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The Impact of Tax Benefit System Reforms Between 1990 and 1998 on
in France: Evaluation by Microsimulation
(preliminary version)

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Introduction

Between 1990 and 1998 many elements of the French tax-benefit system were reformed or adjusted. The origin and the nature of these changes was various but characterised by the general tendency of reducing direct income taxes, substituting social contributions by social taxes, increasing indirect taxation. Apart from the constant, state and social budget deficit concern, the aim of these reforms was to better balance the tax burden among different type of tax payers. A considerable effort was done to weaken direct wage taxation by enlarging tax base for social contributions and reducing the low wage taxation.

These changes in the system were discussed and analysed separately at the moment of their introduction, but no global evaluation of their common impact on family incomes has been done.

Several difficulties appears when trying this type of exercise. The most frequent constraint is the absence of an appropriate data recording of all incomes and taxes on the individual and household level. But even if it is possible, the changes in population structure, general economic situation evolution, labour market conditions, individual behaviour make difficult the measure of pure, distributional effect of the reforms.

Micro-simulation models can be in this case a very convenient tool of evaluation using specially constructed exhaustive data basis covering the essential of redistributive system and controlling for structural and behavioural changes.

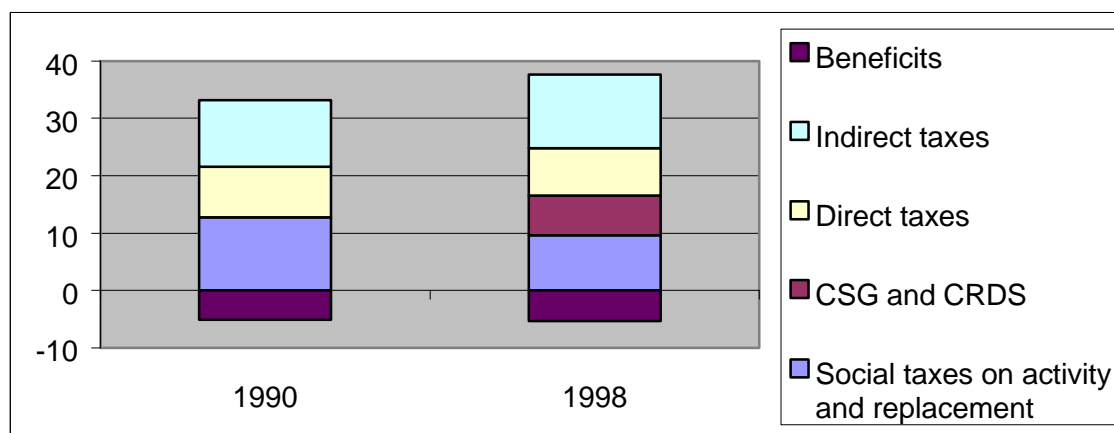
In this paper the overall (monetary) redistribution effects of reforms in tax benefit system between 1990 and 1998 is proposed using the INSEE microsimulation model INES (see appendix 1 for short description). The adopted approach is to apply to the same population of households and tax units observed in 1996 tax file, the full tax benefit legislation of 1990 and 1998. Different aspects of change in income distribution between these dates can be compared and analysed as a « pure effect » of legislation impact evolution. This is of course a theoretical effect assuming the constancy of the population structure and no change in individual behaviour.

1. Evolution of the tax-benefit system structure 1990-1998

A large number of reforms have been introduced in the French redistributive system since 1990. The most important ones are :

- creation and development of new direct social taxes (CSG, CRDS): a proportional very large base tax to finance social security deficits, and partially to substitute them to the traditional social security contributions paid on wages only.
- increase in social contributions financing the unemployment insurance and the pension system.
- reform of the income tax : general decrease of tax burden reducing the average and marginal tax rates and decreasing the number of tax payers.
- increase in indirect tax rates (VAT by 2 pp) and gasoline tax (TIPP).

