TAX NEUTRALITY ON SAVING ASSETS.
THE SPANISH CASE
BEFORE AND AFTER THE TAX REFORM

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ABSTRACT

The primary aim of this research is to provide a background to help us identify the impact of taxes related to savings. The proposed measure to assess to which extent alternative ways of savings are differently treated by the tax system is based on the methodology originally developed by King and Fullerton: the effective tax rates.
Furthermore, the concept of Degree of Fiscal Privilege is applied in order to provide a deep insight of the relative distortion introduced by the set of tax provisions in respect a neutral situation in which taxes treat equally all type of saving assets.
Bearing this purpose in mind, it will be considered the Personal Income Tax in operation as of the 1st January 1998 and the 1st January 1999 due to the recent process of Personal Income Tax reform carried out in Spain.
In the light of results, we find support for the expected lack of neutrality (i.e. a wide dispersion of effective tax rates among alternative saving vehicles) both under the 18/91 law and the 40/98 law. However, in the savings taxation arena it is possible to identify a trend towards greater doses of simplicity and neutrality as means of a closer treatment between capital income and capital gains returns.
Finally, our analysis suggest that an empirical analysis is still needed in order to explore the attractiveness of savings assets after the tax reform's effects have taken place.

LIST OF ABBREVIATIONS

AVFTP	actual value of the final tax payments
AVATP	actual value of annual tax payments
b	bonus rate of 95% from the old `Capital Rents Tax´
br	base reductions (fixed amount in percentage terms)
C	capital accumulated in C years
d	coefficient of dividend's imputation
dtl	deduction from the tax liability
DE	deductible expenses from labour income
E	capital income exemption amount of pt. 200.000
ETR	effective tax rate
FIM	Shares Investment Funds
FIAMM	Money Market Asset's Investment Funds
$\mathbf{i_h^n}$	nominal rate of interest of asset `h´
$\mathbf{i_h^r}$	real rate of interest of asset `h´
K	proportion of the top limit reduction from the taxable base
-L	period of time between the income is obtained and the date of tax payment or devolution
$\mathbf{m_h}$	withholding tax rate at the source of asset `h´
m*	withholding taxes for labour income
M	number of years after 1994
N	number of years before 1994
P'	proportion of annuity considered as capital income
P	proportion of annuities considered as capital income (18/91 Law)
Pp	proportion of permanent annuity considered as capital income (40/98 Law)
Pt	proportion of temporary annuity considered as capital income (40/98 Law)
$\mathbf{r_h^{Rb}}$	real rate of return of asset `h´ before taxes
$\mathbf{r_h^{Nb}}$	nominal rate of return of asset `h´ before taxes
$\mathbf{r_h^{Rn}}$	real rate of return of asset `h´ net of taxes
r	nominal discount factor
Rc	reduction coefficients for capital gains as the number of years from acquisition date to 1994.
R	annual permanent rent
RC	reduction coefficients for income generated over more than two years (40/98 law)
SIM	Share Investment Societies
$\mathbf{t_j}$	statutory marginal tax-rate of individual `j´,
t*	tax rate of the old `Capital Rents Tax´ equal to 24 per cent.
tc	capital gain tax rate (including all taxes: ts+te)
td	dividends tax rate
te	tax rate on the personal level payment
ti	tax rate on collective life insurance contracts
tico	tax rate on collective life insurance contracts and capitalisation operations
tp	tax rate on pension funds
ts	corporate tax rate
TB	taxable base
Y	number of asset's holding years
$\mathbf{w_{hj}}$	tax wedge
$\boldsymbol{\alpha}$	percentage of distributed dividends
$\mathbf{(1-\alpha)}$	percentage of non distributed dividends
$\boldsymbol{\Phi}$	special tax provisions in force
$\dagger_{\mathbf{hj}}$	overall marginal taxation of asset `h´ held by individual `j´ which
$\boldsymbol{\pi}$	expected inflation rate
$\boldsymbol{\pi}$**c**	actualisation coefficient for inflation over the period from 1994 to the disposal date

CHAPTER 1

Introduction

1.1 Background and Aims of the Study.

The primary aim of this research is to provide a background to help us identify the impact of taxes related to savings. In particular, we will analyse tax neutrality through the different tax provisions in force, and how these impact on the different saving vehicle's profitability.
On such grounds, one might address the following questions:

1- Why a research on savings taxation?
2- Why the Spanish Personal Income Tax has been chosen?
3- How is the Spanish Tax System investigated?

With regard to the first issue, the study focuses on the savings taxation because there is a theoretical and empirical support for arguing the saving's sensitiveness to taxes, both in aggregate and in relative terms. According to that, taxes play an important role in explaining the level of economic growth in a country. Having said that, the lack of tax neutrality will be analysed in terms of distortions among alternative allocations of savings depending upon taxation criteria which, in turn, will have an impact on the final saving's profitability. A rational saver will, therefore, take into account all these tax considerations at the time of making the appropriate investment decision.

Secondly, the study concentrates on the Spanish Personal Income Tax, which appears to be the key element when analysing savings behaviour in the personal sphere. What is more, there has been in Spain a recent process of tax reform, which offers an opportunity for analysing the tax neutrality improvement that has been achieved through this process.

Thirdly, the study aims to present a wide and detailed analysis of this tax reform by investigating two main research areas:

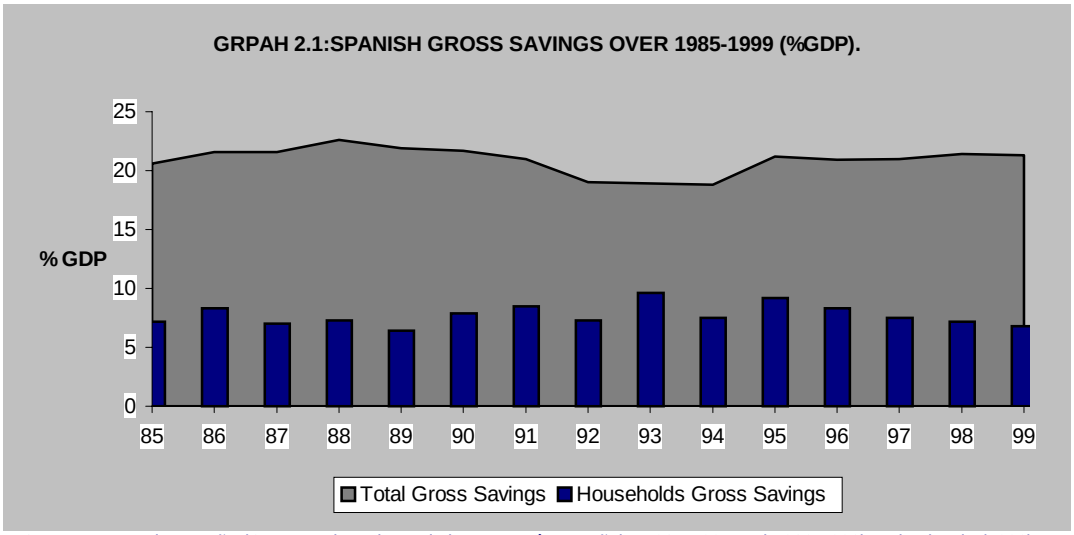
1- Capital income generating assets
2- Capital gains generating assets.

Each of those areas aims to fill the gaps in existing literature about the comparative effective taxation of those assets before and after the tax reform. Even though the Spanish literature related to the 18/91 law's effects is quite extensive, for the moment relatively few investigations of the 40/98 law have been carried out. The more recent analyses of the topic that are currently available appear in the bibliography at the end of the study. Due to the fact that none of the existing studies has analysed the proposed research areas from the effective taxation perspective, the study deals with an important topic.

1.2. General Evolution and Composition.

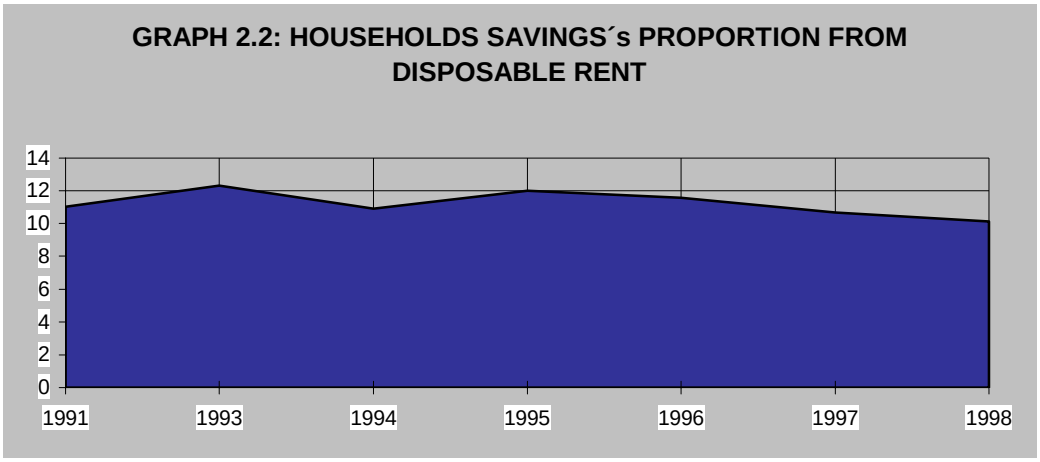
Starting from the consideration that an increase of savings leads to a virtuous circle of investment expansion, this might be seen as a key issue for economic growth in a country. For this reason, it is worthwhile to devote attention to saving’s relative level and composition across time. The first step in explaining the general evolution of aggregate savings is to devise what are the main reasons behind saving. Generally speaking, the saving decision is a response to one or more of four major motives such as lifecycling, precautionary, saving for bequest and purchasing lumpy assets. Even though this list is neither exclusive nor exhaustive, it is representative of what changes can be expected in saving behaviour depending upon the motive for doing so. Therefore, in spite of the level of taxation in a country, savings for precautionary reasons tend to be more stable across time while those corresponding to lumpy purchases are more volatile.

The Spanish situation in terms of Gross Household Savings over the period 1991 up to 1998 (including 1999´s forecast by Laborda, 1999) is presented in **Graph 2.1**. Operationally, Gross Savings can be defined as Gross Disposable Income minus Current Consumption for each of the economic sectors such as Corporate, Households and Public Administration.
From the Graph below it can be appreciated that the Spanish economic crisis in early 1993 have an impact on household savings because during the crisis they considerably increase. Signals of weakness appear during the following months and savings reached their lowest level in the succeeding period. This phenomenon highlights the precautionary attitude of Spanish households, which reduce current consumption when there is economic uncertainty about the future crisis solution, and do the opposite when the economy is favourably evolving. Forecast for the 1999 tend to confirm a stagnancy in the gross saving level, even though there can be appreciated a smooth decline.



Source: Banco de España (Cuentas Financieras de la Economía Española, 1985-1994 and 1989-1998) and Laborda (1999)

Analysing the proportion of disposable rent saved by households, it shows marked changes. Even though disposable rent does not substantially decrease during crises, the proportion of savings increases as it can be seen from **Graph 2.2**. This behaviour confirms the aforementioned precautionary attitude of Spanish savers. From 1995 onwards, the decrease of the marginal propensity for saving is a continuous process and this reduction has been occurred in favour of consumption increases.

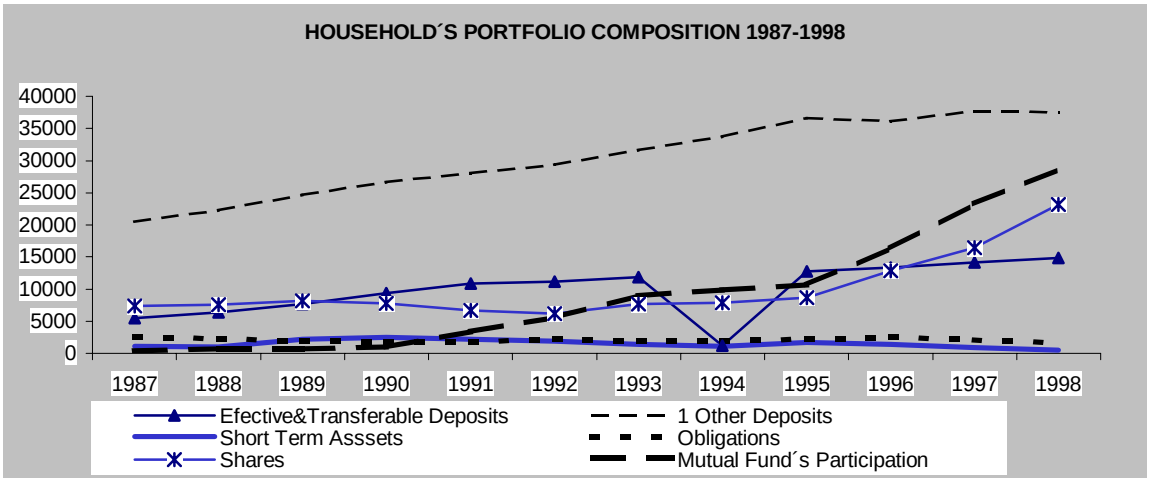


Source: Banco de España (Cuentas Financieras de la Economía Española, 1985-1994 and 1989-1998).

In terms of savings composition we will consider the pattern of household's savings during the period from 1985 to 1999. The primary concern will be to detect changes in the way in which the household's wealth is distributed among different assets.

At this juncture no attempt will be made to determine to what extent the personal income tax is influencing the relative composition of savings. The approach used consists of examining holding levels of different assets at the end of various calendar years. From **Graph 2.3** it appears clear that savings composition has not been a stable process across time. The main trends that can be distinguished are firstly, the `other deposits´ category which includes both deposits in national currency and deposits in foreign currency as the predominant category across this period. Secondly, it is registered a markedly decline in the volume of `effective and transferable deposits´ during the year after the crisis. As it has been pointed out, the gross savings have increased during 1993, and hence money for

consuming tends to be lower during the following year. `Mutual funds´ rose from 1990 onwards, showing a linear increase and reached 1998 they started to exponentially grow. `Shares´, on its part, experienced a stable process up until 1995 and thereafter a marked increase within the same trend of mutual funds, but below their level. Lastly, the evolution of both `short term assets´ and `obligations´ does not show significant changes around the level of pt. 2000 thousand million, but in the case of short term assets there is a trend of smooth decreases in the last two years of analysis.



Source: Banco de España (Cuentas Financieras de la Economía Española, 1985-1994 and 1989-1998).
In pt. thousand millions.
[1] `Other deposits´ include deposits in national currency and foreign currency.

1.3. Necessity of a Personal Tax Reform in Spain.

The reform of taxes on personal income in Spain has been over the recent years a major preoccupation of governments. Since 1979 there have been several attempt for adapting the tax system to social, economic and technological changes, however, none of them supposed a comprehensive reform. We can refer to those as an accumulation of fiscal dispositions that, at the end, tried to solve specific problems in the sphere of personal taxation.

In regard to the tax treatment of savings under the 18/91 law, numerous criticisms have been made on the grounds of its lack of neutrality. One of the major concerns when designing the new taxation of savings is precisely to minimise, as far as possible, adverse effects of taxes distorting alternative allocations among savings products. Hence, the shift from interventionism to greater doses of neutrality with the new tax law in force is a measure warmly approved.
Particular concerns have been expressed for reducing the wide scope of tax relieves on savings. What it is clear in practice is that these provisions, once in place, acquire a vocal constituency for their preservation so they are not easy to remove (Institute for Fiscal Studies, 1994). At the other extreme, government debt instruments benefit from tax-privileged schemes providing an advantage against other alternatives for investment. In some cases, due to the higher nominal value of public debt titles, only high rate taxpayers would be able to invest in those, so governments are directly contributing to variations in fiscal privilege between different types of taxpayers.

