements, thereby lowering the burden on the "personal income" of their recipients (Carbajo Vasco, 1991 reviews these special regimes, which were deepened in 1985 and 1992). Income shifting might be detected by the econometric equations in subsection 4.4.2, though it is much less likely to be captured by the discrepancy exercise of subsection 4.4.1.

4.4.1 The discrepancy approach

The international literature has attempted to measure under-reporting with the comparison between tax returns and household surveys or national accounting. This approach has been widely applied in Italy, where tax evasion issues are also acute (Bernardi and Bernasconi, 1997; Fiorio and D'Amuri, 2005; Marino and Zizza, 2012); and also in some tax gap estimations performed by states in the United States (as cited by Alm and Borders, 2014). The intuition behind it is that the incentive to conceal income in a tax return is not present at an anonymous interview, so the answers to the latter would be more honest (which does not preclude possible errors). In this sense, the difference between both sources would indicate lack of generality in the taxation of income. It is important to keep in mind, as has been said, that this difference is not only illegal fraud, but also avoidance and other escapes from taxation in a broad sense – including incomprehensive legal definitions of the tax base, which can be difficult or impossible to discern. Offshore unreported revenues will not show up in this calculation, to the extent that they are not present either in National Accounts (on this source of evasion, see e.g. Johannesen, 2014; Zucman, 2013).

The data used here comes from two sources. One is the PIT returns micro-data provided by the Spanish Institute for Fiscal Studies (IEF), which offers a 2% randomised sample of all taxpayers in each year since 1982.[25] The other arises from the Household Budget Surveys (from now on, HBSs) undertaken by the Spanish

incomes, whose last steps have been taken with R. Decree-Laws 1/89 and 5/89, will to some extent have to be retraced".

[25]The design has changed in the later years, being more complex since 1999.

Statistical Institute (INE). The comparison of both databases poses several challenges. Firstly, income data in HBSs are known to be also widely under-assessed, so they have been previously adjusted to the magnitudes in National Accounts (chapter 2).[26] On the other hand, incomes in the HBSs are always given in net terms, so gross revenues can only be obtained after imputation of the tax paid, which was tackled in chapter 3. Other adjustments in the homogenization of the data are explained in the methodological Appendix D.1. The information does not include Ceuta, Melilla, the Canary Islands, and the regions with special tax regimes (Basque Country and Navarra).

The categories of income to be analysed need to be identifiable in both databases. This restricts the analysis to four components: labour income, capital income, self-employment income and the total sum of household revenues.[27] Several non-monetary items are included in the taxable base: imputed income from owner-occupied housing (in capital income), in-kind compensation (labour income) and self-supply (self-employment income).

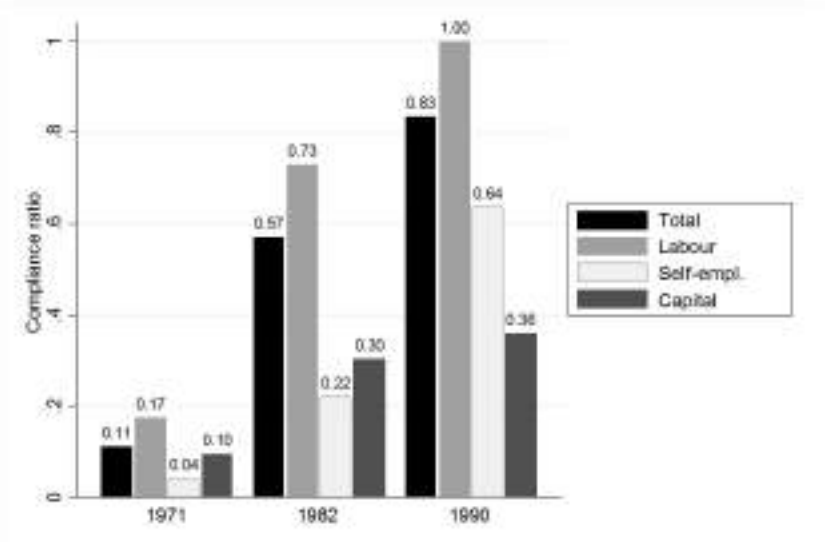
The aggregate composition of incomes of taxpayers in both sources serves as an indication of total evasion in a very broad sense. Figure 4.4 reflects the compliance ratio obtained by dividing the reported magnitudes by the real estimated flows of household incomes of each kind. In 1990, over-reporting of Labour revenues has been obtained, likely arising because of the total being underestimated in the HBS data; this figure has thus been adapted to 100% and the other ratios have been adjusted accordingly.[28]

[26] Recall that the scaling-up procedure used different factors by income source. This prior adjustment will directly affect the levels of the ratios obtained (which would be higher relative to the raw HBS data), but only indirectly their variation across income levels, by affecting the relative ranking of households. Because the same factor was used to all income of a certain kind irrespective of the income level of the recipient, incomes might be under-estimated in high ranks and therefore the ratios would suffer from upward biases (because of known non-response among affluent households). It should also be taken into account, however, that were item non-reporting is an issue in the HBS, factorization is not a completely correct adjustment methodology (imputation should go along). This additional problem entails a downward bias on the compliance ratios for incomes where item non-reporting in the HBSs is significant. This could be the case for capital incomes.

[27] Labour income includes pensions in 1990, but they are not available in the HBSs in previous years. Pensions are thus added from other sources for the aggregate discrepancy in 1982, while pensioners are dropped for the calculations of under-reporting by levels. See the methodological appendix for details.

[28] Recall the note on the adjustment procedure applied: high incomes might have been under-adjusted, and low incomes over-adjusted (this entails that the income share of non-taxpayers appears bigger in our corrected HBS data than it actually was, thus pushing the compliance ratios up). It is also possible that the problem arises because of imperfect matching between the survey and the tax database.

FIGURE 4.4: Compliance ratios by income source (obliged taxpayers)



Sources: author's calculations with aggregated tax data of 1971 from Dirección General de Tributos (1980), p. 34; tax return micro-data 1982 and 1990 from IEF; household budget surveys from INE, adjusted in Torregrosa (2015; 2015) using aggregate magnitudes from INE (1979; 1993).

Calculations for 1971 are undertaken under the assumption that the share of income of each kind accruing to the households over the threshold is the same as in the HBS of 1973-74.

Labour and total ratios for 1982 are approximated by adding subjected pensions to the denominator (data from Ministerio de Trabajo, 1991) and using their distribution by deciles given in Bandrés (1993).

It can be seen that labour incomes were the most correctly reported, already in 1971, but specially since the eighties.[29] On the other hand, capital incomes show the most deceiving behaviour, while self-employment starts as the kind evading the most but experiences a very significant improvement. The total tax base shows a remarkable increase, but lack of compliance was still calling for concern in the last decade of the 20th Century.

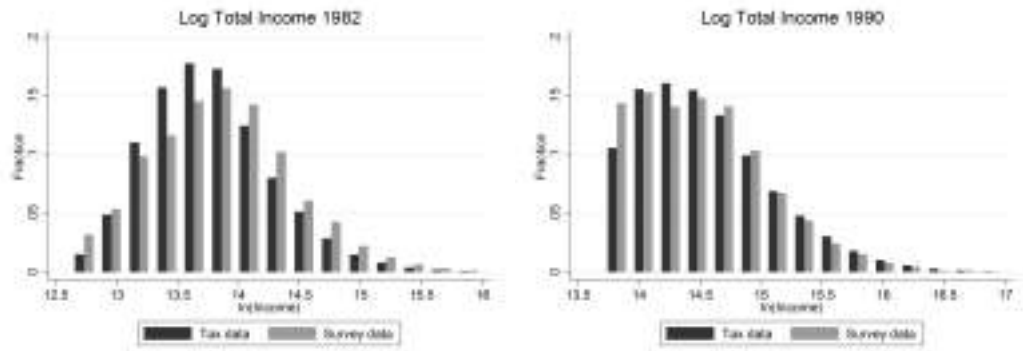
These ratios subsume the impact of non-filing (which was specially acute in 1971), under-valuation and under-reporting. In the rest of the paper, I attempt to concentrate only on the last two aspects. However, non-filers cannot be directly excluded from the HBS sample, because we do not have information on who they were exactly. Therefore, my procedure relies on re-weighting the survey sample

[29]The 17% compliance estimated in 1971 might indicate that most wages accrued to taxpayers who failed to make a return, but this does not imply that they weren't paying the corresponding labour tax, which was withheld at source. Recall that the declared tax base data here is only for the "general" tax, not a comprehensive one for all the range of factor taxes.

to match the population of effective tax filers (i.e., that of the tax database), by region, marital status, and labour market status (active versus pensioner). In this way, the weighted averages of the survey data will reflect the values of those who did file their returns. This procedure, of course, is only an approximation, which may be biased if inside each category the differences in income between filers and non-filers are significant.[30]

A comparison of the distribution of the tax bases, shown in figure 4.5, indicates that the incomes reported to the tax authorities were more concentrated than those in the survey. In the lower-middle range there is an 'excess mass' of tax data observations, which would correspond to higher income taxpayers under-reporting their incomes (and as a consequence, implying an 'excess' of survey observations at the top). At the bottom of the distribution, there are also more observations from the survey, which would signal to the impact of non-filers not being completely adjusted by the re-weighting procedure.

FIGURE 4.5: Comparing the distributions in the tax and survey data



Source: author's calculations with IEF panel data and HBSs.
The survey data have been re-weighted to match the population of effective filers.

To calculate the compliance ratios by income levels, I follow Matsaganis et al. (2010). Under-reporting is calculated for each income source separately, as a ratio of the means in each database for each region. The underlying hypothesis here is thus that any difference between taxpayers at different income levels arises because of their location and the composition of their income:

$$C_{sk} = \frac{Y_{Rsk}}{Y_{Ssk}} \tag{4.1}$$

[30] If non-filers have lower incomes than filers *inside a given combined category*, the estimated compliance will be upward biased (because mean incomes in the re-weighted survey will be underestimated), and the other way around.

where C_{sk} stands for compliance ratio of income source s at region k, Y_R represents average income reported in the tax returns and Y_S average income reported in the HBSs.[31]

Once these compliance ratios are obtained, they are used to make an estimation of the real incomes of taxpayers in the tax-return database, at the individual level (imputing the average compliance behaviour):

$$Y_{Eisk} = \frac{Y_{Rsk}}{C_{sk}} \tag{4.2}$$

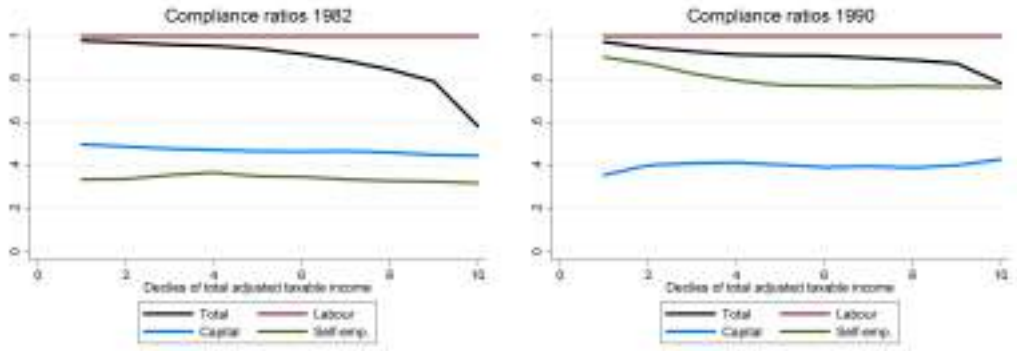
where Y_{Eisk} represents the real estimated income from source s of individual i, living in region k.[32]

Finally, compliance behaviour by income level can then be calculated as:

$$C_{sj} = \frac{Y_{Rsj}}{Y_{Esj}} \tag{4.3}$$

Figure 4.6 shows the results.

FIGURE 4.6: Estimated compliance ratios by income deciles



Source: author's calculations with IEF panel data and HBSs (re-weighted; see text). Following Matsaganis et al. (2010).

Again, in the case of income from labour we do not find any detectable under-reporting (a plausible consequence of their higher control). On the other hand, in both years we can see total compliance decreasing in income, with behaviour

[31] Of course, it may be argued that different income levels behave differently *inside* a given source of income. Therefore, in Appendix D.2 I show an alternative calculation following the earlier work of Fiorio and D'Amuri (2005), who directly estimate these ratios by income levels. This procedure, however, will be biased if the reporting decision causes significant re-ranking between the observations, to the extent that they change their quantile.

[32] When the income of a given category is negative, it is multiplied by the compliance ratio instead of divided, thus assuming symmetric behaviour.

worsening significantly at the top decile, where it is estimated at 60-80%. Self-employment and specially capital incomes had worse compliance levels, which are driving the total because of the changing composition of tax bases across income levels.[33]

There is a remarkable improvement between both years in the total and self-employment compliance rates. The exception is the persistent sheltering of capital incomes (a part of which is channelled as *legal* under-valuation procedures). When interpreting the results, it should also be kept in mind that high incomes are possibly under-adjusted in the survey data, because of the use of a single factor for each kind of income in the up-scaling of the HBSs (these factors should probably be increasing with income to confront the higher reluctance to participate or give accurate answers of higher-income households). This means that compliance ratios are likely over-estimated in the upper part of the distribution, while the opposite effect would be found at the base.

The different rates obtained for the income deciles are likely to have had a very relevant impact on the progressivity of the tax, as we will see in section 4.5. Horizontal equity would of course also be affected. Even though equity would also be deteriorated if the lowest deciles under-reported the most, the fact that it is the top that specially escaped taxation would make fraud more worrisome, since the 10% of wealthiest taxpayers concentrated (as well as today) a much higher percentage of the total taxable base than their share in population. The leaking of a third of their incomes was therefore a vast obstacle for the revenue capacity of the tax – and the fiscal system in general, of which it was an important pillar.

4.4.2 Econometrics: too generous to be true?

My second estimation follows Feldman and Slemrod (2007) and Domínguez et al. (2016), who applied the formers' framework to the Spanish PIT in 2008. The method is based on Pissarides and Weber (1989)'s insight about relative under-reporting in household surveys: the self-employed were shown to be untruthful reporters of their income, because of their seemingly higher expenditure in food relative to the (reliable) wage-earners. The truthful category in Feldman and Slemrod's elaboration is no longer a type of individual (like the self-employed

[33]Some compliance ratios over 1 were obtained for labour incomes (and have been adjusted to 1). These indicate that the re-weighting applied does not fully account for the impact of non-filers, which would have lower incomes than filers in the given categories.

versus the wage earners), but an income source: labour; and the "consumption" item, that might be related to the level of income but in principle not to its composition, is here charitable donations. We may think of many characteristics which determine the income share that an individual wishes to give to others, but it is plausible that this decision is not influenced by whether the income was obtained as wages, business revenues, or interests.

If we accept these assumptions, we can estimate an equation of the following form:

$$lnDONATIONS_i = \alpha + \beta ln(L_i + k_2 MC_i + k_3 FC_i + k_4 SE_i + k_7 N_i + k_8 O_i) + \gamma X_i + u_i \quad (4.4)$$

where X_i is a vector of taxpayer characteristics including her age, marital status, number of dependants, region of residence, city size, type of tax return, wealth dummy, differential tax due before the deduction for donations, and investment in housing.[34] Total income is expressed as the sum of its sources: L from labour, MC from movable capital, FC from fixed capital, SE from self-employment, N represents negative flows of all kinds and O other incomes (mostly irregular ones). Revenues from different sources are always defined as broadly as possible from the data (i.e., they are meant to represent the total yield, net of costs of obtainment but not of other tax allowances). β is the elasticity of donations to total (real) income, and u_i the error term. The coefficients of interest are the k: $1/k$ indicates the compliance ratio of each component of income. Labour income is taken to be fully reported, and therefore has no corresponding k.[35]

Again, it should be noted that the coefficients k subsume two different kinds of under-assessment of incomes: actual evasion and legal understatement, arising from tax code's rules. This can be potentially important, as we have previously

[34] Age is not available as such in 1982, so a dummy variable for being retired is used as an approximation. The type of tax return is needed after 1989, when the option of separate filing for couples was introduced.

[35] Following Domínguez et al. (2016), an alternative estimation has been performed for 2001, where pensions are taken to be the only fully compliant income source. In our case, however, there is no significant change in the coefficients, and the behaviour of wage incomes cannot be statistically distinguished from that of pensions (this is similar to the later results in Domínguez et al., 2015 for 2005-2007).

mentioned, in fixed capital and economic activities under presumptive assessment.[36]

Notice that, in contrast to Feldman and Slemrod (2007)'s estimation and other similar works, there is no variable here representing the 'price' of the donation. This is because in Spain charitable contributions are treated as a tax credit (a given percentage of the donation is deducted from the tax bill), and not as a deduction from the taxable base, which implies that they are not affected by different marginal tax rates.

Another potential issue is the possibility that the taxpayers over-report their donations so as to obtain an excessive tax credit. Indeed, Slemrod (1989) found an average overestimation of 7.2% in audited tax returns in the United States. It would be a problem for our estimation if propensity to this behaviour were related to the composition of an individual's income. But this is not clear; in fact, Feldman and Slemrod argue that it would not be rational in combination with an under-reporting of income, because it could trigger the attention of the tax administration. It is as well possible that the apparent higher charitable inclinations of wealthy taxpayers arise partly because they have better control on their donations and report them more accurately. If this were the case, our calculation would over-estimate fraud (given the correlation between the level of income and certain changes in its composition).[37]

The biggest problem, however, seems to be the possibility of sample selection bias, if we apply this procedure to the data directly, using only the observations which have donations deducted in their returns. This would be specially worrisome in Spain, compared to the United States, where giving-deducting behaviour has traditionally been more extended. Table 4.3 shows that returns with itemized donations (s=1) were 3% of the sample in 1982 and 14% in 2001, and that their mean income was significantly higher than that of the whole universe of taxpayers. This casts reasonable doubt on the possibility of obtaining generalizable

[36] In 1982 we cannot include these incomes separately in the estimations, because all tax returns with explicit charitable donations were done in the "ordinary" model, which does not include the possibility of presumptive assessment. For 2001, on the contrary, we introduce them separately in the equation, as Domínguez et al. (2016) did.

[37] However, the direction of the bias is difficult to establish. Fack and Landais (2013) find that, in France, wage earners and low income taxpayers tended to over-report their donations to a greater extent (given their having less capacity to under-report incomes or abuse other deductions). If this were the case in our data too, the results would be an under-estimation. Informal conversation with a tax adviser in Barcelona suggested that these deductions are not very prone to evasion because of their low quantitative importance.

results from what is a small, particular sub-sample.

TABLE 4.3: Composition of the sample regarding reported donations

	1982			2001		
s	Freq.	Percent	Mean income	Freq.	Percent	Mean income
0	116,308	97.4%	1,021,411	300,089	85.7%	3,501,217
1	3,082	2.6%	2,524,057	50,084	14.3%	6,093,974
Total	119,390	100.0%	1,060,201	350,173	100.0%	3,754,349

Source: author's calculations on the IEF tax return microdata.

Income is in nominal pesetas, and refers to the sum of net revenues from each source (which is higher than the taxable base, given legal deductions applied). 2001: weighted means, but percent refers to the unweighted distribution.

This issue can be solved by using a two-stage estimation, following Heckman (1979), as has previously been done in García and Marcuello (2001) to estimate the giving behaviour in the Spanish household budget survey data for 1990. The first equation is a Probit aimed at explaining the 'donating or not' behaviour, run over all observations:

$$Prob(s_i = 1|lnBI_i, Z_i) = \Phi(\alpha + \beta lnBI_i + \gamma Z_i), \tag{4.5}$$

$s = 1$ meaning that the taxpayer made a deductible donation during the year. Φ is the normal cumulative function. Z_i is a vector of taxpayer characteristics which includes all those in X_i but also some extra variables expected to affect the yes/no decision, but not the amount ('exclusion restriction'). In this case, city size and regional dummies are used. The rationale for the first one is that in bigger cities individuals are more likely to face direct appeals for making donations, which may make them more prone to do them, but not necessarily more generous once they have made the first decision (this exclusion restriction is also applied in García and Marcuello (2001), although they do not provide a theoretical justification). The regional dummies are also used following the intuition that the level of public goods, social cohesion, or other such aspects might affect the perceived need of individuals in different communities to make charitable donations (in that sense, Bradley et al. (2005) include the level of regional public expenditure). Once again, we expect the impact to be through a higher probability of donating, rather than giving more money after having decided to donate, since it is unlikely that the taxpayers in general have a very sophisticated knowledge of the level of need in different locations.

After estimating the Probit equation, we calculate the inverse Mills ratio (λ), which in Heckman (1979)'s procedure accounts for the probability of selection of the observations (more specifically, the 'nonselection hazard'):

$$\lambda_i = \frac{\phi(\alpha + \hat{\beta} lnBI_i + \hat{\gamma} Z_i)}{\Phi(\alpha + \hat{\beta} lnBI_i + \hat{\gamma} Z_i)}, \tag{4.6}$$

where ϕ and Φ are the normal density function and normal cumulative function of the predicted values in the probit estimation. This new variable λ is included in the second equation, to correct the bias arising from the truncation of the sample (here, we only use the observations with $s = 1$):[38]

$$lnDONATIONS_i = \alpha + \beta ln(L_i + k_2 MC_i + k_3 FC_i + k_4 SE_i + k_7 N_i + k_8 O_i) + \gamma X_i + \delta \lambda_i + u_i \tag{4.7}$$

I apply this methodology to the analysis of the years 1982 and 2001. Other years have data problems that preclude successful estimation.[39] The number of variables and observations available increases between the two years, and some features of the tax had changed (namely, imputed income from owner-occupied housing is no longer included in the taxable base for the first dwelling, and a non-taxable threshold was introduced). In the year 2001 we can separately estimate compliance for different kinds of self-employment income categories, according to the assessment procedure (accountancy-based or presumptive).

Table 4.4 shows some indicators of the goodness-of-fit of the probit equations.

[38] In principle, a Tobit estimation is another option to deal with this problem. The condition for this strategy, however, is that the two decisions (to give or not to give, and what amount to donate in the first case) are essentially affected in the same direction by the same factors. This is not necessarily true, and in fact different signs are obtained for some variables in the two stages of the estimation, suggesting that there are two qualitatively different decisions involved. This was found also by García and Marcuello (2001).

[39] Namely, very low number of observations from 1985 to 1991 because deductible donations were restricted, and from 1992 to 1998 the inability to correctly calculate the quantities donated because of the existence of different percentages of deduction (in the microdata, only the quantity deducted is available, which represented 10-15-20-25% of the donation, depending on the year). A new panel begins in 1999, but in the first two years the variable 'age' is missing for many observations. I have also estimated the models for 1983: the results are similar to those in 1982 and therefore serve as a reassurance. Compliance, however, seems slightly higher, which points to the low precision of these early data estimates because of the low number of observations.

The overall performance is good, even though predicting accuracy is low for observations with s=1. This is not surprising in such an unbalanced sample, according to Greene (2003). It points to the estimated probabilities being generally low. There might be a problem of omitted variable bias because of not including educational level (not available in the tax data), which has been shown to be significant in related studies, including García and Marcuello (2001) for Spain. This feature is, however, expected to be highly correlated with income and other variables in the model, which would reduce the extent of problem. In any case, the results have to be read with caution.

TABLE 4.4: Goodness-of-fit measures of the Probit estimation

	1982	2001
Prob>χ^2	0.0000	0.0000
Pseudo R^2	25.60	11.73
% correctly classified		
Total	99.83%	85.54%
s=1	2.82%	5.71%
s=0	97.33%	98.86%

Source: author's calculations.

Table 4.5 presents the estimated coefficients. They are generally not at odds with other studies of charitable donations (Backus, 2010; Bradley et al., 2005; Brooks, 2003; Domínguez et al., 2016; García and Marcuello, 2001). The income elasticity of donations is lower than one. Demographic variables have the expected signs: older taxpayers and women are more likely to donate, and also those with children. The tax due variable (not shown because of space considerations) corresponds to the differential tax due resulting from the return (not the total of the tax bill, most of which has normally been deducted at source), *before* the application of the tax credit for donations. It intends to control for the incentive to make (or report) donations because of anticipating a high payment at the filing season, which could arise in relation to variability in yearly incomes. This seems to be the case in 1982, where it has a positive, significant value in both the one-step and the two-step estimations; in 2001, on the other hand, the coefficient is negative in the one-step and the probit equation.[40] The significance of lambda in the two-step estimation shows that there is indeed a sample selection problem, which causes the one-step estimation to be biased.

[40] I interpret this as weak evidence pointing towards over-reporting of donations in 1982.

TABLE 4.5: Regression results. Dependent variable: log donations (marginal effects in Probit)

	1982			2001		
	One-step	Two-step Heckman		One-step	Two-step Heckman	
	Censored nl	Probit	Censored nl	Censored nl	Probit	Censored nl
lnIncome	0.462***	0.052***	1.018***	0.534***	0.083***	0.305***
	(0.074)	(0.001)	(0.180)	(0.008)	(0.001)	(0.024)
Movable cap.	5.065**	-	2.363***	2.001***	-	3.143***
	(1.978)	-	(0.521)	(0.152)	-	(0.466)
Fixed cap.	6.142**	-	2.705***	1.403***	-	1.932***
	(2.761)	-	(0.785)	(0.116)	-	(0.289)
Self-empl.	5.992***	-	2.625***	-	-	-
	(2.074)	-	(0.546)	-	-	-
SE Direct	-	-	-	1.228***	-	1.493***
	-	-	-	(0.051)	-	(0.122)
SE Objective	-	-	-	1.110***	-	1.325***
	-	-	-	(0.131)	-	(0.288)
SE Agrarian	-	-	-	1.326***	-	1.491***
	-	-	-	(0.160)	-	(0.330)
Negative inc.	1.710	-	1.491***	-0.388	-	-4.017*
	(1.170)	-	(0.576)	(0.558)	-	(2.164)
Other inc.	5.684	-	2.402**	1.176***	-	1.653***
	(5.355)	-	(1.071)	(0.115)	-	(0.283)
Married	-0.566***	-0.005***	-0.579***	-0.204***	0.043***	-0.353***
	(0.088)	(0.001)	(0.090)	(0.026)	(0.002)	(0.027)
Female	-	-	-	0.197***	0.086***	-0.084**
	-	-	-	(0.027)	(0.002)	(0.034)
Age	0.627**	0.002	0.618**	-0.037***	0.004***	-0.054***
	(0.257)	(0.003)	(0.251)	(0.003)	(0.0003)	(0.003)
Dependants	0.066***	0.001***	0.102***	0.004***	0.003***	-0.005***
	(0.018)	(0.0003)	(0.019)	(0.001)	(0.0001)	(0.001)
Citysize1	0.059	0.003	-	0.158***	0.050***	-
	(0.150)	(0.002)	-	(0.036)	(0.004)	-
Citysize2	-0.110	-8.85e-06	-	0.154***	0.036***	-
	(0.161)	(0.003)	-	(0.034)	(0.003)	-
Citysize3	-0.076	0.006***	-	0.228***	0.045***	-
	(0.113)	(0.002)	-	(0.026)	(0.002)	-
Citysize4	-0.044	0.011***	-	0.162***	0.034***	-
	(0.083)	(0.001)	-	(0.017)	(0.002)	-
lambda	-	-	0.665***	-	-	-0.842***
	-	-	(0.161)	-	-	(0.059)
Regions	yes	yes	no	yes	yes	no
Obs.	3,082	119,387	3,082	50,084	350,173	50,084
R^2	0.161	0.256	0.131	0.165	0.117	0.159

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The one-step procedure corresponds to equation (4.4), while the two-step calculations follow equations (4.5) to (4.7).

'Dependants' captures the needs of the household (in 2001 the variable corresponds to the income exempted according to family situation). 'lambda' is the inverse Mills ratio. Other controls include a dummy for joint filing of marriages (compulsory in 1982), the differential tax due prior to the deduction for donations, the investment in acquiring a house, a dummy for disability (1982), age squared (only in 2001), the interaction of 'married' with 'female' (only in 2001), a 'wealth' dummy, and a constant.

The coefficients of interest k indicate the presence of under-reporting when they are significantly bigger than one. Table 4.6 displays the estimated compliance ratios under both estimation strategies, although the two-step method is considered more accurate while the first one would be biased. The estimated compliance ratios are higher in 1982 when we apply Heckman, and lower in 2001. The story thus changes considerably. With the first results, we would have concluded that under-reporting lay above 80% in the beginning of the eighties, and was strongly pulled back during the following two decades. The Heckman estimates, however, yield under-reporting levels near 60% for all non-labour incomes in 1982, with the behaviour of movable capital actually getting slightly *worse* (around 70% still escaping taxation at the end of the century). Only self-employment incomes improved very significantly, while fixed capital incomes did so more slightly.[41]

TABLE 4.6: Compliance ratios à la Feldman-Slemrod

	1982		2001	
	1-step	2-step	1-step	2-step
Movable capital	20%**	42%***	50%***	32%***
Fixed capital	16%*	37%**	71%***	52%***
Self-employment	17%**	38%***	-	-
SE Direct	-	-	81%***	67%***
SE Objective	-	-	90%	75%
SE Agrarian	-	-	75%**	67%
Other incomes	18%	42%	85%	60%**

Source: author's calculations with the coefficients from table 4.5.

The compliance ratio is $1/k_i$ for each income source. Self-employment activities are separated in 2001 according to the valuation procedure: 'SE Direct' are those under accountancy-based assessment, while 'SE Objective' correspond to those under presumptive assessment, where we further distinguish agrarian activities ('SE Agrarian').

*** Different from 1 at p<0.01, ** p<0.05, * p<0.1.

4.5 Discussion

Table 4.7 shows an overview of the results in terms of estimated compliance for different income sources by all the methods applied. An improvement can be seen across the years, but also persistence in the differences in compliance degrees

[41] The behaviour of the self-employed in 2001 under presumptive taxation, also in agrarian activities, cannot be statistically distinguished from total compliance. This might be shocking for readers familiar with the Spanish context. A plausible explanation is the relatively low number of observations for these categories, which does not allow to obtain precise estimates.

depending on the source, with the increase concentrated on self-employment incomes.[42] Because of that, from representing 53% of all under-reporting in 1982, self-employment incomes went down to 31%, nearly trading positions with movable capital incomes (from 30 to 53%). The share due to real estate incomes is quite stable (17 to 16%).

The table allows to make a decomposition of total evasion, where the estimations for filers are only a part of the aggregate discrepancy (which includes the effect of non-filing). Both estimations are consistent with each other: in 1982, aggregate non-labour incomes were hidden by over 70% – but near half of that fraud was due to non-filers.[43] Those who did file declared non-labour revenues around a half or a third of what they actually earned, in average. Similar appreciations can be made for the following years.

While total compliance increased over the years, the aggregate behaviour of filers appears to have been more stable. This would point to the extension of filing as a significant part of the explanation of the improvement during the eighties – also implying that the bias in the re-weighted estimates related to non-filers' incomes, presumably an over-estimation of compliance, is less important in the 1990 data (recall footnote 30).