Graph 1
Shares of different taxes , contributions and benefits as percentage of the
reference income in 1990 and 1998



The analysed below shares of different taxes and benefits refer to the « reference family income » which is household's fiscal income (as declared in personal income tax form) increased by revenues from wealth and investment. These two parts represent on average, respectively 90% and 10% of the total reference income considered as invariant in real terms at two dates 1990 and 1998.

The 1990-1998 evolution of the structure and relative importance of different taxes and transfers is shown on the graph 1 and table 1. The observed changes are considerable. The social contributions share paid by employers increased by 2.5 pp (from 25% in 1990 to 27.5% in 1998), those paid by workers, self-employed, pensioners or unemployed decreased by 3 pp (from 12.8 to 9.7%). The non-existent in 1990 taxes - CSG and CRDS increased the social contribution share in 1998 by 7pp. The direct income tax share decreased by 0.6 pp, but the importance of the tax on wealth and investment increased by .7pp. The indirect taxes increased their share by 1.3 pp (from 11.6 to 12.9 %).

Table 1
Taxes and benefits in 1990 and 1998

	Share in reference income (fiscal income) 1990	Share in reference income (fiscal income) 1998
Fiscal income net of contributions(1)	90,4	90,4
Gross revenue from wealth and investment* (2)	9,6	9,6
reference income (1)+(2)	100,0	100,0
Employers' contributions (public sector)**	5,6	7,2
Employers' contributions (private sector)	19,4	20,3
Social taxes on activity and replacement incomes***	12,8	9,7
CRDS****	0,0	0,5
CSG taxable****	0,0	2,1
CSG deductible****	0,0	4,2
Taxes on wealth and investment revenues	0,6	1,3
Direct Income Tax (IRPP)	7,5	6,9
<i>of which paid on CSG and CRDS</i>	<i>0,0</i>	<i>0,3</i>
Local Tax	1,3	1,3
Benefits	5,1	5,5
Indirect taxes	11,6	12,9

** *these contributions are of rather conventional character: they represent the needs for financing of the current public pensions.*

*** *Incomes from wages, self-employed revenues, unemployment benefits and retirement pensions.*

**** *Paid on wages, self-employed revenues, unemployment benefits and retirement pensions*

The total impact of all these changes on disposable income is about minus 1.2 pp. The disposable income (after indirect taxes) was in 1990 about 84.2% of the reference income to become 83% in 1998.

2. The taxes' and transfers' evolution by equivalent income.

The general evolution described above affected differently various categories of households with respect to the level of reference income and demographic structure. In order to take into account demographic differences among families, the reference income was divided by INSEE equivalence scale (1 for first adult, .5 for the second et further, .3 for children below 14) .

In table 2, contribution and transfer evolution between 1990 and 1998 is presented for households ranged by deciles of per equivalent adult reference income. Four phases of redistribution can be then analysed :

pre-fiscal contributions (social contributions paid on wages by employers and employees) and social contributions paid on all incomes - first three columns of the table 2

direct taxes computed on the fiscal income column 5 and 6

benefits paid to households column 7

indirect, consumption taxes column 9

The last column gives (in percentage points (pp)) the net of benefits evolution of the

total taxation including all social contributions and taxes, total direct taxation and indirect consumption taxes.