In the light of the high internal mobility of savings and the better financial culture of individuals, the key issues in designing the tax reform process in Spain were reflected in Lagares Committee as follows:
1. Improvement of tax neutrality by allowing a more homogeneous treatment among financial assets.
2. Guarantee of equity and fairness principles.
3. Consideration of tax policies in the European Union for designing a competitive tax system.
4. Consideration of capital market's sensitiveness since taxation can interfere in the efficient allocation of resources.
5. Reinforcement of fiscal controls in order to prevent problems of fraud and evasion.
6. Simplicity as the goal for calculating the final tax liability.

Advocates of the tax reform carried out have emphasised that, overall, the reform leads to a more adequate fiscal framework according to European circumstances. It has also been considered that free movements of capital within the EU since 1989 can provoke a delocalisation of savings. Accordingly, governments have introduced a favourably treatment to non-residents who do not pay taxes on interest income, while residents have to pay the tax at their marginal rate. This problem can become even more pronounced with the beginning of the Euro because exchange-rate costs and its risk will be removed from the European sphere. On such grounds the proposed Directive for harmonisation of interest taxation can mitigate the aforementioned risk of delocalisation.

1.4. Methodology.

The proposed measure to assess to what extent alternative ways of savings are differently treated by the tax system is largely based on the González-Páramo (1991) methodology; the effective tax rates. This basically consists of calculating the marginal tax rate for alternative ways of saving by taking into account not only the statutory or schedule personal income tax rate, but also other aspects of the tax system, which determine the profitability of investment assets. Among other there can be cited whether or not withholding taxes are levied, reductions from the taxable base are performed and so on and so forth. There will also be considered the presence of different rates of inflation and, hence, the adjustments to be made in order to calculate taxable returns.

The total tax wedge is seen as the total distortion caused by taxes which, in turn, can be appraised as to whether they provide disincentive for new savings, and more particularly, whether taxes distort the form of saving's materialisation. On such grounds, the saver perspective is adopted under a vantage of different economic scenarios determined by the researcher's criterion.

Furthermore, the concept of Degree of Fiscal Privilege is applied in order to provide a deep insight of the relative distortion introduced by the tax provisions as against a neutral situation in which taxes treat equally all type of saving assets.

1.5. Structure of the Study.

This study is structured by analysing in chapter 2 the proposed methodology for appraising the effective taxation of capital income and capital gains, emphasising the particular changes to the general model in each case.

Analysis and discussion of the results are conducted in chapter 3 basically by comparing the effective tax rates and degrees of fiscal privilege before and after the tax reform.

Finally, chapter 4 offers some concluding remarks and outlines the limitations of this research providing some suggestions for further research in the future.

CHAPTER 2

Analysis of Savings Tax Neutrality: Proposed Methodology

2.1 Introduction

In this section we present the theoretical model for calculating effective tax rates, which seems to us to fulfil the needs for the research problem in question. This measure has been originally developed by King and Fullerton (1983) in the corporate tax sphere. Its adaptation to the Spanish case has been carried out by González-Páramo (1991) who appraised this concept in the fields of personal income assets taxation. The decision is to use this methodology referred to financial assets and, hence, introduce all changes that have occurred as a result of the tax reform. The aim is to construct a general set of equations for both capital income and capital gain assets which include all sort of tax arrangements and, therefore, specify for each type of asset the particular changes in respect of the general case. It will be taken the Personal Income Tax in operation as of the 1st January 1998 and the 1st January 1999.
Bearing this purpose in mind, it is necessary to explain in detail the equation's terms with respect to both Effective Tax Rates and the Degree of Fiscal Privilege, according to the tax provisions under the 18/91 Law and the 40/98 Law.

2.2 Effective Tax Rates and Degree of Fiscal Privilege Definitions.

At the time to apply this general methodology, temporal series are not available because the new personal income tax has not been fully complied with by taxpayers. For the first fiscal year in which the new legislation is in force (1999), the relevant data will be collected by the Treasury Department in June 2000. Consequently, the aim is to assess the impact of the recent Spanish tax reform from a theoretical point of view.

`Effective tax rates´ can be defined according to OECD (1991) as taking into account not only the statutory or schedule personal income tax rate, but also other aspects of the tax system which determine the investment's profitability.
On such grounds, a `fixed-p approach´ of the King and Fullerton methodology is adopted as for a constant real pre-tax rate of return for all sorts of financial assets. The post-tax rate of return is calculated for each asset according to their nature, their amount and their timing. Thereafter the difference between the pre-tax and the post-tax rates of returns is expressed as a percentage of the real pre-tax return on the investment as means of the effective marginal tax rate levied on each asset under study.
The saver perspective is adopted under a vantage of different economic scenarios determined by the researcher's criterion. However, regarding the "tax wedge" concept some subjective and objective conditions have to be specified. The reason for subjective distinctions is because the Personal Income Tax in Spain is defined as a progressive tax rate schedule and, hence, taxpayers are subject to different tax rate depending upon their level of annual income. In respect of objective distinctions, the reason for doing so is the wide array of existing tax arrangements for particular assets. Summarising, two parameters can influence the tax wedge such as type of saver (relative position on the tax schedule) and type of asset.
The main points, which will configure the framework of the analysis, are as follows:

A) Subjective Element: stylised saver-cases are used to represent a wide diversity of circumstances related to individuals. That is the case of standard individuals in different brackets of the tax rate schedule, i.e. average and higher rate taxpayers. Similarly, family and marriage conditions will be specified for each standard saver because due to the presence of tax deductions, the tax bill depends upon the number of children, economic marriage regime, retired persons dependent on the taxpayer, and so forth.
B) Objective Element: includes the more common set of financial assets to which a saver has access. Alternatives among which savers will choose to invest are classified as generating either capital income (cash receipts) or capital gains (increased value of the asset). The criterion upon which this classification was chosen is due to significant differences in their tax treatment. This information is contained in Table II (Law 18/91) and Table III (Law 40/98) in the Appendix.
C) Temporal Element: two periods will be analysed corresponding to different Tax Laws in force, before 1999 (under 18/91 Law) and 1999 onwards (under 40/98 Law).
D) Economic Scenario: relevant variables related to the case under study will be the level of nominal interest rate and inflation rate. These will remain unchanged during each year of analysis. As a matter of fact, no attempt is made to use actual interest rates; rather the rate is used consistently throughout so attention is directed towards the impact of taxation. Moreover, various changes in the assumptions are made in order to generate results under different contexts of inflation and interest rates.
E) Additional considerations: the investment in financial assets is wholly financed by savings available at the time of the investment. This means that external financing is out of consideration[i].

Summarising, the framework is organised as follows:

Country: Spain.

Personal Income Tax in force: - before tax reform; 18/91 Law,
- after tax reform; 40/98 Law.

Financial Assets: - capital income assets,
- capital gains assets.

		LAW 18/91	LAW 40/98
Taxpayers:	-average: pt. 3,400.000	t_j = 28,00%	t_j = 28,30%
		m*= 18,00%	m*= 24,50%
	- high: pt. 11,100.000	t_j = 56,00%	t_j = 48,00%
		m*= 33,00%	m*= 36,00%

(where t_j is the marginal statutory tax rate while m* corresponds to the withholding tax rate levied at origin on labour income).

Situation: - holding of asset (annual income),
- disposal of asset (realised capital gains).
-

Economic conditions: - nominal interest rates of 7% and 9% respectively,
- inflation rates of 4% and 6% respectively.

In this connection, there will be explained the relevant concepts for the study whose meaning appears in the list of abbreviations, which figures in page 4. The set of equations below summarises the procedure for calculating those as:

(1)- Nominal Rate of Interest

$$i_h^n = \{(1+ i_h^r)(1+\pi)\}-1$$

where: i_h^n nominal rate of interest of asset `h´; $i_h^r$ real rate of interest of asset `h´ and π expected inflation rate.

The real rate of interest can be calculated as approximating to:

(2)- Real Rate of Return Before Taxes

$$r_h^{Rb} = r_h^{Nb} - \pi$$

where: r_h^{Rb} real rate of return of asset `h´ before taxes and $r_h^{Nb}$ nominal rate of return of asset `h´ before taxes.

(3)- Real Rate of Return Net of Taxes

$$r_h^{Rn} = r_h^{Nb}(1-\dagger_{hj}) - \pi$$

where: r_h^{Rn} real rate of return of asset `h´ net of taxes and $\dagger_{hj}$ overall marginal taxation of asset `h´ held by individual `j´ which:

(4)- Marginal Statutory Tax Rate

$$\dagger_{hj} = \dagger_{hj}(t_j, \Phi, r)$$

where: t_j - statutory marginal tax-rate of individual `j´, Φ - special tax provisions in force and **r** - nominal discount factor.

Consequently, the tax wedge can be expressed as in the equation below:

(5)- Tax Wedge

$$w_{hj} = r_h^{Rb} - r_h^{Rn} = \{r_h^{Nb} - \pi\} - \{r_h^{Nb}(1-\dagger_{hj}) - \pi\} = r_h^{Nb}\dagger_{hj}$$

Recalling the concept of `effective tax rate´ as the proportion which represents the tax wedge (w_{ih}) over the real rate of return before taxes:

(6)- Effective Tax Rate

$$ETR = \frac{w_{hj}}{r_h^{Rb}} = \frac{r_h^{Rb} - r_h^{Rn}}{r_h^{Rb}} = \frac{r_h^{Nb} \dagger_{hj}}{r_h^{Rb}}$$

As far as Equation 6 is concerned, effective tax rates will be calculated for different: economic scenarios, taxpayers and financial assets.
In order to introduce all these considerations into the equation, the numerator of the expression might be rewritten according to González-Páramo (1991) as follows:

(7)- Tax Wedge

$$r_h^{Nb} \dagger_{hj} = r_h^{Nb} \left\{ m_h - (t_j + m_h - br) (1+r)^{-L} \right\}$$

where: m_h withholding tax rate at the source of asset `h´, $t_j$ marginal statutory tax-rate for individual `j´, **br** base reductions (fixed amount in percentage terms), **r** nominal discount factor and $^{-L}$ period of time between the income is obtained and the date of tax payment or devolution (i.e when the tax liability is negative).

Substituting this expression into Equation 6, we have:

(8)- Effective Tax Rate

$$ETR = \frac{r_h^{Nb} \left\{ m_h + (t_j - m_h - br) (1+r)^{-L} \right\}}{r_h^{Rb}}$$

Having reached this point, the next step is to determine for each asset `h´ under study the different tax provisions in force regarding the equation's terms. Similarly, the marginal tax rate will be fixed for each standard saver `j´.

2.3 The 18/91 Personal Income Tax Law.

A) According to Equation 8 above, we can define the **Capital Income** into the "Income from other Financial Assets" category as follows[1]:

TABLE 2.1: CAPITAL INCOME GENERATING ASSETS: EQUATION´S TERMS

	m_h	L (+)	L(-)
Bank Deposit	0,25	0,5	1
State Obligations	$\frac{0,25\,(1+r)+0,25}{2}$	0,5	1
Treasury Letters	0	1,5	2
Promissory Notes and Zero Coupon Bonds	0,25	1,5	2
Financial Account			
- Treasury Letters	0,25	0,5	1
- State Obligation	0	0,5	1
Bonus Obligation	m* = (1-b) t*	where `b´ is the bonus rate of 95% from the old `Capital Rents Tax´ with t* =24%. ETR = $\frac{r_h^{Nb} \left\{ (1-b)\, t^* + (t-t^*) (1+r)^{-L} \right\}}{r_h^{Rb}}$	

[1] It has been assumed that all these capital income returns computed have exceeded the legal reduction of pt. 29.000 from the taxable base.

B) **Corporate shareholders**. Two cases can be distinguished:

a) the Corporate distribution of α% of earnings as dividends (taxed as capital income at `td´ rate) and
b) the Corporate accumulated reserves of (1-α)% of earnings (taxed as capital gain at `tc´ rate).

Having said that, the net of tax nominal return is expressed as follows:

(9)- $r_h^{Nn} = r_h^{Nb} \{ \alpha (1- td) + (1-\alpha) (1-tc) \}$ and, hence, the effective tax rate is:

(10)- $ETR = \frac{r_h^{Nb} \{ \alpha\, td + (1-\alpha)\, tc \}}{r_h^{Rb}}$

Moreover, the different tax rates applying to dividends (td) and capital gains (tc) must be defined according to different tax provisions as follows:

a/- **Dividends**: since 1995, for eliminating the double taxation of dividends there exists an `imputation system´ in the taxable base and a `deduction system´ from the tax liability. Depending upon the issuer of assets, the term `d´ is: 40%, 25% or 0% respectively, so:

(11)- $td = ts + (1-ts)\, m + (1-ts)\, (1-RC)\{(1+d)\, t - m - br - d\} (1+r)^{-L}$

where: **ts**- corporate tax rate (0,35), **d**- coefficient of imputation, **m**- withholding tax rate (0,25), **br**- base reduction (29.000/dividend), **L(+)** - 0,5 and **RC** - base reduction coefficients equal to Zero.

b/ - **Capital Gains**. **U**ntil 1996 there was a procedure under which a set of `reduction coefficients´ were applied for the nominal capital gain depending upon the holding period of the asset. This system is still temporarily in force under a transitory regime[ii], but only for those assets bought before 1994 (i.e. more than two years before 1996 when this tax provision began to be in force). Its main advantage is that after "Y" number of years holding the assets (from acquisition to 1996), it is possible for realised capital gains to be exempt of taxes . So, for one pt. of capital gain, the taxable base was:

(12)- $TB = 1 - \{(Y-2)\, rc\}$

where: **TB**- Taxable Base, **Y**- Number of holding years and **rc**-Reduction Coefficients depending upon the date of acquisition.

For simplifying purposes, let us call the number of holding years before 1996 exceeding two: Y-2 = "N".
According to this transitory regime, for calculating the holding period of the asset we must distinguish two subperiods of time. Thus, up until 1994 the `reduction coefficient system´ is applied while for the remaining years up until the date of disposal, the `actualisation coefficient system´ is used. In both cases, it is assumed that a FIFO procedure operates for computing the number of holding years for each share.

In order to calculate the capital gain's effective tax rate (tc) we need to define three terms: te; personal level payment, ts; corporate level payment and tc; includes all taxes. The `te´ tax rate is the one which make equal the `actual value of the final tax payment´ on the whole capital gain at the realisation, and the `actual value of annual tax payments´ on hypothetic accumulated nominal capital gains[iii].

i-Actual value of the final tax payments (AVFTP)

** capital gain before 1994 ; (N years)*

(13)- $AVFTP = \frac{\{\{1+ r\,(1-ts)\}^{N} - 1\} * \{1-(N*Rc)\} * (1-RC)\{m+ (t-d-m)(1+r)^{-L}\}}{(1+r)^{N-1}}$

where: **ts**- is the corporate tax rate as a fixed 35 per cent, **t** -is the personal income tax rate (in our case fixed at 20 per cent)[iv], **Rc**- is the reduction coefficient of 25% for the number of years from acquisition date to 1994, **RC**- is a base reduction coefficient in this case equal zero, **m**- is the capital income withholding tax, that in this case is equal zero and **d-** is a tax liability deduction which in this case is equal zero.

** capital gain after 1994; (M years)*

(14)- $AVFTP = \frac{\{\{1+ r\,(1-ts)\}^{M} - (1* \pi c)^{M} - E\} * (1-RC)\{m+ (t-d-m)(1+r)^{-L}\}}{(1+r)^{N+M-1}}$

where: **πc** -is the actualisation coefficient for inflation over the period from 1994 to the disposal date, which apply to the acquisition value according to the guidelines contained in the Table 2.2.

E- is the exemption amount of pt. 200.000, which applies to capital gains generated over more than two years (except for the shares from Collective Investment Institutions). In percentage terms it might be expressed as: $E = 200.000 / \{\{1+ r (1-ts)\}^{M} - (1* \pi c)^{M}\}$ assuming an initial investment of pt. 1,000.000.