The favourable evolution in the case of business incomes can be related to the aforementioned introduction of the Value Added Tax in 1986 (which encouraged the report of activity in order to claim back taxes paid on purchases, improving compliance in directly assessed establishments), and secondly, to a reform in the system of presumptive taxation in 1991: given that in the eighties the low incomes reported by this group were worrisome for tax authorities, a new model was introduced for the standard assessment of these revenues, which seems to

[42] My results in terms of under-reporting by filers can be compared with those of Domínguez et al. (2016), whose work is closely replicated in the 1-step procedure. They calculated for the year 2008 a rate of compliance of 60% for movable capital, 70% for fixed capital, and 65% for self-employment activities under direct estimation (78% in the case of presumptive assessment). These levels are near the ones I get using the same method for 2001, so improvement in compliance seems to have been concentrated to a large extent in the last decades of the 20th century.

[43] Indeed, if we estimate aggregate incomes of filers using the k as up-scaling factors, we find them to be around 60-70% of the aggregate incomes of those obliged to pay the tax (obtained from the HBS in section 4.4.1). The rest of the discrepancy is due to non-filers. If we up-scale incomes by the factors obtained in the 1-step estimation, the aggregate is significantly higher than the macro framework.

TABLE 4.7: Estimated compliance ratios by sources of income

	1982			1990		2001
	Total	Filers		Total	Filers	Filers
	Discr.	Discr.	2-step	Discr.	Discr.	2-step
Labour	73%	100%	ass. 100%	100%	100%	ass. 100%
Movable capital	30%	45%	42%	36%	37%	32%
Fixed capital			37%			52%
Self-employment	22%	32%	38%	64%	62%	-
SE Direct	-	-	-	-	-	67%
SE Objective	-	-	-	-	-	*75%*
SE Agrarian	-	-	-	-	-	*67%*
Other incomes	-	-	-	-	-	60%
Total	57%	89%	79%	83%	84%	83%

Source: author's calculations.

Total discrepancy results are those in figure 4.4, thus subsuming the effect of non-filing. Filers' discrepancy estimates correspond to the ratios of the re-weighted values, referring only to active population in 1982 (and adjusting to Labour = 100% in 1990). The econometric estimations for filers are obtained from the coefficients in table 4.5, the compliance ratio being $1/k$ for each income source (only the two-step results are shown). Self-employment activities are separated in 2001 according to the valuation procedure: direct assessment (accountancy-based) or presumptive, where we further distinguish agrarian activities. The results shown in italics are not statistically significant at the 10% level. Total compliance for filers in the 2-step estimations is calculated as the weighted average of compliance of the different income sources (using the 'SE Direct' coefficient for all self-employment incomes in 2001).

have brought up the reported yields.[44] It might also be suggested that a "learning" process took place after the introduction of the modern tax, in the context of higher legitimacy of the system under democracy.

Regarding fixed capital incomes, there were two potentially opposing changes. On the one hand, imputed rents from the main home were no longer subject to tax after a reform in 1998 (this would push down estimated compliance, given that all "loopholes" in the definition of the tax base are included as such). On the other, a withholding mechanism was introduced for rental incomes in the same year, supposedly enhancing compliance. The evolution of cadastral values, which were updated during the 1990s, surely also played a role.[45]

[44]In the 1978 law, the method for presumptive taxation was the *Estimación Objetiva Singular*, based on turnover. The 1991 reform introduced a new method, *Estimación por signos, índices y módulos*, which uses parameters such as the number of employees or the situation or size of the business premises. This system seems to have improved the reporting of entrepreneurial incomes, but is still fiercely criticised because of non-neutrality and not following the principle of economic capacity (Navarro, 1993). In the taxpayers data (positive tax due), presumptive estimation was applied in 8% of the returns in 1982, 14% in 1990 and 11% in 2001 – 28%, 74% and 52% respectively of those with some business income reported.

[45]Cadastral values were brought up, which would have reduced the legal "base-voidening" and thus should have a positive impact on estimated compliance. However, this operation was highly controversial and triggered an important opposition (these values are also the base for other housing taxes, fundamentally a local real estate tax). It came to be known as *"Catastrazo"*, with implications of being an authoritarian policy, ill-treating taxpayers – which could thus have

The persistently low values obtained for movable capital, on the other hand, could seem harder to explain, considering the improvements in withholding and information reporting by the financial sector. One possible cause is the changing composition of filers, with the new ones under-reporting more. On the other hand, the results could be pointing to the role of financial sophistication and avoidance, including international mobility and use of tax havens. Piketty (2003) provides some similar insights for the case of France.[46] The answer is to be given by further research.

4.5.1 The equity concern: impact on progressivity

A second consistency check between the discrepancy and econometric methods is whether they yield similar profiles of compliance by income levels. What would be the ratios for each income level using the coefficients from the donations equation? To calculate them, I assign the obtained ks to each individual in the sample, thus imputing them the average behaviour in each income source. This allows to calculate "real" incomes, and contrast them with reported ones, in a similar manner as with Matsaganis et al. (2010)'s calculations. These ratios are shown in figure 4.7, and, for 1982, they can be compared with the compliance profile in figure 4.6. As can be seen, they are very similar and the general results hold: concealment was concentrated at the top.

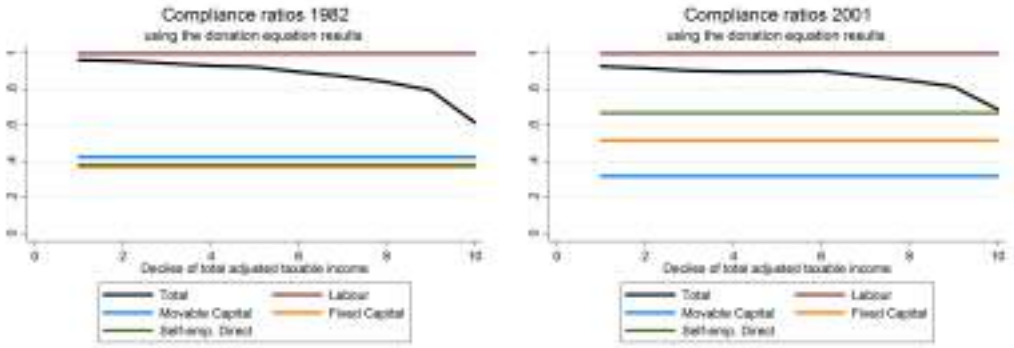
Intuitively, it is easy to imagine that this distributional pattern of under-reporting necessarily had an impact on progressivity estimations. Three different scenarios are shown in table 4.8 to illustrate this. Scenario 1, 'Apparent', is calculated as the combination of reported incomes and actual tax payments (i.e., the original data). In the presence of fraud, these indicators are a miscalculation of real progressivity.[47] In scenarios 2 and 3, I use "real" incomes, obtained factoring up the reported revenues with the ks (i.e., necessarily assuming that under-statement of

caused tax resistance. See the parallels with the reforms of property taxation in the United States (Martin, 2008).

[46] He reports a falling ratio of dividends in tax returns to those in National Accounts in the period 1927-95, and relates it to the development of funded pension plans and retirement saving accounts.

[47] This applies also to the exercise in chapter 2, which may be read as a lower-bound calculation of regressivity.

FIGURE 4.7: Estimated compliance ratios by income deciles à la Feldman & Slemrod



Source: author's calculations with IEF panel data.
The lines for different sources of income represent the compliance ratios from table 4.6, which are used to estimate total incomes.

incomes is uniformly distributed for each income source).[48] The 'corrected' column in table 4.8 represents the effective behaviour of the tax, with these "real", factored-up incomes in combination with actual tax payments (which derive from reported decisions). Furthermore, in a 'no under-reporting' scenario, the distribution of the tax burden and thus the reduction in inequality would have been very different. These calculations (real incomes, alternative simulated tax payments) are shown in the fifth column of the table.

Real inequality would be around 7-24% higher than it looks in the reported data, and the average tax rate around 14-20% lower (difference between columns 'apparent' and 'corrected'). The redistribution estimates are the most affected: the index would be 64% lower than apparent in 1982, 49% in 1990 and 30% in 2001; while progressivity was 51-32-15% overestimated respectively. This is a very significant impact, which would be a lower bound if under-reporting were increasing *within* income source. On the other hand, the negative impact has also very clearly decreased between the three estimations, following the changes in the distributional patterns of fraud.

Without evasion, the personal income tax would have behaved in a notably different way. The 'no under-reporting' column shows that, as expected from the progressive rate schedule, the taxation of high incomes would have been much

[48] I use the results of the donations equations for 1982 and 2001, while the coefficients obtained from the discrepancy analysis are applied for 1990. In 1982, using these alternative coefficients does not change the results.

TABLE 4.8: Impact of under-reporting on progressivity estimations

	1982				
	Apparent (1)	Corrected (2)	Difference (2-1)/(1)	No under-reporting (3)	Difference (3-2)/(2)
Pre-tax Gini	31.66	37.13	17%	37.13	0%
Post-tax Gini	29.19	36.25	24%	32.52	-10%
Average tax rate	12.05	9.63	-20%	16.50	71%
Redistribution	2.46	0.88	-64%	4.61	424%
Progressivity	18.40	8.99	-51%	23.56	162%
Tax rate top 10%	15.64	10.82	-31%	21.58	99%
Tax rate top 1%	22.69	11.53	-49%	38.67	235%
	1990				
	Apparent (1)	Corrected (2)	Difference (2-1)/(1)	No under-reporting (3)	Difference (3-2)/(2)
Pre-tax Gini	34.47	38.58	12%	38.58	0%
Post-tax Gini	30.97	36.80	19%	31.40	-15%
Average tax rate	15.36	12.38	-19%	22.55	82%
Redistribution	3.50	1.78	-49%	7.18	303%
Progressivity	19.87	13.47	-32%	24.86	85%
Tax rate top 10%	19.81	14.54	-27%	32.66	125%
Tax rate top 1%	27.52	16.50	-40%	46.81	184%
	2001				
	Apparent (1)	Corrected (2)	Difference (2-1)/(1)	No under-reporting (3)	Difference (3-2)/(2)
Pre-tax Gini	36.99	39.55	7%	39.55	0%
Post-tax Gini	32.25	36.22	12%	32.91	-9%
Average tax rate	15.97	13.81	-14%	20.11	46%
Redistribution	4.73	3.33	-30%	6.64	99%
Progressivity	25.39	21.47	-15%	26.73	24%
Tax rate top 10%	23.04	19.22	-17%	28.84	50%
Tax rate top 1%	30.07	22.14	-26%	41.17	86%

Source: author's calculations.

In all cases, instead of the legal tax base, the sum of net revenues from all sources has been used (which is closer to the concept of "total pre-tax income"). The 'Apparent' scenario is the estimate readily obtained from the data, affected by under-reporting. 'Corrected' shows the real behaviour of the tax, if evasion was distributed as obtained, while the 'No under-reporting' scenario shows how the tax would be distributed under full compliance.

The redistribution indicator is the Reynolds-Smolensky index, corresponding to the difference between the Gini of pre-tax and post-tax incomes. The progressivity indicator is the Kakwani index, calculated as the difference between pre-tax Gini and concentration of tax payments. The tax rates for the top 10 and 1% refer to the distribution of corrected incomes. To improve readability, all indices have been multiplied by 100.

more intense if the spirit of the law had been followed.[49] The Spanish tax system has been historically criticised for applying high legal rates on narrow tax bases; to a certain extent the appreciation seemed to hold as late as the end of the 20th Century. Differences are very intense, again specially in the first year shown, but still in 2001 redistribution would have been *doubled* if income sheltering were eradicated.[50]

4.5.2 An international comparison

Placing the Spanish experience in international perspective might shed some further light. Table 4.9 presents rates of compliance taken from many different studies (which normally presented rates of evasion, 1 - compliance). The total estimates for Spain during our time period are lower than many other available in the literature, which correspond to more developed countries or later periods. Our case appears close, however, to the results for Italy in 1991-94 and Chile in 1996, and also to the US estimates for the 1980s, obtained through the discrepancy method (i.e., subsuming the effect of non-filing and exemptions).

Compliance rates for self-employment incomes are always lower than those from dependent labour or the general tax base. The behaviour in Spain does not stand out a lot in this respect. Rates of 20-30% are also found among small informal business suppliers in the United States, suggesting that a significant part of the difference between countries could be due to the business structure. Small enterprises are more frequently informal, and also often taxed following presumptive methods: this regime, as has been said, historically under-estimated these revenues in the Spanish PIT. Similar systems exist in developing countries and also in places like France or Belgium, although they tend to loose importance. Presumptive methods are not applied, or very marginally, in developed economies

[49] In 2001, the existence of a special treatment for long-term capital gains has been considered a tax privilege, and thus the 'no under-reporting' scenario locates these revenues together will all the rest (i.e., I do not distinguish between the *'Base General'* and the *'Base Especial'*, and apply the general, progressive tax schedule to the total – the *'Base Especial'* had a 18% uniform tax rate). The quantitative incidence of this choice, however, is very limited.

[50] Of course, such a result is highly implausible. The exercise serves as an indication of the intensity of the distortion, and not as a credible policy objective. Furthermore, the government surely took into account the existence of fraud when designing tax schedules, so the 'no under-reporting' scenario would not be their real goal. The estimated tax gap in terms of tax liability lies between 2.4 and 4.9% of GDP – a lower-bound, since our data does not include the Basque Country, Navarra nor the Canary Islands.

TABLE 4.9: A comparison of Personal Income Tax compliance estimates across countries

Study	Country	Year	Evasion as % of...		
			Tax liability	Tax base	
				Total	Self-empl.
		1982*	58%	*62%*	*22*-38%
This study	Spain	1990	64-55%	*83%*	*64*-...%
		2001	71-83%**		...-67%
Esteller-Moré (2011)	Spain	1993-2000		*80%*	
Domínguez et al. (2015)	Spain	2005			76%
Domínguez et al. (2016)	Spain	2008			65-78%
Klepper and Nagin (1989)	US	1982			68-26-52%**
		1985	86%	*69%*	65-27-69%**
Internal Revenue Service (1996)	US	1988	87%	*74%*	68-19-68%***
		1992	87%		68-19-68%***
Feldman and Slemrod (2007)	US	1999			65-26-22%***
Johns and Slemrod (2010)	US	2001	82%	89%	57%
Black et al. (2012)	US	2006	77%		64%
Kleven et al. (2011)	Denmark	2007	98%	98%	63%****
Galbiati and Zanella (2012)	Italy	1987			54%
Bernardi and Bernasconi (1997)	Italy	1991		74%	37%
Bernardi (1996)	Italy	1994		77%	40%
Fiorio and D'Amuri (2005)	Italy	2000			22-92%
Marino and Zizza (2012)	Italy	2004		86%	64%
Albarea et al. (2015)	Italy	2010		93%	76%
Matsaganis et al. (2010)	Italy	2002	79%	89%	
Matsaganis and Flevotomou (2010)	Greece	2004	74%	90%	76%
Artavanis et al. (2015)	Greece	2003-09			57%
Leventi et al. (2013)	Greece	2005-09	70%	88%	57%
Benedek and Lelkes (2011)	Hungary	2005	84-80%	91-87%	33%
Engel et al. (1999)	Chile	1996	*46%*	*77%*	
	Chile	2003	*54%*		
	Ecuador	2005	*42%*		
	El Salvador	2005	*64%*		
Jiménez et al. (2010)	Guatemala	2006	*30%*		
	Mexico	2004	*62%*		
	Peru	2006	*66%*		
	Argentina	2005	*50%*		

Compliance is presented as % of the estimated total in each case. Most of these studies apply different variants of the discrepancy method. The estimates for the United States and Denmark, on the other hand, are based on audit data (except for Feldman and Slemrod, 2007), as well as those from Galbiati and Zanella (2012). Numbers in italics refer to compliance calculated including non-filing and underpayment. The tax liability calculations of this study refer exclusively to filers.

* 1982 refers only to the active population.

** The first figure includes the effect of the reduced tax rate on long-term capital gains.

*** Refers respectively to Non-farm proprietor income, Informal supplier income and Farm income.

**** Refers to all self-reported income, as opposed to that subject to third-party information.

where businesses are deemed capable of managing a basic accountancy. This element, therefore, clearly affects the comparison of Spain with countries such as Sweden or the United States.

The process of salarization and the growing size of enterprises therefore seem important determinants of the increased compliance in developed countries. And indeed, both these indicators were comparatively low in Spain at the start of the period, but tended to increase over time. The share of employed workers over the workforce, according to the OECD database, was around 75% in Spain in the middle of the 1970s and grew up to near 85% thirty years later, converging significantly with its level in richer economies (at around 90%). This evolution entails that the share of incomes that lacks accurate third-party control is decreasing. In the framework of Kleven et al. (2015), the size of businesses is also important, because it makes collusion difficult and generates more accurate accountancy. Firm size was indeed growing in Spain during this period, with small and medium enterprises decreasing considerably as a share of total employment (from 92% in 1986 to 79% in 1998).[51]

The previous appreciation with respect to labour and self-employment incomes cannot be easily extended to capital yields. It is difficult to find examples to make a comparison, since not many works provide with estimates for capital incomes escaping taxation. In the case of discrepancy work, it is normally difficult to obtain an adequate comparable magnitude. The extent to which the abovementioned processes also affected capital incomes in different countries is unknown, and in any case they have been potentially counteracted by increasing capital mobility, avoidance schemes and development of tax privileges, which can be seen as a "white-collar" substitute for outright evasion.

4.6 Conclusions

Tax evasion is a very popular topic in the Spanish public debate today. Folk wisdom has it that it is still very pervasive, and unequally distributed – concentrating among the rich and the self-employed. Its existence would render the tax system

[51] Which is nevertheless still a high value compared to developed countries; see Tafunell, 2005, p. 721, where the figure for Germany is 65% in 1986, similar to other central-northern European countries. The contrast is specially acute when we focus on the share of micro-enterprises, with less than 10 employees (over 40% of total employment in Spain versus 18% in Germany in 1986).

unfair, and there is much claim for fighting against it, specially under the *zeitgeist* brought about by the economic crisis. What is the origin of these impressions?

This chapter has reviewed the slow and twisted path toward generality in income taxation in the country. The principle that all citizens should contribute according to their economic capacities was not followed for a long time. During most of the 20th Century, personal taxation was only directed at the very rich households, so for most of the income scale there was no progressivity (and hardly at the top, given acute non-filing). With the reforms in the seventies and the introduction of the modern tax in 1978, the nature of the problem changed: the tax was now supposed to capture all incomes and treat them equally; but resistances were hard. A high percentage of individuals did not even file a tax return, and those who did reported incomes well below their real value on average. The new tax was severely affected by lack of compliance and low legal valuations, in spite of several administrative and legislative developments during the next decades.

I have estimated under-assessment of incomes in tax returns, including non-filing, legal under-valuation and under-reporting by filers. Discrepancy between macro aggregates gives us an approximation to the total impact of these elements, which lies around 42% evasion in 1982 for the total tax base, and ranging from 27% in wages to around 70-80% in other yields – with an improvement in self-employment incomes to around 36% in 1990. As a second step, restricting the attention to the behaviour of filers, I try to assess how reporting compliance changed across income sources and the income scale. To do that, I have followed two proposals in the literature. The first is a discrepancy analysis between tax return microdata and survey data (after adjusting these to National Accounts for each income source), following Matsaganis et al. (2010)'s approach.

The second method is an econometric estimation with tax return microdata, exploiting the relation between reported charitable donations and the composition of income (under the assumption that donations should not be affected by the latter, only by its level). This idea was developed by Feldman and Slemrod (2007) and applied to Spain for 2008 by Domínguez et al. (2016). Nevertheless, here I have slightly modified the procedure to correct for a plausible sample selection problem using Heckman's estimation method, because returns with charitable donations are a small – and distinct – part of the total.

The discrepancy analysis shows very high levels of compliance in labour incomes, while they were much lower for self-employment and, specially, capital yields. As a result both of composition and of differing rates of compliance across deciles within income source, evasion in the total tax base is found to be increasing as we move towards the top of the income distribution. The donation equations confirm the different behaviours of incomes from disparate sources. Taking labour as fully compliant, all other yields would be reported at near 40% of their real value in 1982. Nineteen years later, at our second estimation, compliance had gone up slightly in fixed capital incomes (now at 52%), and specially self-employment activities (67%), but down in the case of movable capital (32%).

Because of the varying composition of incomes across the society's income distribution, we expected a negative impact of these results on progressivity. Thus, the estimations we get from the reported data concerning redistribution and progressivity would be upwards biased. This is confirmed by a back-of-the-envelope calculation that gives an estimate of that bias as around 60-30% for the redistribution index and between 15 and 50% for the progressivity indicator, depending on the year. The results seem to confirm Comín's insight that, at least for some time, *"the regressivity of the tax system, however, has not been banished in practice, because fraud is still very flagrant in incomes with no withholding at source. Widespread evasion in high-income taxpayers and non-labour revenues has made PIT a tax on labour incomes"* (Comín et al., 1995).

The bad news is that undermined progressivity of PIT, which was – and is – the only real progressive tax with some weight in the system, calls into question the image of the ensemble of taxation and the joint tax-and-transfer scheme. Tax evasion and avoidance have proven pervasive in the country. The good news, however, is that efforts to reduce fraud, despite being slow, have reaped some rewards, specially with regards to self-employment incomes. A lot is left to be done, judging by the results in this paper and the ones from Domínguez et al. (2016), but at least we know where the big tax gaps are.

Further work would benefit from access to audit data, as has been possible in the United States, allowing the development of rich research in the area (Bishop et al., 2000; Feldman and Slemrod, 2007; Johns and Slemrod, 2010), and also in Denmark (Kleven et al., 2011). This would make much more precise estimations possible. They are without a doubt interesting not only for economic history, but also for societal awareness and policy design.

Chapter 5

Public opinion and political institutions in the fiscal transition

After the tax reform undertaken in Spain between 1977 and 1986, the practical results in terms of progressivity and redistribution were not outstanding. Inequality did not significantly decrease after the transition to democracy, as political economy literature would suggest. In recent times, the system has shown its incapacity to sustain European-level welfare services. But why?

This paper analyses the main contenders which might explain the issue: ideologies and the decision-making institutions. Perhaps the general citizen – or the decisive voter – was not so keen on redistribution. Alternatively, the political system may have not translated effectively the public stances onto policies. Some of these elements were significantly modified during the political transition. Other were affected by international developments, such as the general change of emphasis from equity to efficiency in tax system design, and capital increasing its mobility and its resulting higher capacity to escape from taxation.

5.1 Introduction

As the previous pages have shown, the Spanish fiscal system underwent a deep change during the transition period. It has been thoroughly studied by previous literature, both with respect to revenues (Comín, 1993, 2007; Pan-Montojo, 1996) and expenditures (Espuelas, 2013). The reform was initiated in 1977, with the objectives of increasing direct tax revenue and modernizing the system, to provide funding for the nascent welfare state.

However, my quantitative results in this thesis establish the limited success of the new tax system with respect to progressivity and redistribution. A summary is presented in table 5.1. Inequality did not substantially decrease after democratisation, and the tax system as a whole was not progressive, which limited the joint redistributive effect of the public budget. In order to understand this result, in the following pages I analyse the design of tax policy, based on primary sources, and under the light of the interpretative frameworks of international literature.

TABLE 5.1: The impact of taxation on inequality in Spain, 1970-90

	1970	1982	1990
Pre-tax income inequality	38.0	42.1	42.5
Net factor income inequality	39.0	41.5	40.8
Post-tax income inequality	41.4	44.5	49.2
Disposable income inequality	34.7	33.0	32.9
Post-tax-and-transfer income inequality	36.2	34.5	37.3
AETR on 2nd decile	28.3	43.6	70.7
AETR on 10th decile	20.0	34.9	46.5
AETR on top 1%	16.4	32.3	44.4
Progressivity index	-0.0849	-0.0274	-0.0485
Redistribution index	-0.0332	-0.0239	-0.0667
PIT tax base discrepancy	89%	43%	17%
PIT apparent tax rate 10th decile	-	15.6	19.8
PIT corrected tax rate 10th decile	-	10.8	14.5
PIT apparent tax rate top 1%	-	22.7	27.5
PIT corrected tax rate top 1%	-	11.5	16.5

Source: chapters 2, 3 and 4.

Notes: income inequality is expressed using the Gini index, in percentage terms. Households are the unit of analysis, but the OECD equivalence scale and individual weighting is used. AETRs are obtained adding all taxes paid by households, directly or indirectly (and including Social contributions). The progressivity index is Kakwani's, and the redistribution index is Reynolds-Smolensky's. The 'apparent' tax rates correspond to reported incomes, while 'corrected' tax rates relate PIT payments with real estimated incomes.

I will study two interrelated aspects: social preferences and the mechanisms of their translation into actual policies. Demand for redistribution is the result of a complex process, with intervening factors such as the evolution of dominant ideas about fairness in income distribution, and the capacity of the tax system to approach the desired ideal (Steinmo, 2003). Prevailing economic theory about taxation, and the policies applied in leading countries, have changed deeply since the mid 20th Century: from defence of progressivity to extended attacks on it as an obstacle to efficiency, giving rise to the privileged treatment of capital incomes. On the other hand, the degree of inequality and its different dimensions

(e.g. subjective perceptions or polarization) also condition social demands, and the possible formation of different interest coalitions (Kristov et al., 1992; Lupu and Pontusson, 2011). The first focus of this chapter is therefore the analysis of Spanish attitudes towards tax equity and their evolution during the democratic transition. I approach the issue following the ideas of distributive justice, progressivity and income redistribution in sociological surveys, the press, and political debates.

The second question is the translation of citizen preferences into political action. In the period under analysis, an authoritarian decision-making mechanism was replaced by a parliamentarian one, based on political parties. Did that mean going from the "only voter" of francoism to the "median" or "swing" voter of democratic political economy? To what extent were social demands reflected in policies? What aspects can explain a certain degree of persistence in tax incidence, despite extensive fiscal reforms?

I will analyse the impact of the configuration of the regime during its early years on the distribution of political power, with a special focus on the electoral system: as a mechanism translating the distribution of citizens' preferences onto a certain distribution of seats, its importance cannot be overrated – and the choice of its features would be explained by its expected effects. In that sense, even though the Spanish system is formally proportional (which, according to Persson and Tabellini (2003) and Iversen and Soskice (2006), would favour the introduction of redistributive policies), in its actual operation it deviates significantly from proportionality, favouring conservative stances (Gunther, 1989; Montero and Riera, 2009). Differences in political participation would further extend this bias, because lower turnout of low income groups generally decreases the chances of pro-redistribution parties (Montero, 1986).

As was advanced in the introduction, international comparisons provide some intuitions about the relationship between political institutions and the level of progressivity and redistribution achieved in different societies. Steinmo (1989, 1993) related the Swedish political system (centralized, proportional and corporatist), with relatively regressive taxes, which had nonetheless high revenue capacity to finance redistributive spending. In contrast, the Anglo-Saxon model was characterized by more progressive but lower taxes. Piketty and Saez (2007) and Prasad and Deng (2009) have explored this assertion empirically. Our intention is to discern the position of Spain in this general framework.

Among political institutions, the international ones should not be neglected: in the globalised world of the last decades of the 20th century, capital mobility and tax competition are key factors in our understanding of the pressures against fiscal progressivity. During the period of study, Spain was increasing its economic openness, with the milestone of accession to EEC/EU in 1986 and the subsequent process of construction of the EMU. Nevertheless, even before that, substantial international flows of capital existed (including illegal offshore movements).

This last chapter thus intends to contrast the explanatory capacity of two possible factors behind the non-progressivity of the tax system. Was the Spanish citizenry not demanding tax progression? Or was the political system not translating their demands onto policies? If the answer to the second question is positive, we can further focus either on national institutional issues (disproportionality in representation) or international ones (international integration and capital mobility).

In the rest of the chapter, I analyse the sources about public opinion on tax equity among Spaniards (section 5.2), and then I review the institutional framework and how it interplayed with citizens' preferences to bring about decisions about taxes (section 5.3). Section 5.4 concludes.

5.2 Public opinion on taxes

Whether Spaniards were in favour of progressive taxation, or just of the provision of public services irrespective of the distribution of the corresponding tax burden, needs to be explored in the data. This section approaches the issue on the basis of surveys, petitions, and the media.

5.2.1 Surveys

An extensive Fiscal sociology literature analyses the attitudes of the public with respect to taxes. Survey evidence starts in the mid 1960s in the case of Spain. Early studies were generally focused on the opinions about legitimacy and tax evasion, in an effort to provide useful insights to tax administration design. The first ones were undertaken by the Institute for Fiscal Studies, in cooperation with scholars from the University of Cologne. The Centre for Sociological Studies (CIS)

conducted similar studies since 1980. For the present, we have also international sources such as the *International Social Survey Program* or the *World Values Surveys*.

Unfortunately, this evidence is scattered and heterogeneous across time. It allows, however, to extract some conclusions, which I have organized in three sections: progressivity, tax burden, and evasion. I am working here with published data (not individual observations), which in some cases allow disaggregation by professional group, income level, age, social class, or educational attainment (the exact classifications vary between surveys; some also include political orientation and gender of the respondent). See Appendix E for the list of surveys used.

Tax progressivity perceptions and demand

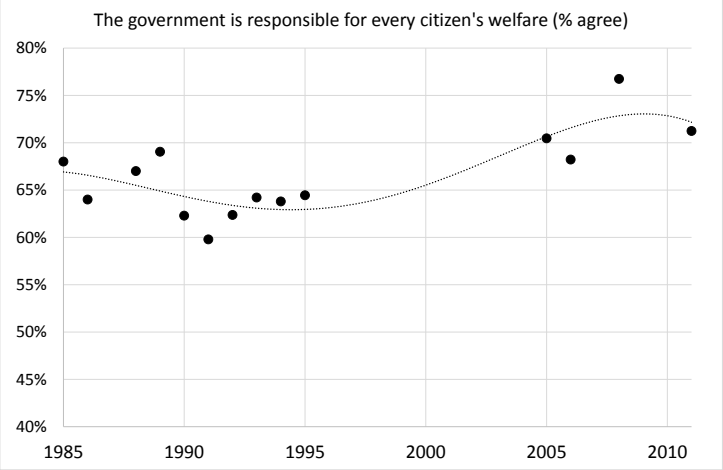
Spaniards usually show high concern with inequality in social surveys. In 1971, 60% considered inequality a serious problem of the Spanish society.[1] Reducing wealth and income inequality was the 3rd out of 14 issues in the worries of the citizens, an opinion which did not vary a lot across social classes (García, 1972, 1975). The percentage of those claiming to be worried had gone up to 74% in 1996 (Del Pino, 2005). In 1995, 96% thought that the government should take measures to reduce what they perceived as intense income differences, and the actual redistribution policies were judged non existent or ineffective by 88% (Centro de Investigaciones sobre la Realidad Social, 1995).

Furthermore, a high percentage of Spanish citizens hold a "collectivist" approach to welfare, where the individual is not the sole responsible for her life, but the government should also play a significant role (see figure 5.1). In some other countries, these attitudes are significantly less frequent (around 25% in the USA and 50% in France according to Gandarias, 1999, p. 188).

Over the last decades, Spaniards have not found their tax system to be fair. Always over half of the survey respondents consider the distribution of the tax burden not progressive (see figure 5.2). Discontent rose during the last years of the dictatorship, if a comparison between the surveys from 1965 and 1971 is to be given credit: in 1965, only 60% of respondents meant that taxes were unfairly distributed, while in 1971 the same answer was given by 86%. The most criticised

[1] All percentages are given over valid answers, unless in some cases where this information is missing from the sources.