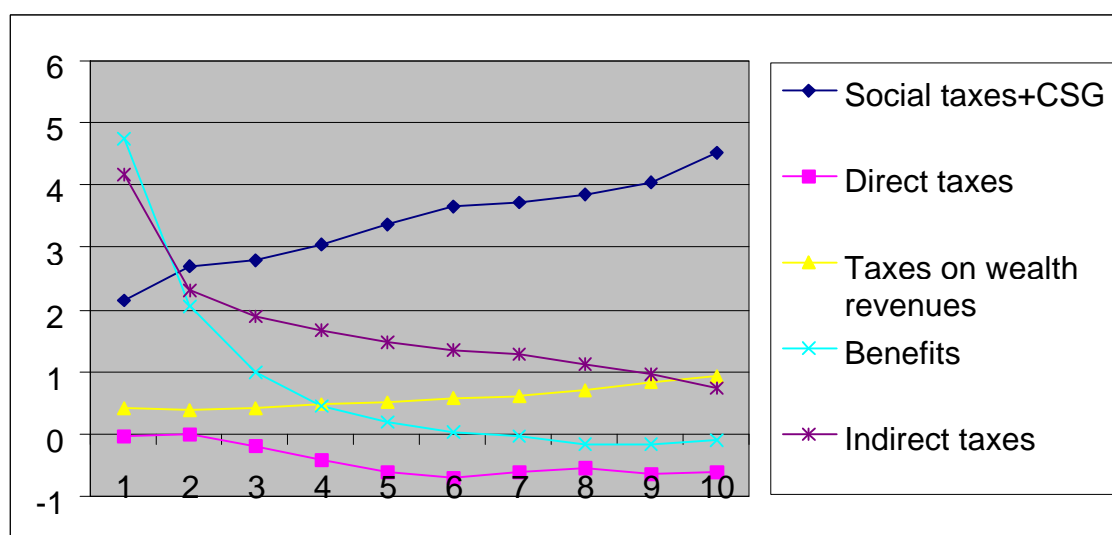
Table 2
Taxes and benefits 1990-1998 evolution :
1990-1998 difference in percentage points of the reference income, by equivalent income deciles

Equivalent income deciles	social contribut.	social taxes	Total social taxes and contr.	Reference (fiscal) income	direct income tax	taxes on wealth and investment	benefits	Direct taxes minus benefits*	indirect taxes	Direct taxes, indirect taxes, minus benefits	Total of taxes and contributions minus benefits 12
1	2	(3)	4=(2+3)	5	6	7	8	9=(6+7-8)	10	11	
Ensemble	-3,1	6,9	3,8	177104	-0,5	0,7	0,2	-0,1	1,3	1,2	4,9
1	-3,8	5,9	2,1	39673	0,0	0,4	4,7	-4,4	4,2	-0,2	1,9
2	-3,4	6,1	2,7	77773	0,0	0,4	2,0	-1,7	2,3	0,6	3,3
3	-3,4	6,2	2,8	101996	-0,2	0,4	1,0	-0,8	1,9	1,1	3,9
4	-3,4	6,4	3,0	120674	-0,4	0,5	0,4	-0,4	1,7	1,3	4,3
5	-3,5	6,9	3,4	140542	-0,6	0,5	0,2	-0,3	1,5	1,1	4,5
6	-3,5	7,2	3,6	162699	-0,7	0,6	0,0	-0,2	1,4	1,2	4,8
7	-3,6	7,3	3,7	187831	-0,6	0,6	0,0	0,0	1,3	1,3	5,0
8	-3,3	7,2	3,8	216847	-0,6	0,7	-0,2	0,3	1,1	1,4	5,3
9	-3,1	7,1	4,0	268147	-0,7	0,8	-0,2	0,3	1,0	1,3	5,3
10	-2,3	6,8	4,5	457029	-0,6	0,9	-0,1	0,4	0,7	1,1	5,7

How to read the table: The 4.9 in the first line column 12 means that the total net effect of the change in all taxes and benefits is the loss of 4.9 percentage points of the reference income.

* this column takes into account the opposite to the taxes and contributions effect of benefits

Graph 2
1990-1998 evolution of tax and benefit rates (in percentage points differences) by equivalent income deciles.



Pre-fiscal contributions

The decrease of social contributions paid on wages between 1990 and 1998 is the highest for first decile (-3.8), and the lowest for the last one. In between, the decrease is relatively homogenous with slight amplification when the living standard increases. The observed small differences between deciles can be explained on the one hand by specific contribution reductions for low wages and on the other hand, for higher incomes, by the suppression of the income ceiling for old age pension contribution.. The observed increase in social contributions paid on all incomes (CSG, CRDS) is pretty regularly increasing with rising incomes. This is due to a very simple, proportional nature of these taxes. Very small differences are due, of low incomes, to the special reduction schemes, and for high incomes to the income structure effect. Indeed, among higher incomes the share of wages is lower than average and thus the amount of contribution on wages is proportionally lower. The combined effect of both types of contributions (column 3) gives a very regular pattern of increasing considerably with income social taxation between 1990 and 1998. The increase was twice as high for high incomes than for low ones.