RC-is a base reduction coefficient in this case equal zero

m- is the capital income withholding tax, that in this case is equal zero

d- is a tax liablity deduction, which in this case is equal zero

TABLE 2.2:

ASSET'S ACQUISITION	ACTUALISATION COEFFICIENTS[1]
Before 1994	1,020
1995	1,083
1996	1,042
1997	1,020
1998	1,000

[1]These coefficients only apply if the holding period at all is more than one year.

ii-Actual value of annual tax payments (AVATP):

(15)- $AVATP = te\ r\ (1-ts) + \frac{te\ r\ (1-ts)\{1+ r\ (1-ts)\}^{N+M-1}}{(1+r)^{N+M-1}}$ operating the progression:

(16)- $AVATP = \frac{te\ (1-ts)}{ts} * \frac{(1+r)^{N+M} - \{1+ r\ (1-ts)\}^{N+M}}{(1+r)^{N+M-1}}$

So, for obtaining the value of t_e we need to equalise AVATP and AVFTP:

(17)- $te=\frac{\{(1+r)^{M}\{\{1+ r\ (1-ts)\}^{N} -1\}* \{1-(N*rc)\} + \{1+r(1-ts)\}^{M} -(1* \pi c)^{M} - E\}* ts* (1-RC)\}m+ (t-d-m)(1+r)^{-L}\}}{(1-ts)\ \{(1+r)^{N+M} - \{1+ r\ (1-ts)\}^{N+M}\}}$

On the whole, we need to obtain the capital gains tax rate on shares as: tc =ts+te, so

(18)- $tc=ts+\frac{\{(1+r)^{M}\{\{1+ r(1-ts)\}^{N} -1\}*\{1-(N*rc)\}+ \{1+r(1-ts)\}^{M} -(1* \pi c)^{M} - E\}*ts* (1-RC)\}m+ (t-d-m)(1+r)^{-L}\}}{(1-ts)\ \{(1+r)^{N+M} - \{1+ r\ (1-ts)\}^{N+M}\}}$

C) Shares from Collective Investment Institutions. There must be distinguished three main groups according to the institution's nature and their operational conditions.

a) SIM (Share Investment Societies) which are not quoted on an Exchange Market and are not taxed under the Fiscal Transparency System[v].
For calculating both the tax rate on dividends and capital gains, the same procedure as in section B (Equation 11 and 18) for ordinary corporate shares will be applied.

b) SIM (Share Investment Societies) which are not quoted on an Exchange Market and are taxed under the Fiscal Transparency System. The effective tax rate in that case is defined according to Equation 8 where: m_h is equal zero in this case (no withholding taxes are levied), br is equal zero in this case and $^{-L}$ is equal to 3/2. Then:

(19)- $ETR = \frac{r_h^{Nb}\ t\ (1+r)^{-3/2}}{r_h^{Rb}}$

C) SIM (Share Investment Societies), FIM (Shares Investment Funds) and FIAMM (Money Market Asset's Investment Funds). They follow a special regime because the dividends distributed are subject to withholding taxes, but there is no deduction for double taxation of dividends from the final tax liability (d = 0 because the corporate tax rate for these institutions is 1%). Thus, equation 11 can be rewritten as:

(20)- $td = ts + (1-ts)\{m + (t-m-br)(1+r)^{-L}\}$

In respect of capital gains equation 18 presents the term E equal zero since there is no exemption of pt. 200.000 and ts is equal to 0,01.

(21)- $$tc = ts + \frac{\{(1+r)^{M}\}\{1+r\,(1-ts)\}^{N} - 1\}*\{1-(N*rc)\} + \{1+r\,(1-ts)\}^{M} - (1*\pi c)^{M}\}*ts*t*(1+r)^{-L}}{(1-ts)\ \{(1+r)^{N+M} - \{1+r\,(1-ts)\}^{N+M}\}}$$

D) Life and Disability Insurance Contracts and Capitalisation Operations.

The premiums paid on an annual basis are subject to deductions from the tax liability at a fixed percentage of 10%, but no other reduction is allowed in regard of this type of contract.

a) Capital: the procedure for calculating the tax rate that applies to these returns (qualified as capital gains) is basically the same as in the case of corporate share disposal (Equation 18). The difference is that insurance companies are taxed at the corporate tax rate of 25% (ts) and the tax liability deduction (d= 0,10) is different from zero. Taking into account this information, the same equation 18 can be applied here as `tico´.

b) Permanent Rents: they are considered as capital income. The first step is to calculate the amount of `annual permanent rent´ (R) that can be obtained during `v´ years in order to consume a capital `C´ accumulated in `c´ years. In present value, the following condition might be verified:

(22)- $$R\frac{\{1-(1+r)^{-(v+1)}\}}{1-(1+r)^{-1}} = C\,(1+r)^{c}$$

The next step is to apply the set of coefficients stipulated by the 18/91 Tax Law to this amount (R). These coefficients express the proportion of the rent P´ considered as capital income:

(23)- $$P' = \{(1+P)*(1+Pp)*(1+Pt) - 1\}$$

Under the 18/91 Law, the criterion is based on the age of the recipient (P) and the remaining terms appear to be zero. The `actual value of the final tax payment´ on the rent's receipt (AVFTP) as well as the `actual value of annual tax payments´ as accumulated returns into the fund (AVATP) are calculated as follows:

(24)- $$AVFTP = R*P'*(1+r)^{1-N}\{m+(t-m-d)(1+r)^{-L}\}$$

where: **R**- annual permanent rent, **P´**- proportion of annuity considered as capital income, **m**- capital income withholding tax and **d**- tax liability deduction.

and substituting the equation 23 in the expression above, we have:

(25)- $$AVFTP = R*\{(1+P)*(1+Pp)*(1+Pt) - 1\}*(1+r)^{1-N}\{m+(t-m-d)(1+r)^{-L}\}$$

while on the other side,

(26)- $$AVATP = t_e\, r_h^{Nb}\, N$$

so, for obtaining the tax rate that equates these two expressions, we have:

(27)- $$t_e = \frac{R*\{(1+P)*(1+Pp)*(1+Pt) - 1\}*(1+r)^{1-N}\{m+(t-m-d)(1+r)^{-L}\}}{r_h^{Nb}\, N}$$

Applying the concept of tico = ts+te, and substituting into the above expression we have:

(28)- $$tico = ts + \frac{R*\{(1+P)*(1+Pp)*(1+Pt) - 1\}*(1+r)^{1-N}\{m+(t-m-d)(1+r)^{-L}\}}{r_h^{Nb}\, N}$$

and simplifying the null terms from the expression above we can rewrite:

(29)- $$tico = ts + \frac{R*P*(1+r)^{1-N}\{m+(t-m-d)(1+r)^{-L}\}}{r_h^{Nb}\, N}$$

c) Temporary Rents: the only difference with respect the previous case is that the proportion of the annuity considered as capital income, is not dependant on the age of recipient. In this case, the 18/91 Law establishes P as a fixed 60 per cent of each annuity. Then Equation 28 is simplified as:

(30)- $$tc = ts + R\frac{* P* (1+r)^{1-N} \{m+ (t-m-d) (1+r)^{-L} \}}{{}_{h}^{Nb} N}$$

E) Returns obtained from Pension Funds. According to their tax treatment, each annual contribution can be reduced from the taxable base up to a certain limit (K), while the excess over this limit (1-K) is allowed to be deducted from the tax liability at a fixed percentage. We will consider the two forms in which these returns can be obtained:

a) Capital: we need to calculate the `actual value of the final tax payment´ on the capital realisation (AVFTP) as included into the labour income section:

(31)- $$AVFTP=(1+r_h^{Nb})^N(1-DE)\{m*+(t-m*)(1+r)^{-L}\}(1+r)^{1-N}(1-RC)-Kt(1+r)^{-L}-(1-K)\,dtl\,(1+r)^{-L}$$

where: **(1-DE)-** is a general deduction of expenses from labour income, equal to 5%, **m*-** withholding taxes for labour income, **RC-** reduction coefficient from the taxable base, in this case equal to zero, **K-** proportion of the top limit reduction from taxable base (high rents can reduce the maximum allowed, so k = 1), **dtl-** deduction from tax liability at a fixed percentage.

so taking common factor, the expression changes to:

(32)- $$AVFTP = (1+ r_h^{Nb}) (1-DE) \{m* + (t- m*) (1+r)^{-L} \} (1-RC) - \{ K t + (1-K) dtl \} (1+r)^{-L}$$

On the other side we have the `actual value of annual tax payments´ as accumulated returns into the fund (AVTP) as:

(33)- $$AVATP = t_e\, r_h^{Nb}\, N$$

then, for obtaining the tax rate that equates these two expressions we have:

(34)- $$t_e = \frac{(1+ r_h^{Nb}) (1-DE) \{m* + (t- m*) (1+r)^{-L} \} (1-RC) - \{ K t + (1-K) dtl \} (1+r)^{-L}}{r_h^{Nb} N}$$

The tax rate on pension funds' (tp) is expressed as:

(35)- $$tp=ts+\frac{(1+ r_h^{Nb}) (1-DE) \{m*+(t- m*) (1+r)^{-L}\} (1-RC)- \{Kt+ (1-K) dtl \}(1+r)^{-L}}{r_h^{Nb} N}$$

b) Permanent Annuities: Because they are considered as labour income on receipt, the `actual value of the final tax payment´ on the rent's receipt (AVFTP) is:

(36)- $$AVFTP =R (1+r)^{1-N} (1-DE) \{m*+(t- m*) (1+r)^{-L}\} -\{Kt+(1-K) dtl\}(1+ r)^{-L}$$

and recalling equation 33 ($AVATP = t_e\, r_h^{Nb}\, N$) to obtain the tax rate that equates these two expressions, we have:

(37)- $$t_e = R\frac{(1+r)^{1-N} (1-DE) \{m* + (t- m*) (1+r)^{-L} \} - \{K t + (1-K) dtl \}(1+ r)^{-L}}{r_h^{Nb} N}$$

Applying the concept of tp = ts+te, and substituting into the above expression we have:

(38)- $$tp = \frac{ts + R (1+r)^{1-N} (1-DE) \{m* + (t- m*) (1+r)^{-L} \} -\{Kt+(1-K) dtl \}(1+ r)^{-L}}{r_h^{Nb} N}$$

F) Collective Life Insurance Contracts. They have a particular treatment since there is no reduction from the Taxable Base (K=0), but there is still a deduction from the final Tax Liability (dtl). Following the same procedure as in the previous case:

a) Capital: the insurance rate (ti) is expressed according to Equation 35 as follows:

(39)- $ti = ts + \dfrac{(1+ r_h^{Nb}) (1-DE) (1-RC)\{m^* + (t- m^*-dtl) (1+r)^{-L}\}}{r_h^{Nb} N}$

b) Permanent Annuities, using the same notation from Equation 38 we can express:

(40)- $ti = ts + \dfrac{R (1+r)^{1-N} (1-DE)\{m^* + (t- m^*-dtl) (1+r)^{-L}\}}{r_h^{Nb} N}$

Lastly, the concept of **`Degree of Fiscal Privilege´** will be applied in order to give a deeper insight into the relative distortion introduced by tax provisions. The procedure for calculating it can be stated in two steps:

1. Work out the statutory tax wedge corresponding to each taxpayer in the absence of any tax provision. Thus, it will be calculated by multiplying the statutory tax rate times the nominal rate of interest.
2. Obtain the tax rate which applied to the real rate of interest gives an equal tax wedge as that calculated in step 1.
3. Subtract the effective tax rate for each type of asset according to the aforementioned methodology, from the marginal tax rate obtained in step 2.

As an example, if there is an asset with a nominal rate of interest equal to 7%, and the inflation rate is 4%, we will operate as follows:

1º) Tax wedge (average taxpayer) = 28% * 7% = 1,96%
2º) Marginal tax rate´ = 1,96% / 3% = 65,33%
3º) Degree of Fiscal Privilege = 65,33% - ETR and then, the degree of fiscal privilege would be equal to:

(41)- DFP = MARGINAL TAX RATE- ETR

2.4 The 40/98 Personal Income Tax Law.

Applying the new tax provisions contained into 40/98 Law, the aforementioned parameters for calculating effective tax rates, must be reassessed according to Equation 8.

A) Starting with the **Capital Income Asset's** parameters, they can be defined as follows[1]:

TABLE 2.3: CAPITAL INCOME GENERATING ASSETS. EQUATION´S TERMS

	m_h	L (+)	L(-)
Bank Deposit	0,18	0,5	1
State Obligations	$\dfrac{0,18 (1+r)+0,18}{2}$	0,5	1
Treasury Letters	0	1,5	2
Promissory Notes and Zero Coupon Bonds.	0,18	1,5	2
Financial Account			
- Treasury Letters	0,18	0,5	1
- State Obligation	0,18	0,5	1
Bonus Obligation	$m^* = (1-b)\, t^*$	where `b´ is the bonus rate of 95% from the old `Capital Rents Tax´ with t* equal to 24%. ETR = $\dfrac{r_h^{Nb}\{(1-b)\, t^* + (t-t^*) (1+r)^{-L}\}}{r_h^{Rb}}$	

[1] The reduction of pt. 29.000 does not apply, so all capital incomes will be subject to the personal income tax from the first pt.. There is a 30 per cent of reduction when capital income is generated over more than two years.

B) **Corporate shareholders**. Applying the same procedure as under the 18/91 Law we will consider two tax rates corresponding to:

a) α% of distributed earnings taxed at `td´ rate and,
b) (1-α)% of retained earnings taxed at `tc´ rate.

a)- **Dividends**-for eliminating the double taxation of dividends there exists an `imputation system´ in the Taxable Base and a `deduction system´ from the tax liability. The procedure remains the same as under the 18/91 Law

(Equation 11), with the exception of no fixed base reduction (br=0) and the proportional reduction for long term dividends (over more than two years) is different from zero. The equation below is self-explanatory of concepts previously outlined.

(42)- $td = ts + (1-ts)\, m + (1-ts)\,(1-RC)\{(1+d)\, t - m - d)\,(1+r)^{-L}\}$

where: **ts**- corporate tax rate (0,35), **m**- withholding tax rate (0,25), **RC**- of 30 per cent if dividends were generated over more than two years, **d**- coefficient of imputation and **L(+)** - 0,5.

b) - Capital Gains**,** the capital gains tax rate (tc) is again defined as `ts´ plus `te´, which is the tax rate that equates the `actual value of the final tax payment´ on the whole capital gain on realisation to the `actual value of annual tax payments´ on accumulated nominal capital gains.

i- Actual value of the final tax payments (AVFTP)

* *capital gain before 1994*[vi]; applying the previously explained Equation 13 we have:

(43)- $AVFTP = \dfrac{\{\{1+ r\,(1-ts)\}^{N} - 1\} * \{1-(N*Rc)\} * (t-d)\,(1+r)^{-L}}{(1+r)^{N-1}}$

where: **ts**- is the corporate tax rate as a fixed 35 per cent, **t** -is the personal income tax rate (in our case fixed at 20 per cent)[vii], **Rc**- is the reduction coefficient of 25% for the number of years from acquisition date to 1994 and **d**- tax liability deduction in this case as equal to zero.

* *capital gain after 1994;*

The main differences with respect the previous system are that actualisation coefficients are not allowed (π=0) and the exemption from the base has been eliminated (E=0).

(44)- $AVFTP = \dfrac{\{\{1+ r\,(1-ts)\}^{M} - 1\} * t\,(1+r)^{-L}}{(1+r)^{N+M-1}}$

ii- Actual value of annual tax payments (AVATP): Equation 16, under the new 40/98 law, remains the same.