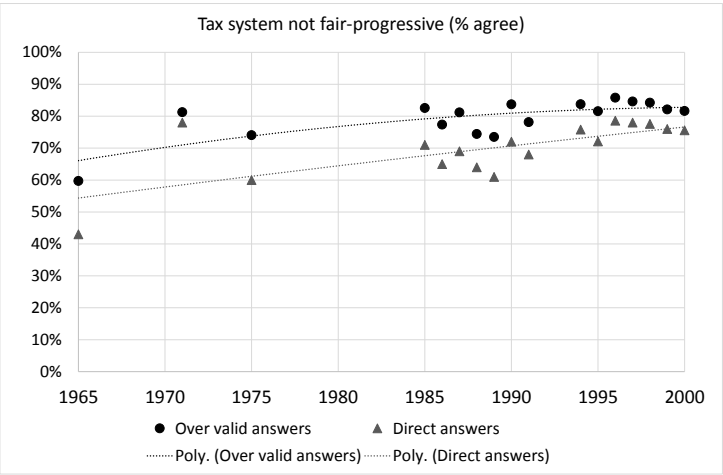
FIGURE 5.1: Collectivist attitudes towards welfare in Spain, 1985-2011



Source: Del Pino (2005).

tax in the pre-reform system was the Labour Tax (*Impuesto sobre las Rentas del Trabajo Personal*), which placed a high burden on wage earners (this issue will be commented on in section 5.2.2). Significantly, in 1965 businessmen directed their hatred towards the corporation tax: self-interest seems to be in the base of these opinions, with each social group despising the tax that burdened themselves.

FIGURE 5.2: Is the tax system fair? Spain, 1965-1998



Sources: see Appendix E.

In spite of the persistent "no" to the fairness question, during the second half of the nineties other surveys depict the respondents as more and more satisfied with the redistributive role of their tax system (Delgado and San Vicente, 1998).

The apparent contradiction might suggest a framing effect, or a decrease in the redistributive preferences of the citizens during this last part of the period. However, it is also possible that there is some confusion with the way questions were asked: *"Do you think that, generally, taxes are fairly collected? That is, that those who own more pay more? Or do you think otherwise?"*, as can be seen, implies that fairly collected taxes would be equivalent to progressivity. It is unclear what an individual should answer if he did not agree with the value judgement implicit in the question.

We can try to find out to what extent fairness actually meant progressivity in the minds of the respondents. In 1971, 67% of direct taxpayers thought that direct taxes were fairer than indirect ones (García, 1975), and 60% of direct taxpayers in the city of Madrid were in favour of the direct estimation of tax bases rather than objective assessments (Margallo and García, 1971). Both aspects indirectly point towards progressivity, since it is direct, personal taxes that make it possible.

In the 1975 survey, the issue was directly addressed, and 89% of the respondents agreed with progressivity postulates (versus 11% who favoured a proportional system, with no regressivity option provided). This was a general stance in the public, with very similar percentages of approval across different ages and levels of education. The lowest level of approval of progressivity was 83% among those with higher incomes.[2] 68% of the surveyed supported the personal income tax as a good revenue method.

Theoretical questions of this kind, however, have been found to be problematic in previous literature. Often, inconsistency arises when theoretical and empirical questions are compared (see the discussions in Bartels, 2005; Edlund, 2003 and Singhal, 2013). The low educational attainment of most of the sample has to be taken into account in this case, since a significant part of Spaniards in the 1970s had very low formal schooling.[3] Many of the respondents of these surveys may have lacked the basic mathematical skills to provide an adequate answer to quantitative questions about progressive taxation, even if they adhered to the principle in itself.[4]

[2]But this difference may well be not statistically significant, given the high standard errors in the survey sub-groups, of around +/-5 percentage points.

[3]In the household survey of 1973-74, 85% of household heads had only up to primary education, with 26% answering not to have completed the basic level.

[4]Inconsistencies clearly appear in the 1991 survey, for example. Demand of progressivity is shown in questions about decreasing or increasing the tax share of certain social groups, with highly educated and upper-middle class individuals specially prone to increasing progressivity. However, when required to choose between increasing the income tax or the VAT, opinions are

We only have two examples of "empirical" questions, and they are quite far apart in time (1971 and 1996).[5] Comparing them is not straightforward, since the framing of the questions was quite dissimilar, specially with respect to three dimensions. In 1971, the survey asked about the overall tax system, regarding the perceived and ideal tax rate in each income level, while in 1996, only direct personal taxation was dealt with. All kinds of citizens were surveyed in 1996, whereas the data for 1971 refer to a specific group of taxpayers, namely businessmen, liberal professionals and public employees.[6] Another important difference is that, in the 1971 survey, respondents were only asked about their own ideal tax burden, and not about a general profile of tax rates across different income levels. This means that, when comparing both years, we can quite safely assume that the ideal progression for 1971 would have been higher if everyone answered about all income levels (because of self-interest of the less well-off, being a majority).[7]

Figure 5.3 compares the answers given in both years. The 'ideal' rates described are contrasted with the actual burden faced in each level. For 1971, the IEF study provides a rate structure of reference, but I have found it to be quite imprecise, so I am using instead my own calculations from chapter 3.[8] For the second survey, I have calculated the rates from the official microdata of the personal income tax

divided at approximately 50% for both. The upper groups now followed their self-interest in showing opposition to increases in direct income taxation.

[5]The 1971 survey was carried out by the IEF, while the 1996 one corresponds to the wave "Role of Government III" of the International Social Survey Program, carried out in Spain by CIS.

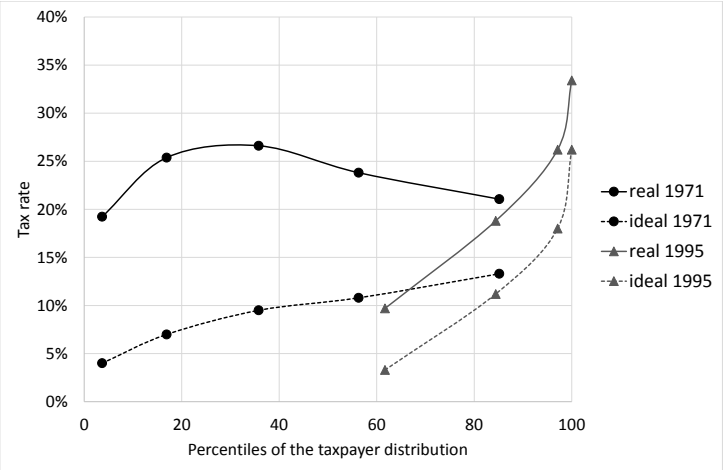
[6]The distance in this sense can be nuanced because these more "modern" groups of society – as they appeared in the 1970s, with more progressive views on taxation in the studies – were more numerous in the Spanish society of the late nineties.

[7]The exact question in 1971 was: *"Teniendo en cuenta todos sus ingresos [...], ¿qué porcentaje aproximado viene usted a pagar en conceptos de impuestos? Y ¿qué porcentaje cree usted que le correspondería pagar?"*, which can be translated as: *"Considering all your income, which percentage approximately do you pay in tax? And what do you think would be a fair amount?"*. In the 1996 survey, the question was: *"¿Cuánto cree Vd. que debería pagar anualmente en impuestos una persona cuyo salario anual bruto fuera de un millón y medio de pesetas? ¿O no debería pagar nada? (Nos estamos refiriendo a todos los impuestos que se deducen del salario, es decir, las retenciones salariales y el impuesto sobre la renta: IRPF)"*, which again can be translated as: *"How much do you think a person earning one and a half million ptas should pay in taxes? Or should she not pay anything? (We refer to all taxes deducted from salaries, withholdings at source and tax due of the personal income tax)."* The questions were asked for the average wage and subsequent levels doubling it (x2, x4, x8).

[8]These rates refer to the year 1970, and specifically to the corresponding socio-economic groups. The correspondence is not exact, since I have included four groups from the survey, which contain businessmen, liberal professionals, independent workers, and white-collar workers ("employees"). As for the tax rates given in Instituto de Estudios Fiscales (1973), they are based on an actualization of the simulation carried out for 1965 by Valle (1974) for the general population, adding an imputation of social contributions (calculated from the ratio total social contributions / total taxes in 1966). This procedure is not very accurate, since social security taxes grew significantly over the next years, and they were not equal for each income level.

corresponding to 1995 (returns to be filed in spring 1996).[9]

FIGURE 5.3: Ideal versus real tax burden



Sources: Instituto de Estudios Fiscales (1973) and Torregrosa (2015b), ISSP "Role of Government III" (Spain) and PIT micro-data from the IEF.

The question in 1971 referred to the joint tax system, while in 1996 it was about direct personal taxation (PIT + workers' Social Contributions). For other important differences between both years, see text.

Percentiles are built on "wide" income from the Household Budget Survey in 1971 (gross earnings plus all transfers received), with the households from the categories considered (mean percentile of the observations in the income intervals from the survey – but 60.6% of those were in the upper one). In 1997, the universe is that of individual taxpayers, and the income used to order them is the *Base Imponible Regular* (gross income after some adjustments, particularly removing irregular flows).

Some similarities between these results are striking, considering all the mentioned differences in the surveys. As is usual, respondents demanded lower taxation than they actually faced. In general, taxes are tough to pay and everyone seems to want their own part reduced. This is not a surprising finding. At the same time, when combined with questions about public expenditures, citizens always appear more sensitive towards the need to contribute.[10]

[9] "PANEL PURO Y EXTENDIDO IRPF 1982/1998 IEF-AEAT (Declarantes)". I have used the rates of individual and separate returns (as the question is asked in individual terms), using a range of +/-5% around each income point. Social contributions, approximated by the corresponding allowance in the tax base, have been added to the tax due (*"cuota líquida"*).

[10] The difference between both 1971 series in figure 5.3 would be even bigger if the reference were the "subjective" tax burden, i.e. what respondents *thought* they were paying, which was below their actual payments. This seems to confirm contemporary analysts' suggestion that there was acute fiscal illusion, related to the widespread use of indirect taxes. This issue, however, must be taken with caution, given the small sample size and the fact that the survey was undertaken under a dictatorship. By contrast, using UK data for 1995, for instance, Gemmell et al. (2004) find over-estimation of the taxes paid, both direct and indirect.

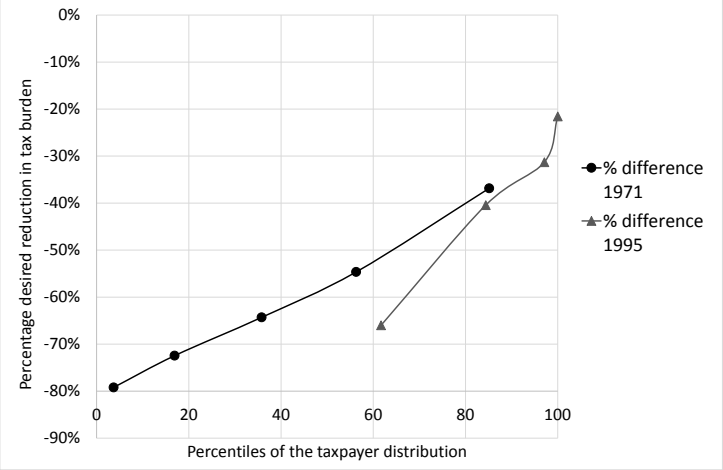
We can also see evidence of the dramatic change in the desired size of the government. The rates chosen by respondents in 1996 would imply public expenditure to represent a much higher share of the national income than in the 1971 answers. Actually, the change was larger than it looks in the graph, because in 1996 only a fraction of taxation was considered, while in 1971 the question dealt with the whole tax system. The slope is also more acute, with a difference of 20 percentage points between the minimum and maximum desired tax rates in 1996, compared with only 10 in 1971; although this is specially sensitive to the just mentioned difference, and to the income levels that were covered in each survey.[11]

The answers can also be interpreted as a demand for higher progressivity. Figure 5.4 shows the difference between the ideal and real tax burdens for each income level, as a percentage of the latter (i.e., it would answer to the question "*In which proportion do you wish to increase/decrease the tax rate paid by citizens making ... a year?*"). In both years, the slope of the line is clearly increasing: respondents wish to reduce rates more on the lower-earnings population than on the wealthy. In 1971, since the question only asked about the income level of the respondent, the results reported actually mean that the wealthiest demanded a lower decrease of their own taxes, while the the opposite was true for the poorest – who were experiencing higher effective taxation.

Recall that in 1996 this data refer only to the personal income tax, together with the workers' social contributions. If we looked exclusively at PIT payments, the actual shape of the tax rates distribution was remarkably similar to that of the desired rates. So it is difficult to sustain that respondents in the mid nineties favoured a strong increase (or decrease) in the progressivity of this specific tax. Their dissatisfaction would arise from other aspects of the system, like the regressive character of other taxes (among which social contributions) or the efficacy with which public revenues seemed to be used. We turn to this issue in the next paragraphs.

[11] This is a general problem in this kind of studies. It is often not very clear if the questions or answers refer only to personal direct taxes, which are easier to perceive by citizens, or to overall taxation.

FIGURE 5.4: Demand of higher progressivity: reduction of burden desired for each income level



Sources: same as figure 5.3.

Notes: same as figure 5.3.

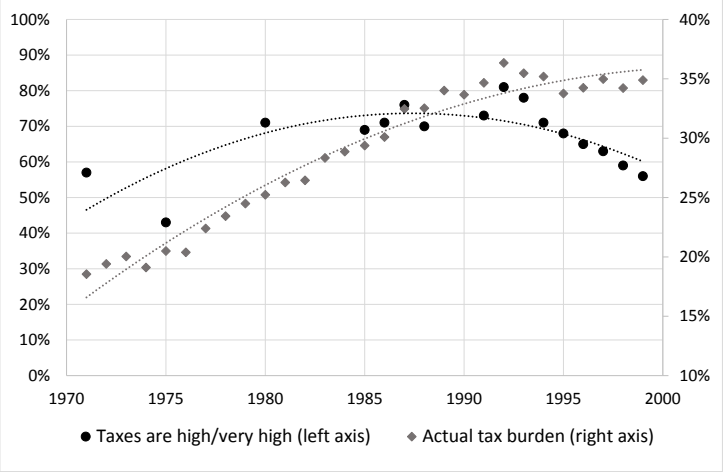
Tax burden and equilibrium with respect to public services

A related dimension is that of the level of tax burden. Across the decades under analysis, Spaniards came to think increasingly that they paid high taxes, following the actual evolution of tax revenues (see figure 5.5). This perception started to decrease around 1990, at the same time as the ratio of tax revenues to GDP was stabilizing (as a result of the Treaty of Maastricht and the subsequent efforts to control public expenditure).

But the perception of the tax burden not only depended on its actual level but also on the public services provided. During these years, taxpayers seem to have noticed immediately the increase in their taxes, while the benefits of extended expenditures took longer or where less visible (especially considering non-cash benefits). This is confirmed in figure 5.6, which shows the evolution of the "index of taxpayer feeling", with a trend opposed to that of the perception of high tax burden. This index intends to capture the equilibrium that citizens perceived between the taxes they paid and the public services they were provided with in exchange. Its value never becomes positive (which is also common internationally), but satisfaction was clearly increasing since the mid-1980s.

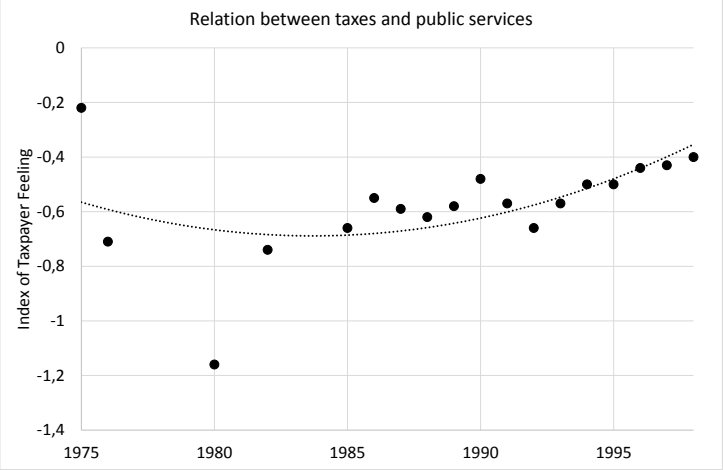
Other elements could be playing a complementary role. One of them is the regressivity of taxation. In fact, the tax burden was very high for those at the bottom, and maybe their answers were driving the total to some extent. This aspect

FIGURE 5.5: The perception of a high tax burden (percentage agree)



Sources: for the perception of the tax burden, Alvira and García (1976, 1981), Alvira et al. (2000), and Strümpel and Alvira (1975). For the actual tax burden, 3 for 1960 to 1990, with GDP from Prados de la Escosura (2003); rest of the period from IEF (Badespe) and INE (GDP base 1986 and 1995, online access).

FIGURE 5.6: Index of taxpayer "feeling" (equilibrium)



Sources: Alvira and García (1976, 1977, 1981, 1987) and Alvira et al. (2000).

Note: the index is designed to take a value between 2 and -2, where a positive answer would mean that benefits are perceived to be larger than sacrifices.

would lose importance as regressivity decreased during the period. However, fiscal drag was also in place during the eighties, when consistent inflation was not accompanied by deflating of the tax rate structure, thus causing strong increases in the rates faced by low and middle income taxpayers (González-Páramo, 1988; Salas, 1997). The economic cycle is also expected to have driven responses to a

certain extent, in this case negatively affecting taxpayers' perceptions in the first half of the nineties.

Tax evasion

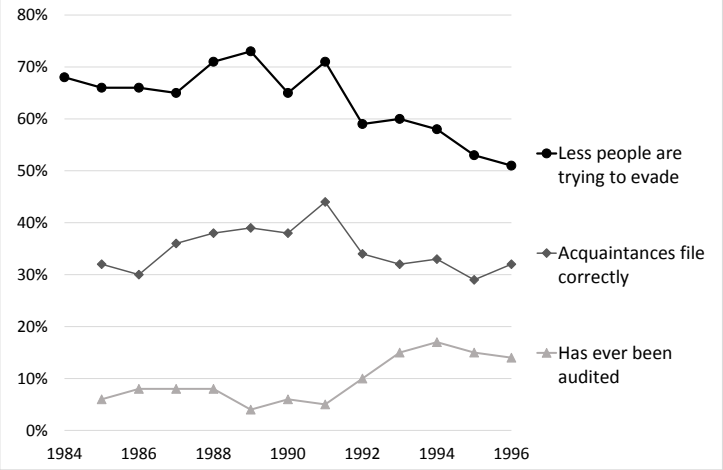
Tax evasion was a central topic in the surveys, and one the reformers of the 1970s and 80 attached high importance to. For Spaniards in general, in an abstract way, fraud was also worrisome: it came in the 5th place in 1971 (out of 14 suggested problems), with 57% of respondents sharing this opinion. It is significant, however, that these worries were less acute among liberal professionals and managers – precisely those social groups identified by their fellow citizens as being more able and prone to evade (Margallo and García, 1971). Furthermore, when asked about social sanctions against tax evaders, very few of total respondents had clear rejection attitudes: only 14% in 1971 and 10% in 1976. So, most of them were aware of the issue, but tended to be indulgent about it.

Throughout the period, the perception seems to be that evasion was high and persistent. Figure 5.7 shows that during the nineties a growing number of respondents claimed to have been audited, which would point to higher efficiency of the tax administration in this respect. However, when asked if less people evaded at the time of the survey than in the past, they clearly showed negative perceptions on the evolution of fraud. Their perception of the fiscal behaviour of acquaintances shows no clear trend. We might venture that the slight decrease in fraud (as found in chapter 4 and comparing with Domínguez et al., 2015) coexisted with a growing concern and rejection among the public, which are indeed evident in more recent surveys.

Summing up

Some general conclusions may be extracted from this review of survey data. Alvira and García, who took part in the design and treatment of the surveys, summarized the results in three "popular critiques" of the tax system in the 1970s (Alvira and García, 2005): unfair distribution of the burden, excessive complexity, and inequitable impact of tax evasion. My own interpretation, taking into account subsequent surveys, would include some further points:

FIGURE 5.7: Citizens' perceptions of tax evasion
(percentage agree)



Source: Alvira et al. (2000).

1. Spaniards were strongly in favour of redistribution by the government, and a large majority did not believe their tax system to be effective in this respect. Such was the situation both before and after the tax reform of the 1970s.

2. Spaniards wanted higher progressivity, but also lower levels of overall taxation (this can be in part related to framing inconsistency). Nowadays, they also appear to be clearly against any cuts in welfare state services (Del Pino, 2005).

3. During the eighties there was a strong feeling of bearing high taxes, which can be related to the disequilibrium with respect to services (i.e. the delays in building the welfare state) and also to the regressivity of taxation in general. An "anti-fiscal" feeling seems to have developed, which comes through also in answers to interviews (see e.g. Díaz and Delgado, 2005). It seems to be related to:

    a) A significant fiscal drag, which increased PIT revenues during the decade, by making the tax heavier among the low-middle income classes. This seems to have strongly affected its legitimacy, given that tax increases were higher than those of real earnings during several years (a point made by Lagares, 1990).

   b) The effect of economic distress and the growing public indebtedness, causing an image of bad management and squandering.

4. Tax evasion can also play a role in this regard, and has been persistent in the eye of citizens. Some indicators point towards higher repeal of this practice, which seemed to enjoy widespread indulgence at the beginning of the period.

Remarkably, these conclusions are quite similar to those reached by Edlund (2000) with Swedish data, for the period 1981-1997. The Swedes also seemed to think that their taxes were unfair and too high, but not so much if they were explicitly compared to the level of public services. When asked about desired taxes by income level, they also demanded higher progressivity, specially a decrease of taxation on poor households.

Singhal (2013)'s analysis of seven OECD countries yielded similar perceptions, using the same 1996 data presented in section 5.2.1 (International Social Survey Program, Role of Government III). She found that 87% of respondents were in favour of progressivity postulates, although only 38% provided strictly progressive answers (i.e., across all income levels asked about). Spain was the country with the highest level of strictly progressive answers, with 63%. Fernández-Albertos (2011) confirms the strong pro-redistribution stance taken by Spaniards in a comparative perspective.[12] Boeri et al. (2001) showed strong support for the status quo of welfare states in four European countries, among which Spain (the other are France, Germany and Italy). Interviews conducted in 2000 found that Spain was the country where a higher percentage preferred an increase in taxes and benefits (30% of respondents, versus 14-17% in the other countries – which is consistent with the incomplete process of Spanish fiscal convergence with the Western European systems).

5.2.2 Petitions

Some popular perceptions of taxes can also be found in petitions made to the fiscal authorities throughout the period. I have analysed a sample of 69 petitions

[12]Out of a sample of 25 countries, Spain's demand for redistribution was higher than in the other non-communist states. Support for redistribution was found even among those with incomes within the richest 15%. The author relates this result to the fact that in a 1993 CIS survey a majority thought they would benefit from greater income equality.

dated from 1964 to 1979 which can be found in the Archive of the Ministry of Public Finance.[13]

Most of these letters were petitions by organizations (75%), namely businesses or branches of the official "vertical" trade unions. Missives by individuals are very scarce before the transition to democracy, but their number increases a lot since 1977. What is most significant is that 88% of them referred to the same tax: the Labour Tax (IRTP, *Impuesto sobre las Rentas del Trabajo Personal*). There was a general complaint against its non-taxable threshold, which was strongly decreasing in real terms because of inflation. This might be one of the explanations why the revenue of this tax increased substantially during the 1970s, and bears a strong resemblance to the criticisms about the personal income tax in the following decade.

Letters by individuals come sometimes from highly educated workers, such as doctors, with specific issues. But some of them are reflection of popular discontent, normally expressed as a petition more than a demand, and frequently related to inflation and to the hard situation of large families. A man from Denia in July 1977 wrote *"I welcome your tax reform, increasing the Labour Tax; but as I am a worker with a large family (6 sons), I want to ask you to keep in mind these families in your taxes, because it is not the same to have 500.000 ptas and share between 4, than between 8, which is my case"*.

Many of the petitions signed by organisms of the vertical unions have a technical character, but some introduce arguments of progressivity. For example, in March 1977 a letter coming from workers of a building enterprise asked explicitly for progressive reform: *"A progressive and fair economic policy requires a deep tax reform, so many times announced and never carried out [...] which taxes progressively, and not merely proportionally, the highest wages or incomes"*, and increased control over unreported earnings. A year earlier, the president of the national vertical union of workers from the Metal sector criticised the system with the following statements: *"We have an unfair and ineffective tax system, and that doesn't mean that the burden workers face is excessive, but that, in fact, capital incomes are undertaxed"*.

Of course, the concentration of complaints around the Labour tax suggests that lobbying about business taxation was funnelled through other channels, not that it was non-existent.

[13]This sample cannot be considered random nor representative. Letters containing personal data protected by the law were previously removed by the Archive staff. Source: General Index 1.851, box 57.762.

5.2.3 Press

The media can also provide some information about prevailing social attitudes about taxation. Journals of diverse orientation have been selected, as can be seen in table 5.2.

TABLE 5.2: Press analysed for this study

Journal	Period active	Orientation	Source	Progress of research
ABC	since 1891	Conservative	online	1974-77
Cuadernos para el Diálogo	1963-78	Progressive	BNE	1977
El País	since 1976	Progressive	online	1977-90

Note: BNE stands for *Biblioteca Nacional de España*, the National Library, where all Spanish periodicals can be found.

ABC

This was a conservative journal, of monarchic orientation under the dictatorship, and aligned to the right-wing party *Alianza Popular* during the transition period. Its online search machine has allowed to investigate the articles relating to taxation issues with high efficiency, searching for the words 'tax reform'.

During the years 1974-77, opinions voiced in *ABC* were clearly against redistribution and against the need of any tax reform of this kind. Arguments provided were generally of a technical nature: an administrative reform should go first as a prerequisite, and fiscal effort in the country was high and could not, or should not, be increased. One idea was to "start" by applying effectively the tax regulations in place: *"The possibilities in our tax system to obtain higher revenues are considerable, so that these tax reforms are unnecessary"*[14], combating fraud with simplification and improved administration and transparency in public expenditures. The main "theoretical" critique against Fuentes Quintana's position (the main figure behind proposals for reform) was that the level of tax burden in Spain compared to its European neighbours was not so low, when taking into account the income level in the country.[15] A clear anti-fiscal stance is taken by one of the contributors

[14] *"Hojas de alcabala: El porqué y el para qué de una reforma"*, *ABC*, 8/10/1974, p. 55.

[15] Recall from the surveys that the tax burden was seen to be quite high, but specially for the poorest families, and not for the wealthiest. This point is avoided by the journal.

when writing: *"Like summer clouds announcing thunder and lightning, for a long time the ordinary and overwhelmed citizen has been feeling the treat of a tax reform"*.[16]

In 1976, when talks about tax reform were becoming more frequent (related to the projects of the Minister Villar Mir), *ABC* generally criticised these initiatives as populism. Regular contributors were fiercely against the aspiration of using the tax reform as a potent channel for the reduction of inequalities. For example, former Minister Navarro Rubio claimed that reformers were pushing excessively for this solution and that the economic crisis strongly advised not to increase the tax burden.[17]

Cuadernos para el Diálogo

This periodical had a clear democratic orientation and was thus situated in the opposition to the late Franco's regime, with a prominent trajectory in criticizing the tax system during its last years. Renowned personalities wrote in the pages of *Cuadernos*, making it a good example of the progressive-centrist views on many social and political issues. Several of its signatures were later incorporated to *El País*.

In the year 1977, opinions voiced here were clearly favourable to a progressive tax reform. As an example, in January the journalist J. Estefanía claimed that the state budget was socially unjust and a profound redistributive reform was needed:

> *"The trend of increasing direct taxes is very slow, and, also, does not automatically achieve a more equitable distribution of the tax burden. [...] For example, one of the direct taxes increasing the most is the Labour Tax, against which Spanish workers have repeatedly complained for years. [...] It is necessary to eradicate tax evasion starting from above, so that the budget becomes indeed an instrument to reduce social differences and achieve greater equality. [...] Political reform may be going forward; the economic one lags behind because it touches more direct interests"*.[18]

In July the journal published an interview with the new Public Finance Minister, Francisco Fernández Ordóñez, with a very positive tone. Critiques focused on pressure groups lobbying against the reform (fundamentally the banking sector), and the acknowledgement that, in spite of tax changes, the majority of the

[16] *"Hojas de alcabala: Nuestro esfuerzo fiscal"*, *ABC*, 11/8/1974, p. 43.
[17] *"Teoría de la relatividad fiscal"*, *ABC*, 11/6/1976, p. 3.
[18] *Cuadernos para el Diálogo*, n. 193, 8-14th January 1977.

costs of the economic crisis were falling on the workers' shoulders (due to the containment of wage increases to fight inflation, as agreed in the Moncloa Pacts).

In November 1977, when the first tax reform law passed through Parliament, the editorial took a clear position in defence of the project, which was facing resistances from the right and even inside the government's party, UCD. The underlying idea was that democracy implied not only a political change, but also an economic one: *"Enjoying democracy is not only the exhibition of a Parliament formed by universal suffrage, or laws allowing to see films without prior censorship. It also means enjoying higher distributive justice in the tax burdens and wider development of collective services"*. It also underlined that the reform was not anti-capitalist, but exactly the opposite, since it meant reinforcing capitalism in a very critical context – therefore, rejecting it could provoke a radicalization of voters.[19] Such a reasoning was, according to the journal, precisely what made the project pass through Senate, the most conservative chamber, where it had faced severe opposition among the UCD seats.[20]

El País

Born in 1976, *El País* soon came to be the most read journal in Spain, a position it still holds today. From its origins, it worked as a journal in a fully democratic context would, and containing diverse opinions. The official orientation of the journal, however, was quite clearly social-democratic.

During the years 1977 and 1978, the pages of *El País* monitored quite closely the process of tax reform, explaining to its readership the main debates and projects going through Parliament. Notably, some initiatives of the left were granted particular attention (e.g. the insistence on publication of individual tax data).

Editorials in the journal were very favourable to the tax reform, and specifically to the principles of progressivity, generality and transparency. On July 1977, it was stated: *"The tax reform must serve as a stimulus to put in place an effort of national solidarity, and must become the demonstration that the Government is willing to fight for an equitable society"*.[21] Another editorial from April 1979 praised transparency and cried out for more tax compliance among citizens, while also criticizing that the highest burden still was placed on salaried workers: *"Tax evasion is, first of all,*

[19] *Cuadernos para el Diálogo*, n. 236, 5-11th November 1977.
[20] *Cuadernos para el Diálogo*, n. 238, 19-25th November 1977.
[21] *"La reforma fiscal"*, *El País*, Editorial, 31/7/1977.

an active deed of lack of solidarity towards the community. In that sense, the publication of tax returns can become useful to make many taxpayers report and pay more, even if it only is to avoid public shame".[22]

A series of interviews to the members of the Public Finance Commission in 1978 served to transmit the readers some of the main issues at stake in the negotiations. They are interesting today, among other things, because they make clear to what extent the principle of progressivity was of general acceptance in the public opinion at the time. The MPs of UCD, PSOE (Socialist Party) and PCE (Communist Party) defended the application of this idea (notwithstanding some differences between them). Those of *Alianza Popular* and the Catalan Minority Groups, however, were representatives of conservative voters and not so favourable to progressivity. But this came through only in their proposals, on discussions of detailed issues concerning tax exemptions, allowances or credits, and not as a general statement or as a challenge to the rate structure proposed by the government in Parliament (these issues are explored in section 5.3.1).[23]

In that sense, Ramón Trías Fargas, member of the Catalan Minority Group, stated: *"I have maintained since 1963 that strong and progressive taxation is a requisite for liberty and democracy"*, but alongside criticised what he considered to be excessive rush in the reform process, and a tilt towards equity at the expense of efficiency.[24] Laureano López Rodó from *Alianza Popular* showed a similar position: *"In general terms, the philosophy of our project would have been similar to that of UCD. I understand that indeed the income tax must be the king of the system"*, which did not preclude him from opposing particular aspects, also concerning savings and family treatment particularly.[25]

5.3 Lost in institutions?

The second candidate for our initial paradox is that the new parliamentarian system failed to channel citizen's attitudes with respect to progressivity to effective

[22] *"Reforma fiscal y reforma moral"*, *El País*, Editorial, 1/4/1979.