direct taxes

The situation after direct taxation and after benefits is very different from the previous one. The average effect is close to 0 (-.1). Direct taxation between 1990 and 1998 is diminishing when income increases. On the contrary, benefits rise for first three deciles, then practically do not change. Globally it gives the weakening reduction of direct taxation (net of benefits) when income level rises. This evolution pattern can be explained for the poor household by a relative increase in benefits between two dates and for the richer households by the increase in taxes on wealth and investment and the loss of certain benefits which became means tested between 1990 and 1998. (APJE for example).

Indirect taxes

The conclusions of the previous paragraph are considerably modified when the consumption taxes are taken into account. As the share of consumed income is decreasing with living standards of families, the impact of changes in consumption taxes is the highest for poor households and diminishing regularly when equivalent income rises. The gain in terms of decrease in taxation for poor families is almost completely compensated by the increase in consumption taxes. For richer households the effect of indirect consumption is the equalisation effect of the overall taxation: the 1990-1998 changes impact become almost homogeneous along the income distribution except for the first 2 deciles.

overall effect

The global effect of all 1990-1998 changes in the redistributive system (column 12 in table 2) is highly progressive with respect to the equivalent income increase: the all tax

(net of benefits) average taxation rate increased between 1990 and 1998 by almost 5 percentage points (pp). This increase was only 2 points for the first decile and 5.7 for the last one, progressing regularly in between. In fact, the strongest observed changes in redistributive system concern the pre-fiscal taxation (social contributions). The different stages of taxation starting from fiscal income, have mutually neutralising effects with relatively weak and not very redistributive final impact.

3. The taxes' and transfers' evolution by family structure.

The similar like in previous section analysis can be led taking into account different family structure configurations rather than position on income distribution. It can inform us on between families (or horizontal) redistribution as an effect of 1990- 1998 reforms in redistributive system .

Table 3
Taxes and benefits 1990-1998 evolution :
1990-1998 difference in percentage points of the reference income, by family type

Household's type	Structure	social contr.	social taxes	Total social taxes and contr.	Reference (fiscal) income	direct income tax	taxes on wealth and investment	benefits	Direct taxes minus benefits*	indirect taxes	Direct taxes, indirect taxes, minus benefits	Total of taxes and contributions minus benefits
	(1)	(2)	(3)	4=(2+3)	5	6	7	8	9=(6+7-8)	10	11	12
Total	100%	-3,9	7,9	4,0	185311	-0,6	0,5	0,3	-0,3	1,3	1,0	4,9
1 person	21%	-4,1	7,5	3,4	107062	-0,4	0,6	1,2	-1,0	1,4	0,4	3,7
more than 1 person, but no family	2%	-3,3	6,5	3,3	156344	-0,4	0,6	0,7	-0,5	0,9	0,4	3,6
Lone parent family	9%	-3,7	6,9	3,2	121902	-0,4	0,4	1,0	-0,9	1,7	0,8	4,0
Couple, no children	19%	-3,9	7,8	3,9	206472	-0,7	0,6	0,0	-0,1	1,1	1,0	4,9
Couple with 1 child under 18	27%	-3,9	8,1	4,2	239963	-0,6	0,5	-0,3	0,2	1,3	1,5	5,6
Couple with 2 children under 18	16%	-4,0	8,2	4,2	214827	-0,6	0,4	0,8	-0,9	1,5	0,5	4,7
Couple with 3 or more children under 18.	7%	-3,8	8,1	4,3	175857	-0,4	0,4	0,6	-0,5	1,9	1,3	5,7

How to read the table: The 4.9 in the first line column 12 means that the total net effect of the change in all taxes and benefits is the loss of 4.9 percentage points of the reference income.