(45)- $AVATP = \dfrac{te\,(1-ts)}{ts} * \dfrac{(1+r)^{N+M} - \{1+ r\,(1-ts)\}^{N+M}}{(1+r)^{N+M-1}}$

Then, for obtaining the value of t_e we need to equate AVATP and AVFTP.

The overall capital gains tax rate on shares is as in the Equation 18 with the following changes: E=0 and π=0.

(46)- $tc=ts+ \dfrac{\{(1+r)^{M}\{\{1+ r\,(1-ts)\}^{N} -1\} * \{1-(N*Rc)\} + \{1+r\,(1-ts)\}^{M} -1\} * ts*t*(1+r)^{-L}}{(1-ts)\ \{(1+r)^{N+M} - \{1+ r\,(1-ts)\}^{N+M}\}}$

C) Shares from Collective Investment Institutions. Following the same procedure as with the 18/91 Law, the three main groups of Collective Investment Institutions can be explained as:

a) SIM (Share Investment Societies) which are not quoted in an Exchange Market and are not taxed under the Fiscal Transparency System.

The tax rates of dividends and capital gains are obtained applying the same procedure as for ordinary corporate shares, but for those institutions taxed at the corporate tax rate of 35 per cent and is an allowance for the deduction for double taxation from the final tax bill.

b) SIM (Share Investment Societies) which are quoted in an Exchange Market but are taxed under the Fiscal Transparency System. The effective tax rate in this case is defined as follows:

(47)- $ETR = \dfrac{r_h^{Nb}\ \ t\ (1+r)^{-3/2}}{r_h^{Rb}}$

c) SIM (Share Investment Societies), FIM (Shares Investment Funds) and FIAMM (Money Market Asset's Investment Funds). The special regime they follow has been substantially modified in the sense that both distributed dividends and capital gains realised on termination by investors are now subject to withholding taxes.

The deduction for double taxation of dividends is not applied since the corporate tax rate applied to these institutions is one per cent, but when they were generated in more than two years, a reduction of 30% can be performed. We need then to rewrite Equation 11 by including the new proportional base reduction (RC) and by eliminating the fixed base reduction (br).

(48)- Dividends: $td = ts + (1-ts)\,(1-RC)\left\{ m + (t-m)\,(1+r)^{-L} \right\}$ (where m=0,25)

(49)- Capital gains: are calculated as in Equation 18 with the following changes: E=0, π=0, d=0 and m = 0,20.

$$tc = ts + \frac{\left\{(1+r)^{M}\left\{\left\{1+ r\,(1-ts)\right\}^{N} -1\right\}* \left\{1-(N*Rc)\right\}+ \left\{1+r(1-ts)\right\}^{M} -1\right\}*ts*\left\{m+(t-m)*(1+r)^{-L}\right\}}{(1-ts)\ \left\{(1+r)^{N+M} - \left\{1+ r\,(1-ts)\right\}^{N+M}\right\}}$$

D) <u>Life and Disability Insurance Contracts and Capitalisation Operations.</u>

The deduction from the tax liability is removed under the new Law, and they are now taxed as any other source of capital income, even if they are received in the form of capital.

a) <u>Capital</u>: it is taxed for the amount that exceeds the sum of premiums paid in each year, and it is subject to capital withholding taxes (m= 25%). For calculating the tax rate of this type of insurance contract (ti) we will proceed by changing Equation 14 as follows: E=0, π=0 and d=0. What is of relevance here is that even though the procedure for calculating the tax rate of this type of insurance contracts remains the same as for capital gains, it has the fiscal consideration of capital income.

(50)- $AVFTP = \dfrac{\left\{\left\{1+ r\,(1-ts)\right\}^{N} - 1\right\}*(1-RC)\left\{m + (t-m)\,(1+r)^{-L}\right\}}{(1+r)^{N-1}}$

where: **RC**- base reduction coefficients (see Appendix).

The AVATP is obtained from Equation 16. Operating these two expressions we will obtain the following `tico´ rate for insurance and capitalisation operations by making equal AVATP and AVFTP:

(51)- $tico = ts + \dfrac{\left\{\left\{1+ r\,(1-ts)\right\}^{N} -1\right\} * (1-RC)\left\{m+(t - m)*(1+r)^{-L}\right\} *ts}{(1-ts)\ \left\{(1+r)^{N} - \left\{1+ r\,(1-ts)\right\}^{N}\right\}}$

b) <u>Permanent Rents</u>: they are still considered as capital income. Following the aforementioned procedure from Equation 23, we will apply the new set of coefficients stipulated by the 40/98 Law to the annual permanent rent (R) to be received. Let denote this proportion of the permanent annuity as `P´.

The `actual value of the final tax payment´ as regular capital income of the rent's receipt (AVFTP) can be expressed with the Equation 25 making P=0, Pt=0 and d=0, obtaining:

(52)- $AVFTP = R* Pp* (1+r)^{1-N} *\left\{m + (t - m)\,(1+r)^{-L}\right\}$

For applying the concept of tico = ts+te, just by simplifying the Equation 28 as:

(53)- $tico = ts + \dfrac{R\ Pp\ (1+r)^{1-N} *\left\{m + (t - m)\,(1+r)^{-L}\right\}}{r_h^{Nb}\ N}$

c) <u>Temporary Rents</u>: the difference with respect to the previous case is that the proportion of the annuity considered as capital income is dependent on the length of the period. In that case, Equation 28 is simplified as:

(54)- $ti = ts + \dfrac{R*Pt* (1+r)^{1-N}\left\{m + (t - m)\,(1+r)^{-L}\right\}}{r_h^{Nb}\ N}$

E) <u>Returns obtained from Pension Funds</u>. Each annual contribution, both from the employer and the employee, can be used to reduce the taxable base up to a certain limit (K), but the excess over this limit (1-K) cannot be deducted from the tax liability (dtl=0). The main difference is that when returns relates to contributions made more than two years ago and they are received as capital, a reduction of 40 per cent can be practised before including this amount into the taxable base. Another difference is the new system for calculating the labour withholding tax, which will be levied on receipt of the pension returns.

a) Capital: the `actual value of the final tax payment´ on the capital gain realisation (AVFTP) is equivalent to Equation 31 with DE=0 and d=0:
The tax rate on pension funds' rate is as in Equation 35 but applying the aforementioned changes:

$$\textbf{(55)-}\ tp = ts + \frac{(1+ r_h^{Nb}) \{m^* + (t-m^*)(1+r)^{-L}\}(1-RC) - (1+r)^{-L} K t}{r_h^{Nb} N}$$

b) Permanent Annuities: For applying the concept of `tp´ we have that Equation 38 appears with DE=0 and d=0 as:

$$\textbf{(56)-}\ tp = ts + R\frac{(1+r)^{1-N}\{m^* + (t- m^*)(1+r)^{-L}\} - (1+ r)^{-L} K t}{r_h^{Nb} N}$$

F) Collective Life Insurance Contracts. Their treatment consists of neither reduction from the taxable base nor deduction from the final tax liability.

a) Capital: when it is generated over more than two years, a set of reduction coefficients on the amount to include into the Taxable Base are applied (RC)[viii].
The insurance capital gain rate is expressed as in Equation 35 with DE=0 and K=0. Then,

$$\textbf{(57)-}\ ti = ts + \frac{(1+ r_h^{Nb})(1-RC)\{m^* + (t- m^*)(1+r)^{-L}\}}{r_h^{Nb} N}$$

b) Permanent Annuities, using the same notation

$AVFTP = r^*(1+r)^{1-N}\{m^* + (t- m^*)(1+r)^{-L}\}$ and

$AVATP = t_e\, r_h^{Nb} N$

so, for obtaining the tax rate that equates these two expressions, we have:

$$\textbf{(58)-}\ t_e = \frac{r^*(1+r)^{1-N}\{m^* + (t-m^*)(1+r)^{-L}\}}{r_h^{Nb} N}$$

The subsequent `ti´ is obtained by modifying Equation 38 as: DE=0 and K=0.

$$\textbf{(59)-}\ ti = ts + \frac{R(1+r)^{1-N}\{m^* + (t- m^*)(1+r)^{-L}\}}{r_h^{Nb} N}$$

Finally, the concept of `Degree of Fiscal Privilege´ will be applied following the same procedure as in equation 41 for the ETR obtained according to 40/98 law's provisions.

2.5 Conclusions.

In this chapter we presented the theoretical model for calculating effective tax rates according to both the 18/91 and 40/98 laws' provisions. It is important to bear in mind that, on the one hand, we will apply unchanged statutory tax rates whilst, on the other hand, there will be considered different scenarios of nominal rates of return and different rates of inflation. Allowing for different economic conditions will enable us to isolate variations in either inflation or interest rates, and those related to specific tax factors.
From the set of equation developed, it is possible to see at the first sight that tax differences between capital income and capital gain's assets have been partially mitigated under the new 40/98 law.
As a whole, what it appears clear is the law's simplicity improvement in the sense of a more homogeneous treatment between these two groups of assets. However, due to the wide diversity of returns considered it does not proceed to make more generalisations based on theoretical equations *stricto sensi.*

CHAPTER 3

Analysis of Results

3.1 Introduction

The first part of the analysis is focused on the capital income generating assets for which there are separately calculated the corresponding effective tax rates (ETR) in 1998 and in 1999 for a vantage of different economic scenarios.
The second part follows the same procedure for analysing effective tax rates corresponding to capital gains and rents (the more representative assets to which the taxpayers have access).
The third part emphasises the changes that have occurred in savings taxation due to the tax reform carried out and, therefore, the assets that benefit more from the new tax law's provisions.
The last part will offer some concluding remarks in the light of results.

3.2 Framework of Study

The framework is organised as considering two scenarios of economic conditions. On the one hand, we stipulate a nominal interest rate of 7% (r) and an inflation rate of 4% (pr). On the other hand, there is a nominal interest rate of 9% (r) and an inflation rate of 6% (pr). The real rate of return is (approximately) constant in both cases. The reason for doing so is based on the decision to adopt a fixed p-approach according to the King and Fullerton methodology.
Two case-taxpayers are under study, the so-called `average taxpayer´ corresponding to an hypothetical situation of total income equal to pt. 3,400.000 who is taxed at a marginal tax rate of 28% in 1998 and at 28,3% in 1999. Secondly, the so-called `high taxpayer´ with a hypothetical total income of pt. 11,100.000 and taxed at a marginal tax rate of 56% and 48% respectively.
Applying the same total income amounts, the corresponding withholding tax rates will be calculated following the same procedure as for calculating the final tax liability. In the case of the 18/91 law, the procedure is different because it takes into account additionally to the total income to be earned during the fiscal year, the number of descendants. Thus, the next information is required for our case of study[ix]:

	Nº of descendants	Withholding tax rate
Annual Total Income		
- more than 3,145.000	0	0,18
- more than 10,108.000	0	0,33

3.3 Presentation of Results

3.3.1 Capital Income Generating Assets

From **Tables 3.1 and 3.2** (r=7% and pr=4%) can be observed the effective marginal tax rates for those assets generating capital income both under the 18/91 in 1998 and in 1999.
In the first place, we analyse the case of an average taxpayer that corresponds to the second column in **Table 3.1** below. As can be appreciated, the more heavy tax burden in 1998 is levied on the State Obligations ownership. Conversely, the Bonus Obligation is the asset with a lower ETR (nearly 12%) immediately followed by dividends from corporate share's ownership (23%), and then, at a considerable distance, by Treasury Letters (59%). The rest of assets considered are taxed at around an average ETR of 64-65%.

TABLE 3.1: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL INCOME (1998).		
NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%		
	Marginal tax rate = 28%	Marginal tax rate = 56%
Bank Deposits	65,10	128,26
State Obligation	66,10	129,26
Treasury Letter	59,03	118,06
Promissory Notes	64,66	123,69
Financial Account:		
- Treasury Letter	65,10	128,26
- State Obligation	63,16	126,32
Bonus Obligation	11,82	74,98
Dividends		
- Short term	23,11	80,58
- Long term	23,11	80,58

Source: Own calculations.

This situation is quite modified by the introduction of the 40/98 law (**Table 3.2**) because, with the sole exception of State Obligations and Promissory Notes, the rest of capital income assets tend to present higher ETR. On such grounds, the Bonus Obligation is still the asset with the lowest ETR (12,5%) but the second position is now occupied by the State Obligations.

Analysing the case of a high taxpayer with marginal tax rates of, respectively, 56% and 48%, it should be noted that the relative ranking of assets is maintained in both cases. The common note for all of these assets is that they are taxed over their real nominal interest rate excepting the Bonus Obligation and the corporate share's dividends with ETR less than 100%, both under the 18/91 and the 40/98 law.

TABLE 3.2: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL INCOME (1999).		
NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%		
	Marginal tax rate = 28,3%	Marginal tax rate = 48%
Bank Deposits	65,23	109,67
State Obligation	50,17	94,60
Treasury Letter	59,66	101,19
Promissory Notes	63,71	105,24
Financial Account:		
- Treasury Letter	65,23	109,67
- State Obligation	65,23	109,67
Bonus Obligation	12,50	56,94
Dividends		
- Short term	23,72	64,16
- Long term	52,48	80,79

Source Own calculations.

If we change the economic conditions to a situation of r=9% and pr= 6% (constant real interest rate of 3%), from **Table 3.3** to **Table 3.4** there is a general trend of increased ETR in all cases. Particularly, an average taxpayer is facing higher tax burdens, but in all cases still presenting a positive real profitability.

Moving now to the case of a high taxpayer, the situation is even more pronounced because some assets under the previous law (Table 3.3) reached ETR´s levels of nearly 164-165% over their real profitability (i.e. bank deposits, state obligations and financial account based on treasury letters). With the new 40/98 law, the effective taxation of these type of assets decline primarily due to the lower marginal tax rate of 48% *versus* the previous 56%. An additional consideration is the equally treatment received by financial accounts, under the 40/98 law, independently from the underlying asset on which they are based.

TABLE 3.3: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL INCOME (1998).

NOMINAL INTEREST RATE = 9% and INFLATION RATE = 6%

	Marginal tax rate = 28%	Marginal tax rate = 56%
Bank Deposits	83,62	164,08
State Obligation	85,27	165,73
Treasury Letter	73,81	147,63
Promissory Notes	82,91	156,72
Financial Account.		
- Treasury Letter	83,62	164,08
- State Obligation	80,46	160,91
Bonus Obligation	15,09	95,55
Dividends		
- Short term	30 85	104,07
- Long term	30,85	104,07

Source: Own calculations.

TABLE 3.4: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL INCOME (1999).

NOMINAL INTEREST RATE = 9% and INFLATION RATE = 6%

	Marginal tax rate = 28,3%	Marginal tax rate = 48%
Bank Deposits	83,60	140,20
State Obligation	64,67	121,28
Treasury Letter	74,61	126,54
Promissory Notes	81,15	133,09
Financial Account:		
- Treasury Letter	83,60	140,20
- State Obligation	83,60	140,20
Bonus Obligation	15,96	72,56
Dividends		
- Short term	31,64	83,15
- Long term	68,27	104,33

Source Own calculations.

3.3.2 Capital Gains Generating Assets and Rents Receipt.

According to the methodology previously explained in chapter 2, the framework is organised as in the case of capital income assets. Two types of returns are considered: capital gains realisation (with N years as the period of their generation) and rents receipt, either permanent or temporary.

We have selected the more representative cases of corporate shares ownership, participation in Collective Investment Institutions such as Share Investment Institutions (i.e. SIM) and Fund Investment Institutions (i.e. FIM), contracts with Life Insurance Institutions, benefits from Pension Plans and, lastly, benefits from Collective Life Insurance Plans.
Some specifications should be made in respect of those incomes. In the case of permanent rent receipt from a Life Insurance Institution, the age of the recipient is determined in order to apply the percentages of those rents considered as capital income:

	Age 36	Age 75
- **18/91 law**:	70%	30%
- **40/98 law**:	45%	20%

Also considered, under the 18/91 law, is the reduction coefficient to the taxable base for Pension Plans and Collective Life Insurance Plans (the term K in the corresponding equation 35 and 38 from chapter 2) which takes values of : K=62% (average taxpayer) and K=100% (high taxpayer).