[23] The same conclusion is reached by Pan-Montojo (1996) when discussing a businessmen survey from October 1977, where respondents did not criticise the existing system but acknowledged the need to reform it. In Pan-Montojo's words (p. 286): *"Their resigned answers reveal the political impossibility for its beneficiaries of openly defending the fiscal statu quo, and the absence of a coherent model of taxation, alternative to that offered by the reformist tradition"*.

[24] *El País*, 2/6/1978.

[25] *El País*, 3/6/1978.

policy-making. Did it fail to be democratic in this regard? Were there contradictions between different policy goals?

Several studies have explored possible explanations for the lack of a convincing link between inequality and redistribution, such as Meltzer and Richard (1981) initially posed – or progressive taxation, as is our focus here. General discussions can be found in Saint Paul and Verdier (1996), Borck (2007) or Acemoglu et al. (2013). I focus here on four factors.

First, the specific institutional setting can be more or less favourable to redistribution. An extensive literature has developed in this area: Steinmo (1989) contrasted the Swedish centralized system with that of the US; Persson et al. (2000) claimed that parliamentary systems would be more redistributive than presidential ones, Alesina et al. (2001) argued that the majoritarian and federal system of the US worked against redistribution, and Iversen and Soskice (2006) pointed that in proportional electoral systems centre-left parties would have more chances to take office.

Secondly, it is widely known that political participation and influence increases with income – and thus is higher among individuals we would expect to be less favourable towards progressivity, given their self-interest. This has been pointed by the literature on special interest politics (Becker, 1983; Grossman and Helpman, 2001) and is also one of the arguments behind Acemoglu and Robinson's (2008) claim of the decisive *de facto* power of elites after a democratic transition. Recently, Karabarbounis (2011) claimed to have found support for the "one dollar, one vote" hypothesis, relating redistribution levels in several countries to different indicators of inequality which would proxy for the political influence of each group. This approach is similar to that of Lupu and Pontusson (2011), who pointed at the importance of the structure of inequality (skewness) for the realisation of different social coalitions.

Other authors have explored the relation between consumption taxation and welfare state development. Lindert (2004) argued that redistributive social spending has been based on heavy indirect and labour taxes, because high revenue needs could not be met with progressive schemes. Political resistance or economic considerations (the disincentive effects) would make it difficult. Following his insights, a growing literature has been finding that the most effective way to provide redistributive services would be to fund them with taxes on the lower classes

(Ganghof, 2006; Kato, 2003; Prasad and Deng, 2009; Timmons, 2005; Wilensky, 2002).[26]

This relates to the international dimension. In Beramendi and Rueda (2007), an open economy might reduce the feasibility of relying on progressive income taxes for funding welfare state services. Therefore, international openness, specially in financial flows, provides some taxpayers an easier "exit" option. Such was posited already in the eighties by Bates and Lien (1985), and can also be found in the more recent works of Boix (2003) and Freeman and Quinn (2012).

I merge these possible factors in two alternative stories – a national and an international one. Of course, they are not mutually exclusive. Starting from the inside helps considering the nature of the Spanish regime in itself, as it emerged from the process of democratic transition, while the international context was present during the whole time but increased its influence with advances in economic openness and the integration in the EEC/EU.

5.3.1 Political transition and national power structures

Albertus and Menaldo (2014) discuss the importance of the process of democratic transition, during which redistribution would only come through if the elite's control is hampered by revolutionary threat. This idea may be relevant in our case. In Spain, as was mentioned in the introduction, the democratic transition was not the result of a revolution, but came about only after Franco's death in 1975. However, the political elite was not a compact block by then, since a part had been developing a slightly reformist agenda.

The opposition was not fully united either, in spite of the efforts headed by the Communist Party (PCE) to achieve a democratic breakout, after which a provisional, concentration government would call for elections. This was not possible, but significant social upheaval was taking place at the same time, with labour conflicts and mobilization at different levels, undoubtedly influencing the process of political change.

The usual interpretation, advanced earlier, is that neither Francoists nor the opposition were strong or united enough to impose their views, so a compromise arose. The transition process was a political reform, conducted from above by

[26] Lindert's "free lunch puzzle" has a counterpart in Korpi and Palme (1998)'s "paradox of redistribution" with respect to social expenditure (universality versus targeting).

Suárez – who had been appointed by the King, Franco's designated successor –, which did not openly reject the dictatorship's legal framework, but aimed at reforming it. The strength of the political and social opposition made it nevertheless possible to introduce some changes that meant a clear breakthrough in comparison with the previous regime. Were those enough to ensure democratic tax policy?

Malapportionment

Fernández-Albertos (2011) provides a list of political factors and their expected impact on redistribution policies. The number of veto players and federalism would reduce redistribution.[27] On the other hand, proportional representation, large and cohesive parties, and long governmental tenure of socialism would have the opposite effect. Fernández-Albertos considers that these three last factors explain the presence of a developed system of redistributive policies in Spain. In this regard, the influence of the long rule of the socialist party cannot be denied (1982-1996), neither the fact that the party system is quite concentrated and cohesive (and with strong internal party discipline). By contrast, it is much more difficult to accept that the Spanish political system is characterised by a high degree of proportional representation.

Spanish elections are known to have very low levels of proportionality when compared to other European countries. One of the main reasons is district malapportionment. This term comes from Samuels and Snyder (2001), and refers to disproportionality in territorial representation: it generally favours less populated regions with more conservative voters; therefore hurting prospects for redistribution.[28]

Samuels and Snyder (2001) suggested that the manipulation of electoral representation by means of malapportionment could in fact favour the chances of democracy in a transitional context. Their paper analyses Latin America in recent years, but the idea seems easily applicable to Spain, where several studies by political scientists have underlined the interests evident in the design of the electoral

[27] The first element is not important in the Spanish case. The second is present to some extent, in the special regimes granted to the Basque Country and Navarra. This aspect limits inter-territorial (and, thus, also personal) redistribution. It is, however, out of the scope of this paper.

[28] This link is explored by Ardanaz and Scartascini (2013) with Latin American data on personal taxation. Majoritarian systems have been found to be related to lower social spending in Persson and Tabellini (2003).

system during the transition (Gunther, 1989; Lago and Montero, 2005). Whereas nominally proportional, in its operation the electoral system is affected by both a majoritarian bias and a conservative bias (since rightist parties benefit more than leftist ones from actual non-proportionality).

In Samuels and Snyder (2001)'s data, Spain's malapportionment value is 0.0963 for 1996, number 16 in a sample of 78 countries.[29] I have estimated the corresponding value for the first democratic elections in 1977 at 0.0929: the small gradual deterioration over time is likely due to the lack of adjustment to demographic movements. The Loosemore-Hanby index of disproportionality in parties' outcomes, on which the malapportionment index is based, shows a different evolution, with a decreasing time trend (see table 5.3). This has to do with the adaptation of parties to the electoral system.

TABLE 5.3: Loosemore-Hanby index of disproportionality in Spanish general elections, 1977-86 (%)

	Parties with seats	Incl. parties without seats
1977	15.05	18.81
1979	14.31	17.62
1982	12.21	14.27
1986	10.08	13.24

Source: author's calculations with data from *Junta Electoral Central*.

The index is calculated as the sum of differences between all parties' shares in seats and votes, in absolute values, divided by two.

During the first years, the effects of the electoral system benefited specially Suárez's party, UCD (see table 5.4). It won a significant position in the first democratic parliament, although not attaining the absolute majority, as had been its purpose. The centrist party was also the most fortunate in 1979. As Gunther et al. (1986) have discussed, the impact of the first election on the party system was very significant. Parties obtaining representation in 1977 not only gained institutional power, but also reinforced their access to public opinion, and – last but not least – obtained funding from the state budget. The ones who did not, and they were many, disappeared or were disadvantaged from then onwards. In that way, the electoral system was an active element in the configuration of the party system during the first years of the new regime. And, similarly, due to the defining character of this early period, the reinforced majorities enjoyed by UCD had a lasting impact on public policy.

[29] The ranking becomes 4 out of 20 if only federal countries are considered.

TABLE 5.4: Parties benefiting from electoral rules, 1977-86

	UCD / AP (since 1982)			PSOE		
	% votes	% seats	Diff.	% votes	% seats	Diff.
1977	34.52	41.14	6.62	24.44	29.43	4.99
1979	35.08	48.00	12.92	30.54	34.57	4.03
1982	26.46	30.57	4.11	40.82	50.57	9.75
1986	26.13	30.00	3.87	37.86	46.57	8.71

Source: author's calculations with data from *Junta Electoral Central*.

In 1982 and 1986, the first columns correspond to electoral coalitions headed by *Alianza Popular*, the new preponderant party in the right.

After 1982, the central party in the system was PSOE, the Socialist party, who now enjoyed the bigger premiums in terms of parliamentary seats. As can be seen, PSOE actually won an absolute majority in 1982, which entitled the party to initiate programs in welfare state development and to complete the reform in taxation, intensifying anti-fraud measures and finally introducing other new taxes. The party and the context, however, had by then changed in many respects.[30]

The parties' stances in Parliament

I have conducted an in-depth investigation of the political processes behind the parliamentarian discussion of tax laws, and the measures defended by each party in the debates. See the list in table 5.5.

A first approach suggests the existence of a bottleneck in the tasks of the Public Finance Commission. Indeed, the net wealth, inheritance and value added taxes were sent in by the government in 1978 but did not make it through the process during the first legislature (1977-79), nor during the second (1979-82). The processes were re-started each time. The same group of MPs was designated in 1978 to examine all three direct taxation projects, with the personal income tax coming in the first place because of its highest priority. These parliamentarian works also coincided with the process of elaboration of the Constitution, which

[30] Andrade Blanco (2012) reviews the ideological and tactical evolution of the Socialist party during the years of the political transition. An inspection of its electoral programs shows how, by 1986, tax progressivity had practically disappeared as an instrument for redistribution, and attention was directed mainly to social expenditure.

TABLE 5.5: Main tax law projects in 1977-79

Law	Proposal	Sanction	No. amendments
LMURF: wealth tax, anti-fraud	July 1977	Nov. 1977	139
Personal Income Tax	Jan. 1978	Sept. 1978	202
Net Wealth Tax	Jan. 1978	-	82
	April 1979	-	115 (incl. 57 prev.)*
Inheritance & Gift Tax	Jan. 1978	-	64
	April 1979	-	80 (incl. 46 prev.)*
Value Added Tax	July 1978	-	54
	April 1979	-	81 (incl. 48 prev.)*

Source: Archive of Congress, documentation from the Public Finance Commission: Folder 12, *Legs.* 1069, 1696-2, 1698-3, 1700, 1714-8 and 1715-1.

Notes: LMURF stands for *Ley de Medidas Urgentes de Reforma Fiscal*, Law of Urgent Measures of Fiscal Reform. A Net Wealth Tax was finally passed in 1991; Inheritance & Gift in 1987, VAT in 1985.

'(incl. ... prev.)' refers to how many amendments from the previous parliamentary process were kept by parties for the next debate.

undoubtedly concentrated the efforts of politicians at the time. The resulting delays made it possible for the resistances to the reform to fight back and come up with alternative models in the 1980s.

Already the initial deadline for sending in the projects by the Government was not respected, which has been interpreted by Pan-Montojo (1996) as a result of undercover pressures to moderate the laws. This was implied by the Communist MP Ramón Tamames when complaining about the fact that *"an important increase in the degree of conservatism can be appreciated in these projects with respect to the initial plans"*.[31]

a) Law of Urgent Measures of Fiscal Reform (1977)

The first project of the minister Fernández Ordóñez was also the first law to be passed by the new Parliament, elected in June 1977. The processing of this law was made urgent, since the government meant to bring it to force starting in 1978.

The LMURF was a first set of measures to introduce the tax reforms. It attempted to set a bridge between the old taxes and the new ones to be discussed during 1978. It included the creation of various transitory taxes

[31]Direct taxation projects had been agreed to be sent by the end of September 1977, but only entered Parliament in January 1978 (the Corporation tax in June), while the time limit for indirect taxes was the end of November 1977 and they arrived in June 1978. Tamames' words come from the report of the meeting of the Public Finance Commission on 9th February, 1978.

(a Wealth tax and a surcharge on high labour incomes), changes in several indirect ones, and a set of anti-evasion measures (tax amnesty, fiscal crime and lifting of banking secrecy). These were supposed to bring about a new beginning in the relations between taxpayers and the tax administration.

With respect to the initial project, the law that was finally approved shows an increase in the progressivity of the Wealth tax rates, following quite closely some of the proposals of the Catalan Socialists group. This increase in progressivity, however, was accompanied by a reduction in the revenue capacity of the tax, since rates were reduced for those with under 100 million pesetas of wealth (where the majority of estates would be found), while increased at the top, over 500 million (something with very low potential practical effects). By contrast, the alternative structure put forward by the Communist party was less progressive on paper, but would have brought higher revenue from the propertied classes.[32]

No significant changes were introduced with respect to tax crime and bank secrecy, while the right-wing party AP managed to get for his voters the exemption of monuments and significant artworks from wealth taxation, and the increase of deductions for new labour contracts in business taxes (a point shared by UCD and the Basque and Catalan groups).[33]

The debate in Parliament (25th October 1977) focused on a couple of specially contested issues. The Socialists had strongly pushed for the inclusion of corporations in the Wealth tax, arguing that leaving them out introduced inequity among enterprises (at the expense of individual ones), and as such they were included in the first project issued by the government. This point was important, the speaker said, not because of revenue considerations, but because the wealth tax was meant to serve as a registry of estates for the rest of the prospective reform. Responding to this proposal, the UCD MP García Añoveros justified the change because of concerns about double taxation and possible negative impacts on investment. The speeches of Socialist proponents suggest that opposition to openly and constructively discussing

[32] In fact, this may be part of the explanation of the distance between the initial revenue estimate in the project (39,649 million pesetas, of which the government's objective was to reach 20,000) and the actual revenues (8,589 million in 1978 and over 15,000 in 1979).

[33] In this and other episodes, the points put forward by different parties can be read in the spirit of Dixit and Londregan (1996). The introduction of exemptions and deductions clearly enters the realm of special interest politics. Spanish parties in this initial period seem to be caring about their own constituencies, while they could have evolved towards a more swing-voter approach with the consolidation of democrac.

this issue was fierce (Barón Crespo: *"In this case we were told: 'Positions are completely opposed', even though the first draft of the Ministry of Public Finance [...] made reference to the wealth tax on corporations"*), which might point to the existence of external pressures explaining the change of opinion inside of the government. The Socialist proposal was backed by the Communist party in Congress, but was nevertheless rejected by 164 votes against 147.

The other discussed aspect was the date of start of the duty of cooperation of financial entities, regarding the lifting of bank secrecy. The Catalan Socialists, represented by Ernest Lluch, suggested that this principle should start to be effective since June 1977, before the law was sanctioned *but after the principle had been made public*. They argued that during the year important capital movements had taken place, and the government should be able to investigate them, since the law did not change the legality of the behaviour of their owners.[34] The Catalan right-wing party argued against this proposal, defending the principle of non retroactivity. The point was also rejected, but very narrowly: 147 against 142.

b) The Personal Income Tax (1978)

This was one of the cornerstones of the reform, and would be a key tax in the new system. The project of the government is dated December 1977 and was discussed in the Commission between January and May 1978, to be approved by the Parliament during the summer and finally sanctioned in September. The processing of this law was successful in the sense that the Government managed to pass it more or less in the time frame that had been planned, which would not be the case with the following projects. The debates took place right after the Moncloa Pacts and still during the period of 'consensus', before a crisis in UCD completely unfolded the next year. Nevertheless, some of the elements introduced in the regulation of this tax opened the doors to avoidance by high income families, according to Pan-Montojo (1996) and Comín (2007).[35]

[34] *"Everyone knows that in this country since at least the 1st of January there have been a series of financial movements, first, against the democratic process; then, speculating on the peseta, and, lastly, a series of manoeuvres this summer that neither did help to consolidate the first democratic Government. Ergo, the problem of the date is not a minor issue".*

[35] Comín refers to the possibilities to realise high capital losses against other incomes and the mechanism of fiscal transparency established, among other aspects. See Comín (2007), p. 32, for further detail.

The discussions analysed here are undoubtedly related to the rifts in the governmental party, whose MPs presented 19% of the amendments to the law (38 out of 202). Jointly considered, all the parties in the centre-right (including UCD) made 70% of the suggested amendments. The content of their amendments was also more critical of the project, while the contributions of the parties from the left had a more cooperative, sometimes technical, character.

Remarkably, the proposed rate structure was not much discussed. A progressive schedule was accepted by all parties, at least on paper. The main resistances were related with tax credits and allowances, where the increases defended by the conservative parties could be interpreted as a base-voidening strategy. The design of tax credits profoundly affects the progressivity of a tax, but it does so in a less transparent way, thus making it difficult for the public opinion to express an informed preference.

The centre-right parties pushed for increased family allowances (together with the Socialists in this case), and also greater credits for all kinds of investments, personal expenses and charitable donations. Some of these suggestions were accepted at least partially, which meant a moderation of the law during its passing through Congress.[36]

The same was not the case for the Communist party's proposals or other amendments by the Socialists, such as the elimination or strict limitation of presumptive assessment (whose application was left to the discretion of government). The obligation of the tax administration to publish fiscal data at the individual level was the object of considerable controversy, with the main argument against it being terrorist threats. It finally appeared both in LMURF and the PIT law, only to be replaced in 1981 with the publication of aggregate statistics.[37]

The power left in the hands of government was criticised by almost all parties, particularly the executive's capacity to adapt the PIT schedule and credits by means of a yearly decree. This aspect was heavily contested, with

[36] Increase in family allowances, introduction of new investment deducible concepts, reduction in the imputed incomes from home-ownership, and establishment of a limit of 40% effective taxation.

[37] Lists of taxpayers of the years 1977 and 1978 were publicly displayed at the building of the ministry of Public Finance in 1979 and 1980, with the press commenting on some dubious cases. But these data corresponded to the old personal income tax. The regulation was changed to stop publication of the (new PIT) 1979 data in 1981.

almost all groups demanding a yearly compulsory adjustment to inflation (which was high at the time). Those amendments were not accepted, leading as we know to strong fiscal drag during the 1980s.

c) The Net Wealth Tax

The initial wealth tax introduced in 1977 was meant to be transitory, and thus was called "extraordinary" in the law. It was in force, however, for fourteen years.

The project to replace it entered Parliament in January 1978, and raised similar issues as its precedent. There were many technicalities, showing an interest of the parties to debate the design of the tax in more depth than with the transitory previous tax. The Commission did not reach an agreement before the government was dissolved, and a similar process took place in April 1979.

The Communist party defended again the need to include corporations in the tax. Socialists suggested cadastral values to be adjusted yearly, according to the evolution of prices in rental dwellings, which was meant to tackle the widely known problem of under-valuation in these values, used as a reference for this and other taxes.

The parties in the centre-right, on the other hand, strove for individual instead of joint taxation, an increase of the exempted threshold and annual adjustment to inflation; all measures geared towards limiting the revenue potential of the tax. Another issue raised by them was the rejection of individual tax data publication because of terrorist threats.

d) The Inheritance Tax

The history of this tax was similar to that of the wealth tax. The same project entered twice in Parliament under UCD governments, without making it to the plenary session.

The main novelty of the inheritance tax project of 1978, as defended by the Public Finance Minister, was a greater personalization of the tax according to the recipient of wealth, whose pre-existing property would be taken into account to calculate the tax due. This had the effect of making the tax more progressive. The proposal was rejected by the representatives of the right, namely AP and the Catalan nationalists. The same groups again proposed

an increase in exempted thresholds and the annual adjustment to inflation. The left-wing parties, as would be expected, suggested higher or more progressive rate structures.[38]

e) The Value Added Tax

Several projects of this tax were presented to Parliament during the period. The first one was from July 1978, whose discussion was reinitiated in April 1979 after the second elections. This project had not made it into law by 1981, when it was withdrawn by the government, putting forward a new proposal more adjusted to European harmonization guidelines.

VAT has been considered a "revenue-raising machine", and as such its advantages are many. It is an efficient tax, which may foster compliance in businesses and favour savings with respect to consumption, and represented a remarkable improvement in neutrality when compared to the existing turnover tax. Ultimately, however, at least two aspects made it difficult to introduce in Spain in the end of the seventies: the expected impact on price levels (at a time of double-digit inflation) and the fact that it meant putting an end to undercover export subsidies. In the end, the tax came into force as part of the changes related to accession to the EEC.

The debates are a clear example of special interest politics, with MPs of different parties aiming for more complexity in the tax, by granting exemptions for more activities or including them in the reduced rates.[39]

Social Security Reform

The Social Security system had attained by 1977 a great importance in terms of public revenue and expenditures. Social contributions represented 49% of the revenues of public administrations, and 11% of GDP. These quantities, not integrated in the general government budget, were administered by a whole set of different institutions created over the 20th Century. Several problems called for reform: complexity of the system, low resulting pensions, inequities between different groups of workers, high regressivity of the contributions, negative effects on employment...

[38] Another point was the inclusion of illegitimate descendants in the first category of heirs, those with lower rates applied.

[39] For example, health services, insurance, cars, fashion, wine, perfumes, or even shotguns.

Proposals in this respect were, indeed, to be found in the programs of the main political parties. The lines advocated by AP, UCD, PSOE and PCE in 1977 were remarkably similar: they all called for universality, collective control, and government funding (at least, an increase in general taxes' participation).[40] The government had appointed a commission to design a new model, which appeared in the *"Libro Blanco de la Seguridad Social"* in April 1977. However, during the following years, the programs kept mentioning the same issues, because they had not been translated into practice.[41]

The reason is simple. Universalization and increased pensions, in a context of growing unemployment, needed to be funded with reinforced transfers from the government's general budget. This, however, could barely be a reality before the tax reform had paid off in terms of revenue and progressivity.[42] Social Security reform took off in 1978 with deep institutional changes, which brought about improvements in administration. But the main reform, with health expenditure and non-contributory pensions assumed by the general budget, would not be a reality until 1989-90. It had to wait for the introduction of the Value Added Tax, which allowed a reduction in social contributions, and for an improvement of the economic situation. In this sense, Guillén (2000) has emphasized continuity in the Social Security system during the years of the transition. Government's participation in the funding of the system increased (largely due to growing expenditures in unemployment protection), and minimum pensions grew more than the upper ones. But the basic nature of the regime, with differentiated categories of workers, was maintained and even reinforced.

The contributory system was simplified in 1978, with the end of a long transitory system established in 1972, which attempted to bring the tax bases for social contributions progressively closer to the real wages paid, starting from a much lower level in the sixties (see Monasterio, 1992). Since 1978, minimum and maximum caps were dictated yearly by the government (by decree, and thus with no parliamentary discussion). The maximum caps have the effect of exempting a fraction

[40]The parties of the left also insisted on increasing pensions to make them equivalent to the minimum wage, annual adjustment to inflation, and improvement of the conditions of agricultural workers.

[41]The main exception were the proposals of right-wing AP, which by 1982 had evolved towards a two-pillar model, with basic-public and complementary-private levels (with private institutions cooperating in the first one as well).

[42]In the words of the *Libro Blanco*, the objectives could only be attained *"with more active government involvement. But this leads to the need for a more sufficient and progressive tax system. It would be vain to base redistributive action on regressive government contributions"* (author's translation).

of the higher salaries, with regressive impact. The official version was that the caps were being increased specially for the higher-paid categories of workers, thus reducing regressivity. In hindsight, however, it does not seem to have been like that. An analysis of the evolution of these caps shows that their increase was effectively higher for the upper categories *in absolute terms*, but that during 1976-88 all groups saw their bases increased yearly in very similar percentages (until 1989-93, when the number of different caps was reduced). Moreover, the caps only increased in real terms in 1977-78 (and slightly in 1983), while for the rest of the years that increase seems to have been impeded by the crisis and the convenience of not pushing up labour costs. When compared to the average wage, the tax caps were actually made lower (except slightly in 1983-84), which would point to little or no eradication of the regressivity of these contributions. Of course, to the extent that higher wages experienced above-average increases during the decade, regressivity would be becoming higher.

Pressure groups

Actions to protect special interests outside the parliamentary course might also be part of the story, although one harder to uncover. The leaders of the process of tax reform cited the opposition of de facto powers as a powerful reason for the partial derailment of the reform plan. For example, Fuentes Quintana asserted in 1996 that *"The reform measures were effectively stopped. A big part of the tax changes were paralysed by vested interests. [...] I am certain that there were [business] interferences to address what should be done."*[43] He resigned in October 1978, only one year after the beginning of the tax reform, when the personal income tax had just been approved and still not applied. His quick abandonment of politics was caused by hard resistances to his economic reform plans, of which the tax measures of his collaborator Fernández Ordóñez were only one part. Fuentes was the promoter of the Moncloa Pacts, which included a whole range of liberalization measures together with the stabilization programme. Some of these measures were opposed by the banking sector, the energy sector, and fellow members of the government, which aimed for a more conservative policy – starting to reflect the uneasy coexistence of very different tendencies inside UCD.[44]

[43] Excerpt of an interview by Andreu Missé, reproduced in Fuentes Quintana (2004).

[44] The interpretation of *El País* was quite clear in this respect: *"The pressures of the financial sector against the reform and the manifestations of the more conservative flank of business, along with the manoeuvres to form a big right-wing party outside UCD, undoubtedly frightened the party's political cadres and Suárez himself"*, *El País*, Editorial of 25/10/1978.

The Public Finance Minister Fernández Ordóñez stayed in government until April 1979, also before he could culminate his entire reform program (which included the definitive wealth tax and the value added tax). He had a similar reading, and denounced in a book one year later the reactionary character of resistances to the reform.[45] This protagonists' version of the story has been backed by the historian Pan-Montojo (1996), putting forward evidence from complaints of left-wing Members of Parliament about the influence of vested interests: for example, some exemptions for capital incomes, which according to the socialist Lozano were due to pressures by the regulatory body of the Spanish Stock Market (*Comisión Nacional del Mercado de Valores*).

Certainly, the behaviour of the banking sector was not of fully friendly cooperation. In order to make taxation of capital incomes effective, withholding had to be generalised, and information on bank accounts had to be accessible to the tax administration. The lifting of the banking secrecy in the November 1977 act, however, triggered a fierce campaign of opposition, which argued that the right to personal intimacy was threatened, and that the measure could have negative economic consequences, such as a reduction of operations and the growth of the black markets. *Cuadernos para el Diálogo* denounced strong pressures on the Public Finance reformers.[46] *ABC*, on the other hand, voiced the concerns of Rafael Termes, president of the bankers' association, who showed willingness to cooperate, but complained about the burdensome task of sending information about all their clients.[47]

According to the law, however, detailed data about quantities and operations was only asked for in case of tax inspection. This was appealed in court by a taxpayer in 1983, who finally lost his case in November 1984 at the supreme Constitutional Court.[48] In 1985, the government produced new legislation on the obligation to inform the tax administration on each individual's withholdings, which was again appealed by 116 financial entities, that lost their case in 1986 (Castillo, 1994).

[45] "*In Spain, where public spending has not yet reached the levels of industrial countries, and where the tax system has very recently taken its first steps toward justice, a conservative phenomenon has been born, fuelled not only by the international process, but by the nostalgia for the past. [...] This has strengthened the pressure of conservative forces, from public manifestations against the tax reform and the Moncloa Pacts, to a greater control of government policy*". (Fernández Ordóñez, 1980), p. 137.

[46] "*The men at the Public Finance Ministry [...] seem willing to address the problems and, furthermore, resist the pressures that such a powerful organization like the banking sector has already triggered.*", *Cuadernos para el Diálogo*, n. 221, 23rd to 29th July 1977.

[47] *ABC*, 29/12/1977, p. 51.

[48] *Tribunal Constitutional*, sentence 110/1984.

Non-financial enterprises also showed deep concern about the reform, given the economic context, and demanded lower fiscal burdens, particularly regarding social contributions. These were paid nominally by employers in around 80% of the total: although the statutory regulation did not reflect the economic incidence of the tax, the relaxation of these contributions was a potentially high relief for business at the time. These demands were included as proposals of the main parties, but, as we have seen, not put into practice immediately. In any case, the lack of thorough updating of the tax caps was consistent with business' position, since it could have potentially meant increases in revenue, were it not adequately combined with reductions in tax rates.

Also as a result of the democratic transition, new business associations were born, aimed at defending economic liberalization, and prominent members soon came to see progressive reform as undesirable. As an example, Carlos Ferrer Salat (president of CEOE, the main new employers' association), said in 1977 that *"Because of its contents, this project [of general fiscal reform] is going to put an important brake on investment"*.[49] Small firm-owners were more favourable to the reform, since they suffered to some extent the regressivity of the previous system, through presumptive assessments and the weight of social contributions for labour-intensive enterprises. A small business owner from the metal sector said to the press in June 1977: *"I don't mind the tax reform, what matters to me is that it is done taking into account the economic capacity of each enterprise and that it prevents that the most powerful ones get benefited. I hope that this democracy makes things go that way"*.[50]

Both employers' and workers' associations were legalised in the spring of 1977, and between 1980 and 1987 a series of social pacts were attained, with agreements to tackle the economic crisis and focusing mainly on anti-inflationary measures, unemployment and labour market liberalization (Mella, 1992). As Comín (2007) notes, these kind of agreements had not been possible in 1977, at the initial months of democracy, Moncloa Pacts finally being reached between political parties: *"The negotiations between the Government and social organisations – employers' associations and unions – had not made progress by August of 1977. So the Government*

[49] *Cuadernos para el Diálogo*, number 233, 15 to 21st October 1977. These words correspond to a conference about the current situation of enterprises organised by the Association for Progress of Direction.

[50] *Cuadernos para el Diálogo*, number 216, 18 to 24th June 1977. Retailers from Madrid also claimed against presumptive business taxation in 1976 (*"Los comerciantes insisten en el cierre de los sábados"*, *ABC*, 10/11/1976, p. 44).