Pre-fiscal contributions

Generally both type of social contributions evolution taken separately (columns 2 and 3 table 3) have a strong but relatively few differentiated between families impact. Their common effect (column 3) on the change in taxation shows an evolution in favour of lone persons and lone parents families. For couple with children whatever their number, the increase in social taxation is by 1 pp higher than for all other households.

direct taxes

Generally, direct tax reduction reforms turned out to be more advantageous for couples with or without children when compared with lone person households with or

without children . Thus the sense of horizontal redistribution (if any) was in this case rather from couples to one adult households.

The benefits rose very slightly between 1990 and 1998, a little more for couples with 2 or more children but also for lone persons and lone parents. No child couples had no change in benefits.

The combined direct taxes and benefit evolution effects are more advantageous for lone adult households or families with 2 or more children. For families with one child the net of benefit direct taxation increased essentially because of means testing of APJE benefit.

Indirect taxes

Consumption taxes evolution was clearly unfavourable for families with children when compared with households having no child . The indirect taxation became harder for families with increasing number of children both for couples and lone parents.

overall effect

The global effect on families of all 1990-1998 changes in the redistributive system (column 12 in table 3) is negative. Generally the tax burden increased between 1990 and 1998 more for households with children than without them , both when comparing couples and lone parents. The highest increase is observed for large families with 3 or more children and for those with one child.

The relative decrease of family benefits, on the one hand and the change in indirect taxation on the other hand, can explain this evolution.

3. The taxes and transfers evolution by family head work and taxation status.

Professional activity characteristics combined with income position give an extra view on the nature of tax benefit system evolution. Special situation with respect to the taxation of retired and unemployed on one hand, and almost 50% of households not paying direct income tax on the other hand, make interesting the analysis in this direction.

Table 4
Taxes and benefits 1990-1998 evolution :
1990-1998 difference in percentage points of the reference income, by work and
taxation status

work and taxation status of household's head	structure	social contr.	social taxes	Total social taxes and contr.	Reference (fiscal) income	direct income tax	taxes on wealth and investment	benefits	Direct taxes minus benefits*	indirect taxes	Direct taxes, indirect taxes, minus benefits	Total of taxes and contributions minus benefits
	(1)	(2)	(3)	4=(2+3)	5	6	7	8	9=(6+7-8)	10	11	12
Total	100 %	-3,1	6,9	3,8	177104	-0,5	0,7	0,2	-0,1	1,3	1,2	4,9
working , not taxable	14 %	-4,5	7,9	3,3	98085	0,0	0,5	1,5	-1,0	2,2	1,2	4,5
working taxable	42 %	-3,9	8,1	4,2	241024	-0,7	0,5	0,0	-0,1	1,1	1,0	5,2
Unemployed not taxable	4 %	-2,6	4,7	2,1	54406	0,0	0,4	4,0	-3,6	3,0	-0,6	1,5
Unemployed taxable	2 %	-3,5	6,7	3,2	186709	-0,5	0,6	0,3	-0,2	1,3	1,0	4,2
Retired not taxable	12 %	-0,6	1,1	0,5	85072	0,0	1,2	0,1	1,1	1,6	2,7	3,2
Retired taxable	20 %	-1,4	5,4	4,0	207322	-0,7	1,0	0,0	0,4	1,0	1,4	5,4
inactive not taxable	5 %	-1,4	2,5	1,2	52322	0,0	1,0	4,2	-3,3	2,6	-0,7	0,5
Inactive taxable	2 %	-2,4	5,8	3,4	178345	-0,6	0,9	0,3	-0,1	1,1	1,1	4,5

How to read the table: The 4.9 in the first line column 12 means that the total net effect of the change in all taxes and benefits is the loss of 4.9 percentage points of the reference income.

Pre-fiscal contributions

Only certain contribution based on wage apply to pensions and unemployment benefit. Moreover, the change in specific contributions for these categories is not perfectly comparable with those of working people. It explains for a large part the relatively weak change effect for these categories and for this social contribution based on wages and wage-replacement incomes (column 2 in table 4). Working and not taxable person's household improved considerably its taxation position with respect to this part of social contributions when compared with retired , unemployed or not active's situations. The change in other part of social contributions those based on all incomes worsened more than average the situation of families with working family head whatever his taxation position : taxable or not taxable (column 3 table 4). This is also true, but to less extend, for unemployed. The evolution of situation for not taxable inactive and retired was much better than for all other categories.