Having said that, we will firstly analyse how these returns were taxed according to 18/91 law's provisions. From **Table 3.5** (r=7% and pr=4%), it is immediately clear that there is a wide dispersion of ETR. Starting from the situation of an average taxpayer, the lowest ETR corresponds to a capital gain generated over 20 years as a result of a Life Insurance Contract (0,9%) followed by a capital gain, also generated over 20 years, from the disposal of a corporate share (1,2%). On the other extreme, the highest ETR corresponds to a participant's disposal from a SIM (under a fiscal transparency system) which is close to a 60% of its real profitability.
For a high taxpayer, and maintaining the same order of assets, the ETR are respectively 2,3% and 2,4% at the lowest, while the participation in a SIM is the unique case that presents negative real profitability (ETR=118%).
Overall, the reason behind the low taxation of capital gains is the existence of two types of adjustments for calculating their taxable base: reduction coefficients and inflation actualisation coefficients. In all the periods considered of, respectively, 5,10 and 20 years, these two types of adjustments have been performed.
In the case of rent receipt, in 1998 these were subject to higher ETR, either permanent or temporary (around a level of 25-26%). Permanent rents from Pension Plans and Collective Life Insurance Plans are, comparatively to capital gains, better treated by the tax because those are included in the labour income section where there are no reductions applying to capital gains.

As far as capital gains taxation under the 40/98 law is concerned (**Table 3.6**), substantial changes have occurred. Under the 40/98 law, the main modification is that inflation adjustments have been eliminated.
The increasing ranking of ETR for an average and high taxpayer is, firstly, capital gain generated over 20 years from the disposal of FIM´s participation (respectively of 2,3% and 3,8%) while the last place is occupied by the disposal of a SIMM's participation (60% and 102%).
As already mentioned, inflation effects are not corrected for calculating the tax bill and, therefore, capital gain's ETR have comparatively increased. However, in the case of Pension Plans and Collective Life Insurance Plans, just the opposite has occurred because the capital gains taxable amount is allowed to be reduced by 40% when they were generated over more than two years, but it does not apply to permanent rents received from the same concept. Regarding the remaining cases of permanent rents from Life Insurance Institutions, no substantial changes have happened in terms of ETR which are still around their previous level of 25-26%.

Under an alternative scenario of nominal interest rates of 9% and inflation rate of 6%, **Tables 3.7 and 3.8** give and indication of how changes in the stipulated economic conditions can influence the effective taxation of capital gain generating assets.

TABLE 3.5: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL GAINS (1998).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate = 28%	Marginal tax rate = 56%
Corporate Shares		
- Capital gain (N=5)	15,35	30,71
- Capital gain (N=10)	4,24	8,48
- Capital gain (N=20)	1,20	2,41
Collective Investment Institution		
SIM[1]	59,03	118,06
FIM[2]		
- Capital gain (N=5)	22,24	44,48
- Capital gain (N=10)	8,26	16,52
- Capital gain (N=20)	1,60	3,20
- Annual realisation	20,60	41,21
Life Insurance Institution		
- Capital gain (N=5)	12,05	30,79
- Capital gain (N=10)	4,64	11,85
- Capital gain (N=20)	0,92	2,34
- Permanent rents (Age[3]=36, N=10)	25,65	26,61
- Permanent rents (Age=75, N=10)	25,28	25,69
- Temporary rents (N=10)	25,56	26,38
Pension Plans		
- Capital gain (N=10)	25,72	25,19
- Permanent rents (N=10)	24,42	22,61
Collective Life Insurance		
- Capital gain (N=10)	26,71	29,33
- Permanent rents (N=10)	25,87	27,20

Source: Own calculations.
[1] Share Investment Society
[2] Share Investment Fund
[3] Age of the receptionist

TABLE 3.6: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL GAINS (1999).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate= 28,3%	Marginal tax rate = 48%
Corporate Shares		
- Capital gain (N=5)	27,94	47,39
- Capital gain (N=10)	8,98	15,22
- Capital gain (N=20)	2,55	4,32
Collective Investment Institution		
SIM[1]	59,66	101,19
FIM[2]		
- Capital gain (N=5)	29,70	49,18
- Capital gain (N=10)	10,94	18,11
- Capital gain (N=20)	2,27	3,75
- Annual realisation	29,99	49,65
Life Insurance Institution		
- Capital gain (N=5)	17,28	28,95
- Capital gain (N=10)	6,30	10,55
- Capital gain (N=20)	4,62	7,74
- Permanent rents (Age[3]=36, N=10)	25,64	26,08
- Permanent rents (Age=75, N=10)	25,29	25,48
- Temporary rents (N=10)	25,36	25,84
Pension Plans		
- Capital gain (N=10)	25,11	23,52
- Permanent rents (N=10)	24,85	23,08
Collective Life Insurance		
- Capital gain (N=10)	25,85	26,43
- Permanent rents (N=10)	26,43	27,42

Source: Own calculations.
[1] Share Investment Society
[2] Share Investment Fund
[3] Age of the receptionist

TABLE 3.7: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL GAINS (1998).

NOMINAL INTEREST RATE = 9% and INFLATION RATE = 6%

	Marginal tax rate = 28%	Marginal tax rate = 56%
Corporate Shares		
- Capital gain (N=5)	19,94	39,87
- Capital gain (N=10)	5,47	10,93
- Capital gain (N=20)	1,32	2,65
Collective Invest-ment Institution		
SIM[1]	73,81	147,63
FIM[2]		
- Capital gain (N=5)	24,17	48,34
- Capital gain (N=10)	8,25	16,50
- Capital gain (N=20)	1,35	2,70
- Annual realisation	22,67	45,34
Life Insurance Institution		
- Capital gain (N=5)	14,10	36,02
- Capital gain (N=10)	5,02	12,82
- Capital gain (N=20)	0,88	2,24
- Permanent rents (Age[3]=36, N=10)	25,54	26,33
- Permanent rents (Age=75, N=10)	25,23	25,57
- Temporary rents (N=10)	25,46	26,14
Pension Plans		
- Capital gain (N=10)	25,57	25,31
- Permanent rents (N=10)	24,25	22,29
Collective Life Insurance		
- Capital gain (N=10)	26,71	29,32
- Permanent rents (N=10)	25,72	26,82

Source: Own calculations.
[1] Share Investment Society
[2] Share Investment Fund
[3] Age of the receptionist

TABLE 3.8: EFFECTIVE MARGINAL TAX RATES FOR CAPITAL GAINS (1999).

NOMINAL INTEREST RATE = 9% and INFLATION RATE = 6%

	Marginal tax rate = 28,3%	Marginal tax rate = 48%
Corporate Shares		
- Capital gain (N=5)	29,38	49,83
- Capital gain (N=10)	8,74	14,83
- Capital gain (N=20)	2,12	3,59
Collective Investment Institution		
SIM[1]	74,61	126,54
FIM[2]		
- Capital gain (N=5)	30,37	50,88
- Capital gain (N=10)	10,29	17,23
- Capital gain (N=20)	1,77	2,96
- Annual realisation	30,47	51,03
Life Insurance Institution		
- Capital gain (N=5)	16,66	27,82
- Capital gain (N=10)	5,82	9,73
- Capital gain (N=20)	3,97	6,64
- Permanent rents (Age[3]=36, N=10)	25,54	25,89
- Permanent rents (Age=75, N=10)	25,24	25,40
- Temporary rents (N=10)	25,30	25,50
Pension Plans		
- Capital gain (N=10)	25,15	23,63
- Permanent rents (N=10)	24,65	22,79
Collective Life Insurance		
- Capital gain (N=10)	25,84	26,42
- Permanent rents (N=10)	26,19	27,01

Source: Own calculations.
[1] Share Investment Society
[2] Share Investment Fund
[3] Age of the receptionist

By comparing the above two tables to the two previously explained (Tables 3.5 and 3.6), it is straightforward to see that the least sensitive assets with respect to economic condition changes, are the Pension Plans and the Collective Life Insurance Plans. This is because inflation is not taken into account when calculating the amount of taxable base (either under the previous system or the new one).

Focusing the attention on **Table 3.7**, in 1998 there can be appreciated two opposite trends. Firstly, capital gain's effective taxation increases as the nominal interest rates and inflation rate increases, for maintaining a constant real rate of return. Secondly, permanent and temporary rent's effective taxation tends to decline in the same situation, even though they do so by less than 1%.

From **Table 3.8** (40/98 law) it appears clear that no generalisation should be made in respect of capital gains as a whole. For instance, ETR of capital gains from corporate shares or FIM behave differently depending upon the time period for their generation. Thus, when N is equal to 5, an increase in the nominal interest rate leads to an increase in the ETR whereas the opposite is verified when N is equal to 10 or 20 years.

3.3.3 ETR´s changes from 1998 to 1999.

The last part of this section is concerned with the analysis of the ETR´s changes occasioned by the introduction of the 40/98 law in replacing the previous situation.

In the first place, it will be analysed the economic scenario of nominal interest rates of 7% and inflation rate of 4% for average taxpayer obtaining capital income. The asset best treated by the tax reform is the State Obligation with a reduction in its taxation around 16 percentage points. Furthermore, this reduction represents a change of 24% in respect of its situation prior to 1999. The other asset favourably treated is the Promissory Notes, even though with a slight reduction close to one percentage point. The remaining cases appear to be treated worse since they experienced increases in their ETR from less than 1% up to 30 %.
In the case of a high rate taxpayer, state obligation's taxation is reduced around 35% which seems a considerable advantage considering that its level of ETR in 1998 was situated on a bad position of nearly 130% of their real profitability. The second level of ETR´s reductions is situated around a level of 18% and comprises asset's income such as bank deposits, financial account based on treasury letters, promissory notes and bonus obligation. The third level (around 16% of reductions) comprises treasury letters, financial accounts based on state obligations and, lastly, corporate shares (short term).
Going further, an argument that can be generalised is that those assets which have increased their taxation for an average taxpayer show a reduction in the case of a high taxpayer, with the unique exception of dividends from corporate shares (long term).
If we modify the economic conditions, bank deposits show a lower ETR after the tax reform, even though under the scenario of r=7% and pr= 4% quite the opposite has occurred. This is also the case of financial accounts based on treasury letters.

In the fields of capital gains and rents receipt, we found that an average taxpayer is facing a lower level of capital gain's taxation from Collective Life Insurance Plans while, at the other extreme, there are situated capital gains resulting from corporate share's disposal after 5 years with an increased taxation near to 13%.
For a high taxpayer, there are more symmetric changes since the highest drop in ETR is nearly 17% (in that case corresponding to SIM under a fiscal transparency system) while the highest increase is also of nearly 17% (corporate shares with N=5).
Finally, if we consider ETR´s changes being r=9% and pr=6%, it should be noted that an average taxpayer is facing at the same time moderated reductions of less than 1% and pronounced increases of 9%. Contrarily, a high taxpayer taxation is skewed to reductions in their ETR (the maximum is of 21% for SIM while increases are around 10% for corporate shares with N=5).

3.3.4 Degree of Fiscal Privilege.

The procedure for calculating the degree of fiscal privilege has been explained in chapter 2. In particular, equation 41 explains this concept as the difference between the marginal tax rate (applying the statutory tax rate schedule for a given tax wedge) and the effective tax rate for each type of asset.
Table 3.9 below shows how assets generating capital income benefit from the set of legal provisions and to what extent. The statutory tax rate can be appraised as the tax rate schedule applied without any special treatment (e.g. the capital income return times the tax rate corresponding to each taxpayer).
On such grounds, the only asset that presents a negative degree of fiscal privilege for an average taxpayer is the state obligation (-0,8%) as means of an effective taxation higher than a neutral taxation in the absence of tax provisions.

The rest of the cases show positive signs meaning better tax treatment in respect of this neutral situation. The higher the difference between the statutory tax rate (calculated in step two) and the ETR, the more the asset benefits from the set of tax provisions. In that terms, the most extreme case is the bonus obligation whose effective taxation under the previous system was reduced by around 54 percentage points (average taxpayer) and 56 percentage points (high taxpayers) as a result of their privileged tax treatment. This is followed by corporate share's dividends with a reduction between 42 and 50 percentage points, depending upon the type of taxpayer respectively considered.

TABLE 3.9: DEGREE OF FISCAL PRIVILEGE FOR CAPITAL INCOME (1998).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate = 28%	Marginal tax rate = 56%
Bank Deposits	0,23	2,40
State Obligation	-0,77	1,40
Treasury Letter	6,30	12,60
Promissory Notes	0,67	6,97
Financial Account:		
- Treasury Letter	0,23	2,40
- State Obligation	2,17	4,34
Bonus Obligation	53,51	55,68
Dividends		
- Short term	42,22	50,08
- Long term	42,22	50,08

Source: Own calculations.

From **Table 3.10** it should be emphasised that no asset is effectively taxed over its statutory level, either for average or high taxpayers.

Under the new tax law, bonus obligation and corporate dividends (in that case with a period of generation of less than two years[x]) are the assets more favourably treated by law's dispositions, around levels of 42% to 54 %, respectively (average taxpayers) and 48% to 55%, respectively (high taxpayers). On the same line, the state obligation considerably benefit from the new set of law's provisions as compared to the previous situation, that is to say, their relative degree of fiscal privilege has increased.

In addition, the new law equally treats financial accounts based on either treasury letter or state obligation and, consequently, they present the same degree of fiscal privilege. The last comment to be made is that high taxpayers as a whole have seen reduced their degree of fiscal privilege primarily due to the reduction experimented in their level of marginal statutory tax rates.

TABLE 3.10: DEGREE OF FISCAL PRIVILEGE FOR CAPITAL INCOME (1999).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate = 28,3%	Marginal tax rate = 48%
Bank Deposits	0,8	2,33
State Obligation	15,86	17,40
Treasury Letter	6,37	10,81
Promissory Notes	2,32	6,76
Financial Account:		
- Treasury Letter	0,80	2,33
- State Obligation	0,80	2,33
Bonus Obligation	53,53	55,06
Dividends		
- Short term	42,31	47,84
- Long term	13,55	31,21

Source: Own calculations.

Table 3.11 (r=7% and pr=4%) below, analyses to what extent capital gains and rents are differently treated in respect of their neutral taxation (e.g. their profitability taxed at the marginal tax rate of each taxpayer). The procedure employed is basically the same as in the case of capital income assets.
This group of assets will be analysed as a whole rather than considering each particular case. For this purpose, we can observe at the very extremes of the range of values: share investment institution's participation with a relative privilege of 6% (average taxpayer) and 13% (high taxpayer) and capital gains generated over 20 years as a result of Life Insurance Institution contracts (64% and 128%, respectively).
If we analyse for an average taxpayer the range of dispersion around these values, we will obtain a standard deviation of σ equal to 0,16 for capital gains and σ equal to 0,01 for rent's receipt.
Regarding high taxpayers, the range of dispersion is of σ equal to 0,31 for capital gains and of σ equal to 0,02 for rent's receipt. The interpretation of such a result is that, overall, assets generating capital gains offer more opportunities for saving's portfolio management based on fiscal criteria. Accordingly, the form of rent's materialisation does not substantially impact on saver's fiscal privilege. However, rent's receipt from Pension Plans and Collective Life Insurance Plans tend to present higher fiscal privilege than their respective capital gains realisation.
Overall, a high taxpayer is the one who has greater doses of fiscal privilege than compared to an average taxpayer with values higher than 100% in most cases.