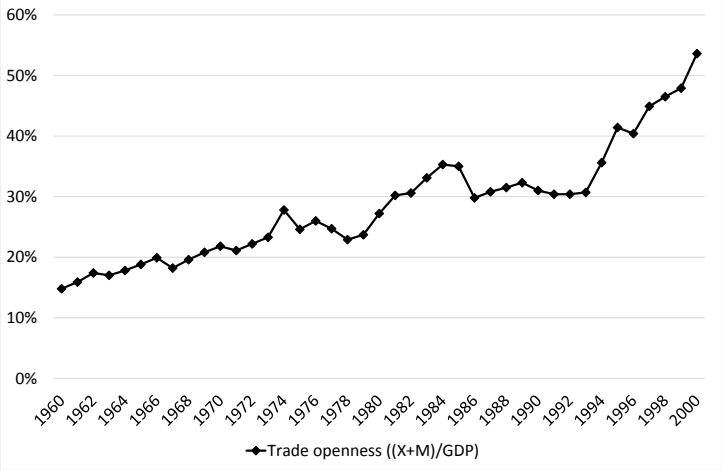
decided to seek and try to reach an agreement among all the political parties represented in Parliament" (page 21). During these years, trade unions were mainly worried about the preservation of the purchasing power of wages and pensions, and tax objectives ranked secondary in their agenda. Albeit illegal, they had existed under the dictatorship, being an important part of the opposition to the regime during its last decades. But their power was decreasing during the eighties, with affiliation levels lower than those of EEC countries. Business associations, by contrast, started to be organized in the first years of democracy and were quite belligerent against the UCD and socialist governments. Is low – democratic – corporatism related to the relatively low level of redistribution attained? This is Jo Martin (2015)'s argument when she compares welfare state development in the United States and Sweden, arguing that the second country's lower burdens on capital and high redistribution are both a consequence of the cooperative decision-making process (in Sweden, in Eriksson, 2014's words, big business was "embedded"). Corporatism brought economic interests to sit together and feel a responsible part of the setting of policy, ultimately making redistribution measures possible.

5.3.2 International integration

It could also be the case that Spanish domestic policies were democratic, but that the external context made it increasingly difficult to support progressive taxation. International economic openness was increasing along political liberalization, eventually culminating with the integration in the EEC/EU (1986) and the subsequent commitments in trade and financial movements. The level of trade openness can be seen in figure 5.8.

That economic openness is an obstacle to progressive taxation has been long established in the literature. This arises from the "exit" option given in a common market to the holders of mobile tax bases – namely capital, as opposed to labour. Consequently, in an economic union where each state keeps raising its own taxes, the models predict downward pressure on the mobile factors of production, to avoid their relocation (see, e.g. Persson and Tabellini, 1992 or Hettich and Winer,

FIGURE 5.8: The increasing trend in trade openness



Source: Tena (2005), table 8.8 (pp. 630-31).

The index of trend openness corresponds to the sum of imports and exports over GDP.

1999, pp. 102–106).[51] Genschel (2002) contends that international tax competition has had harmful effects on countries' policies, even though a general "race to the bottom" has not been found in the tax to GDP ratios. He argues that, in the absence of these constraints, taxes would likely be higher and more progressive, with stronger burdens on capital and lower on labour and consumption.

So why did the European countries not reach an agreement on harmonization to avoid these effects? This was indeed part of the talks in the European Commission during the preparation of the common market. But the practical results were highly uneven: while there was considerable unification in criteria around indirect taxes (VAT and excises), the same was not reached when it comes to direct taxation. Kopits (1992) provides an overview of the process. Corporation tax rates harmonization was already put forward by the Commission in 1975, but delayed by the need to define a common tax base – a complicated issue, the discussion of which is still under way. On the contrary, as soon as 1991 an agreement was reached to avoid double taxation of dividends across frontiers.

Regarding more fundamental aspects of personal income taxation, a complete unification of criteria was never fully on the table. But it was foreseen that, in

[51] Persson and Tabellini suggest that economic forces towards decreasing burden on capital would be counteracted by a political reaction, so that the final situation could be the maintenance of the statu quo. Interestingly, their model predicts convergence in capital income taxation across countries, but divergence in labour income taxes, since the evolution of the latter would depend on the effects of economic openness on inequality.

the absence of automatic information sharing and/or homogeneous withholding, capital revenues could easily engage in fraud making use of the upcoming liberalization. This, in turn, would provide the recipients of these incomes with higher leverage to obtain tax privileges, in advance and after the lifting of controls in July 1990.

Some initiatives therefore intended to limit these effects of downward pressure on capital incomes. The initial proposal of the European Commission in 1989 was to establish a uniform 15% minimum withholding tax on interest income of EC residents. This option was abandoned, turning instead to an agreement on general cooperation. These decisions required unanimity. Lasheras' (1990) interpretation is that interests in countries such as the United Kingdom and Luxembourg prevented the adoption of general agreements on automatic information exchange and uniform withholding at source, and that put a hard limit on the possibilities for capital taxation in Spain: *"this situation is forcing, in order to avoid massive outflows of domestic savings, to put taxation of capital incomes and capital gains in line with that existing in the rest of countries of the Community"* (Lasheras, 1990, p. 59).

Of course, these developments are only an epilogue in our story. They might, however, be a very relevant one. Even if the country only entered the EEC in 1986, and free circulation of capitals was not a reality until 1993, the *prospect* of these events was there long before. Accession to "Europe" was for a long time an aspiration of the Spanish governments and also of the Spanish people, since it was considered a sign of bringing the country towards the standards of living and democratic politics of its neighbours. The relevant issue here is not so much whether the effective capital outlets would have been so intense in the event of no adaptation to low levels capital taxes, but the fact that they *were seen* as potentially big threat in the economic literature, and *present as an argument* in the debate about tax reforms since the last half of the eighties.

The failure of harmonization thus gave way to competition and national adjustments in tax regulations. Ganghof (2001)'s interpretation suggests that governments operate in a "cuatrilemma" setting, where they have to give up on either competitiveness (low taxation on capital), allocative efficiency (equal taxation on incorporated and unincorporated capital), comprehensiveness (equal taxation on capital and labour income of individuals) or progressivity (understood here as increasing rates on labour income). All objectives could not be achieved jointly in the international context of the late 20th Century. In Scandinavia, as is well

known, these pressures brought about dual taxation of personal income. In Spain, the path towards reinforcing capital taxation was somewhat "nipped in the bud". Subsequent reforms in the 1990s lowered top marginal tax rates and granted privileged treatment to capital gains. Finally, steps to dualization have been taken at the beginning of the 21st Century, with the establishment of a separate schedule for certain capital incomes.

Changes in economic theory have been taken place at a similar pace (Slemrod, 1995; Steinmo, 2003). The model introduced in Spain at the end of the 1970s was a product of the postwar era and Keynesian supremacy. General, progressive and redistributive taxation was at its peak in the sixties and seventies, with the Carter Report of 1966 favouring a model of personal taxation as integrated and comprehensive as possible. Proliferation of allowances and credits, however, made the real systems differ from the model, and plagued them with horizontal and vertical equity problems. The proposed solutions rested on new theoretical approaches, related to the development of optimal tax theory during the 1970s, which focused on the behavioural effects of taxation (i.e. the disincentive to work or save, and thus the negative impact of tax rates on the tax base). Tax policy proposals have thus tended to reduce progressivity, specially at the top, and prioritize the objective of neutrality over equity considerations.

This evolution was taking place just as Spain was catching up with the developments of the previous decades. Whereas there was no strong alternative on the table at the end of the seventies, soon these new ideas penetrated the public debate in the country, and hindered the full development of the reform. Pan-Montojo (1996) suggests the appearance of a program for "reform of the reform" in the beginning of the 1980s, which called for protection of savings and investment. It was put forward by AP in the 1982 electoral programme, but its influence reached also the centre and left of the political spectrum. The tide had changed.[52]

5.4 Conclusions

This chapter has explored the conditions under which tax reform took place in Spain between 1970 and 1990. I have exposed the main aspects to be found in

[52]Fuentes Quintana (1987) is an outstanding symbol of the change in attitudes, becoming a proponent of the linear tax. That the socialist party also evolved in a similar direction is clear from the tax reforms undertaken under their rule in the 1990s and beyond.

survey data regarding the public's attitudes with respect to taxation, inequality and redistribution. Albeit limited, the sources suggest the presence of a strong demand for equalization, although slightly decreasing over time. The press gave voice to some opinions very favourable to the progressive reform, which had no clear alternative at the beginning. Apparently, this different option started to emerge at the beginning of the 1980s, as part of a supply-side, business-friendly economic program. The proposals of the main political parties showed a similar evolution, with the initial emphasis on inequality reduction and tax progressivity losing ground in their platforms during the successive elections.

Political institutions and the external context might have influenced to a great extent how the citizens' demands were translated into policies. In this regard, I have identified several constraints which limited the effective culmination of the reform. Malapportionment in Parliament is the first: the design of the electoral law during the transitional period was made under significant conservative influence, giving birth to a system which benefited rural, conservative districts. The importance of this element should not be underscored, since it largely shaped the party system that emerged in the period following the first democratic elections of 1977. Successful parties got access to power in the constitutional talks, attention in the media, and public funds for their activities.

Other political aspects that might have affected the process have only been hinted to here, such as the relation of political participation with income levels and the action of pressure groups, which is cited by different kinds of narrative evidence. These issues deserve further attention in the future.

Economic distress and changes in public finance theory are very much related to each other. Rising unemployment and sluggish growth certainly made it difficult to strongly increase taxation. The reform of Social Security was delayed by the resistance to increase labour costs, and the introduction of VAT was also deferred by fears about its foreseeable inflationary effects. In 1977, the model aimed at was the product of postwar Keynesian economics, developed under a period of unprecedented growth and social peace in western democracies. The oil shocks era brought about a different context, where emphasis was placed on the promotion of private savings and investment. Finally, international openness came to reinforce this process, by providing capital owners with a credible exit option.

Chapter 6

Concluding remarks

This thesis has attempted to shed more light on a still under-researched topic in economic history, namely the role of taxes in social systems and their interrelation with political structures. I have analysed the case of Spain during its transition to democracy, trying to find in the tax changes a reflection of political developments. Democratization after a forty-year long dictatorship brought about a profound tax reform, aiming to introduce in Spain the fiscal principles applied in other countries during the 20th century. The main milestones were the introduction of the personal income tax (1979) and the value added tax (1986), together with the modernization of tax administration. These developments provided funding for welfare state expansion and facilitated the country's accession to the EEC. But some of the practical effects of the reform were very soon criticised as limited, and already in the 1990s, too early to allow a long-term evaluation, new public finance ideas started to penetrate the system.

Most of the thesis has a quantitative character, using techniques from economics and economic history. While based on widely used methods, I add some methodological proposals for correction of biases in survey data (chapter 2), a joint consideration of total taxation and its impact on social groups (chapter 3), and an addition to Feldman and Slemrod (2007)'s method for estimating fraud in different income sources, by introducing a correction for sample selection (chapter 4). Some of these ideas could be useful for other cases studies, specially were there are significant data problems.

The main results can be summarised as follows:

1. Disposable income inequality did not substantially decrease after the transition to democracy – contrary to theoretical expectations and the conclusions of previous literature.

2. Taxation kept being regressive after the modernisation of the system, with new progressive direct levies counteracted by consumption taxes and social contributions.

3. Tax-and-transfer rates were jointly progressive, though very meagrely at the top: the welfare state provided redistributive services, but it was not the rich who paid for them.

4. One of the main cornerstones of the reform, personal income taxation, was severely undermined during the first decades of its implementation by widespread evasion and avoidance in non-wage incomes.

5. The demands for progressive taxation were constrained by both domestic political institutions and the international context, which was no longer favourable to these ideas.

How does our case study fit into the pattern identified by the literature, according to which large, redistributive welfare states rest on regressive taxation, while progressive tax systems give rise to limited redistributive government? Was the Spanish case the result of a compromise of this type, where the expansion of social expenditures in the eighties and nineties could only be funded by the recently introduced value added tax and persistently heavy social contributions?

Since Steinmo (1989, 1993) observed – contrary to his expectations – that the tax system in the United States was more progressive in the 1970s and 1980s than the Swedish one, several answers have been ventured. Steinmo's own interpretation was about the role of political institutions in shaping and translating social preferences. Other scholars have argued that strongly progressive taxes are ineffective measures for redistribution, since they would trigger fierce political opposition (Wilensky, 2002) or have adverse economic consequences (Lindert, 2004). Thus, historically, these forces would have given rise to an apparent paradox, where countries with highly redistributive tax-and-transfer systems based the funding of these schemes on regressive taxes, such as consumption taxes or social contributions.

Kato (2003) has formulated this relationship clearly, underlining the role played by value added taxes in financing redistributive policies – with most success in those countries that introduced them before the crisis of the 1970s. It has since been accepted between tax scholars, and fits quite well with the public finance

economists' claim that it is optimal to redistribute through expenditure, and forget about progressive taxation.

Certainly, as much as it is true that expansion of public revenues in the end of the seventies could only be achieved by increasing the burden at the top, a sustained, further expansion under the economic crisis seems to have been politically feasible only if it also limited the progressivity of taxes. But we should not forget that total redistribution levels are the result of the combination of both sides of the budget, so tax regressivity could severely limit contemporaneous redistribution – even if it might allow for future expansion. What does the comparison of different countries say?

Prasad and Deng (2009) confirmed the Steinmo-Lindert idea showing that the tax system in the US was more progressive than that of several European countries in the period 1979-2000. The same conclusion can be reached by contrasting the progressivity of the US taxes in Piketty and Saez (2007), though decreasing, with that of the Swedish system as obtained by Bengtsson et al. (2015). However, when comparing the operation of the joint tax-and-transfer scheme in Spain with those of the United Kingdom and the United States, our Mediterranean country appeared still beneath those in terms of inequality reduction throughout the period 1970-90 (remember figure 3.6). Thus, compared with the available international data, the Spanish experience can be described as an incomplete convergence not only to the European core but also to the most liberal polities. Welfare state development, delayed by the dictatorship, was hindered by a new international political economy, where the combination of sluggish growth, economic openness and neo-liberal theory made progressive taxes harder to defend and implement. This, in turn, limited the state's redistributive capacity.

To some extent, this story might also fit other countries in the European periphery, adding a new category to the discussion. Welfare state laggards resorted to regressive taxation to expand social spending, like the redistributive policy leaders had done before. But lower revenue from personal taxes, higher levels of inequality, and slow growth impeded the establishment of highly redistributive tax-and-transfer systems. Were they too late?

Future avenues for research are diverse. From a national point of view, the story told here can be further completed: either extended chronologically, in both directions – although the older data would require slightly different methods –, or

including a thorough treatment of transfers and the incidence of welfare state services. The development of the public education and health systems pushed in the direction of increased equality of opportunity, which would no doubt be a major distributive result of democratization.

Comparative prospective studies include, for example, a broader consideration of the distributive effects of late democratic transitions, where Milanovic (2013)'s concept of the "Inequality Extraction Ratio" might be of interest (the idea was first put forward by Milanovic et al., 2011). In the presence of economic growth, constant or increasing inequality as measured by the Gini index can coexist with reduced appropriation of the social surplus by the countries' elites.

Another possible further development is an exploration of the conditions for the successful introduction of tax innovations. Following the idea that more redistributive states rest on regressive taxation, what made these developments politically feasible in the first place? A similarly regressive tax de jure might have different real effects and perceptions where the economic structure and levels of inequality also differ. In this sense, an exploration of the dynamics of the introduction of heavy consumption taxation in presently generous welfare states may shed some new light.

A third topic related to the results of the dissertation is the impact of international integration and tax competition on the autonomy of states to establish their desired tax structures. The globalization hypothesis (Genschel, 2002; Steinmo, 1994) has pointed to increasing economic openness as an obstacle to national redistributive schemes, especially with respect to progressive taxation. Surely the policy coordination at the time of the abatement of frontiers has a lot to do with the likelihood of this result. In this sense, we might benefit from a comparison of the recent process of European integration with previous experiences, such as the early process of economic integration across Scandinavian countries.

Finally, the history of tax evasion is a young research field. From a quantitative point of view, few results are available still. Further studies could be undertaken to complement what was started in chapter 4, analysing fraud in a longer time period, in other taxes, or in other countries. In this sense, the conclusions that have been recently drawn from the new top incomes series (Atkinson and Piketty, 2007) might be nuanced in some cases with estimations of hidden incomes, which could potentially enrich our perceptions about long-term inequality and redistribution.

Appendix A

Tax revenue series

Long term series of Spanish tax revenue were already provided by Comín and Díaz (2005). For this study, nonetheless, I needed higher level of detail for the imputation procedure, so I disaggregated the tax revenue on the basis of primary sources. The data I use are on a accrual basis (i.e. not budgeted figures, nor cash flows either). In some cases, they have been obtained from those other budgetary phases which precede or follow, applying the corresponding adjusting factor.[1]

The existence of tax autonomy in some regions has made several adjustments necessary. During the dictatorship, the provinces of Álava and Navarra had distinct taxing power on most items (generally, with high regulatory capacity in the direct ones and only collection management in the indirect ones). Of these, they kept a part for themselves and transferred an annual payment to the State (*cupo*) as their share in the common budget.[2] This means that the revenue of e.g. land taxes in these provinces is not included in the general figure, so I had to disaggregate them from the corresponding provincial administrations' revenue to integrate them in the study. This has been done resorting to budgeted data or applying the general national structure: I am therefore not considering the difference that might exist in the tax burden distribution with respect to the rest of the nation.[3] For the post-transition period, a very similar regime persists in the Autonomous Communities of Navarra and País Vasco (which includes not only

[1] It might be conceptually more solid to use cash-flow figures, but the accrual criterion has been chosen because of various reasons; fundamentally the availability of consolidated data for all Public Administrations and the fact that it is the most widely used in international statistics. The difference between both quantities is insignificant in most cases.

[2] The *cupo* system was legislated upon for long periods of time, specially in the case of Navarra, and fixed in nominal terms. This obviously entailed a progressive reduction in the value of real central revenue coming from these territories, aggravated in times of high inflation (of which there were several episodes during the dictatorship).

[3] And which most likely does exist to a certain extent. In recent times, it is known to mean a lighter burden on corporations, for example.

Álava but also its neighbouring provinces Guipúzcoa and Vizcaya). Information on revenues is also not totally integrated, but improved enough for the purpose of this analysis (the general statistics do show now how much, say, income tax was raised in these areas).

On the contrary, the Canary Islands and the cities of Ceuta and Melilla have been excluded from the computations because of their specific regime in indirect taxation. It is considered that their presence would bias the results (since there is lighter indirect burden, it would mean to underestimate the regressivity of the general system – not too much, though, because of their small share in national income and tax revenue). So, in the results, 'Spain' refers to the Península and the Balearic Islands.

A.1 Total tax revenue: disaggregation of the series

The series have been obtained from official sources: totals are from *Cuentas de las Administraciones Públicas*, which provide information for the whole of the General Government and its different components, while higher detail on the Central State's numbers comes from *Cuenta General del Estado - Cuenta de la Administración General del Estado*. These have been consulted in the Archives of the Public Finance Ministry and the IGAE (*Intervención General de la Administración del Estado*). Several publications of the Ministry of Public Finance have been used for other purposes: information on the taxes of autonomous communities (*"impuestos concertados"*) has been obtained from *Recaudación y estadísticas de la reforma tributaria*, while disaggregation of municipal taxes comes from *Liquidación de presupuestos de las Corporaciones Locales* and the *Memoria de la Administración Tributaria*. See section A.3 for the list of sources. Missing data have sometimes been estimated by linear interpolation.

The social contributions totals are from *Cuentas de las Administraciones Públicas*, adding those from public employees (which appear as a direct tax in the Central Government statistics) and disaggregating several components: the contributions of the self-employed (1967-79, from National Accounts, *Contabilidad Nacional de España*), of the unemployed (1967-79 from *Memoria Estadística de las Contingencias de la Seguridad Social Administradas por el INP*, 1980-84 from *Anuario de Estadísticas Laborales* of the Labour and Social Security Ministry), and the agrarian special regime (1981-90, *Anuario de Estadísticas Laborales*, 1970 from *Memoria Estadística*

de los Seguros Sociales administrados por el INP). There is a discontinuity in the social contributions series in 1967 (when the social security law came into force), which I have not been able to eliminate. It is related to the introduction of family protection in the aggregate accounting (the explanation can be found in Instituto Nacional de Estadística, 1968).

Further disaggregation in several taxes (not shown in the following tables, but used in the calculations) was obtained from primary sources in the Central Archive of the Ministry of Public Finance (direct taxes) or other publications (indirect taxes details by groups of goods): *Información Estadística del Ministerio de Hacienda* (1960-72) and *Estadísticas Presupuestarias y Fiscales* (1973-89). It has been impossible to find tariffs revenue by product types, even though I have come across evidence that such statistics were calculated by the Ministry for several years during the seventies.

The taxes from autonomous tax regions have been estimated from *Información Estadística del Ministerio de Hacienda* and *Cuentas de las Administraciones Públicas* (which provides local budgets), applying when needed the composition at the general level from *Cuenta General del Estado*.

Tables A.1, A.2 and A.3 show the tax revenue series in nominal pesetas, for the period 1958-1990, and the whole of the country (i.e., before extracting the revenue from the regions not considered in the study).

I next show the composition of tax revenue: the share of each item in the total (tables A.4 and A.5), and also the importance of each one related to GDP (tables A.6 and A.7).

TABLE A.1: National taxes in nominal pesetas, 1958-1968

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
DIRECT TAXES											
Inheritance Tax	1,314	1,335	1,446	1,608	1,904	1,884	2,224	2,241	2,383	2,746	3,363
Land Tax (rural)	1,302	1,283	1,434	1,379	1,390	1,394	1,391	1,395	992	930	981
Land Tax (urban)	1,541	1,589	1,706	1,826	1,960	2,291	2,439	2,670	2,938	3,388	3,304
Labour Tax	4,321	4,643	5,379	5,950	6,708	7,663	8,441	8,706	12,341	14,161	14,284
Capital Tax	2,796	2,264	2,534	2,836	3,163	3,291	3,622	4,402	4,890	5,567	6,492
Fiscal Licence	1,060	1,128	1,193	1,252	2,275	2,563	2,838	2,981	3,166	3,587	3,852
Industry & Trade Tax	793	1,312	1,434	1,620	1,828	2,126	2,527	3,297	3,782	4,416	5,260
Corporation Tax*	6,720	7,575	7,485	8,351	9,321	9,856	10,185	12,363	17,075	19,304	20,530
Old Income Tax	785	1,025	1,142	1,177	1,374	1,594	1,817	2,016	2,173	2,485	3,090
Local Land Plot Tax	506	462	587	532	528	711	1,202	1,477	1,846	2,556	3,256
Wealth Tax	-	-	-	-	-	-	-	-	-	-	-
Personal Income Tax	-	-	-	-	-	-	-	-	-	-	-
Local Land Tax	-	-	-	-	-	-	-	-	-	-	
Local Licence Tax	-	-	-	-	-	-	-	-	-	-	-
Local Vehicles Tax	-	-	-	-	-	-	-	-	-	-	-
Other	5,623	5,923	6,364	6,519	7,625	9,034	10,005	9,296	8,514	8,608	9533
TOTAL	26,760	28,538	30,703	33,050	38,076	42,408	46,692	52,314	60,099	67,748	73,943
INDIRECT TAXES											
Transfer Tax and Stamp Duties	6,345	7,094	7,294	8,266	9,316	11,663	12,659	9,981	11,632	13,637	15,473
Equity Tax	1,294	1,506	1,475	1,647	1,777	2,227	2,290	179	114	46	-
Oil Monopoly	3,540	3,527	2,908	4,143	4,825	5,380	6,070	6,477	8,710	11,574	11,922
Tobacco Monopoly	1,870	2,024	2,335	2,661	2,750	2,563	3,471	3,471	4,371	4,670	5,037
Customs Duties**	2,776	3,109	6,878	10,862	14,504	17,054	20,039	14,969	19,773	18,456	18,032
Import Taxes***	-	-	-	-	-	-	-	13,100	15,537	14,289	13,479
Expenditure Tax	10,768	11,664	13,412	13,738	17,174	16,310	16,662	460	122	42	-
Luxury Tax	4,250	5,650	6,509	7,436	8,625	10,416	13,589	17,129	20,801	24,835	27,396
Turnover Tax	-	-	-	-	-	-	2,505	12,943	15,871	19,441	21,780
Excises	-	-	-	-	-	-	-	11,697	11,951	14,161	16,129
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-
European Tariff	-	-	-	-	-	-	-	-	-	-	-
Local Circulation Tax	-	-	-	-	-	-	-	-	-	-	-
Other	3,253	4,036	3,736	5,395	4,036	4,987	5,186	6,635	4,019	4,541	5,243
TOTAL	34,096	38,608	44,546	54,148	63,006	70,599	82,470	97,042	112,900	125,692	134,492
SOCIAL CONTRIBUTIONS											
Public Employees	202	210	254	293	305	260	281	465	968	1,594	1,725
Employers	15,066	15,931	16,554	17,359	20,558	26,062	32,324	37,127	38,356	100,675	103,684
Employees	4,457	4,763	5,180	5,675	6,745	9,029	11,244	11,819	13,315	16,222	20,259
Self-Employed	-	-	-	-	-	-	-	-	-	2,735	3,201
Unemployed	-	-	-	-	-	-	-	-	-	557	1,063
TOTAL	19,725	20,904	21,987	23,327	27,608	35,351	43,849	49,412	52,639	121,782	129,932
GENERAL TOTAL	80,581	88,050	97,236	110,525	128,690	148,358	173,011	198,767	225,638	315,222	338,367
% IN STUDY	89.0%	88.7%	88.1%	88.4%	90.7%	90.5%	91.2%	92.0%	94.4%	95.8%	95.6%

Source: see text. Data is in million pesetas.
* Includes a "special tax of 4%" on capital emissions 1965-80.
** Includes customs revenues from Canarias and other taxes on international trade.
*** A tax that was supposed to mirror the interior tax burden of imported goods.

TABLE A.2: National taxes in nominal pesetas, 1969-1979

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
DIRECT TAXES											
Inheritance Tax	3,769	4,242	4,975	6,199	7,979	8,969	10,380	11,063	13,601	16,413	18,860
Land Tax (rural)	983	1,474	1,664	1,826	1,692	1,898	2,013	2,258	2,283	2,213	1,205
Land Tax (urban)	4,245	4,921	6,073	7,714	9,656	12,946	14,512	15,607	18,589	22,426	2,552
Labour Tax	17,267	21,664	27,638	35,005	50,376	68,897	93,643	126,000	188,325	303,657	148,552
Capital Tax	7,492	8,804	10,743	12,130	15,012	16,155	26,198	48,175	61,069	82,525	41,742
Fiscal Licence	4,205	4,400	4,950	5,082	5,695	7,296	9,449	9,666	11,785	13,738	440
Industry & Trade Tax	5,676	6,769	7,891	8,866	9,475	11,107	15,110	16,699	20,813	22,121	26,344
Corporation Tax*	26,192	28,947	33,148	39,285	48,455	60,199	74,443	80,785	95,306	105,673	155,560
Old Income Tax	3,319	3,410	4,529	5,196	6,689	6,341	7,938	10,558	12,018	24,405	29,138
Local Land Plot Tax	2,249	3,866	3,892	3,877	5,727	7,727	11,715	10,661	14,882	21,828	26,199
Wealth Tax	-	-	-	-	-	-	-	-	-	8,589	15,249
Personal Income Tax	-	-	-	-	-	-	-	-	-	-	298,324
Local Land Tax	-	-	-	-	-	-	-	-	-	-	20,183
Local Licence Tax	-	-	-	-	-	-	-	-	-	-	19,727
Local Vehicles Tax	-	-	-	-	-	-	-	-	-	-	-
Other	8,299	9,997	11,396	11,927	12,305	13,876	19,560	30,679	38,170	38,372	14,857
TOTAL	83,696	98,494	116,898	137,106	173,061	215,411	284,961	362,150	476,842	661,960	818,930
INDIRECT TAXES											
Transfer Tax and Stamp Duties	19,622	23,328	26,435	32,460	42,879	54,727	61,516	72,537	93,124	112,786	128,193
Equity Tax	-	-	-	-	-	-	-	-	-	-	-
Oil Monopoly	15,154	13,798	11,408	14,016	20,956	-6,695	4,047	31,169	35,897	49,004	65,383
Tobacco Monopoly	6,242	7,105	7,039	8,141	8,890	8,741	11,557	11,598	7,990	7,866	11,447
Customs Duties**	20,975	22,399	23,850	31,365	41,364	45,248	51,371	62,433	87,136	76,723	83,193
Import Taxes***	17,408	18,612	16,677	21,832	29,432	35,673	43,868	37,101	44,366	47,941	45,621
Expenditure Tax	-	-	-	-	-	-	-	-	-	-	-
Luxury Tax	33,726	38,391	44,505	50,016	64,828	71,168	82,700	102,511	137,307	173,236	208,485
Turnover Tax	25,542	31,017	32,771	37,071	45,794	57,733	55,743	61,231	68,154	93,796	108,825
Excises	18,508	21,551	24,666	26,798	29,229	30,286	30,031	30,476	32,184	32,908	25,276
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-
European Tariff	-	-	-	-	-	-	-	-	-	-	-
Local Circulation Tax	-	-	-	-	-	-	-	-	-	-	-
Other	6,373	8,035	11,314	14,258	13,946	18,231	17,128	28,225	52,248	69,216	88,786
TOTAL	163,550	184,236	198,665	235,956	297,319	315,111	357,960	437,279	558,405	663,475	765,208
SOCIAL CONTRIBUTIONS											
Public Employees	2,030	2,247	2,522	2,598	2,704	3,085	3,955	4,602	5,678	8,039	10,005
Employers	119,165	131,871	157,939	207,709	261,134	331,639	445,465	516,894	773,803	989,111	1,224,083
Employees	23,447	26,105	32,385	43,192	53,517	64,738	84,100	88,120	129,924	165,283	205,978
Self-Employed	3,434	4,509	8,805	9,087	10,833	13,068	17,711	22,098	50,302	71,409	92,244
Unemployed	1,274	1,218	2,029	2,509	2,347	3,256	8,938	12,990	23,537	38,008	60,992
TOTAL	149,350	165,951	203,680	265,094	330,535	415,786	560,169	644,704	983,244	1,271,850	1,593,303
GENERAL TOTAL	396,596	448,681	519,243	638,156	800,914	946,308	1,203,090	1,444,133	2,018,491	2,597,285	3,177,441
% IN STUDY	96.3%	96.0%	95.6%	95.9%	96.7%	96.6%	97.0%	95.9%	95.5%	95.9%	96.7%

Source: see text. Data is in million pesetas.
* Includes a "special tax of 4%" on capital emissions 1965-80.
** Includes customs revenues from Canarias and other taxes on international trade.
*** A tax that was supposed to mirror the interior tax burden of imported goods.