The total effect of social contributions evolution is the most favourable for families with not working and not taxable heads.

direct taxes and benefits

Direct taxes and benefit effects cannot be observed on not taxable households or not eligible for family benefits (retired). So, the effect of this part of the redistribution by working and taxation status is very weak. The only relatively strong and significant effect is those of wealth and investment taxation evolution - relatively stronger - for retired and inactive than for working.

For not taxable unemployed or inactive families a considerable improvement of

income position can be noted, thanks particularly to the positive evolution of benefits for them (plus 4 pp).

Indirect taxes

Consumption taxation evolution affected particularly poor families with a high proportion of consumed income. This is generally the case of all not taxable families, but particularly those with an unemployed and inactive head (column 9 table 4). On the other hand taxable pensioners, inactive or working suffered less than average from the increase of indirect taxation and in roughly the same proportions for all of them.

overall effect

Once all taxes, contributions and benefits taken into account, the final effect of 1990-1998 changes was the most negative, in terms of increase of the tax burden, for families of taxable retired and a little less for taxable working (column 11 in table 4) is negative. On the other hand non taxable unemployed or inactive changed very little their relative position versus tax-benefit system. These evolution can be explained, for taxable retired, by an effect of wealth and investment taxation reform. For not taxable retired the very weak final effect is due to exoneration from social contributions based on all incomes (CRDS, CSG).

3. The 1990-1998 redistributivity and progressivity evolution of the whole tax-benefit system and its components.

The changes in different elements of the tax-benefit system which occurred in 1990-1998 period are complicated enough to make difficult the evaluation the change in its redistributive and progresivity properties.

In this section we will analyse to what extent, what we observed on the individual level, can be explained by specific evolution characteristics of different elements of the tax-benefit system. We will try to analyse how the whole system and its components moved in the direction of the more or less efficient reduction in inequalities with more or less taxation progressivity.

The global redistributive effect and its decomposition presented here is, like in other static studies of this type, very partial because it takes into account only monetary redistributive effects of taxes and benefits. The distribution of compensations in terms of services available through social security or social assistance systems financed by social and income taxes cannot be easily analysed. So it is usually supposed to be neutral from inequality point of view. But it is well known, for example, that the distribution of health or education services can be very unequal among different populations, reproducing usually the inequalities observed in income distribution : Poor use relatively less the health, retirement and education services then do more wealthy families.

Several approaches are possible to appreciate the redistributive power of a given tax – benefit system and its components. (Rainwater et al. 1995, Bourguignon 1998, Bourguignon, Bureau 1999, Burniaux et al. 1999). In particular we can do it

sequentially applying one after another elements of redistribution following traditionally adopted order of redistribution - starting from gross income until equivalent disposable income. But the observed effects are not in this case invariant with respect to the order in which are analysed taxes and benefits (Bourniaux 1999). For example, the indirect taxes usually taken into account in the end of processes of redistribution are computed show much more redistributive effects if they were subtracted at the beginning of the redistribution process. From the final effect point of view there is no difference, but it can be important when the redistributivity of a given tax or benefit is analysed.

As our interest is precisely the analysis of the redistributivity characteristics change of the tax-benefit system different components we will subtract one by one specific taxes and benefits from gross income (reference, fiscal income including social contributions and wealth and investment revenues).

Progressivity and redistribution effect are computed using the Kakwani (P^K) (Kakwani,1977) and Reynolds -Smolensky (P^{RS}) indicators. (Lambert 1989, Decoster, Van Camp 1998).

Redistribution effect (Reynolds-Smolensky) is defined as a difference between concentration coefficients before and after tax:

$$\Pi^{RS} = G_X - C_{X-T} \quad (1)$$

where:

G_X - Gini coefficient of pre-tax income;

C_{X-T} - concentration coefficient of post tax income.