Lastly, we will see from the second column of **Table 3.12** (average taxpayer) that under the new law, the degree of fiscal privilege tend to be lower for capital gains while for rents receipt it is registered a smooth increase. Conversely, the case of capital gains from Pension Plans and Collective Life Insurance Plans show fiscal privilege increases.
For a high taxpayer (third column) there is a general fiscal privilege decline as mean of a less generous treatment of law's provisions after the tax reform. Furthermore, in few cases it reaches values above 100% such as the capital gains generated over 20 years.

TABLE 3.11: DEGREE OF FISCAL PRIVILEGE FOR CAPITAL GAINS (1998).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate = 28%	Marginal tax rate = 56%
Corporate Shares		
- Capital gain (N=5)	49,98	99,95
- Capital gain (N=10)	61,09	122,18
- Capital gain (N=20)	64,13	128,25
Collective Investment Institution		
Share Invest.Society	6,30	12,60
Share Invest.Fund		
- Capital gain (N=5)	43,09	86,18
- Capital gain (N=10)	57,07	114,14
- Capital gain (N=20)	63,73	127,46
- Annual realisation	44,73	89,45
Life Insurance Institution		
- Capital gain (N=5)	53,28	99,87
- Capital gain (N=10)	60,69	118,81
- Capital gain (N=20)	64,41	128,32
- Permanent rents (Age=36, N=10)	39,68	104,05
- Permanent rents (Age=75, N=10)	40,05	104,97
- Temporary rents (N=10)	39,77	104,28
Pension Plans		
- Capital gain (N=10)	39,61	105,47
- Permanent rents (N=10)	40,91	108,05
Collective Life Insurance		
- Capital gain (N=10)	38,62	101,33
- Permanent rents (N=10)	39,46	103,46

Source: Own calculations.

TABLE 3.12: DEGREE OF FISCAL PRIVILEGE FOR CAPITAL GAINS (1999).

NOMINAL INTEREST RATE = 7% and INFLATION RATE = 4%

	Marginal tax rate = 28,3%	Marginal tax rate = 48%
Corporate Shares		
- Capital gain (N=5)	38,05	64,61
- Capital gain (N=10)	57,05	96,78
- Capital gain (N=20)	63,48	107,68
Collective Investment Institution		
Share Invest.Society.	6,37	10,81
Share Invest. Fund.		
- Capital gain (N=5)	36,33	62,82
- Capital gain (N=10)	55,09	93,89
- Capital gain (N=20)	63,76	108,25
- Annual realisation	36,04	62,35
Life Insurance Institution		
- Capital gain (N=5)	48,75	83,05
- Capital gain (N=10)	59,73	101,45
- Capital gain (N=20)	61,41	104,26
- Permanent rents (Age=36, N=10)	40,39	85,92
- Permanent rents (Age=75, N=10)	40,74	86,52
- Temporary rents (N=10)	40,67	86,16
Pension Plans		
- Capital gain (N=10)	40,92	88,48
- Permanent rents (N=10)	41,18	88,92
Collective Life Insurance		
- Capital gain (N=10)	40,18	85,57
- Permanent rents (N=10)	39,60	84,58

Source Own calculations.

3.4 Conclusions.

This section offers the conclusions obtained from the effective tax rates that average and high rate taxpayers are paying for assets generating either capital income or capital gains.

The first group of capital income returns is characterised in 1998 by heavy levels of effective taxation in the sense that those are, generally, subject to withholding taxes. On the other extreme, assets generating capital gains at the time of their disposal are favourably treated due to the absence of withholding taxes, the presence of reduction coefficients in whatever of the forms analysed, the opportunity of performing tax liability deductions and so on and so forth.

With the introduction of the new 40/98 personal income tax law, this panorama has been substantially modified. The main points to be emphasised are the following:

1- Public Debt Instruments still being the capital returns that are taxed to a lesser extent than comparable alternative investments. Furthermore, state obligations are the assets that benefit most from the reduction on the capital withholding tax rate.

2- There has been introduced a comparable tax treatment on financial accounts based on either treasury letters or state obligations.

3- Even though the top marginal tax rate has been substantially reduced, high rate taxpayers are facing levels of effective taxation above their real returns, once the inflation has been adjusted.

4- While the transitory regime of reduction coefficients and inflation actualisation coefficients remains in force, capital gains are favourably treated by the personal tax system as compared to ordinary capital returns.

5- Collective Investment Institutions show increased levels of ETR as a consequence of the introduction of withholding taxes which, in turn, are more in line with capital returns taxation.

6- The insurance sector as a whole has seen disappear the special set of tax liability deductions which, in some cases, will be translate into levels of taxation even higher than the corporate sector (e.g. 20 years as the period of capital gain generation).

7- It should be noted that, in spite of the lower percentage of rents considered as capital income, rents receipts tend to maintain an equivalent effective taxation before and after the tax reform.

8- The introduction of the new tax law reveals a general trend of taxation reductions for high rate taxpayers, while the opposite trend can be verified for average rate taxpayers.

9- The higher the level of nominal interest rate and inflation rate, the more pronounced are the differences between the two tax laws in force in 1998 and in 1999.

10- The wide range of fiscal privilege's degrees highlights that, under the 40/98 law, the set of tax provisions regarding savings taxation appear to have positive effects as against a neutral situation of no special tax treatments.

11- In some cases of capital gains and rents receipt, high taxpayers enjoy a degree of fiscal privilege, even larger than the size of the real rate of returns.

12- None of the assets examined presents a zero degree of fiscal privilege and, hence, taxpayers need to be concerned with the `tax efficiency´ of their savings instead of choosing assets on the basis of pre-tax returns.

13- All the saving returns considered in this study are sensitive to changes in the expected economic conditions of nominal interest rates and inflation rates.

14 - The existence of the so-called client effect is justified on the grounds of a marked discrepancy between the ranking of asset's effective taxation for average and high rate taxpayers.

CHAPTER 4

Conclusions

The study follows a theoretical approach towards addressing our main research questions stated in **chapter 1**. In addition, this chapter analyses the trends of Spanish savings over the last years, and there can be emphasised two main features: sensitivity to economic conditions (aggregate terms) and sensitively to tax provisions (relative composition). Lastly, it should be justify the necessity of a personal income tax reform in Spain. The arguments exposed are presented as means of a personal income tax's lack of neutrality, fairness, efficiency, simplicity and so forth.

In **chapter 2** we presented the theoretical framework for calculating effective tax rates on returns from saving investments. On such grounds, the methodology employed is largely based on González-Páramo (1991). The proposed measure of effective tax rates summarises a complicated tax code in a synthetic measure. In doing so we were able to appraise the extent to which saving assets are differently treated by the personal income tax in force as of the 1st January 1998 and the 1st January 1999.
Due to the pronounced differences in their respective tax treatment, two main groups of assets are analysed; they are capital income and capital gains. From the set of equations developed in this chapter, it is possible to see that these differences have been partially mitigated under the new 40/98 law. Therefore, these two groups of returns present a more homogenous treatment, once the law has eliminated some provisions, which differentiate the taxation of those. This could be interpreted as a trend towards greater doses of simplicity. However, the assessment of the tax law's provisions related to each type of return will be appraised in terms of effective tax rates as a whole, rather than considering each provision individually. In other words, we will analyse the personal income tax as a whole from the determination of the final tax liability in which all tax provisions are jointly considered.

The analysis of results is presented in **chapter 3** in different tables according to alternative economic scenarios and under different tax laws in force, as before and after 1998.
Focusing the attention on the major changes that have occurred in savings taxation by the introduction of the 40/98 law, these can be summarised as:

1) Comparatively, public debt instruments still enjoying a privileged tax treatment.
2) Effective taxation above levels of real rates of interest is verified for high rate taxpayers.
3) The transitory regime has maintained a more favourable treatment for capital gains, even though it will tend to progressively disappear in the future.
4) On the one hand, the introduction of withholding taxes is the major cause of the increased taxation of assets from Collective Investment Institutions while, on the other hand, the disappearance of tax liability deductions provoke this in the case of the insurance sector.
5) Overall, high rate taxpayers are those who benefit to a greater extent from the tax reform through their marginal tax rate reduction.
6) Effective tax rates in all cases appear highly sensitive to changes in the assumptions of economic conditions.
7) The lack of tax neutrality among alternative saving investments leads to the presence of the so-called `client effect´.
8) The sign of the degree of fiscal privilege should be interpreted as a measure of a positive effect of the set of legal provisions as compared to a neutral situation of no special treatments.

Having said that, we should recognise that this research project is not exempt from shortcomings. In the first place, empirical data on the new personal income tax in force will be available from June 2000 onwards. For this reason, the analysis performed in this research is solely from a theoretical perspective. Secondly, effective tax rates are very sensitive to the assumptions made and then, the results will be at the expense of the researcher's criterion adopted. Thirdly, it should be emphasised that a pitfall of effective tax rates is their *ex ante* perspective. In these terms, due to the presence of a fiercer competition among highly substitutable assets, financial institutions will try to attract investors by modifying rates of return for saving assets in line with tax changes. Thus, if an asset is comparatively favourably treated by the tax system, there will be room for cutting down their nominal rate of return. On these terms, it might be worth exploring the post-tax attractiveness of saving assets after the tax change has occurred, however no data is available for the moment.

Taking all these arguments into consideration, further research that can draw on empirical data is still needed in the taxation arena.

APPENDIX: Analysis of the Personal Income Tax under the 40/98 Law.

The main aspects of the new 40/98 Law concerning the different savings assets will be examined. Particular attention is given to the Tax Law's contents of income classification, measurement of tax base, tax rates and withholding taxes. A complete and comprehensive analysis requires a more detailed explanation of the new tax in force, but the discussion is already involved enough without widening its scope further. Instead, in broad terms, emphasised here are the changes that have been introduced by the tax reform in respect the previous system.
Overall, the tax reform carried out in Spain with the approval of 40/98 Law of Personal Income Tax can be assessed as a step towards the prevailing fiscal model in the EU. The rationale for arguing so is because the new configuration of the Personal Income Tax is based on the `disposable rent´ concept defined as the individual's remaining income after attending his/her needs and those from his/her family. Under the previous system, adjustments for personal and family situations took place as deductions from the final tax liability[xi]. The choice adopted by the lawyer to implement the disposable rent concept is by determining an exempt amount from the Taxable Base varying with taxpayers' family and personal situations.
In general terms, the analytic definition of personal income includes the following items:

I. Labour Income.
II. Capital Income
  II.A. Real State Property Income.
  II.B. Asset Income.
III. Business and Professional Income.
IV. Capital Gains and Losses.
V. Imputation rents.

This classification into five groups does not perfectly coincide with economic classification of personal income under which there only exist two productive factors, capital and labour. In addition, from an economist's point of view, the `income´ concept comprises all income (i.e. in kind and in money) for assessing people's taxable capacity, while the same concept for tax purposes does not include income in kind in all their extent.

Generally speaking, assets' returns comprise both capital income and capital gains obtained from assets. Due to the fact that there exist alternatives saving vehicles, savers tend to compare the different post-tax returns of those assets in order to make the appropriate investment decision. Under the choice between assets generating capital income and those generating capital gains, a rational saver will prefer the latter ones according to fiscal reasons rather than economic efficiency arguments. Furthermore, when referring to assets' returns themselves there are a wide array of options available to savers with substantial differences in terms of taxation. This diversity has evolved across time in various ways, but the common note in all the changes that have occurred in recent years is the government's necessity for revenues, so all efforts were focused on avoiding fiscal-engineering operations and tax evasion opportunities. According to Cordón, Mancheño and Molina (1999), the argument behind the heavy tax burden placed on saving is that by increasing government revenues from taxes, the public sector will be better able to increase public sector savings and therefore maintain the overall level of aggregate savings in the country.
Far from any formal study, accumulated experience demonstrates that this approach has not been appropriate according to circumstances. What is more, savings taxation has modified the relative composition of savings towards the low-taxed assets at the expense of close substitutes rather than increasing its aggregate level.

Under the system in force in 1998, the main advantage of capital gains taxation can be explained as the saver's capability to decide when the capital gain's tax liability will crystallise depending upon the moment of its realisation. Additionally, tax allowances are asymmetric since capital gains are taxed after adjusting for inflation while nominal capital losses are able to be compensated in nominal terms.
As a whole, the new 40/98 Law has established a closer treatment between capital gains and capital income since:

a) Capital gains generated over;
  * less than two years are taxed at marginal tax rate within the General Taxable Base.
  * more than two years are taxed at 20% within the Special Taxable Base.

b) Capital Income even when generated over a period longer than two years is taxed within the General Taxable Base at marginal tax rate, but applying reduction coefficients to the amount to be included. In such a way, the nominalist principle prevailing in the previous system has been broken.
c) Both distributed returns derived from life insurance contracts and those in the form of realised gain in the asset price on the disposal (whatever asset it comes from) are now included as capital income rather than capital gains.
d) The minimum annual exemption of pt. 200.000 from capital gains as well as the legal reduction of pt. 29.000 from capital income has been eliminated.
e) Full compensation of negative capital returns against ordinary income is permitted, while for capital losses the compensation is allowed until the limit of 10% of ordinary income.
f) The adjustment for inflation in calculating capital gains (acquisition values) has been eliminated, except in the case of real estate sales.

g) Some capital gains are now subject to withholding taxes as for example the disposal of shares from Collective Investment Institutions. From the investor point of view, these existing withholding taxes are seen as a collection technique and represent an advanced payment of tax, which can be credited against the final liability. Insofar, as they are a prepayment they do not affect the substantive tax liability because the basic rate taxpayer would have no further liability, non- taxpayers would be able to reclaim the tax credit, but higher rate taxpayers would have a further liability. The criticism is that they imply an opportunity cost for the advanced money during the period until the finalised liability is required. Thus, for government this is like a free-rate finance for public debt.

1- Capital Income.

In order to analyse the capital income concept, we can define it according to article 19 of 40/98 Law as:
a- all utilities and compensations received, whatever their nature or denomination, monetary or in kind, estimated or real, and direct or indirect,
b- which come from assets, goods or rights with economic content,
c- that are in the ownership of the taxpayer (full or partial) and
d- that are not used in business or professional activities.

Going further, the Law established the following classification of capital incomes:

I- Participation in Firm's Equity.
II- Life and Disability Insurance Contracts and Capitalisation Operations.
III- Income from Other Financial Assets.
IV- Others.

I- Participation in Firm's Equity.

The article 23.1 regulates income coming from participations in firms (i.e. negotiable titles). This article includes a list of returns neither exclusive nor exhaustive, which are subject to capital income tax for this concept.
The regulation does not introduce substantial differences in respect the previous Law. Then, for calculating:
a- The whole sum to be included in the Taxable Base, the first element introduced to avoid the double taxation of dividends is the `integration system´ based on the following coefficients: 140%, 125% and 100% depending upon the Corporate tax rate applying to the issuer of shares. At the second stage there is a deduction from the personal tax liability of, respectively, 40%, 25% and 0%. Imagine, for instance, that an individual receives dividends of pt. 100 from a Credit Cooperative Society (taxed at 25% in the Corporate tax), he / she will declare pt. 125 in the taxable base (100*1,25) and, thereafter, deduct from his/her tax liability pt. 25 (100*0,25). The same procedure applies to the other aforementioned cases.
b- Deductible Expenses, are only those corresponding to `administration and custody of negotiable titles´. This concept has been explicitly defined both in a positive and in a negative sense by the Law. For instance, expenses derived from individual investment advice provided by expertise investors would not be deducted for tax purposes.
c- Withholding taxes, apply as 18 per cent at the source of income.
d- On Disposal or Redemption, these assets generate a capital gain or loss.

II- Life and Disability Insurance Contracts and Capitalisation Operations.