TABLE A.3: National taxes in nominal pesetas, 1980-1990

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
DIRECT TAXES											
Inheritance Tax	20,093	25,313	27,961	31,567	34,740	37,481	42,335	54,879	76,188	77,196	82,409
Land Tax (rural)	441	-	-	-	-	-	-	-	-	-	-
Land Tax (urban)	-	-	-	-	-	-	-	-	-	-	-
Labour Tax	14,274	-	-	-	-	-	-	-	-	-	-
Capital Tax	5,821	-	-	-	-	-	-	-	-	-	-
Fiscal Licence	-	-	-	-	-	-	-	-	-	-	-
Industry & Trade Tax	24,157	-	-	-	-	-	-	-	-	-	-
Corporation Tax*	189,823	213,918	259,585	330,614	370,546	447,096	564,042	833,166	887,409	1,376,245	1,584,064
Old Income Tax	6,399	-	-	-	-	-	-	-	-	-	-
Local Land Plot Tax	21,977	25,309	34,034	41,175	48,315	57,467	68,506	73,707	84,869	107,291	86,333
Wealth Tax	17,887	14,448	19,792	19,441	18,631	26,901	33,088	44,515	57,176	35,742	96,910
Personal Income Tax	659,751	815,322	985,377	1,214,906	1,506,506	1,629,282	1,747,729	2,533,903	2,887,023	3,591,344	3,840,625
Local Land Tax	54,385	54,563	59,832	64,809	76,549	79,464	123,429	103,955	209,999	232,442	289,383
Local Licence Tax	28,201	36,314	64,694	71,743	81,994	86,683	108,646	119,378	139,688	151,947	163,007
Local Vehicle Tax			-	-	-	-	-	-	-	-	97,958
Other	22,122	56,974	32,866	58,542	54,524	87,086	55,172	87,962	23,400	14,108	20,481
TOTAL	1,065,330	1,242,160	1,484,141	1,832,796	2,191,805	2,451,460	2,742,947	3,851,464	4,365,751	5,586,315	6,261,170
INDIRECT TAXES											
Transfer Tax and Stamp Duties	134,526	136,428	149,207	165,924	172,679	193,220	209,295	250,869	320,088	398,473	492,317
Equity Tax	-	-	-	-	-	-	-	-	-	-	-
Oil Monopoly	9,120	0	0	75,600	37,000	108,169	333,725	111,647	158,137	99,194	90,887
Tobacco Monopoly	12,892	27,005	27,035	30,648	27,710	28,422	-	-	-	-	-
Customs Duties**	105,612	119,063	145,558	178,378	188,457	219,968	286,352	339,047	365,668	349,641	302,287
Import Taxes***	65,489	72,579	96,582	111,524	125,893	162,134	-44,559	-	-	-	-
Expenditure Tax	-	-	-	-	-	-	-	-	-	-	-
Luxury Tax	161,135	160,697	195,479	241,072	269,728	297,498	51,278	-	-	-	-
Turnover Tax	123,095	230,545	320,172	427,394	646,091	702,628	241,011	67,194	53,988	47,554	40,570
Excises	204,425	287,279	242,509	303,553	426,751	447,839	503,484	709,489	766,916	838,712	984,757
Value Added Tax	-	-	-	-	-	-	1,460,871	1,979,000	2,250,257	2,575,745	2,774,119
European Tariff	-	-	-	-	-	-	-	40,115	50,388	59,803	61,720
Local Circulation Tax	-	-	19,789	29,650	39,511	43,121	47,786	51,556	68,294	79,521	-
Other	132,176	130,215	154,062	199,127	229,846	275,023	99,605	131,308	108,429	107,441	85,886
TOTAL	948,470	1,163,809	1,350,393	1,762,870	2,163,666	2,478,021	3,188,846	3,680,225	4,142,163	4,556,084	4,832,542
SOCIAL CONTRIBUTIONS											
Public Employees	13,062	14,873	16,634	19,420	23,013	30,505	39,044	48,789	47,379	58,430	61,591
Employers	1,361,067	1,531,771	1,776,345	2,052,896	2,114,258	2,368,788	2,675,240	3,042,105	3,391,789	3,873,674	4,390,171
Employees	262,624	288,986	345,303	422,158	509,177	535,508	635,185	662,706	704,300	818,806	932,663
Self-Employed	99,440	112,233	135,502	165,960	215,582	238,213	282,673	311,924	338,330	375,117	414,697
Unemployed	87,127	123,595	107,860	128,279	150,353	181,215	163,106	193,007	195,077	270,717	310,962
TOTAL	1,823,319	2,071,458	2,381,644	2,788,714	3,012,382	3,354,229	3,795,248	4,258,531	4,676,875	5,396,743	6,110,084
GENERAL TOTAL	3,837,119	4,477,427	5,216,178	6,384,379	7,367,852	8,283,709	9,727,041	11,790,219	13,184,789	15,539,142	17,203,796
% IN STUDY	96.0%	95.8%	96.4%	96.0%	96.1%	95.6%	98.4%	98.1%	99.0%	99.2%	99.4%

Source: see text. Data is in million pesetas

* Includes a "special tax of 4%" on capital emissions 1965-80.

** Includes customs revenues from Canarias and other taxes on international trade.

*** A tax that was supposed to mirror the interior tax burden of imported goods.

TABLE A.4: Composition of tax revenue, 1958-1974

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
DIRECT TAXES																	
Inheritance Tax	1.6%	1.5%	1.5%	1.5%	1.5%	1.3%	1.3%	1.1%	1.1%	0.9%	1.0%	1.0%	0.9%	1.0%	1.0%	1.0%	0.9%
Land Tax (rural)	1.6%	1.5%	1.5%	1.2%	1.1%	0.9%	0.8%	0.7%	0.4%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%
Land Tax (urban)	1.9%	1.8%	1.8%	1.7%	1.5%	1.5%	1.4%	1.3%	1.3%	1.1%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%	1.4%
Labour Tax	5.4%	5.3%	5.5%	5.4%	5.2%	5.2%	4.9%	4.4%	5.5%	4.5%	4.2%	4.4%	4.8%	5.3%	5.5%	6.3%	7.3%
Capital Tax	3.5%	2.6%	2.6%	2.6%	2.5%	2.2%	2.1%	2.2%	2.2%	1.8%	1.9%	1.9%	2.0%	2.1%	1.9%	1.9%	1.7%
Fiscal Licence	1.3%	1.3%	1.2%	1.1%	1.8%	1.7%	1.6%	1.5%	1.4%	1.1%	1.1%	1.1%	1.0%	1.0%	0.8%	0.7%	0.8%
Industry & Trade Tax	1.0%	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.7%	1.7%	1.4%	1.6%	1.4%	1.5%	1.5%	1.4%	1.2%	1.2%
Corporation Tax	8.3%	8.6%	7.7%	7.6%	7.2%	6.6%	5.9%	7.0%	7.6%	6.1%	6.1%	6.6%	6.5%	6.4%	6.2%	6.0%	6.4%
Old Income Tax	1.0%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%	0.8%	0.9%	0.8%	0.8%	0.9%	0.8%	0.8%	0.7%
Local Land Plot Tax	0.6%	0.5%	0.6%	0.5%	0.4%	0.5%	0.7%	0.7%	0.8%	0.8%	1.0%	0.6%	0.9%	0.7%	0.6%	0.7%	0.8%
Wealth Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Personal Income Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Land Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Licence Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Vehicle Tax	-	-	-	-	-	-	-	-	-	-	-	-					
Other	7.0%	6.7%	6.5%	5.9%	5.9%	6.1%	5.8%	4.7%	3.8%	2.7%	2.8%	2.1%	2.2%	2.2%	1.9%	1.5%	1.5%
TOTAL	33.2%	32.4%	31.6%	29.9%	29.6%	28.6%	27.0%	26.3%	26.6%	21.5%	21.9%	21.1%	22.0%	22.5%	21.5%	21.6%	22.8%
INDIRECT TAXES																	
Transfer Tax and Stamp Duties	7.8%	8.1%	7.5%	7.5%	7.2%	7.9%	7.4%	5.1%	5.1%	4.3%	4.6%	4.9%	5.2%	5.1%	5.1%	5.4%	5.8%
Equity Tax	1.6%	1.7%	1.5%	1.5%	1.4%	1.5%	1.3%	0.1%	0.1%	0.0%	-	-	-	-	-	-	-
Oil Monopoly	4.4%	4.0%	3.0%	3.7%	3.7%	3.6%	3.5%	3.3%	3.9%	3.7%	3.5%	3.8%	3.1%	2.2%	2.2%	2.6%	-0.7%
Tobacco Monopoly	2.3%	2.3%	2.4%	2.4%	2.1%	1.7%	2.0%	1.7%	1.9%	1.5%	1.5%	1.6%	1.6%	1.4%	1.3%	1.1%	0.9%
Customs Tax	3.4%	3.5%	7.1%	9.8%	11.3%	11.5%	11.6%	7.5%	8.8%	5.9%	5.3%	5.4%	5.1%	4.7%	5.0%	5.2%	4.8%
Import Tax	-	-	-	-	-	-	-	6.6%	6.9%	4.5%	4.0%	4.3%	4.0%	3.1%	3.3%	3.6%	3.7%
Expenditure Tax	13.4%	13.2%	13.8%	12.4%	13.3%	11.0%	9.6%	0.2%	0.1%	0.0%	-	-	-	-	-	-	-
Luxury Tax	5.3%	6.4%	6.7%	6.7%	6.7%	7.0%	7.9%	8.6%	9.2%	7.9%	8.1%	8.5%	8.6%	8.6%	7.8%	8.1%	7.5%
Turnover Tax	-	-	-	-	-	-	1.4%	6.5%	7.0%	6.2%	6.4%	6.4%	6.9%	6.3%	5.8%	5.7%	6.1%
Excises	-	-	-	-	-	-	-	5.9%	5.3%	4.5%	4.8%	4.7%	4.8%	4.8%	4.2%	3.6%	3.2%
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
European Tariff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Circulation Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	4.0%	4.6%	3.8%	4.9%	3.1%	3.4%	3.0%	3.3%	1.8%	1.4%	1.5%	1.6%	1.8%	2.2%	2.2%	1.7%	1.9%
TOTAL	42.3%	43.8%	45.8%	49.0%	49.0%	47.6%	47.7%	48.8%	50.0%	39.9%	39.7%	41.2%	41.1%	38.3%	37.0%	37.1%	33.3%
SOCIAL CONTRIBUTIONS																	
Public Employees	0.3%	0.2%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.3%	0.3%
Employers	18.7%	18.1%	17.0%	15.7%	16.0%	17.6%	18.7%	18.7%	17.0%	31.9%	30.6%	30.0%	29.4%	30.4%	32.5%	32.6%	35.0%
Employees	5.5%	5.4%	5.3%	5.1%	5.2%	6.1%	6.5%	5.9%	5.9%	5.1%	6.0%	5.9%	5.8%	6.2%	6.8%	6.7%	6.8%
Self-Employed	-	-	-	-	-	-	-	-	-	0.9%	0.9%	0.9%	1.0%	1.7%	1.4%	1.4%	1.4%
Unemployed	-	-	-	-	-	-	-	-	-	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.3%	0.3%
TOTAL	24.5%	23.7%	22.6%	21.1%	21.5%	23.8%	25.3%	24.9%	23.3%	38.6%	38.4%	37.7%	37.0%	39.2%	41.5%	41.3%	43.9%

Source: see text.

TABLE A.5: Composition of tax revenue, 1975-1990

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
DIRECT TAXES																
Inheritance Tax	0.9%	0.8%	0.7%	0.6%	0.6%	0.5%	0.6%	0.5%	0.5%	0.5%	0.5%	0.4%	0.5%	0.6%	0.5%	0.5%
Land Tax (rural)	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-
Land Tax (urban)	1.2%	1.1%	0.9%	0.9%	0.1%	-	-	-	-	-	-	-	-	-	-	-
Labour Tax	7.8%	8.7%	9.3%	11.7%	4.7%	0.4%	-	-	-	-	-	-	-	-	-	-
Capital Tax	2.2%	3.3%	3.0%	3.2%	1.3%	0.2%	-	-	-	-	-	-	-	-	-	-
Fiscal Licence	0.8%	0.7%	0.6%	0.5%	0.0%	-	-	-	-	-	-	-	-	-	-	-
Industry & Trade Tax	1.3%	1.2%	1.0%	0.9%	0.8%	0.6%	-	-	-	-	-	-	-	-	-	-
Corporation Tax	6.2%	5.6%	4.7%	4.1%	4.9%	4.9%	4.8%	5.0%	5.2%	5.0%	5.4%	5.8%	7.1%	6.7%	8.9%	9.2%
Old Income Tax	0.7%	0.7%	0.6%	0.9%	0.9%	0.2%	-	-	-	-	-	-	-	-	-	-
Local Land Plot Tax	1.0%	0.7%	0.7%	0.8%	0.8%	0.6%	0.6%	0.7%	0.6%	0.7%	0.7%	0.7%	0.6%	0.6%	0.7%	0.5%
Wealth Tax	-	-	-	0.3%	0.5%	0.5%	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.2%	0.6%
Personal Income Tax	-	-	-	-	9.4%	17.2%	18.2%	18.9%	19.0%	20.4%	19.7%	18.0%	21.5%	21.9%	23.1%	22.3%
Local Land Tax	-	-	-	-	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%	1.0%	1.3%	0.9%	1.6%	1.5%	1.7%
Local Licence Tax	-	-	-	-	0.6%	0.7%	0.8%	1.2%	1.1%	1.1%	1.0%	1.1%	1.0%	1.1%	1.0%	0.9%
Local Vehicle Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6%
Other	1.6%	2.1%	1.9%	1.5%	0.5%	0.6%	1.3%	0.6%	0.9%	0.7%	1.1%	0.6%	0.7%	0.2%	0.1%	0.1%
TOTAL	23.7%	25.1%	23.6%	25.5%	25.8%	27.8%	27.7%	28.5%	28.7%	29.7%	29.6%	28.2%	32.7%	33.1%	35.9%	36.4%
INDIRECT TAXES																
Transfer Tax and Stamp Duties	5.1%	5.0%	4.6%	4.3%	4.0%	3.5%	3.0%	2.9%	2.6%	2.3%	2.3%	2.2%	2.1%	2.4%	2.6%	2.9%
Equity Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Monopoly	0.3%	2.2%	1.8%	1.9%	2.1%	0.2%	0.0%	0.0%	1.2%	0.5%	1.3%	3.4%	0.9%	1.2%	0.6%	0.5%
Tobacco Monopoly	1.0%	0.8%	0.4%	0.3%	0.4%	0.3%	0.6%	0.5%	0.5%	0.4%	0.3%	-	-	-	-	-
Customs Tax	4.3%	4.3%	4.3%	3.0%	2.6%	2.8%	2.7%	2.8%	2.8%	2.6%	2.7%	2.9%	2.9%	2.8%	2.3%	1.8%
Import Tax	3.6%	2.6%	2.2%	1.8%	1.4%	1.7%	1.6%	1.9%	1.7%	1.7%	2.0%	-0.5%	-	-	-	-
Expenditure Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxury Tax	6.9%	7.1%	6.8%	6.7%	6.6%	4.2%	3.6%	3.7%	3.8%	3.7%	3.6%	0.5%	-	-	-	-
Turnover Tax	4.6%	4.2%	3.4%	3.6%	3.4%	3.2%	5.1%	6.1%	6.7%	8.8%	8.5%	2.5%	0.6%	0.4%	0.3%	0.2%
Excises	2.5%	2.1%	1.6%	1.3%	0.8%	5.3%	6.4%	4.6%	4.8%	5.8%	5.4%	5.2%	6.0%	5.8%	5.4%	5.7%
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-	15.0%	16.8%	17.1%	16.6%	16.1%
European Tariff	-	-	-	-	-	-	-	-	-	-	-	-	0.3%	0.4%	0.4%	0.4%
Local Circulation Tax	-	-	-	-	-	-	-	0.4%	0.5%	0.5%	0.5%	0.5%	0.4%	0.5%	0.5%	-
Other	1.4%	2.0%	2.6%	2.7%	2.8%	3.4%	2.9%	3.0%	3.1%	3.1%	3.3%	1.0%	1.1%	0.8%	0.7%	0.5%
TOTAL	29.8%	30.3%	27.7%	25.5%	24.1%	24.7%	26.0%	25.9%	27.6%	29.4%	29.9%	32.8%	31.2%	31.4%	29.3%	28.1%
SOCIAL CONTRIBUTIONS																
Public Employees	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Employers	37.0%	35.8%	38.3%	38.1%	38.5%	35.5%	34.2%	34.1%	32.2%	28.7%	28.6%	27.5%	25.8%	25.7%	24.9%	25.5%
Employees	7.0%	6.1%	6.4%	6.4%	6.5%	6.8%	6.5%	6.6%	6.6%	6.9%	6.5%	6.5%	5.6%	5.3%	5.3%	5.4%
Self-Employed	1.5%	1.5%	2.5%	2.7%	2.9%	2.6%	2.5%	2.6%	2.6%	2.9%	2.9%	2.9%	2.6%	2.6%	2.4%	2.4%
Unemployed	0.7%	0.9%	1.2%	1.5%	1.9%	2.3%	2.8%	2.1%	2.0%	2.0%	2.2%	1.7%	1.6%	1.5%	1.7%	1.8%
TOTAL	46.6%	44.6%	48.7%	49.0%	50.1%	47.5%	46.3%	45.7%	43.7%	40.9%	40.5%	39.0%	36.1%	35.5%	34.7%	35.5%

Source: see text.

TABLE A.6: Taxes over GDP, 1958-74

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
DIRECT TAXES																	
Inheritance Tax	0.23%	0.22%	0.23%	0.22%	0.22%	0.19%	0.19%	0.16%	0.15%	0.16%	0.17%	0.17%	0.17%	0.18%	0.19%	0.20%	0.18%
Land Tax (rural)	0.22%	0.21%	0.23%	0.19%	0.16%	0.14%	0.12%	0.10%	0.06%	0.05%	0.05%	0.04%	0.06%	0.06%	0.06%	0.04%	0.04%
Land Tax (urban)	0.26%	0.26%	0.27%	0.25%	0.23%	0.23%	0.21%	0.20%	0.19%	0.19%	0.17%	0.19%	0.20%	0.22%	0.23%	0.24%	0.26%
Labour Tax	0.74%	0.76%	0.85%	0.82%	0.79%	0.76%	0.73%	0.64%	0.79%	0.81%	0.73%	0.78%	0.88%	0.99%	1.06%	1.26%	1.39%
Capital Tax	0.48%	0.37%	0.40%	0.39%	0.37%	0.32%	0.31%	0.32%	0.31%	0.32%	0.33%	0.34%	0.36%	0.38%	0.37%	0.38%	0.33%
Fiscal Licence	0.18%	0.18%	0.19%	0.17%	0.27%	0.25%	0.25%	0.22%	0.20%	0.20%	0.20%	0.19%	0.18%	0.18%	0.15%	0.14%	0.15%
Industry & Trade Tax	0.14%	0.22%	0.23%	0.22%	0.21%	0.21%	0.22%	0.24%	0.24%	0.25%	0.27%	0.26%	0.27%	0.28%	0.27%	0.24%	0.22%
Corporation Tax	1.15%	1.24%	1.18%	1.15%	1.10%	0.97%	0.88%	1.02%	1.09%	1.10%	1.05%	1.18%	1.18%	1.18%	1.19%	1.21%	1.22%
Old Income Tax	0.13%	0.17%	0.18%	0.16%	0.16%	0.16%	0.16%	0.15%	0.14%	0.14%	0.16%	0.15%	0.14%	0.16%	0.16%	0.17%	0.13%
Local Land Plot Tax	0.09%	0.08%	0.09%	0.07%	0.06%	0.07%	0.10%	0.11%	0.12%	0.15%	0.17%	0.10%	0.16%	0.14%	0.12%	0.14%	0.16%
Wealth Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Personal Income Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Land Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Licence Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Vehicle Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	0.97%	0.97%	1.00%	0.89%	0.90%	0.89%	0.86%	0.68%	0.54%	0.49%	0.49%	0.37%	0.41%	0.41%	0.36%	0.31%	0.28%
TOTAL	4.60%	4.68%	4.85%	4.53%	4.47%	4.18%	4.03%	3.85%	3.83%	3.86%	3.79%	3.78%	4.00%	4.18%	4.17%	4.33%	4.35%
INDIRECT TAXES																	
Transfer & Stamp	1.09%	1.17%	1.15%	1.13%	1.10%	1.15%	1.10%	0.73%	0.74%	0.77%	0.79%	0.89%	0.95%	0.94%	0.99%	1.07%	1.11%
Equity Tax	0.22%	0.25%	0.23%	0.23%	0.21%	0.22%	0.20%	0.01%	0.01%	0.00%	-	-	-	-	-	-	-
Oil Monopoly	0.61%	0.58%	0.46%	0.57%	0.57%	0.53%	0.52%	0.48%	0.56%	0.66%	0.61%	0.68%	0.56%	0.41%	0.43%	0.52%	-0.14%
Tobacco Monopoly	0.32%	0.33%	0.37%	0.37%	0.32%	0.25%	0.30%	0.26%	0.28%	0.27%	0.26%	0.28%	0.29%	0.25%	0.25%	0.22%	0.18%
Customs Tax	0.48%	0.51%	1.09%	1.49%	1.70%	1.68%	1.73%	1.10%	1.26%	1.05%	0.92%	0.97%	0.93%	0.87%	0.97%	1.05%	0.92%
Import Tax	-	-	-	-	-	-	-	0.96%	0.99%	0.81%	0.69%	0.76%	0.73%	0.57%	0.65%	0.73%	0.71%
Expenditure Tax	1.85%	1.91%	2.12%	1.88%	2.02%	1.61%	1.44%	0.03%	0.01%	0.00%	-	-	-	-	-	-	-
Luxury Tax	0.73%	0.93%	1.03%	1.02%	1.01%	1.03%	1.17%	1.26%	1.33%	1.42%	1.40%	1.52%	1.56%	1.59%	1.52%	1.62%	1.44%
Turnover Tax	-	-	-	-	-	-	0.22%	0.95%	1.01%	1.11%	1.12%	1.15%	1.26%	1.17%	1.13%	1.15%	1.17%
Excises	-	-	-	-	-	-	-	0.86%	0.76%	0.81%	0.83%	0.84%	0.87%	0.88%	0.82%	0.73%	0.61%
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
European Tariff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Circul. Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	0.56%	0.66%	0.59%	0.74%	0.47%	0.49%	0.45%	0.49%	0.26%	0.26%	0.27%	0.29%	0.33%	0.40%	0.43%	0.35%	0.37%
TOTAL	5.86%	6.33%	7.03%	7.43%	7.40%	6.96%	7.12%	7.14%	7.20%	7.16%	6.89%	7.38%	7.48%	7.10%	7.18%	7.44%	6.36%
SOCIAL CONTRIBUTIONS																	
Public Employees	0.03%	0.03%	0.04%	0.04%	0.04%	0.03%	0.02%	0.03%	0.06%	0.09%	0.09%	0.09%	0.09%	0.09%	0.08%	0.07%	0.06%
Employers	2.59%	2.61%	2.61%	2.38%	2.42%	2.57%	2.79%	2.73%	2.45%	5.74%	5.31%	5.38%	5.35%	5.64%	6.32%	6.53%	6.70%
Employees	0.77%	0.78%	0.82%	0.78%	0.79%	0.89%	0.97%	0.87%	0.85%	0.92%	1.04%	1.06%	1.06%	1.16%	1.31%	1.34%	1.31%
Self-Employed	-	-	-	-	-	-	-	-	-	0.16%	0.16%	0.15%	0.18%	0.31%	0.28%	0.27%	0.26%
Unemployed	-	-	-	-	-	-	-	-	-	0.03%	0.05%	0.06%	0.05%	0.07%	0.08%	0.06%	0.07%
TOTAL	3.39%	3.43%	3.47%	3.20%	3.24%	3.48%	3.79%	3.64%	3.36%	6.94%	6.66%	6.74%	6.74%	7.27%	8.06%	8.27%	8.40%
GENERAL TOTAL	13.85%	14.44%	15.35%	15.16%	15.12%	14.62%	14.95%	14.62%	14.39%	17.97%	17.34%	17.89%	18.22%	18.54%	19.41%	20.03%	19.11%

Source: see text. GDP from Prados de la Escosura (2003).

TABLE A.7: Taxes over GDP, 1975-1990

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
DIRECT TAXES																
Inheritance Tax	0.18%	0.16%	0.15%	0.15%	0.15%	0.13%	0.15%	0.14%	0.14%	0.14%	0.13%	0.13%	0.15%	0.19%	0.17%	0.16%
Land Tax (rural)	0.03%	0.03%	0.03%	0.02%	0.01%	0.00%	-	-	-	-	-	-	-	-	-	-
Land Tax (urban)	0.25%	0.22%	0.21%	0.20%	0.02%	-	-	-	-	-	-	-	-	-	-	-
Labour Tax	1.60%	1.78%	2.09%	2.74%	1.14%	0.09%	-	-	-	-	-	-	-	-	-	-
Capital Tax	0.45%	0.68%	0.68%	0.74%	0.32%	0.04%	-	-	-	-	-	-	-	-	-	-
Fiscal Licence	0.16%	0.14%	0.13%	0.12%	0.00%	-	-	-	-	-	-	-	-	-	-	-
Industry and Trade Tax	0.26%	0.24%	0.23%	0.20%	0.20%	0.16%	-	-	-	-	-	-	-	-	-	-
Corporation Tax	1.27%	1.14%	1.06%	0.95%	1.20%	1.25%	1.26%	1.32%	1.47%	1.45%	1.59%	1.74%	2.29%	2.19%	3.01%	3.10%
Old Income Tax	0.14%	0.15%	0.13%	0.22%	0.22%	0.04%	-	-	-	-	-	-	-	-	-	-
Local Land Plot Tax	0.20%	0.15%	0.17%	0.20%	0.20%	0.14%	0.15%	0.17%	0.18%	0.19%	0.20%	0.21%	0.20%	0.21%	0.23%	0.17%
Wealth Tax	-	-	-	0.08%	0.12%	0.12%	0.08%	0.10%	0.09%	0.07%	0.10%	0.10%	0.12%	0.14%	0.08%	0.19%
Personal Income Tax	-	-	-	-	2.30%	4.34%	4.78%	5.00%	5.39%	5.90%	5.78%	5.41%	6.98%	7.12%	7.86%	7.51%
Local Land Tax	-	-	-	-	0.16%	0.36%	0.32%	0.30%	0.29%	0.30%	0.28%	0.38%	0.29%	0.52%	0.51%	0.57%
Local Licence Tax	-	-	-	-	0.15%	0.19%	0.21%	0.33%	0.32%	0.32%	0.31%	0.34%	0.33%	0.34%	0.33%	0.32%
Local Vehicle Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19%
Other	0.33%	0.43%	0.42%	0.35%	0.11%	0.15%	0.33%	0.17%	0.26%	0.21%	0.31%	0.17%	0.24%	0.06%	0.03%	0.04%
TOTAL	4.85%	5.11%	5.29%	5.97%	6.31%	7.00%	7.29%	7.53%	8.13%	8.59%	8.69%	8.49%	10.61%	10.77%	12.23%	12.25%
INDIRECT TAXES																
Transfer & Stamp	1.05%	1.02%	1.03%	1.02%	0.99%	0.88%	0.80%	0.76%	0.74%	0.68%	0.69%	0.65%	0.69%	0.79%	0.87%	0.96%
Equity Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Monopoly	0.07%	0.44%	0.40%	0.44%	0.50%	0.06%	0.00%	0.00%	0.34%	0.14%	0.38%	1.03%	0.31%	0.39%	0.22%	0.18%
Tobacco Monopoly	0.20%	0.16%	0.09%	0.07%	0.09%	0.08%	0.16%	0.14%	0.14%	0.11%	0.10%	-	-	-	-	-
Customs Tax	0.88%	0.88%	0.97%	0.69%	0.64%	0.69%	0.70%	0.74%	0.79%	0.74%	0.78%	0.89%	0.93%	0.90%	0.77%	0.59%
Import Tax	0.74%	0.52%	0.49%	0.43%	0.35%	0.43%	0.43%	0.49%	0.49%	0.49%	0.57%	-0.14%	-	-	-	-
Expenditure Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxury Tax	1.41%	1.45%	1.52%	1.56%	1.61%	1.06%	0.94%	0.99%	1.07%	1.06%	1.05%	0.16%	-	-	-	-
Turnover Tax	0.95%	0.86%	0.76%	0.85%	0.84%	0.81%	1.35%	1.62%	1.90%	2.53%	2.49%	0.75%	0.19%	0.13%	0.10%	0.08%
Excises	0.51%	0.43%	0.36%	0.30%	0.19%	1.34%	1.69%	1.23%	1.35%	1.67%	1.59%	1.56%	1.95%	1.89%	1.84%	1.93%
Value Added Tax	-	-	-	-	-	-	-	-	-	-	-	4.52%	5.45%	5.55%	5.64%	5.43%
European Tariff	-	-	-	-	-	-	-	-	-	-	-	-	0.11%	0.12%	0.13%	0.12%
Local Circul. Tax	-	-	-	-	-	-	-	0.10%	0.13%	0.15%	0.15%	0.15%	0.14%	0.17%	0.17%	-
Other	0.29%	0.40%	0.58%	0.62%	0.68%	0.87%	0.76%	0.78%	0.88%	0.90%	0.98%	0.31%	0.36%	0.27%	0.24%	0.17%
TOTAL	6.10%	6.17%	6.19%	5.99%	5.90%	6.24%	6.83%	6.85%	7.82%	8.48%	8.79%	9.87%	10.13%	10.22%	9.97%	9.46%
SOCIAL CONTRIBUTIONS																
Public Employees	0.07%	0.06%	0.06%	0.07%	0.08%	0.09%	0.09%	0.08%	0.09%	0.09%	0.11%	0.12%	0.13%	0.12%	0.13%	0.12%
Employers	7.59%	7.30%	8.58%	8.92%	9.43%	8.95%	8.99%	9.01%	9.11%	8.28%	8.40%	8.28%	8.38%	8.37%	8.48%	8.59%
Employees	1.43%	1.24%	1.44%	1.49%	1.59%	1.73%	1.70%	1.75%	1.87%	2.00%	1.90%	1.97%	1.82%	1.74%	1.79%	1.82%
Self-Employed	0.30%	0.31%	0.56%	0.64%	0.71%	0.65%	0.66%	0.69%	0.74%	0.84%	0.84%	0.87%	0.86%	0.83%	0.82%	0.81%
Unemployed	0.15%	0.18%	0.26%	0.34%	0.47%	0.57%	0.73%	0.55%	0.57%	0.59%	0.64%	0.50%	0.53%	0.48%	0.59%	0.61%
TOTAL	9.54%	9.10%	10.91%	11.47%	12.28%	11.99%	12.15%	12.08%	12.38%	11.80%	11.89%	11.74%	11.73%	11.54%	11.81%	11.96%
GENERAL TOTAL	20.50%	20.38%	22.39%	23.43%	24.49%	25.23%	26.27%	26.45%	28.34%	28.87%	29.37%	30.09%	32.47%	32.52%	34.01%	33.66%

Source: see text. GDP from Prados de la Escosura (2003).

A.2 Taxes in the Península and the Balearic Islands

In order to isolate the regions subject to study, tax revenue accruing to the Canary Islands, Ceuta and Melilla have been extracted from the totals, only for specific years. These data have been estimated with the criterion of the provincial administration where taxes were collected. For State taxes, this information is available in *Información Estadística del Ministerio de Hacienda / Estadísticas Presupuestarias y Fiscales* and *Recaudación y Estadísticas de la Reforma Tributaria*; for local taxes I have also used *Liquidación de los presupuestos de las Corporaciones Locales*, the INE Yearbook *Anuario Estadístico*, *Cuentas de las Administraciones Públicas*, *Estadística presupuestaria de las entidades locales de 1982*, *Estadística de los presupuestos de las corporaciones locales. Datos iniciales de los años 1984 y 1985*, *Memoria de la Administración Tributaria* and data on the Real Estate Local Tax for 1990 from the Dirección General del Catastro (available online). Social Security Contributions were disaggregated with *Memoria Estadística de los seguros sociales administrados por el INP* and *Memoria de la Tesorería General de la Seguridad Social*.