This indicator can be decomposed into a difference in Gini coefficients before and after taxation and the reranking correction:

$$G_X - C_{X-T} = (G_X - G_{X-T}) - (C_{X-T} - G_{X-T}) \quad (2)$$

where

G_{X-T} - Gini coefficient of post- tax incomes

G_X - Gini coefficient of pre-tax income;

$(C_{X-T} - G_{X-T})$ - reranking correction

Thus, the redistribution effect can be approximated as a difference of Gini coefficients of pre and post tax incomes when the reranking effect is small.

Progressivity indicator (Kakwani) is defined as a difference of the tax concentration coefficient and pre-tax income Gini coefficient

$$\Pi^K = C_T - G_X \quad (3)$$

Progressivity and redistributivity indicators depend on each other and on the average tax rate computed on post tax income.

$$\Pi^{RS} = t/(1-t)\Pi^K \quad (4)$$

where $t/(1-t)$ - average tax rate on the net of tax income.

The redistributive effect is measured in this paper as a difference in Gini coefficient before and after modification of a given tax or benefit as the reranking correction turned out to be not significant.

The redistributive effect depends on the average rate of taxation with respect to the after-tax income, and on the progressivity of the tax measured as the difference between concentration curves of tax and income before the tax. These three elements of progressivity and redistributivity evaluation were computed for different taxes, contributions and benefits both for 1990 and 1998 (table 5).

Tableau 5
Redistributivity and progressivity evolution of different taxes, contributions and benefits

	1990			1998		
	average tax rate	Redistributivity	Progressivity	average tax rate	Redistributivity	Progressivity
	$t/(1-t)$	Π^{RS}	Π^K	$t/(1-t)$	Π^{RS}	Π^K
Social contributions	10,6%	-0,0008	-0,0064	7,7%	0,0005	0,0054
Social taxes (CSG et CRDS)	-	-	-	5,7%	0,0028	0,0463
Tax on wealth and investment	0,6%	0,0006	0,1144	1,2%	0,0011	0,0933
Direct income tax	8,0%	0,0244	0,2796	7,3%	0,0228	0,2886
Benefits	3,9%	0,0288	-0,7772	3,9%	0,0306	-0,8113
Indirect taxes	10%	-0,0126	-0,1090	11,1%	-0,0146	-0,1166

No surprising result was observed. All direct taxes and contributions diminish inequalities. So do benefits. On the contrary the effect of indirect taxes is to increase inequalities.

What is more interesting is to observe the changes in inequality reductions by different taxes and benefits between 1990 and 1998.

The equalising effect of contributions paid on wages and wage replacement revenues is very small despite of very high average taxation rate. This rate dropped considerably between 1990 and 1998 (by 3 pp) with practically no change on redistributivity and progressivity. This result is not surprising if remembered, that it is essentially income proportional contribution. It can be noticed however that this tax is moving slightly in the direction of more redistributivity and progressivity between two dates. This little change is due to the larger progressivity of the old age pension contribution for high wages introduced after 1990.

The redistributive impact of social contributions based on all incomes (CSG, CRDS non-existent in 1990) goes in the sense of a small progressivity (but larger than in the previous case) with respect to income with a slight reduction in inequality. The main reason of that pattern is the fact, that very low, not taxable incomes are exonerated from the payment of CSG and CRDS.

The average tax rate of these contributions is relatively high, only 2 pp less than traditional social contributions.

The total effect of both social contributions and social taxes is also only very slightly redistributive.

Taxes on wealth and investment do not contribute significantly in inequality reduction even if their impact in 1998 is stronger than it was the case in 1990. Their average rate doubled, but their progressivity diminished between 1990 and 1998.

The direct taxes decreased in volume between 1990 and 1998 with an average tax rate shifting from 8% to 7.3%. Their redistributivity is high, dropping very slightly in 1998 when compared with 1990. The very small increase in progressivity in 1998 is essentially due to decrease in proportion of taxable households in 1998.

The benefits are characterised by the strongest redistributive effect which increases in 1998. Their average rate remain stable, but the degresivity (the negative progressivity) increased strongly in 1998. This evolution can be explained by expansion of means tested benefits to the detriment of universal ones.