This category of capital income comprises the case of returns previously considered as capital gains. The rationale for such a change is the intended attempt for achieving greater doses of neutrality and simplicity within the new personal income tax.
Under the current system, life and disability insurances' returns are taxed as:

A- Labour Income, for collective insurance and
B- Capital Income, for individual insurance and anything not included in A.

As far as Capital Income for this concept is concerned, we can distinguish the following type of returns and the procedure for calculating their taxable amount.
1. Deferred Capital = Capital received
- ∑ Insurance Premiums paid
2. Immediate Permanent Rents =

45 % Annuity - when recipient is less than 40 years old
40 % Annuity - when recipient is between 40- 49 years old
35 % Annuity - when recipient is between 50- 59 years old
25 % Annuity - when recipient is between 60- 69 years old
20 % Annuity - when recipient is more or equal to 70 years old

3. Immediate Temporary Rents =

15 % Annuity - when the period is less than or equal to 5 years
25 % Annuity - when the period is more than 5 and less than or equal to 10 years
35 % Annuity - when the period is more than 10 and less than or equal to 15 years
42 % Annuity - when the period is more than 15 years

4. Deferred Permanent or Temporary Rents. There are applied the same proportions for annuities, but adding an increment corresponding to the accumulated profitability during this deferred period. The procedure to impute this, is by a linear system over the first ten years of the contract. As an example, lets consider the case of Mr. Smith (58 years old) who agreed a life insurance contract consisting of deferred permanent rents (pt. 70.000 per month) at the 1st June 1995. He paid at that moment a premium of pt. 1,000.000 and he will receive the first rent in March of 1999. In present value, the rents to be received are equal to pt. 1,400.000. For calculating the capital returns derived from this contract in 1999 (fiscal year) we need to determine:

Present Value of Permanent Rents.....	1,400.000
Premium Paid.....	1,000.000
Rents received during 1999.....	700.000
Taxable Capital Returns (35%).....	245.000
Total Capital Return (245.000+(1,400.000-1,000.000)/10)	**285.000**

5. Deferred Rents for Retirement or Disability (contracts agreed more than two years before the retirement date and that during this period verified that funds were not moved)= $\sum$ Rents received
   - $\sum$ Insurance Premiums paid
6. Rents Extinction = + Amount Recovered (on termination by policyholder)
   + $\sum$ Rents received up until this moment
   - Tax liabilities paid as capital income for those rents received
   - $\sum$ Insurance Premiums paid

However, contracts agreed before the end of 1994 are under the Transitory Disposition Number 6 which stipulates for the premiums paid before this date, the proportion of the rent considered as capital income is determined according to the previous 18/91 Law coefficients in force in 1998.

Overall, the new treatment given by the 40/98 Law can be assessed as:

1- An improvement in the simplicity and neutrality of personal taxation since:
   a) all contracts are equally qualified as generating capital income,
   b) there is no distinction regarding the type of contract agreed between the parties. It only distinguishes the form in which returns are received (rent or capital) and the contingency covered (retirement or disability),
2. Long-term operations are favourably treated by distinguishing different reduction coefficients according to the period for their generation so, the longer the period, the higher the reduction.
3. Income in the form of rents is better treated under the new Law in the sense that:
   a)- lower percentages of each annuity are considered as capital income in the case of permanent rents (as compared with those contained in the 18/91 Law),
   b)- percentages of each annuity are dependent on the length of the period for temporary rents (under the 18/91 Law it was a fixed 60 per cent),
   c)- there is no tax liability at the time of deferred rent's constitution because the accumulated returns will be linearly imputed during the first ten years.
4. Retirement and disability rents enjoy the same charter of deferred taxation until the moment at which the sum of rents exceed the sum of premiums paid. In this respect, the only distinction that can be made is whether or not the insurance contract is individual or collective (capital income and labour income respectively).

III- Income from Other Financial Assets.

According to article 23.2, financial assets are defined as negotiable titles representative of funds transfers and they are taxed whatever form the returns take. From 1999 onwards, all income coming from these, either as coupons or wealth increases in their transmission, is qualified as capital income.

Compared with the previous Law, the actual redaction has widened this generic concept since it also includes rents, which previously have been considered as capital gains or losses. For instance, that is the case of financial asset's transmissions when they are classified as generating `explicit income´. According to this classification, assets with `implicit income´ are those whose returns are calculated as the difference between issue, subscription or acquisition price and reimbursement, amortisation or selling price, so only at the time of their disposal does this type of income arise. On the other hand, assets with `explicit income´ are those whose interest payments are independent from the title's value at the disposal and where payments occur during the holding period. According to the Commerce Code in force in Spain, three conditions might be verified in this respect: `independence´ between returns and principal, `periodicity´ of payments at predetermined intervals of time and `certainty´ about the parameters that determine the amount of returns. It should be noted that the only purpose for distinguishing explicit income and implicit income assets is to determine the withholding tax rate which apply in each case. Table I shows the main aspects regarding this qualitative differentiation of capital income. Then, for calculating:

a- The whole sum to be included in the Taxable Base corresponds to the total returns (in money or in kind) obtained from whoever has the rights to the asset.
b- Deductible Expenses are the same as in the previous section.
c- Withholding taxes, apply at 18% at the source of income and at the disposal of the asset for wealth increases.
   However, it is not applied to income from Treasury Letters, amortisation of Public Debt instruments, which were not subject to withholding under the previous Law, and disposal or redemption of financial assets generating explicit income and negotiated in a Stock Exchange Market.

d- On Disposal or Redemption, all these assets generate capital income.

Tables II and III from the appendix summarise the tax treatment applicable to different types of financial assets under the 18/91 Law and the 40/98 Law, respectively. As a note, public debt titles bought before 31st December 1996 are regulated under Transitory Disposition Number 8, which determines that their returns will be included into the Special Taxable Base, even though they are not subject to any reduction of irregular income.

IV- Others.

Within this residual concept, some kinds of temporary and permanent rents are explicitly included. Particularly, there are those generated as a result of capital impositions (real estate assets). Their specific regulation is remitted to cases 2 and 3 explained in the previous section II.

Because all capital income is included into the General Taxable Base to which the marginal tax-rate is applied, in order to avoid the excess of progressivity the following reductions can be made for those incomes generated in more than two years, or obtained in an irregular manner

General Reduction of **30%**

Special Reduction for "*Life Insurance*" (deferred capital)

30% if insurance `premium´ was paid more than 2 and less than or equal to 5 years ago
60% if insurance `premium´ was paid more than 5 and less than or equal to 8 years ago,
70% if insurance `premium´ was paid more than 8 years ago
70% if the insurance `contract´ has an average life of more than 12 years and it verifies conditions of regularity and periodicity.

Special Reduction for "*Disability Insurance*" (deferred capital)

40% if `disability's degree´ is less than 65%
60% if `disability's degree´ is more than or equal to 65%
70% if the insurance `contract´ has an average life of more than 12 years and it verifies conditions of regularity and periodicity.

2- Capital Gains.

According to the Law 40/98, definition of capital gains might verify three conditions:

a- wealth value changes,
b- wealth's composition changes and
c- not be explicitly included in any other section of personal income.

The realisation principle is behind the fiscal consideration of capital gains rather than applying the concept of accruals to increases in the asset's value.

Regarding general valuation rules, articles 32 and 33 configure the following framework.

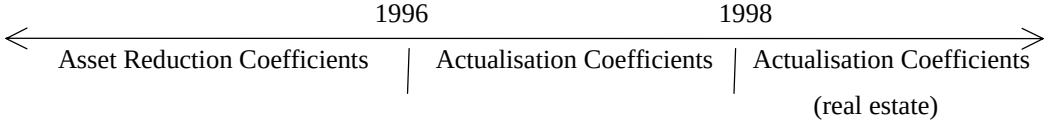
Transmission Value = + Amount received from buyer
- Taxes and Expenses (satisfied by seller)

Acquisition Value = + Price paid on asset's purchase or acquisition
+ Taxes and Expenses paid at that date
- Accumulated Amortisation
- Asset's Improvements Value (i.e. investment costs)

Several concerns are relevant for explaining changes in their taxation under 40/98 Law.

First, it will be maintained that the fiscal treatment for assets bought before the tax reform should respect the previous Law's expectations. Accordingly, the holding period of the asset is calculated according to two subperiods of time. The number of years holding the asset before 1994 will be used to apply the `reduction coefficient system´ which consists of an 11,11% (real estate property), 25% (shares) and 14,28% (the rest) for each year of the holding period that exceeds the first two (N-2).

For years between 1994 and the date of disposal, the `actualisation coefficient system´ for adjusting inflation in the acquisition value will be applied[xii]. In all cases, a FIFO procedure is used for computing the number of holding years of shares sold. Graphically, it can be explained as follows:



Secondly, the purpose for simplifying capital gain taxation leads to including in this category assets sold within professional or business activity.
Thirdly, the threshold for dividing short and long term is fixed at two years rather than at one year as under the previous system.
Fourth, the procedure for eliminating excess of progressivity for capital gains generated over more than two years, consists of taxing them at a fixed 20% rate into the Special Taxable Base.
Fifth, capital gains realised as a consequence of selling shares from Collective Investment Institutions, are additionally subject to withholding taxes at 20 per cent. Depending upon the length of the holding period they will be included in the General Base (less than two years) or into the Special Base (more than two years), and in all cases the FIFO system is used to determine the acquisition date of the shares sold.

All the differences in the treatment of capital gains between the 18/91 Law (in force in 1998) and the 40/98 Law are summarised in Table IV in the appendix.

3- Labour Income.

Three particular cases will be analysed as included in the labour income section.

1. Pension Funds and Pension Plans:

Firstly, we need to define employment Plans as those agreed between the firm as a promoter and its employees. It receives contributions both from firm and from the employees themselves.

CONTRIBUTIONS from the employer are considered as labour income in kind for the employee and are fully exempt from withholding taxes on income in kind. Both employer and employee contributions are subject to reduction from the Taxable Base, even though up to certain limits. There will prevail the lower of the following limits: a) 20% of Labour Income and Economic Activities Income, or b) pt. 1,100.000

If there is an excess of contributions over this limit within a fiscal year, the excess can be carried forward and offset against contributions below the limit over the next five years.

Three principles are then verified. The first, taxation is deferred until the moment at which funds are effectively received (i.e. the income generated by these contributions, whatever form it takes, will accumulate in the scheme tax free until the moment at which the proceeds from the scheme were paid out). The second, illiquidity of contributions and, lastly, transferability of pension funds in certain cases[xiii].

RECEIPTS FROM FUNDS are qualified as labour income and are subject to labour withholding taxes. They can take one of the following forms:

a- pension rents, which are treated as any other source of labour income,

b- pension capital, which can be reduced by 40% when the first contribution was more than two years ago,

c- disability capital, it can be reduced by 40% independently of years since the first contribution.

In all the cases, these proceeds will be taxed at the beneficiary's marginal income tax rate.

2. Insurance by Social Provision Mutuality[xiv].

CONTRIBUTIONS from the employer are labour income in kind for the employee and are fully exempt from withholding taxes as in the previous section. The limit applicable to reductions in the Taxable Base is jointly considered with Pension Funds and Pension Plans. The distinctive nature of these saving vehicles is that, as far as they are considered as alternatives to the Social Security System, they are subject to base deductions for the employer within the concept of `activity expenditures´ (with the limit of pt. 500.000).

RECEIPTS FROM FUNDS are fully taxed as labour income. However, when professionals not actually working in their professional capacity made contributions, they have no rights for either reducing or deducting any amount. Thus, at the time of fund's receipt they will be taxed as: $\sum$ Receipts - $\sum$ Contributions (i.e. payments will be allowed only as a deduction against subsequent receipts).

3. Collective Insurance.

CONTRIBUTIONS from the employer are labour income in kind for the employee and subject to withholding taxes of income in kind. These amounts are not subject to reductions from Taxable Base, so they will be taxed in the same year of their imputation.

RECEIPTS FROM FUNDS are taxed as labour income and subject to labour withholding taxes once the amount received exceeds the previously imputed contributions.

Considering the labour income section as a whole, a set of reduction coefficients can be applied for those income generated in more than two years of in an irregular manner. Thus:

General Reduction of **30%**

Special Reduction for "*Pension Funds and Social Prevision Mutuality*"[xv]

40% if first `contribution´ was paid more than 2 years ago

" *Collective Insurance for Retirement*"

40% if first `contribution´ was paid more than 2 and less than or equal to 5 years ago

60% if `contribution´ was paid more than 5 and less than or equal to 8 years ago,

70% if `contribution´ was paid more than 8 years ago

70% if the first `contribution´ was more than 12 years and it verifies conditions of regularity and periodicity.

Special Reduction for "*Disability Insurance*" (deferred capital)

40% if `disability's degree´ is less than 65%

60% if `disability's degree´ is more than or equal to 65%

70% if the insurance `contract´ has an average life of more than 12 years and it verifies conditions of regularity and periodicity.

There are also exemptions applying to net returns from labour income depending on this amount itself such as:

* minus pt. 500.000 for labour income less than pt. 1,350.000
* minus pt. {500.000-0,1923 (Returns-1,350.000)} for labour income between pt. 1,350.000 and 2,000.000.
* minus pt. 375.000 for labour income more than 2,000.000

The last point to emphasise before ending the exposition of labour income tax treatment, is the new system of withholding taxes introduced by the 40/98 Law which basically consists of a similar tax rate schedule as the one for determining the final Personal Income Tax Liability.

4- Taxable Base and Tax Liability.

As a summary, Table V broadly presents the main advantages and disadvantages in respect of savings taxation under the new 40/98 Tax Law as compared to 18/91 Tax Law.

Taxable Base is obtained once all the sources of income have been computed into the General Taxable Base and into the Special Taxable Base (capital gains generated over more than two years).

The remaining steps for calculating the final tax liability are explained in graphical terms in Diagrams 1 and 2 in the Appendix, regarding the 18/91 Law and the 40/98 Law respectively.

Focusing on the current system, on the left-hand side of the Figure 2 it is illustrated the procedure for determining the final tax liability corresponding to those income included into the General Taxable Base. As it has already been mentioned, the personal and family situation of taxpayers are accounted through a minimum exemption which will be firstly applied to the General Base and, if there remains any amount to be exempted, it will be applied to the Special Base.

The next step is to perform the set of reductions included in the Law such as those related to Pension Funds and Social Provision Mutuality contributions, already explained. However, as can be seen on the right hand side, no reductions are performed within the Special Taxable Base.

Adding together these two amounts, the tax rate schedule is applied in two stages, one corresponding to the Central Government while the other corresponds to Regional Government.

Finally, when the `previous tax liability´ has been obtained, then two kinds of adjustments might be practised. First, the deduction for double taxation (explained in the section of dividend's income at 40%, 25% and 0%) and, secondly, discount all the withholding taxes levied at the source (i.e. labour income, capital income and capital gains). Then, the `final tax liability´ should be paid if it results positive, or required to the Treasury in the opposite case.

TABLE I: QUALITATIVE TAXATION OF CAPITAL INCOME UNDER 40/98 LAW

	TYPE OF RETURNS	FISCAL CLASSIFICATION	WITHHOLDING TAXES
EXPLICIT RETURNS	- COUPON	- CAPITAL INCOME	- YES = 18%
	- TRANSMISSION OR AMORTISATION	- CAPITAL INCOME	- NO if: a) there are represented through account notes and b) they quote in an official Exchange Market.
IMPLICIT RETURNS	- NO COUPON - TRANSMISSION OR AMORTISATION	- CAPITAL INCOME	- YES = 18%
MIXED RETURNS(1)	a) EFFECTIVE RETURN > T* ≅ Explicit	-CAPITAL INCOME coupon & transmission	- YES = 18% (coupon) - NO (transmission)
	b) EFFECTIVE RETURN < T* ≅ Implicit	- CAPITAL INCOME coupon & transmission	- YES (coupon & transmission) = 18%

Source: Cordón , Mancheño and Molina (1999) and own comments.