TABLE A.8: Tax Revenue in the Península and the Balearic Islands

	1960	**1964**	**1970**	**1976**	**1982**	**1985**	**1990**
Land / Real Estate Tax	3,142	3,859	6,297	17,421	57,873	74,745	275,955
Labour Tax	5,273	8,287	21,393	124,174	-	-	-
Capital Tax	2,541	3,642	8,823	48,277	-	-	-
Industry and Trade Fiscal License	1,165	2,765	4,330	9,506	-	-	-
Industrial and Trade Tax	1,404	2,476	6,694	16,443	-	-	-
Inheritance Tax	1,438	2,199	4,163	10,911	27,077	37,372	81,005
Corporation Tax (1)	7,497	10,249	28,948	80,584	256,750	440,855	1,567,274
Personal Income Tax (2)	1,131	1,813	3,384	10,408	962,819	1,584,948	3,756,698
Local Land Taxes	574	1,174	3,794	10,463	33,398	56,394	84,721
Wealth Tax	-	-	-	-	19,166	25,939	94,291
Local Fiscal License	-	-	-	-	62,640	83,095	156,259
Local Vehicles Tax (3)	-	-	-	-	-	-	94,028
Other	6,010	9,464	8,946	27,223	32,134	86,523	15,974
DIRECT TAXES	30,175	45,929	96,773	355,409	1,451,858	2,389,871	6,126,204
Transfer and Stamp Duties	8,706	14,879	23,639	72,927	146,440	189,125	480,130
International Trade Taxes	6,855	20,003	40,939	92,640	228,303	360,576	336,111
Oil Monopoly	2,908	6,070	13,798	31,169	0	0	90,887
Tobacco Monopoly	2,320	3,441	7,063	11,435	26,221	27,305	-
Luxury Tax	6,425	13,439	37,996	103,356	195,477	297,472	-
Expenditure Tax / Excises	13,317	16,709	21,396	29,925	240,203	441,955	970,140
Turnover Tax	-	2,496	31,732	62,377	317,427	694,346	19,914
Local Vehicles Tax (3)	-	-	-	-	18,995	41,391	-
Value Added Tax	-	-	-	-	-	-	2,774,119
Other	3,439	4,093	4,215	22,265	148,413	266,353	61,385
INDIRECT TAXES	43,971	81,130	180,779	426,093	1,321,479	2,318,523	4,731,538
Public Employees	241	269	2,155	4,375	15,836	29,220	59,343
Employers	16,093	31,356	128,362	504,113	1,728,908	2,299,311	4,264,645
Employees	5,035	10,907	25,410	85,941	336,082	519,801	905,996
Self-Employed	-	-	4,389	21,552	131,884	231,226	402,840
Unemployed	-	-	1,186	12,669	104,980	175,900	302,071
SOCIAL CONTRIBUTIONS	21,369	42,532	161,502	628,649	2,317,690	3,255,458	5,934,895
TOTAL TAXES	95,515	169,591	439,053	1,410,152	5,091,027	7,963,852	16,792,636

All taxes in nominal million pesetas.
Source: see text.

(1) Corporate Income Tax includes a tax on equity issuance in 1970 and 1976.

(2) Personal Income Tax includes its precedents *Contribución General sobre la Renta* (1960 and 1964) and *I. General sobre la Renta de las Personas Físicas* (1970 and 1976), although they were of a different nature, as is discussed in the text.

(3) The vehicles tax is classified in local budgets as indirect until 1989 and since then as direct.

A.3 Data sources list

- Dirección General de Coordinación con las Haciendas Territoriales:
  - *Estadística presupuestaria de las entidades locales de 1982*, Ministerio de Hacienda, Madrid.
  - (1986): *Estadística de los presupuestos de las corporaciones locales. Datos iniciales de los años 1984 y 1985*, Ministerio de Economía y Hacienda, Madrid.
  - (several years): *Liquidación de presupuestos de las corporaciones locales. Ejercicio...*, 1984-1989, Ministerio de Economía y Hacienda, Madrid.
  - (1992): *Liquidación de presupuestos de las entidades locales. Ejercicio 1990*, Ministerio de Economía y Hacienda, Madrid.
- Dirección General de Impuestos Directos (1964): *Estadística de servicios de la Contribución General sobre la Renta. Año 1960*, Ministerio de Hacienda, Fábrica Nacional de Moneda y Timbre, Madrid.
- Dirección General de Tributos:
  - (several years): *Boletín de información de la Dirección General de Tributos*, 1979-1983, Ministerio de Economía y Hacienda, Madrid.
  - (1988): *Recaudación y estadísticas de la reforma tributaria [1979-1986]*, Ministerio de Economía y Hacienda, Madrid.
  - (1991): *Recaudación y estadísticas de la reforma tributaria (1979-1990)*, Ministerio de Economía y Hacienda, Madrid.
  - (1992): *Recaudación y estadísticas de la reforma tributaria (1981-1991)*, Ministerio de Economía y Hacienda, Madrid.
  - (1990, 1992, 1993): *Comportamiento del Impuesto Extraordinario sobre el Patrimonio de las Personas Físicas en...* (1988, 1990, 1991), Ministerio de Economía y Hacienda, Madrid.
  - (1996): *El comportamiento del Impuesto sobre Sucesiones y Donaciones (1988-1995)*, Ministerio de Economía y Hacienda, Madrid.
- Intervención General de la Administración del Estado:
  - *Cuenta General del Estado*, 1976-1977.

  - *Cuenta de la Administración General del Estado*, 1978-1990.
  - (several years): *Cuentas de las Administraciones Públicas*, 1958-63 to 1990, Ministerio de Economía y Hacienda, Madrid.
  - (several years): *Información estadística del Ministerio de Hacienda*, años 1960-1972, Ministerio de Economía y Hacienda, Madrid.
  - (several years): *Estadísticas presupuestarias y fiscales*, años 1973-89, Ministerio de Economía y Hacienda, Madrid.

- Instituto Nacional de Estadística (several years): *Anuario Estadístico de España*.
- Instituto Nacional de Previsión:
  - *Memoria Estadística de los seguros sociales administrados por el INP*, Ministerio de Trabajo, Madrid.
  - *Memoria estadística de las contingencias de la Seguridad Social administradas por el INP*, Ministerio de Sanidad y Seguridad Social, Madrid.
- Ministerio de Hacienda (1981-1982): *Memoria de la reforma tributaria*. 1980 and 1981, Madrid.
- Ministerio de Economía y Hacienda (several years): *Memoria de la Administración Tributaria*. 1982/83, 1984-85, 1987-90.
- J. Santos Peñas (1975): *Presión impositiva sobre las rentas de trabajo en España*, tesis doctoral, Instituto de Estudios Fiscales.
- Tesorería General de la Seguridad Social:
  - (1987): *Memoria 1985*, Ministerio de Trabajo y Seguridad Social, Madrid.
  - (1991): *Memoria 1990*, Ministerio de Sanidad y Seguridad Social, Madrid.

Appendix B

Appendices to Chapter 2

B.1 Households and budget constraint by deciles

Table B.1 depicts the distribution of households according to the relation between their incomes and expenditures, extending the data shown in the main text by breaking down deciles of income. We already knew that the extent of households spending more than they said to earn was decreasing as we moved to more recent surveys. Here, we can also see significant differences across the (reported) income distribution in each sample.

In all three surveys, the percentage of households spending less than or equal to their yearly income is increasing with income. This, of course, is not surprising, since part of the explanation lies in the real behaviour of households with different economic means. In almost all deciles, however, the majority of households lie within the 1-2 interval.

Casual observation of this table leads to conclude that adjusting incomes to expenditures will bring up the revenues of the poor more than those of the rich (in percentage terms), leading to lower levels of inequality. To the extent that some households do spend more than their yearly income in a given year, and that households with positive savings are also under-reporting their earnings, such an adjustment can only be a small part of the solution and could even introduce additional biases.

TABLE B.1: Distribution according to the ratio (Expenditure + Net Savings) / Income

		0 - 1	1 - 2	2 - 4	>4	Total
1973	Decile 1	28%	52%	16%	5%	100%
	Decile 2	28%	54%	16%	2%	100%
	Decile 3	29%	56%	14%	1%	100%
	Decile 4	26%	59%	14%	1%	100%
	Decile 5	28%	60%	12%	1%	100%
	Decile 6	28%	61%	10%	0%	100%
	Decile 7	31%	60%	8%	0%	100%
	Decile 8	34%	59%	7%	0%	100%
	Decile 9	36%	57%	7%	0%	100%
	Decile 10	41%	55%	4%	0%	100%
1980	Decile 1	36%	46%	15%	4%	100%
	Decile 2	34%	52%	12%	1%	100%
	Decile 3	35%	53%	11%	1%	100%
	Decile 4	33%	57%	9%	1%	100%
	Decile 5	34%	56%	9%	0%	100%
	Decile 6	35%	57%	7%	0%	100%
	Decile 7	35%	58%	7%	0%	100%
	Decile 8	39%	55%	5%	0%	100%
	Decile 9	43%	52%	5%	0%	100%
	Decile 10	50%	47%	3%	0%	100%
1990	Decile 1	38%	41%	16%	5%	100%
	Decile 2	33%	50%	15%	1%	100%
	Decile 3	36%	51%	12%	0%	100%
	Decile 4	34%	55%	11%	1%	100%
	Decile 5	37%	55%	8%	0%	100%
	Decile 6	38%	54%	7%	0%	100%
	Decile 7	42%	52%	6%	0%	100%
	Decile 8	49%	46%	4%	0%	100%
	Decile 9	52%	45%	3%	0%	100%
	Decile 10	64%	34%	2%	0%	100%

Source: author's calculations based on Household Budget Surveys.

Note: households in the first column spend within their budget constraint. A ratio of 2, for example, means that the family reported to spend twice as much as her yearly income.

B.2 Effects of adjusting only self-employment earnings

In this paper, the estimation of under-reporting of the self-employed *à la* Pissarides-Weber is part of a wider strategy, to obtain adjustment of all incomes to National Accounts. We can, however, ask ourselves what would be the result in terms of inequality of up-scaling earnings after this first under-reporting inquiry. This is shown in table B.2.

The exercise has only a limited effect on the Gini indices, which are slightly increased (compare with the original data in the first columns of table 2.5). This is because I apply here coefficients of 1.21, 1.26 and 1.17 (as resulting from table 2.6, and significantly smaller than those applied in the adjustment to NA exercise, table 2.8), and only to self-employment incomes, which are a limited part of the total (always under 25%).

TABLE B.2: Effect of correcting only the under-reporting of the Self-Employed

	1973	1980	1990
Total (Hh)	36.78	34.43	33.25
OECD	33.13	32.03	30.11
OECD_mod	32.57	31.36	29.49

Source: author's calculations.

B.3 Data aggregates comparison

The following tables show the data involved in each calculation of scaling-up factors, following the scheme in table 7 of the text. Note that m corresponds to the net definition (leaving imputations aside). The value for NOS is not applied in the up-scaling procedure (the results from Pissarides-Weber equation are instead), as is explained in the text, because adjustment to the National Accounting framework in this flow should not be complete.

TABLE B.3: HBS and NA household income aggregates, 1973

	HBS (net)		Direct taxes		HBS grossed	NA (gross)		Gross ratio	Net ratio	m
Self-empl. income	Monetary	397,269				GOS	1,173,484			
	Imputations	210,105				FKC	91,708			
	Rentals	6,140								
	Total	613,514	Total	34,650	648,164	NOS	1,081,776	59.9%	58.6%	2.07
Labor income	Monetary	1,184,062								
	Imputations	15,467								
	Total	1,199,529	Total	419,511	1,619,040	WC	2,029,553	79.8%	74.5%	1.35
Capital income	Total (mon)	29,305	Total	11,425	40,730	Total	139,001	29.3%	23.0%	4.35
Transfer income	Total	187,310	Total	2,347	189,657	Total	472,215	40.2%	39.7%	2.51
Disposable income	Total	2,029,658	n/a		2,029,658	Total	3,099,302	65.5%	65.5%	1.53

Source: author's calculations with 1973 HBS and NA (Instituto Nacional de Estadística, 1983) and Pena and Callealta (1996). Figures from National Accounts always refer exclusively to the household sector.

m: scaling-up factor obtained (for net incomes). GOS: Gross Operating Surplus. FKC: Fixed Capital Consumption. NOS: Net Operating Surplus. WC: Wage Compensation. n/a: non-applicable.

TABLE B.4: HBS and NA household income aggregates, 1980

	HBS (net)		Direct taxes		HBS grossed	NA (gross)		Gross ratio	Net ratio	m
Self-empl. income	Monetary	1,062,966				GOS	3,907,172			
	Imputations	983,735				FKC	350,206			
	Rentals	22,602								
	Total	2,069,303	Total	241,222	2,310,525	NOS	3,556,966	65.0%	62.4%	2.15
Labor income	Monetary	4,317,943								
	Imputations	43,771								
	Total	4,361,714	Total	2,594,067	6,955,781	WC	7,797,509	89.2%	83.8%	1.19
Capital income	Total (mon)	89,079	Total	69,327	158,406	Total	372,411	42.5%	29.4%	3.40
Transfer income	Total	1,149,301	Total	87,127	1,236,428	Total	2,442,233	50.6%	47.1%	2.05
Disposable income	Total	7,669,397	n/a		7,669,397	Total	11,049,326	69.4%	69.4%	1.44

Source: author's calculations with 1980 HBS and NA (Instituto Nacional de Estadística, 2014) and Pena and Callealta (1996). Figures from National Accounts always refer exclusively to the household sector.

m: scaling-up factor obtained (for net incomes). GOS: Gross Operating Surplus. FKC: Fixed Capital Consumption. NOS: Net Operating Surplus. WC: Wage Compensation. n/a: non-applicable.

TABLE B.5: HBS and NA household income aggregates, 1990

	HBS (net)		Direct taxes		HBS grossed	NA (gross)		Gross ratio	Net ratio	m
Self-empl. income	Monetary	2,954,395				GOS	13,206,456			
	Imputations	4,229,056				FKC	1,606,303			
	Rentals	104,158								
	Total	7,287,608	Total	1,072,907	8,360,516	NOS	11,600,153	72.1%	69.2%	2.06
Labor income	Monetary	12,280,468								
	Imputations	102,544								
	Total	12,383,012	Total	9,209,310	21,592,321	WC	23,108,029	93.4%	89.1%	1.12
Capital income	Total (mon)	141,557	Total	756,572	898,130	Total	1,725,920	52.0%	14.6%	6.85
Transfer income	Public	4,797,545				Public	7,177,969	71.2%	69.9%	1.43
	Private	439,019				Private	1,766,759	24.8%	24.8%	4.02
	Total	5,236,563	Total	310,962	5,547,525	Total	8,944,728	62.0%	58.5%	1.65
Disposable income	Total	25,048,741	n/a		25,048,741	Total	32,908,556	76.1%	76.1%	1.31

Source: author's calculations with 1990 HBS and NA (Instituto Nacional de Estadística, 2014), Sanz (1995) and Oliver (1997). Figures from National Accounts always refer exclusively to the household sector.

m: scaling-up factor obtained (for net incomes). GOS: Gross Operating Surplus. FKC: Fixed Capital Consumption. NOS: Net Operating Surplus. WC: Wage Compensation. n/a: non-applicable.

B.4 Other equivalence scales and indices

Only the preferred estimates are shown in the text, which use the Gini index and the OECD equivalence scale. Other indicators have been calculated, leading to similar results: higher inequality in up-scaled data, slight and erratic decrease over time. See table B.6.

B.5 Alternative adjustments of transfers

The up-scaling of transfers undertaken in the main estimation attempts to distinguish between the private ones and public benefits. Both have been found to have significantly different reporting behaviour in the 1990 survey, which is the only of the three where they are explicitly differentiated in the data. An approximation has been made in the previous years to the distinct profiles of compliance, based on those results. However, the procedure might introduce a significant level of uncertainty.

In order to look more closely at the problem, I have performed two alternative calculations (see table B.7). The first one does not correct transfer incomes at all, and thus leaves the original data for this component untouched, combining it with the other up-scaled incomes to obtain the total. The second procedure applies a uniform correction to all transfer income in all deciles (even for 1990, in order to establish the bias).

As can be seen, generally the preferred calculation (table 2.10) depicts intermediate levels of inequality with respect to the other alternatives presented here (no up-scaling generating higher levels, and uniform up-scaling resulting in lower levels). The exception are equivalent incomes in 1990, where our more precise estimate yields higher inequality than these ones. This could suggest that our approximation under-estimates the effect of this distinct behaviour of private transfers and public benefits, thus leading to inequality still being downward biased in the results. The implication, however, is dependant on the distribution of both components being homogeneous across the years, something unlikely given the development of the Welfare State at the time.

TABLE B.6: Income inequality according to other equivalence scales and indices

	1973		1980		1990	
	Original	Corrected	Original	Corrected	Original	Corrected
			Gini			
Total (Hh)	36.19	36.83	34.26	33.51	33.02	34.84
OECD	32.56	34.59	31.99	32.60	29.99	32.95
OECD_mod	31.97	33.79	31.27	31.59	29.35	32.13
Sqroot	32.12	33.88	30.96	31.39	29.37	32.04
			Top 10% share			
Total (Hh)	26.74	28.23	25.35	25.80	24.70	27.13
OECD	25.72	27.69	25.09	25.80	23.97	26.87
OECD_mod	25.32	27.19	24.61	25.19	23.54	26.35
Sqroot	25.22	27.05	24.22	24.88	23.31	26.09
			Top 1% share			
Total (Hh)	5.58	6.47	5.20	6.03	4.85	7.15
OECD	5.44	6.65	5.20	6.14	4.80	7.30
OECD_mod	5.40	6.44	5.06	5.92	4.65	7.23
Sqroot	5.33	6.27	4.90	5.81	4.52	7.08
			GE (2) index			
Total (Hh)	32.90	40.59	31.67	55.31	27.80	69.63
OECD	28.49	40.32	31.85	57.93	26.48	71.91
			p90/p10			
Total (Hh)	5.72	5.25	5.27	4.43	4.95	4.73
OECD	4.19	4.38	4.17	4.13	3.77	3.93
			p90/p50			
Total (Hh)	2.15	2.24	2.08	2.06	2.07	2.10
OECD	2.04	2.13	2.03	2.02	1.96	2.02

Source: author's calculations.

In all indices, the first row represents distribution between households, while the other depict distribution between individuals according to different equivalence scales. The OECD original and modified scales apply weights 0.7-0.5 and 0.4-0.3 respectively to subsequent adults and minors in the household (under 14). The 'Sqroot' scale uses the square root of the household size.

All calculations refer to disposable income. Gross incomes are expected to be more unequally distributed under a progressive direct tax system (which applies specially to 1990).

TABLE B.7: Gini indices under alternative adjustments of transfer income

	1973	1980	1990
No up-scaling of transfer income			
Total (Hh)	38.80	36.43	35.65
OECD	35.05	33.77	32.61
OECD_mod	34.46	33.14	32.01
Uniform up-scaling of transfer income			
Total (Hh)	36.21	32.72	32.14
OECD	34.16	32.13	31.64
OECD_mod	33.33	31.07	30.51

Source: author's calculations.

B.6 Comparing with other approaches to Spanish inequality

The results in this paper differ from those previously obtained using the survey data, because I estimate a higher level of inequality and a smaller decrease over time. This includes the studies reviewed in section 2, based on the HBSs, and also those which have used a different source, the *Encuesta Continua de Presupuestos Familiares*. This is a rotating household panel also provided by INE, with quarterly data and households staying in the sample for a maximum of 2 years.

The *ECPF* consistently displays lower levels of inequality than the HBSs (*EPFs*). One reason for it might be that it suffers from a larger downward bias, because of sample size and the definition of income employed (notably excluding certain capital incomes). According to some reputable sources, this results in its low reliability for the study of inequality (Eurostat, 1999; Goerlich and Mas, 2001).[1] Its higher discrepancy with respect to National Accounts can be seen in Pou and Alegre (2002).

For this reason, differences between my results and those of analyses based on the *ECPF* are to some extent not surprising. Both Oliver et al. (2001) and Pijoan-Mas

[1] *"The sample size is 3,200 households, a lot less than in the three EPFs, which does not allow regional disaggregation. The objective of the ECPFs is measuring the growth in households' consumption in the short term, while the EPFs have a systemic purpose. This means that coverage, breadth of concepts and treatment of the data are very uneven between both sources, so they cannot be considered of similar quality"* (Goerlich and Mas, 2001).

and Sánchez-Marcos (2010), for example, provide an account of falling inequality between 1985 and 1996/2000, partially overlapping with the period analysed here.[2] The differing trends, however, are not completely irreconcilable: in fact, a decrease in inequality in the second half of the eighties could be compatible with general stability, when the whole decade is considered (specially knowing that a whole cycle of recession and growth took place during the eighties, and rates of unemployment were similar at the beginning and the end of the decade, around 15%). Falling inequality in labour market revenues of household heads is also found for the entire decade in the HBSs by Abadie (1997) and in my scaled-up data.[3]

My results can also be compared with studies on the evolution of inequality based on other kinds of data. Prados de la Escosura (2008) provided a long-run estimation based on a macroeconomic approach, calculating dispersion within and between the incomes of "workers" and "capitalists". His series show a rapid decrease in inequality in Spain between the mid 1950s and the mid 1960s, followed by a much slower diminishing trend since then and until the second half of the 1990s, when inequality would have started to go upwards again. The persistence I obtain is therefore quite consistent with Prados de la Escosura's calculations.

For the post-transition period it is also possible to use income tax data and assess the evolution of inequality in taxable income. By definition, however, the levels and trend do not need to coincide with those of disposable income: between both lie direct taxes, transfers and the impact of fraud. There are also other methodological differences, discussed in Ayala and Onrubia (2001): generally, tax-based studies use the taxpayer as the unit of analysis (as opposed to the household, and without applying equivalence scales) and have different universes (given by the effective income threshold to personal direct taxation). This category of taxpayers was also changing over the years: new taxpayers were coming in because the tax was being introduced, and also as an effect of fiscal drag. All of this explains why tax data generally show a higher level of inequality than survey data, and

[2] Oliver et al. (2001) do acknowledge the limitation of under-reporting in their source, around 30% of the National Accounts data for disposable income, although decreasing over time.

[3] I have calculated the indicator defined by Pijoan-Mas and Sánchez-Marcos (2010): head of household earnings (considering labour income and 2/3 of self-employment income). The results show decreasing Gini indices: from 34 to 32 in market earnings, and from 32 to 29 considering also unemployment benefits. These numbers are quite compatible with those of the cited authors in trends, but at a slightly higher level. Since these results do not contrast with Abadie (1997)'s with the original data (which, on the other hand, focus on individuals not suffering from unemployment), we can infer that differences in under-reporting do not affect the evolution of *labour earnings* inequality as much as it does for other incomes.

a worsening in (reported taxable) income distribution during the eighties (e.g. Ayala and Onrubia, 2001; Lambert and Ramos, 1997). The study closest to our discussion is that by Onrubia (2007), which includes calculations for the "fiscal household" (thus homogenizing the periods before and after the introduction of the separate filing option for married couples). The pre-tax income Gini index (taxable base with some adjustments) was found to increase continuously from 1982 to 1991 (31.68 to 42.00).

Alvaredo and Saez (2009) studied top income shares, obtaining the revenues from tax data and the population total (denominator) from National Accounts (therefore, their approach has the same comparability problems with my estimates, namely different income concept and no equivalization). Their results show that the top 0.1% share was fairly constant over the 1960s and 1970s (around 1.87%), with concentration starting to increase in the second half of the eighties (2.14% in 1990).[4] The same trend is shown in the share of the top 1% (7.5% to 8.37% in 1981 and 1990) and the top 10% (32.61% to 35.35% in the same years). It should come as no surprise that the figures are lower for disposable income: in my work, I obtain for the top 1% of households 6.47% in 1973, 6.03% in 1980 and 7.15% in 1990. Nevertheless, the increasing concentration in the last years is seen in both sources.

[4]Tables B2 and B3 in Alvaredo and Saez (2009). There are only three observations in the period 1961-1981, because of problems in the availability of the original data.

Appendix C

Appendices to Chapter 3

C.1 Detailed imputation methodology

The estimation of tax payments consists in allocating the revenue of each tax using the distribution of the corresponding tax base across households:

$$T_{h,t} = \frac{B_{h,t}}{\sum_{h=1}^{N} B_{h,t}\rho_{h,t}} \sum_{h=1}^{N} T_{h,t}\rho_{h,t}, \tag{C.1}$$

where $T_{h,t}$ is the estimated amount of tax t paid by household h, $B_{h,t}$ the corresponding tax base, N the number of households and ρ each one's sampling weight. This formula has been applied generally, for taxes that are proportional to the base, at the highest possible level of disaggregation (e.g., excises on specific goods or differential rates in VAT). Some items, however, required different calculations, for example the inheritance tax and PIT (which are progressive and for which we have better data).

C.1.1 Social contributions

The data permit distinguishing those paid by workers, employers, self-employed workers, and the unemployed (on their behalf by the unemployment insurance). For the first two groups, the General Regime and the Special Regime for Agrarian Workers have been considered separately.

Worker's contributions

The tax base (*Bases de Cotización*) has been simulated with the information on salaries and wages in the HBSs.

1. Correspondence between socio-professional category in the Social Security regulations and socio-economic category and education level in HBSs. In 1970 and 1982, each household has been assigned the category of the household head; the 1990 data allow inferring the category of each working household member.
2. In 1970 there was one *Base Tarifada* for each category. For the following years, the tax base is the salary up to the maximum threshold established by the regulations. Household tax base is the sum of the individual tax bases.
3. Further adjustments and approximations have been made when we lack information on the salary, employment periods or working hours of each member.

Employer's contributions

The part falling on the employer is distributed according to entrepreneurial income of *"empresarios con asalariados"* (entrepreneurs with salaried workers) and capital incomes (to capture the impact of employees of corporations and incidental shifting).

Contributions of the self-employed

According to the distribution of entrepreneurial income of the corresponding socio-economic categories in the HBSs.

Contributions of the unemployed

Distributed according to unemployment benefits in 1990. In previous years, using the distribution of transfers (there is no disaggregation available) when there is unemployment in the household having worked previously (in 1982 we have information on each member, in 1970 only of the household head).

C.1.2 Direct taxes

Almost every tax has a component paid directly by households and another that falls first on enterprises and only gets to the final taxpayer through profits and prices. This second component has always been distributed with the criterion used for the Corporation tax.[1]

Urban Land Tax *(Contribución Territorial Urbana - Impuesto de Bienes Inmuebles)*

In proportion to housing expenditure (real or imputed rent). The HBSs of 1982 and 1990 have some data on the tax paid by owner-occupiers, which is assumed to be 80% of the total revenue (given the distribution of housing regimes in 1990). The remaining 20% has been distributed according to rents paid, also for the owner-occupiers not reporting their tax.

Rural Land Tax *(Contribución Territorial Rústica)*

Distributed according to entrepreneurial incomes of agricultural land proprietors (socio-economic categories in HBSs). I have distinguished between the fixed and the variable part of the tax.

Industrial Tax *(Impuesto Industrial)*

Distributed according to entrepreneurial incomes of urban entrepreneurs (socio-economic categories in HBSs). I have distinguished between the fixed and the variable part of the tax.

Capital Income Tax *(Impuesto sobre las rentas del capital)*

Using the distribution of positive incomes from capital.

[1] 20% of land and housing taxes, and, 75% of the tax on income from capital, 60% of the fiscal licence, 40% of municipal land taxes and 30% of the tax on vehicle circulation.

Labour Income Tax *(Impuesto sobre las rentas del trabajo personal)*

The licence part has been distributed among the socio-economic category of professionals, the variable one using the distribution of income from labour over the threshold (60.000 ptas).

Municipal Land Tax (*I. Terrenos y Solares*)

In proportion to the sum of income from capital and imputed rents.

Corporation Tax (*I. Sociedades* and *I. Especial del 4%*)

According to the distribution of positive income from capital, total monetary expenditure and income from labour. The central estimation weighs each of these components by a third (alternatives in section C.3.3).

Old Income Super-tax (*I. General Renta Personas Físicas*)

Simulated according to the regulations (tax base, exemption threshold, family and labour allowances, formula, tax credits for product taxes). The resulting quantity is a lot higher the real tax paid, and so is also the number of taxpayers. This is of course evidence of fraud, but out of lack of information to deal with it correctly all the quotas were adjusted proportionally.

Property Tax (*I. Patrimonio*)

Property is approximated with a 3% capitalization of capital incomes, including imputed rents and half the revenues from entrepreneurial labour. The households with higher property have been selected up to the number of taxpayers from the tax statistics (*Memoria de la Administratión Tributaria*), and the actual revenue has been distributed among them using the tax shares paid by each tax base group.

Inheritance Tax (*I. Sucesiones*)

I follow here the Office for Tax Analysis of the U.S. Treasury (Cronin, 1999): each potential taxpayer is assigned the product of...

- The resulting quota in case of death (simulated property times the statutory tax rate)[2], under the assumption of there being two heirs (since it is to them that the tax would correspond).
- The mortality rate in the 5-year age interval (obtained from INE; for 1970 I have used the rate of the 45 year-olds in 1975, since there is no information on age in the HBS).

The basic assumption of this procedure is that the heirs would be in a similar income level than the decedent.

Personal Income Tax (*IRPF*)

The distribution of the tax paid (*cuota líquida*) is obtained, by permilles of tax-payers ranked by their net incomes, from the micro-data provided by the IEF ("PANEL PURO Y EXTENDIDO IRPF 1982/1998 IEF-AEAT (Declarantes)"). It is then imputed to the corresponding permilles in the HBSs (previously selected from the households, using the information on age and income of each member).

The obtained distribution is applied to the actual tax paid in the year. Total tax payment of the household is calculated as the sum of the quotas of all members.

Vehicles Tax (*I. Circulación – I. sobre Vehículos de Tracción Mecánica*)

There are reported payments in the 1990 HBSs, but these do not cover the total quantity: the rest has been simulated using the information on expenditure in gasoline, and the same procedure has been applied in 1982.

C.1.3 Indirect taxes

Taxes on specific consumption goods

Distributed according to the corresponding expenditure items, generally at the 3-digit level of disaggregation in the PROCOME classification (but 4-digit codes were used in some cases).[3] Thus I imputed taxes on the consumption of tobacco,

[2]The formula distinguishes by family closeness, but I have only used the formula for the closest ones, to which the immense majority of inheritors belonged.

[3]PROCOME is a Eurostat system of classification of consumer goods that was used in HBSs by all EU countries. Further information can be found at Instituto Nacional de Estadística (1992).

alcohol, goods subjected to the luxury tax (cars, jewellery, electrical appliances...), and so on.

A part of the revenue of the Oil monopoly and the Hydrocarbons excise is distributed according to total consumption, since it would impact on the production process and final prices.

General consumption taxes

The General Sales Tax, Stamp duties and transaction tax, and Tariffs have been distributed according to total monetary expenditure (alternatives are explored in section C.3.1).

For VAT I have distinguished the groups of goods affected by each rate in 1990 (reduced, general and incremented). The distribution of the tax revenue among these is given in the online database Badespe (*Base de Datos Económicos del Sector Público Español*, Instituto de Estudios Fiscales). The reduced rate is applied to food, public transport, the editorial sector, medicines, school materials, the hospitality sector, spectacles and housing investment. The incremented rate corresponds to the purchase of cars, jewellery, boats, and so on.