The indirect , consumption taxes increased in volume between 1990 and 1998, their average rate increased from 10 % in 1990 to 11.1% in 1998. They are anti-redistributive and they became even more in 1998 when compared with 1990. Their degresivity has increased as well. Thus, the evolution of indirect taxes reinforced their tendency to increase inequalities.

All in all the French tax –benefit system is more redistributive in 1998 than in 1990. Almost all elements were going in this direction. The particularly strong effect is observed in the benefits' evolution traditionally the most redistributive element of the system.. Anti redistributive evolution of indirect taxes did not change the general pattern of increase in redistribution.

Conclusion

The 1990-1998 period was marked by a considerable increase in overall taxation especially due to the increase of indirect taxes and social taxes and contributions, slightly compensated by a reduction in direct taxation. Simultaneously social transfers were strongly increasing . The whole system appears as more redistributive not only because of changes in benefits or income from wealth taxation but also, and it is relatively new, to a slightly more redistributive pattern of social contributions. However these effects are considerably reduced by the evolution in indirect taxation going in the direction of the reduction of redistributivity.

At the household's level the observed expansion in taxation was increasing by equivalent income from 2pp rise for 1st decile to 5.7pp for the last one . For families having children the result of changes in taxes and benefits is not very favourable when compared with households with no children. The lone person households lost less than couples , especially those with 1 or 3 and more children. Households of working heads lost more then those of inactive or retired especially in the case when the last are not taxable.

The overall consequence of the general increase in taxation is a significant reinforcement of vertical redistribution and weakening of inter- households, horizontal family redistribution.

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Appendix 1

The Microsimulation Model INES*

The microsimulation model used in this study is a set of data bases and procedures conceived to enable the evaluation of redistributive effects of changes in tax benefit system at the individual level (household, tax unit, individual). It is a simple static model with a possibility to include the individual behaviours and to update the demographic structure.

Description:

1. Tax-benefit system

All taxes contributions and transfers are included (with only small exceptions):

1.1 Taxes and contributions

*income tax
social contributions
VAT and other indirect taxes
local taxes*

1.2 monetary transfers

*family allocations (AF)
back-to-school benefit (ARS)
parental leave benefit (APE)
special education benefit (AES)
young child benefit (APJE)
housing benefit (AL, APL)
lone parent benefit (API)
handicap benefit (AAH)
family supplement (ASF)
Minimum Income (RMI)
minimum old age pension (MV)*

2. Behavioural responses

The model is static. However it is possible to introduce consumer's reactions in VAT part of the model.

3. Coverage

The whole population of ordinary households. Persons in institutions are excluded. Corporate taxes are not included.

4. Model's structure

The model is divided in several units. The most important one is the large data basis on the individual level, computation procedures (taxes, means tested benefits...), simulation procedures, report module to present results under a standard format.

4.1. Data basis.

Tax file record 1996 (20000 households, 50 000 individuals) matched with Employment Survey 1997 is a central source of information. Other sources (surveys and administrative files) to complete lacking information or update:

Surveys - Family Budget Survey (BDF 1995), Housing Survey, Financial Assets Survey, Employment Survey

Administrative files - Annual Wage Register (DADS), Pensions register (SESI).

4.2 Computing procedures

Income Tax (IR) - exhaustive computing procedure adapted from Ministry of Finance module.

Housing benefit - exhaustive computation procedure for means testing and the level of benefit computation

Social contributions module - computes contributions for wage earners and self employed, Social taxes module (CSG, CRDS).

4.3 Imputation procedures for some transfers and benefits.

4.4 Simulation programs:

income tax modification

Housing benefit

change in indirect taxes

introducing new direct taxes

substitution between different taxes and contributions

5. Reports

The redistributive effects of the change in the tax benefit system can be presented at the individual level by typical socio-demographic characteristics : demographic structure, family type, percentile of income, social category, location...

Standard indicators to measure inequality and change in income distribution are available.

see: David, Lhomeau, Starzec (1999) for more details.