(1) Assets with both types of returns might be classified by comparing their explicit return to a reference rate determined as:

r (ref) = 80%*r (Bond of N years) where Bond of 3 years for assets of less or equal to 4 years period,
Bond of 5 years for assets of less or equal to 7 years period,
Bond of 10, 15 or 30 years for assets of more than 7 years period.

TABLE II: FINANCIAL ASSET'S TAXATION IN 1998 UNDER 18/91 LAW.

	HOLDING PERIOD		DISPOSAL OR AMORTISATION					
	CAPITAL INCOME	**Withholding Tax**	**CAPITAL INCOME**		**CAPITAL GAINS**		**Inflation Adjustments**	**Withholding Tax**
			REGULAR	IRREGULAR	REGULAR	IRREGULAR		
Bank Deposit	✔	✔(25%)						
State Bonds & Obligations[1]	✔	✔(25%)			✔	✔	✔	✘
Treasury Letter (ST)[2]			✔					✘
Treasury Letter (LT)[3]				✔				✘
Promissory Notes & ZC[4]			✔	✔				✔(25%)
Financial Account: TL[5]	✔	✔(25%)						
Financial Account: SO[6]					✔			✘
Bonus Obligation[7]	✔	✔(24%)						
Corporate Dividends[8]	✔	✔(25%)						

Source: Cordón, Mancheño and Molina (1999) and own comments.

[1]Holding period of 10, 15 and 30 years
[2] Short term (12 months)
[3] Long term (18 months)
[4] Zero Coupon Bond
[5] Based on Treasury Letters
[6] Based on State Obligations
[7] The effective withholding tax rate =1,2%
✘- Not apply the case.
✔- Apply the case.

TABLE III: FINANCIAL ASSET'S TAXATION IN 1999 UNDER 40/98 LAW.

	HOLDING PERIOD		DISPOSAL OR AMORTISATION				
	CAPITAL INCOME	**Withholding Tax**	**CAPITAL INCOME**	**CAPITAL GAIN**		**Inflation Adjustment**	**Withholding Tax**
				REGULAR	IRREGULAR		
Bank Deposit	✔	✔(18%)					
State Bonds & Obligations[1]	✔	✔(18%)	✔				✘[8]
Treasury Letter (ST)[2]			✔				✘
Treasury Letter (LT)[3]			✔				✘
Promissory Notes &ZCB[4]			✔				✔(18%)
Financial Account: TL[5]	✔	✔(18%)					
Financial Account:SO[6]	✔	✔(18%)					
Bonus Obligation[7]	✔	✔(24%)					
Life Insurance Contracts	✔						
Corporate Dividends[8]	✔	✔✔(18%)					

Source: Cordón, Mancheño and Molina (1999) and own comments.

[1]Holding period of 10, 15 and 30 years
[2] Short-term (12 months)
[3] Long term (18 months)
[4] Zero Coupon Bond
[6] Based on State Obligations
[7] Effective withholding rate =1,2%
[8] If State Obligations were issued before January 1999 and if the holding system is through account notes or they quoted [5] Based on Treasury Letters in an official Exchange Market, they are not subject to withholding taxes.
✘- Not apply the case.
✔- Apply the case.

TABLE IV: CAPITAL GAINS TAXATION BEFORE AND AFTER TAX REFORM.

	18 / 91 LAW (after 1996 tax reform)		40/98 LAW
	ASSETS BOUGHT BEFORE 1994	ASSETS BOUGHT AFTER 1994	
1. Marginal tax-rate	Up until one year from acquisition	Up until one year from acquisition	Up until two years from acquisition
2. Average tax-rate	More than one year and less than two years	More than two years	Not apply
3. Fixed rate at 20%	More than two years	More than two years	More than two years
4. Zero rate	Assets with more than 10, 8 or 5 years	Not apply	Not apply except for assets bought before 1994 (Transitory Disposition 9th)
5. Asset Reduction Coefficients	11.11%, 14.28% and 25% respectively for assets with more than two years	Not apply	Not apply
6. Base deduction of pt. 200.000	Assets with more than two years of holding period	Assets with more than two years of holding period and different from shares of Collective Investment Institutions.	Not apply
7. Actualisation Coefficients	Assets with more than one year of holding period	Assets with more than one year of holding period	Assets with more than one year of holding period (real estate assets)
8. Exemption of transmissions less than pt. 500.000	Whatever the holding period it is.	Whatever the holding period it is	Not apply
9. Integration of capital gains from professional or business activities	No	No	Yes
10. Capital losses compensation with other sources of income	No	No	Yes (up to a 10% of other incomes)

Source: Cordón, Mancheño and Molina (1999) and own comments.

TABLE V: SAVING TAXATION ASSESSMENT UNDER 40/98 LAW *versus* 18/91 LAW.

SAVING PRODUCTS	ADVANTAGES	DISADVANTAGES
CORPORATE SHARES	- The withholding tax rate has been reduced to 18 per cent.	- It drops the exemption of pt. 200.000. - It drops the legal reduction of pt. 29.000. - It drops the actualisation coefficients in the acquisition value for calculating the capital gain. - Returns generated between one and two years are worse treated as regular income.
INSURANCES		- They are now subject to withholding taxes as capital income. - Returns generated in less than two years are worse treated as regular income.
BANK DEPOSITS and FINANCIAL ASSETS WITH IMPLICIT INCOME	- The withholding tax rate has been reduced to 18 per cent.	- Returns generated in less than two years are worse treated as regular income.
FINANCIAL ASSETS WITH EXPLICIT INCOME	- The withholding tax rate has been reduced to 18 per cent.	- At their disposal, these generate capital income rather than capital gains.
MUTUAL FUNDS		- They are now subject to withholding taxes at 20 per cent, even though they are qualified as capital gains. - It drops the actualisation coefficients in the acquisition value for calculating the capital gain. - Returns generated in less than two years are worse treated as regular income.
PENSION FUNDS	- New withholding tax system more accurate in respect the final tax liability. - It is allowed a reduction of 40 per cent when contributions were made more than two years ago. - In some cases is permitted the transferability between pension funds.	- They are not subject to a 5 per cent of deductible expenses from labour income.
COLLECTIVE INSURANCES	- When returns are received in the form of capital, they are subject to reductions (40,60,70%)	- Contributions imputation are subject to income in kind withholding taxes. - They are not subject to a 5 per cent of deductible expenses from labour income.

Source: Iglesias, Cantos and Ruiz (1999) and own comments.

DIAGRAM I: TAX LIABILITY PROCEDURE (18/91 PERSONAL INCOME TAX LAW)

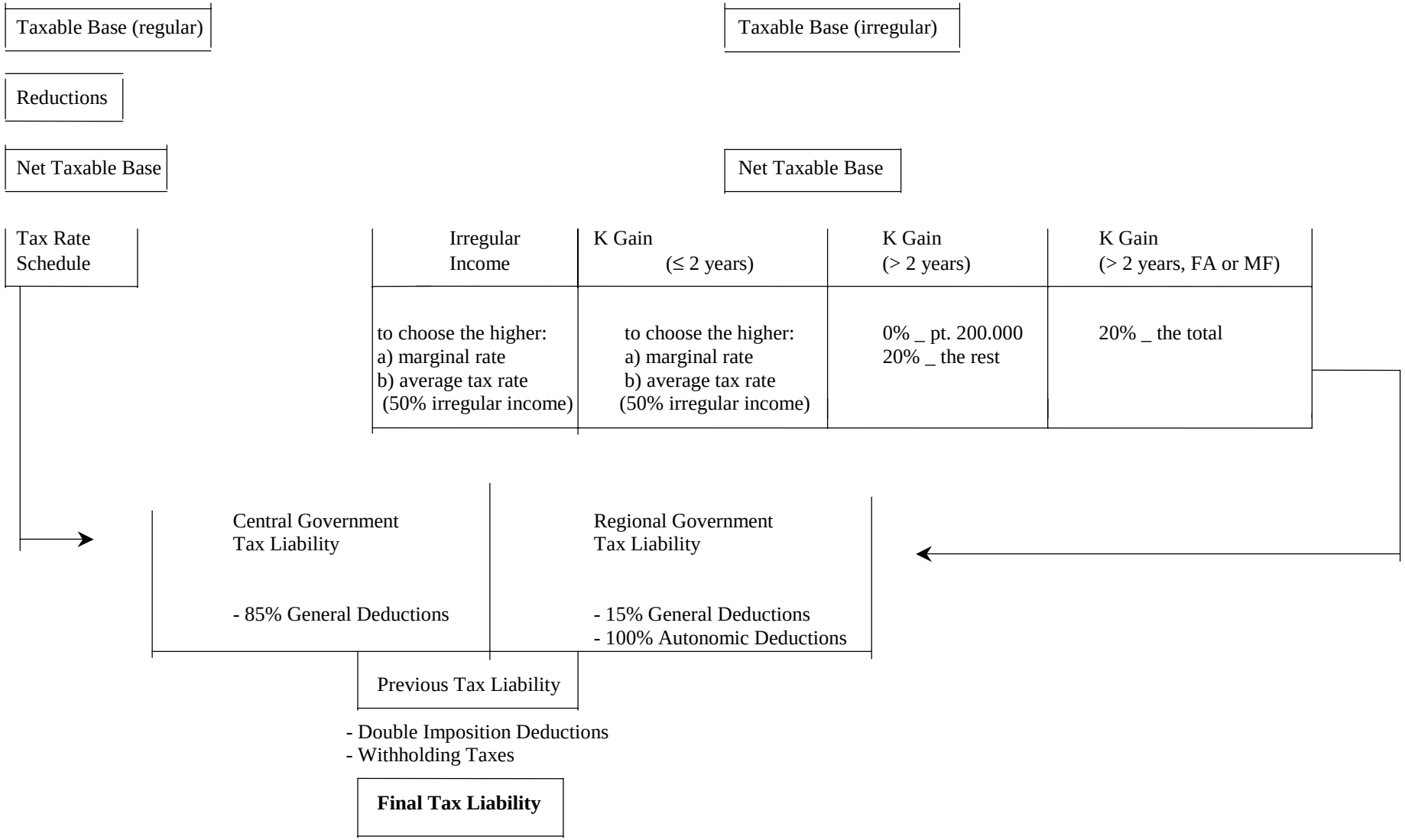
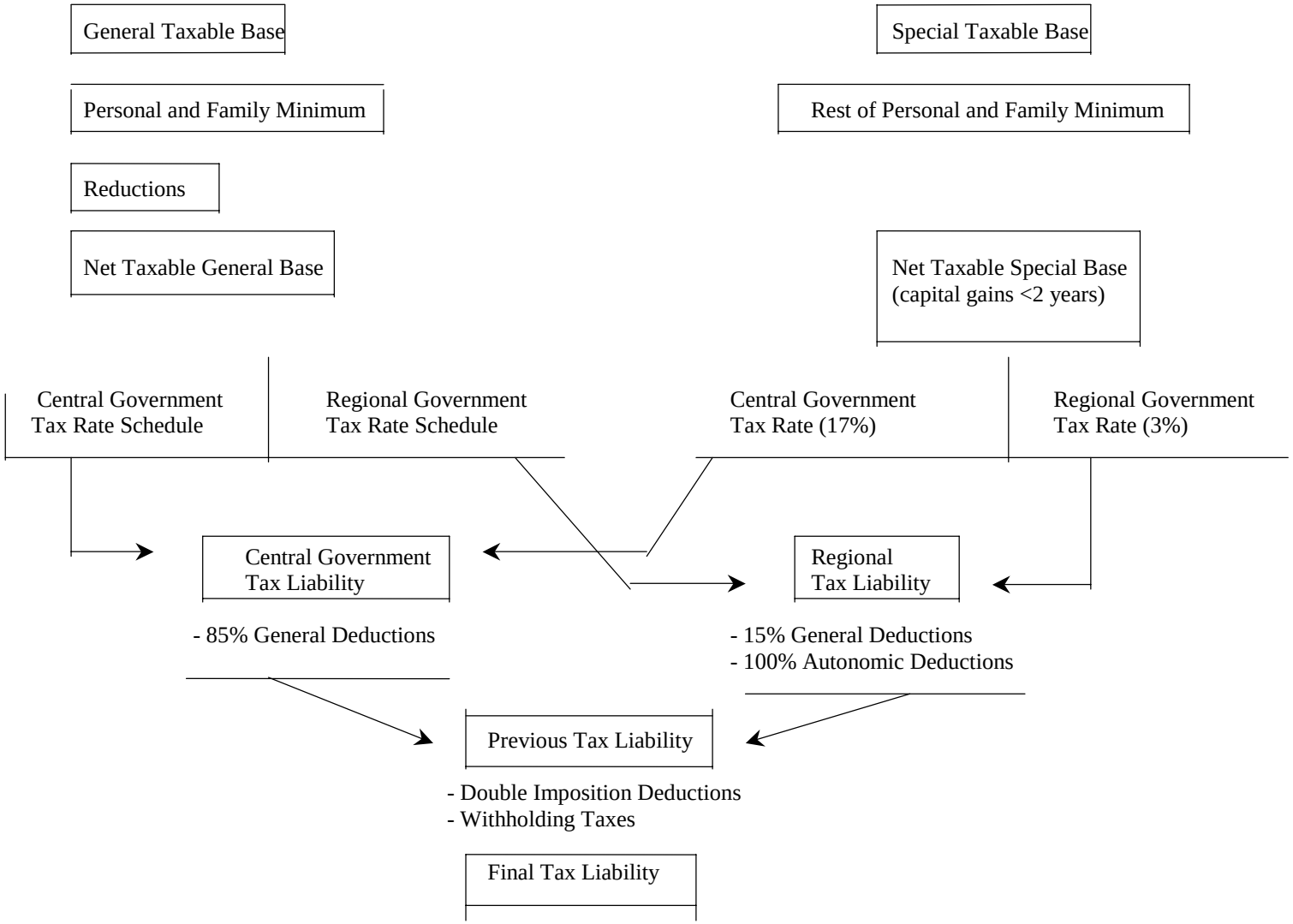


DIAGRAM II: TAX LIABILITY PROCEDURE (40/98 PERSONAL INCOME TAX LAW)



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ENDNOTES

[1] This point is worthy to be emphasised since it constitutes a great difference with King and Fullerton´s approach.
[1] In the Additional Disposition Number 9 of 65/1997 Law.
[1] For more information see González-Páramo (1991).
[1] See Table IV in the Appendix.
[1] Fiscal Transparency System refers to the case of firms whose owners are primarily: artists, sportsmen, or professionals and also to the case of `Asset Holding Societies´. The criterion applied to qualify the ownership is that: more than half of the firm´s capital belongs to those shareholders, or more than half of the firm´s capital belongs to less than 10 owners in all.
These firms are taxed under the Personal Income Tax through a system which imputes all assets and liabilities to the owners in proportion to their participation in the firm. Therefore, there does not exist any further Corporate Tax liability.
[1] Transitory regime as under the 18/91 Law is maintained.
[1] See Table IV in the Appendix.
[1] See Appendix , Section 1.
[1] For simplifying reasons, the rest of income intervals are not presented here.
[1] The reason for distinguishing short and long term is that in the case of short term corporate shares´s dividends there exist a base reduction whereas in the first case, it does not apply
[1] This adjustment system is still used in Greece and Portugal.
[1] After 1998 these are still applying for only real estate property.
[1] A full mobility is not allowed in order to prevent a continuum movement of plans depending on the latest financial publicity.
[1] A Social Prevision Mutuality is defined, according to 30/95 Law of Private Insurance Supervision and Planning, as providing `voluntary insurances whose contents are concomitant to the compulsory Social Security System´
[1] It constitutes an innovation respect the regulation under 18/91 Law and it enhances this type of saving product´s attractiveness.

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