C.2 Average Effective Tax Rates by tax

Here I present AETRs for deciles of individuals (ranked by pre-tax equivalent income), for the main taxes in each year. Generally, I have chosen the ones representing at least 4% of total tax revenue. IGRPF in 1970 is an exception: it only meant 0.8% of revenue, and is presented precisely to show its insignificance. In 1982, the Luxury tax represented 3.8% but I still include it for coherence between the tables. The same reason is behind the inclusion of Tariffs in the last year.

TABLE C.1: Average Effective Tax Rates by deciles, year 1970

	IRTP	IGRPF	ISOC	CSTFE1	IGTE	LUJO	IIEE	CEXT
Decile 1	0.02	0.00	5.32	5.60	19.23	14.56	5.90	24.80
Decile 2	0.25	0.00	1.23	11.09	2.65	2.80	1.23	3.42
Decile 3	0.56	0.00	1.16	12.60	2.22	2.33	1.14	2.86
Decile 4	0.74	0.00	1.14	12.57	2.06	2.23	1.14	2.66
Decile 5	0.97	0.01	1.08	11.63	1.98	2.28	1.15	2.55
Decile 6	1.16	0.01	1.11	11.19	1.85	2.13	1.11	2.38
Decile 7	1.28	0.01	1.08	10.44	1.74	2.02	1.12	2.25
Decile 8	1.40	0.03	1.09	8.99	1.63	2.02	1.16	2.11
Decile 9	1.54	0.10	1.16	7.65	1.55	2.15	1.28	2.00
Decile 10	1.51	0.40	1.55	5.38	1.36	1.85	1.14	1.76
Top 5%	1.35	0.58	1.85	4.30	1.25	1.68	1.04	1.61
Top 1%	0.94	1.07	2.58	2.07	0.86	1.13	0.70	1.11

Source: Author's calculations.

IRTP (*Impuesto sobre los Rendimientos del Trabajo Personal*): labour income tax. ISOC (*Impuesto de Sociedades*): Corporation tax. IGRPF (*Impuesto General sobre la Renta de las Personas Físicas*): personal income super-tax. CSTFE1: Social Contributions under Hypothesis 1. IGTE (*Impuesto General sobre el Tráfico de Empresas*): General Sales tax. LUJO: Luxury tax. IIEE (*Impuestos Especiales*): excises on alcohol, petroleum products, and so on. CEXT: Tariffs and other taxes on international trade.

TABLE C.2: Average Effective Tax Rates by deciles, year 1982

	IRPF	ISOC	CSTFE1	IGTE	LUJO	IIEE	CEXT
Decile 1	0.06	9.45	1.90	34.72	11.40	8.43	24.97
Decile 2	2.09	2.06	8.46	5.60	2.68	2.93	4.03
Decile 3	4.36	1.55	13.15	3.32	1.76	2.09	2.39
Decile 4	5.14	1.49	15.23	2.84	1.68	2.14	2.05
Decile 5	5.53	1.47	16.48	2.61	1.37	1.93	1.88
Decile 6	5.90	1.43	16.75	2.44	1.60	1.87	1.76
Decile 7	6.29	1.40	16.72	2.31	1.42	1.88	1.66
Decile 8	6.59	1.42	16.87	2.14	1.38	1.75	1.54
Decile 9	7.11	1.36	16.72	1.94	1.40	1.66	1.40
Decile 10	8.78	1.79	15.37	1.63	1.15	1.47	1.17
Top 5%	9.84	2.14	13.24	1.54	1.13	1.42	1.11
Top 1%	11.97	3.29	8.04	1.19	0.80	1.03	0.85

Source: Author's calculations.

IRPF (*Impuesto sobre la Renta de las Personas Físicas*): Personal Income Tax. ISOC (*Impuesto de Sociedades*): Corporation tax. CSTFE1: Social Contributions under Hypothesis 1. IGTE (*Impuesto General sobre el Tráfico de Empresas*): General Sales tax. LUJO: Luxury tax. IIEE (*Impuestos Especiales*): excises on alcohol, petroleum products, and so on. CEXT: Tariffs and other taxes on international trade.

TABLE C.3: Average Effective Tax Rates by deciles, year 1990

	IRPF	ISOC	IEPPF	CSTFE1	IVA	IIEE	CEXT
Decile 1	10.69	18.47	0.00	2.13	82.50	64.98	11.69
Decile 2	7.31	5.70	0.00	8.61	20.66	8.85	2.71
Decile 3	6.51	4.44	0.00	13.75	12.43	5.29	1.59
Decile 4	6.68	4.15	0.00	16.44	10.34	4.27	1.31
Decile 5	7.47	4.14	0.01	16.69	9.39	3.92	1.18
Decile 6	8.33	4.00	0.02	16.79	8.13	3.22	1.01
Decile 7	9.00	3.99	0.04	17.50	7.88	2.94	0.95
Decile 8	9.98	3.84	0.06	17.16	7.31	2.83	0.87
Decile 9	10.96	4.02	0.12	16.51	6.71	2.03	0.78
Decile 10	14.02	4.54	0.41	14.99	5.95	1.59	0.66
Top 5%	15.67	4.58	0.59	13.99	5.27	1.14	0.58
Top 1%	19.06	6.84	1.48	8.33	3.64	0.58	0.38

Source: Author's calculations.

IRPF (*Impuesto sobre la Renta de las Personas Físicas*): Personal Income Tax. ISOC (*Impuesto de Sociedades*): Corporation tax. IEPPF: Wealth Tax. CSTFE1: Social Contributions under Hypothesis 1. IVA (*Impuesto sobre el Valor Añadido*): Value Added Tax. IIEE (*Impuestos Especiales*): excises on alcohol, petroleum products, and so on. CEXT: Tariffs and other taxes on international trade.

C.3 Alternative (robustness) estimations

C.3.1 Consumption taxes

There is some better data for indirect taxation in the year 1980, disaggregated by INE for a study undertaken in the IEF in the course of preparations for the introduction of VAT. I have used these data to perform two alternative estimations that show no significant deviation from the baseline ones, thus reinforcing the general procedure.

- Domestic consumption taxation: Calatrava and Martínez-Aguado (1985) calculated rates by sector using the input-output table (in this way estimating the cumulative effect of IGTE), and those were used by Argimón et al. (1987) to obtain rates by consumption groups and calculate indirect tax incidence on the Household Budget Survey. They cover IGTE, ICGI, Luxury Tax, Excises, Fiscal Monopolies and Fiscal Licence. I have used their tax rates and compared the resulting AETR over Disposable income by deciles with those from my baseline estimation. The results show the same trend, meaning that the impact of the different estimation procedure is not significant. AETRs are not very distant from those given in Argimón et al. (1987), but mine display higher regressivity in the lower deciles: this is attributable

to different procedures of correction of the Disposable income given by the HBSs (that study used provincial-level data).

- Tariffs: INE also provided disaggregated tariffs revenue by sectors in 1980 (the only year for which I have been able to find this information). This allows to impute to the corresponding expenditures the taxes falling on final consumption, while maintaining other revenues on total monetary outlays (the disaggregated quantities are 47% of the total). The results are reassuring: AETRs by deciles change for the most in 0.09 percentage points. It can be concluded that using import taxes as a whole does not introduce a serious problem.

C.3.2 Incidence of social contributions

As is discussed in the methodological section, I have estimated an alternative scenario under different assumptions on the incidence of Social contributions, because of the lack of consensus about their impact in the Spanish economy. Hypothesis 2 imputes 50% of the contributions to labour, 25% to businesses (income from individual ownership and capital) and 25% to consumption. This estimation may reflect a situation where workers have gained enough bargaining power to resist the full backwards shifting of this tax onto them, and could be more plausible for the post-transition period (and consistent with a negative effect of social contributions on the levels of employment).

The results are different from the baseline estimates shown in the text, because these contributions made up a very significant part of total tax revenue. With a portion of them falling on capital, they seem a lot less regressive, and this drives the total to a considerable extent: the levels of progressivity and redistribution obtained under hypothesis 2 are higher (less negative) than under the baseline estimation.

In 1982, Social contributions were the most important tax in the system, representing 46% of that year's revenue (and 12% of GDP); therefore, with this alternative hypothesis the system appears a lot less regressive in the beginning of the eighties than at the end, displaying a more intense cycle. However, the same general conclusion about the negative impact of taxes on inequality is still valid.

TABLE C.4: Progressivity and Redistribution under Hypothesis 2

		1970		
	Direct	Soc. Contr.	Indirect	Total
K	0.1161	-0.0320	-0.1368	-0.0456
AETR	4.78	8.84	9.74	23.36
RS	0.0057	-0.0042	-0.0173	-0.0203
		1982		
	Direct	Soc. Contr.	Indirect	Total
K	0.1026	0.0009	-0.1796	-0.0131
AETR	10.26	16.76	8.54	35.56
RS	0.0115	-0.0028	-0.0182	-0.0157
		1990		
	Direct	Soc. Contr.	Indirect	Total
K	0.0805	-0.0207	-0.2327	-0.0433
AETR	17.60	17.21	13.55	48.36
RS	0.0155	-0.0062	-0.0411	-0.0626

Source: Author's calculations.

C.3.3 Incidence of the corporation tax

Three alternative estimations have been calculated concerning this tax, due to the uncertainty about its economic incidence:

- Alt. A: 100% on capital. This is an extreme possibility, done for comparability with works that consider it (fundamentally earlier ones). Nunns (2012) reports that the Tax Policy Center in USA recently changed from 100% to 80% on capital.
- Alt. 2: 70% on capital, 30% on consumption; following the approach taken by Uriel (2003) for Spain.
- Alt. 3: 30% on capital, 70% on labour; according to several recent empirical work with data from US and Europe (Arulampalam et al., 2012; Dwenger et al., 2011; Fuest et al., 2013; Liu and Altshuler, 2013) and which fits the developments in theory (e.g. Randolph, 2006).

In all cases, the incidence considered for the Corporation tax is also applied to the part paid by corporations of other taxes (Fiscal Licence, Equity Issuance tax, Tax on the Income from Capital, and so on). As can be seen in table C.5, all alternative hypotheses are more progressive than the baseline, entailing a reduction in the RS index of 1-2 Gini points for the most in absolute terms. Thus, the general

conclusion of the analysis holds: the tax system got less regressive, and also more negatively redistributive (in a non-monotonic way).

TABLE C.5: Alternative incidence of the Corporation tax

		1970		
	Alt. 1	Alt. 2	Alt. 3	Baseline
K	-0.0579	-0.0728	-0.0813	-0.0849
RS	-0.0243	-0.0293	-0.0316	-0.0332
		1982		
	Alt. 1	Alt. 2	Alt. 3	Baseline
K	-0.0104	-0.0205	-0.0230	-0.0274
RS	-0.0138	-0.0198	-0.0211	-0.0239
		1990		
	Alt. 1	Alt. 2	Alt. 3	Baseline
K	-0.0288	-0.0425	-0.0397	-0.0485
RS	-0.0442	-0.0600	-0.0552	-0.0667

Source: Author's calculations.

C.3.4 Other alternative estimations

Alternative calculations have been performed for the Real Estate tax (with the hypothesis of 50% sharing of the burden between the owner and the occupier) and considering different percentages of assumption by households of the local taxes on land plots. The results are not shown here, since they change the indices very marginally. This is not surprising, given the small share of these taxes in total revenue (Real Estate Taxes: 1.1%, 1.1%, 1.7% in 1970, 1982 and 1990 respectively; local land plot taxes: 0.9%, 0.7%, 0.5%).[4]

C.3.5 Public benefits as part of pre-tax income

Some studies make the methodological choice of using as income reference (denominator in the calculations of AETR and ordering variable for Gini indices) a "wide" gross income which includes public benefits. This is not done in other works, such as Piketty and Saez (2007), while the criterion followed in Bengtsson et al. (2015) is to add only those which are subject to direct taxation.[5] I have also

[4]The prevalence of owner-occupied housing in Spain also contributes to the quantitative irrelevance of the alternative estimation in the case of the Real Estate Tax.

[5]In the case of Spain, and following the definition of the Personal Income Tax base, this would mean including retirement and sickness pensions, but not unemployment or disability benefits. However, unemployment benefits are liable to Social Security contributions.

estimated all the indicators with this alternative framework, in order to compare both.

There are conceptual differences between both calculations. Using Pre-tax income as I have defined it in the main text has the drawback of picturing the lower end of the distribution as extremely poor (with many households having very scarce or no market income at all, and thus above 100% or even infinite tax rates). Many of these families are led by old-age pensioners. Arguably, if the public benefit system did not exist, their income would be higher than zero (they might have saved for a private pension); and furthermore a part of what they receive as a benefit is not a pure "transfer" but delayed salary income. In this sense, depicting them as households with null income is an extreme of two options. But it is the choice consistent with:

- Being able to abstract the incidence of taxation from that of public expenditure.
- Considering Social contributions as a tax and introducing them in our analysis as such.
- Judging that public benefits are to a great extent a redistributive transfer; i.e., that recipient households would have significantly lower income if not benefiting from them (as found by Bandrés and Cuenca (1996) for pensions in Spain).

On the contrary, including public benefits in pre-tax income entails not being able to correctly separate the analysis of public expenditure, because it is already included in our reference income. It also means depicting society as less unequal than it is (public benefits being redistributive). The "true" pre-tax distribution probably lies somewhere in the middle of both scenarios.

As was said in the text, HBSs data do not allow to separate public benefits from private transfers for the first two years analysed.[6] Even though for 1990 it would be possible to do it, to keep consistency in table C.6 I have defined Pre-tax income as Gross Factor Income + all Transfers. I call these results Scenario B, while the baseline framework is Scenario A.

[6] As was said before, 89.5% of total transfers received by households in 1990 were public, a percentage that might have been lower in preceding years.

Resulting from this methodological change, inequality in pre-tax incomes is lower (33.87 in 1970, 33.79 in 1982 and 35.01 in 1990)[7]. The tax system appears less regressive, making the Gini index increase 2.3 points the first year, then only around 1, then again 2.3. The difference with the Scenario A specification grows over time, as a logical consequence of public benefits developing during the period.

Hypothesis 2 regarding Social contributions makes a higher part of the burden fall on top deciles (via partial incidence on capital and employers' incomes; see section C.3.2). Therefore, under the alternative estimation, the tax system looks close to proportional, specially in 1982. However, the profile of effective tax rates by percentiles under both hypotheses still shows significant downward-sloping stretches in the lower classes (first 10-20% of households). The RS index fails to indicate any significantly positive impact of taxes on the distribution of income.

TABLE C.6: Progressivity and redistribution under Scenario B

	Social Contributions Hypothesis 1				Social Contributions Hypothesis 2			
				1970				
	Direct	Soc. Contr.	Indirect	Total	Direct	Soc. Contr.	Indirect	Total
K	0.1364	-0.1397	-0.0873	-0.0618	0.1285	-0.0080	-0.0958	-0.0169
AETR	4.20	7.82	8.56	20.58	4.21	7.78	8.57	20.55
RS	0.0058	-0.0143	-0.0105	-0.0232	0.0055	-0.0017	-0.0113	-0.0106
				1982				
	Direct	Soc. Contr.	Indirect	Total	Direct	Soc. Contr.	Indirect	Total
K	0.1280	0.0022	-0.1046	0.0128	0.1185	0.0592	-0.1109	0.0355
AETR	8.37	13.76	6.96	29.09	8.38	13.68	6.97	29.03
RS	0.0110	-0.0045	-0.0091	-0.0070	0.0102	0.0067	-0.0095	0.0042
				1990				
	Direct	Soc. Contr.	Indirect	Total	Direct	Soc. Contr.	Indirect	Total
K	0.1485	-0.0161	-0.1604	0.0033	0.1394	0.0198	-0.1645	0.0117
AETR	14.32	14.16	11.03	39.50	14.34	14.03	11.04	39.41
RS	0.0234	-0.0074	-0.0240	-0.0226	0.0220	0.0011	-0.0245	-0.0141

Source: Author's calculations.

Pre-tax incomes defined as gross market income + all transfers received.

[7]Equivalent Pre-tax incomes, weighting by household size.

C.4 Data sources for the international comparison

C.4.1 Direct tax rates

- US, UK and France: Piketty and Saez (2007).
- Sweden: Bengtsson et al. (2015)

C.4.2 Direct taxes and transfers

- EU-15 countries: Immervoll et al. (2007).
- Other-OECD countries: Wang and Caminada (2011).

C.4.3 Tax-benefit systems

- Argentina (2006): Cornia et al. (2011).
- Brazil (2009): Lustig (2011).
- Chile (2003): Jorratt (2010).
- Colombia (2003): Barreix et al. (2006).
- Mexico (2000): Goñi et al. (2011).
- Uruguay (2005): Roca (2010).
- US (1982-2009): Congressional Budget Office (2012).
- UK (1977-2009): Barnard et al. (2011).

Appendix D

Appendices to Chapter 4

D.1 Homogenization of databases for the discrepancy analysis

In this methodological appendix I explain the adjustments undertaken to make the survey and the tax data comparable.

1. The population in both databases is not completely coincident. My unit of analysis is the taxpayer, obligated both to pay tax and to file a return. I have thus modified in this sense the structure of the data in the HBSs, where the focus is on the household, and excluded both individuals who filed only to obtain refunds of excessive withholding (and paid no net tax) and those with incomes under the threshold that legally required filing (who had very small participation in total tax paid).[1]

2. Type of return: when the tax was created, the taxpayer unit was the family, and thus all members receiving incomes should make a joint tax return. This feature was modified after mobilization by high-income families with two income-earners, who would pay significantly lower tax if allowed to file separately. They won this case in 1988, and thus starting in that fiscal year couples have the option to file independently or jointly. The first choice is rational for those over a certain threshold of income, and where the share of the second earner is significant. This has been simulated in the HBS for 1990, replicating the information in the tax data. However, to ensure an

[1]The limit of this obligation was 300,000 pesetas in 1982 and 900,000 pesetas in 1990. It is noteworthy that these thresholds did not coincide with the non-taxable minimum, which did not exist as such until 1988, and was 648,000 pesetas in 1990. An additional problem arises in 1990, when imputed incomes from the owner's house were not to be considered for this limit, but cannot be distinguished in the IEF data.

homogeneous exercise over the years, married couples filing separately in 1990 have been merged into one observation.

3. Types of incomes: the fiscal database would allow us to further distinguish among self-employment regarding the type of tax base estimation procedure (namely accountancy-based or presumptive), but this is not possible in the HBSs; as well as the separation of movable and fixed capital incomes.[2]

4. We do not have information on pensions received in 1982 in the survey data. Therefore...

   (a) For the aggregate discrepancy, I add pensions to the denominator, with information from Ministerio de Trabajo (1991) (first, I have subtracted 22% as an approximation of the part corresponding to households under the income threshold, from Bandrés, 1993). Without doing this, the labour and total ratios would be over-estimated (at 86% and 63% respectively).

   (b) For the discrepancy by levels, pensioners have been dropped from the tax data, so the comparison refers exclusively to active population. In any case, during the first years after the introduction of the tax there was certain discussion as to whether public benefits should be included in the base, which was finally set at the supreme national court: unemployment and disability pensions were excluded in 1983 and 1986 respectively, while regular old age pensions were subject to tax. Recall, however, that these revenues were paid by the state and withheld at source, so fraud in them is not expected.

5. Negative values in self-employment and capital incomes in the 1982 tax data have been changed to 0 before the comparison, to avoid potential bias given that there are no negative values in the HBS observations.

6. In order to obtain averages for the filing population, the HBS sample has been re-weighted to match the characteristics of the tax data sample, with respect to region, marital status and labour market status.

[2] In 1990 capital incomes have some disaggregation in the HBS. It is, however, not fully coincident with the fiscal definition, because mortgages paid cannot be distinguished and deducted from imputed rents from owner-occupied housing. Therefore, compliance in movable capital would be over-estimated and the opposite effect would be true for fixed capital.

7. The averages are then calculated over all observations in each income-region category. This means that partial non-reporting of certain incomes is subsumed with their under-reporting. The alternative procedure, using only the observations with each kind of income, would entail assuming that partial non-reporting is non-existent.

D.2 Alternative discrepancy: by income levels

In the text, discrepancy by income levels has been obtained as a result of a composition effect, after comparing the means for type-region combinations. Earlier works on the sort, however, calculated the compliance ratios directly comparing the means of type-level combinations, thus assuming that there is no re-ranking as a result of income under-reporting. This is the case of Fiorio and D'Amuri (2005), whose calculation corresponds to:

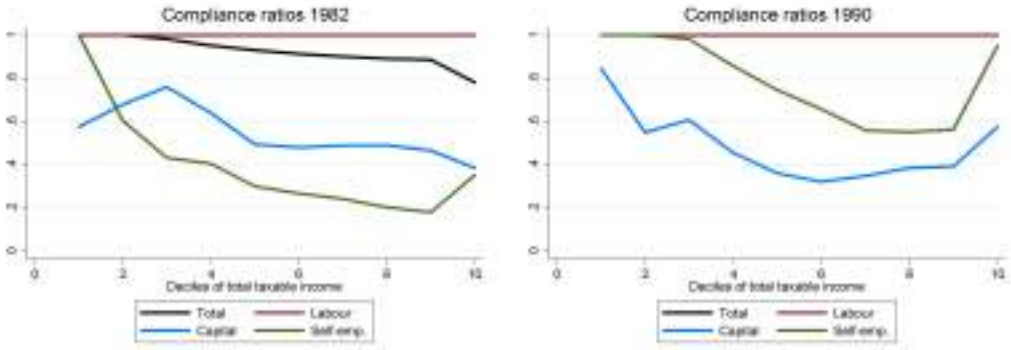
$$C_{sj} = \frac{Y_{Rsj}}{Y_{Ssj}} \tag{D.1}$$

where C_{sj} stands for compliance ratio of income source s at income level j, Y_R represents average income reported in the tax returns and Y_S average income reported in the HBSs. C_{sj} is expected to be lower than one, indicating the existence of evasion.

The results of these calculations, by deciles, are shown in figure D.1. They display something like a U shape for self-employment, and also for capital incomes in 1990. The total tax base is not shown to be significantly under-reported for any income level in 1990 (presumably a result of the previously mentioned under-adjustment in the HBS).

This procedure would be unreliable in the presence of significant re-ranking: if taxpayers get ordered differently because of their reporting behaviour, to the extent that they changed their quantile, it is not consistent to compare the two distributions directly. Such was the motivation of the Matsaganis et al. (2010) approach. The extent of re-ranking and the validity of the assumptions underlying both procedures rests, however, unknown. Reality probably lies somewhere in between.

FIGURE D.1: Estimated compliance ratios by income deciles à la Fiorio & d'Amuri



Source: author's calculations with IEF panel data and HBSs (re-weighted). Following Fiorio & d'Amuri (2005).

Total compliance is not visible in the graph in 1990, since it is estimated at 100% for all levels (see text about the under-estimation of incomes in the survey).

D.3 Variable definitions

Table D.1 shows the definition of the income variables from the IEF panel in terms of the fields in the original database. The "narrow" definition is only possible in 2001, and is applied in an alternative calculation in order to estimate a wider concept of evasion-and-base-voidening (see section D.5). In 1982 and 1990 there are no reductions of incomes available in the original micro-data.[3]

D.4 Summary statistics of variables

Table D.2 presents the summary statistics of the variables used in the regressions.

[3]In legal terms, the concept applied originally to calculate the tax base was the *'Rendimiento Neto'* (income net from obtainment expenses), and not, as later on would be the *'Rendimiento Neto Reducido'*, where additional reductions had been granted. This does not mean that in the 1982 tax there were no tax base reductions, but these were not specific to the income components before the calculation of the tax base.

TABLE D.1: Variable definitions

Variable	Definition	1982	1990	2001	2001 (narrow)
RNT	Labour Income	c3	c3	c4+c6+c7	n.a. (c7)
RNCM	Movable Capital Income	c9	c6+c9	c10+c11+c12	c12
RNCI	Fixed Capital Income	c22	c12	c13+c16+c17	c13+c17
RNSE_D	Self-Employment I. (direct assessment)	-	-	c18+c19+c20	c18+c19
RNSE_O	Self-Employment I. (presumptive assessment)	-	-	c21	c21
RNSE	Self-Employment Non-Agrarian Income	c25+c28	c15+c18	RNSE_D+RNSE_O	RNSE_D+RNSE_O
RNAA	Self-Employment Agrarian Income	c31	c21	c23	c23
RNSETOT	Self-Employment Total Income	RNSE+RNAA	RNSE+RNAA	RNSE+RNAA	RNSE+RNAA
ORN	Imputations and Exempt Incomes	c32+c33+c34	c22+c23+c24+c27	c24+c25+c26+c27+c49	c24+c25+c26+c27+c49
IP	Capital Gains	c35+c36+c37	c36+c37+c43+c44	c28+c44	c28-c29+c44-c45-c46
OREN	Other Incomes	ORN+IP	ORN+IP	ORN+IP	ORN+IP
RNEG	Negative Incomes	All when negative	All when negative	All when negative	All when negative

Notes: all incomes are net from obtainment expenses.
There is no 'narrow' definition of Labour Income, since it is to be kept wide because it is used as reference.
Some reductions of the tax base are not available in the data (specially in self-employment incomes).

TABLE D.2: Summary statistics of variables

1982				
Variable	Mean	Std. Dev.	Min	Max
Tax credit	96	1,811	0	210,000
Donations	642	12,072	0	1,400,000
Labour income	889,072	689,260	0	3,08E+07
Movable capital income	60,768	372,551	0	5,33E+07
Fixed capital income	27,478	182,627	0	4,59E+07
Self-employment income	89,185	463,205	0	5,45E+07
Other incomes	7,915	206,139	0	3,93E+07
Negative incomes	-14,189	96,495	-2,52E+07	0
Married	0.76	0.43	0	1
Pensioner	0.03	0.16	0	1
Dependants	1.25	1.35	0	10
Taxdiff*	-298	126,467	-6,345,692	1,04E+07
Disability	0.03	0.17	0	1
Housing investment	52,022	186,870	0	7,750,000
Wealth	0.01	0.08	0	1
Citysize1	0.04	0.19	0	1
Citysize2	0.04	0.20	0	1
Citysize3	0.09	0.29	0	1
Citysize4	0.19	0.40	0	1
Effective taxpayer**	0.92	0.27	0	1
2001				
Variable	Mean	Std. Dev.	Min	Max
Tax credit	5.65	95.28	0	1.22E+05
Donations	28.26	476.42	0	6.10E+05
Labour income	17,397.87	30,922.56	0	5.43E+07
Movable capital income	972.36	10,830.52	0	1.71E+07
Fixed capital income	653.51	3,446.79	0	6.74E+05
Self-employment income	2,446.83	12,356.13	0	2.82E+06
Other incomes	1,152.11	33,488.74	0	1.67E+07
Negative incomes	-60.95	1,386.54	-1.41E+06	0
Married	0.69	0.46	0	1
Female	0.34	0.47	0	1
Age	45.15	14.82	16	100
Dependants (allowance)	1,875.42	2,305.81	0	38,014.00
Taxdiff*	-203.41	7,048.98	-4.50E+05	6.47E+06
Housing investment	2,460.98	3,546.78	0	1.20E+05
Joint return	0.30	0.46	0	1
Wealth	0.16	0.37	0	1
Citysize1	0.03	0.17	0	1
Citysize2	0.04	0.19	0	1
Citysize3	0.08	0.27	0	1
Citysize4	0.16	0.36	0	1
Effective taxpayer**	0.90	0.30	0	1

Source: author's calculations. All incomes are defined in positive terms, with the negatives aggregated in a specific variable (see equations). Several of these variables are used in their logged form in the estimations.

The unit is pesetas in 1982, and euros in 2001.

* Taxdiff is the tax differential (tax due - total withholdings) *before* the application of the tax credit for donations (see text).

** Effective taxpayer signals returns with positive tax due (this is shown for informational purposes, since it is not included in the estimations).

D.5 Donation equation models

Table D.3 presents the donation equation models that have been run. The text shows the results of my preferred estimation, together with those of the 'Censored OLS' approach (always using the preferred sample definition).

TABLE D.3: Models and samples used

SAMPLE	ESTIMATION STRATEGY	ROBUSTNESS
Original	Censored OLS	Pensions as only reliable category (2001)
Restricted	Two-step: Probit + nl*	Narrowly-defined incomes (2001)
Adjusted*	Tobit	Quadratic term in k (2001)
	Heckman (direct)	Separating deciles 1-5, 6-10

Notes: preferred results marked with *. All estimations strategies have been run for all samples, for each year.

Sample definitions: the restricted sample excludes observations with reported donations over the legal deduction limit (which was established as a percentage of the tax base). The adjusted sample imputes these a donation equal to the maximum allowed.

The robustness estimations generally serve to confirm our main conclusions. The equation with only pensions as reference (only 2001) did not yield significant non-compliance for wages, while the coefficients for other income sources did not change with respect to the baseline.

The model with narrow definitions of income (only 2001) was meant to aim for a wider concept of tax-evasion-and-base-voidening, which would include the effects of all reductions in the tax base. It did not, however, yield results significantly different from the baseline estimation.

Looking for different compliance behaviours across the income scale *in any given income source*, I have performed estimations with quadratic terms in k, as explored by Feldman and Slemrod (2007). These equations provide some evidence of quadratic positive effects for fixed capital and self-employment incomes (but the one-step regression failed to converge). The separation of the observations into two groups according to income deciles entailed obtaining higher underreporting estimates for the top group (with the lower group only having perceptible fraud in movable capital, and self-employment just at the 10% level). This would mean that our estimations of the regressive effect of tax evasion would be a lower bound (because they are obtained imputing the same behaviour to taxpayers in all income levels). Nevertheless, most of the taxpayers with donations are found in deciles 6-10, so the reliability of the bottom group is rather low.

Appendix E

Appendices to Chapter 5

E.1 Sources

1. Archival sources
   - Archivo Central del Ministerio de Hacienda
   - Archivo del Congreso de los Diputados
   - Archivo del Partido Comunista de España
   - Archivo de la Fundación Conferencia Anual Francisco Fernández Ordóñez
   - Archivo General de la Administración
2. Press
   - Hemeroteca de la Biblioteca Nacional de España
   - Hemerotecas online de El País y ABC
3. Electoral data: from the website of the *Junta Electoral Central*, in: http://www.juntaelectoralcentral.es/cs/jec/elecciones/generales. This has been complemented with population data from INE (*Estimaciones intercensales*).
4. Surveys: see table E.1.

TABLE E.1: Surveys on taxation attitudes cited in this study

Year	Conducted by	Published in	Sample
1965	G. Schmölders, U. Köln	Strümpel (1967) and Strümpel and Alvira (1975)	N=1023 (household heads)
1971	IEF	Margallo and García (1971)	N=100 (household heads, direct taxpayers in Madrid)
1971	IEF	IEF (1972), García (1972, 1975) and Strümpel and Alvira (1975)	N=3200 (household heads; direct taxpayers)*
1974	IEF	Alvira and García (1975)	N=1600 (household heads)
1975	IEF	Alvira and García (1976)	N=1189 (household heads)
1976	IEF	Alvira and García (1977)	N=1200 (household heads)
1980	FIES	Alvira and García (1981)	N=1212 (household heads)
1985-86	FIES	Alvira and García (1987)	N=1200 (household heads)
1996	ISSP - CIS	available in ISSP webpage	N=2494 (both sexes)
1985-2005	CIS	available in CIS webpage	

Notes: The surveys were initially conducted only among urban population, with progressively lower cutting levels over the years. This does not longer apply to CIS' surveys at the end of the period.
*IEF (1972) analyses a sub-sample (N=1220) of this survey.

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