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Education

And

Redistribution

Report 3

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In order to draft this report, Cerc referred to the statistical analyses and economic studies conducted in France by the *Insee*, and the *DPD* (*Direction de la programmation et du développement*) of the French Ministry for Youth, National Education and Research.

To prepare this report, a seminar was held in November 2002, the proceedings of which are available online on the Cerc website.

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A conventional analysis of income redistribution using only tax deductions and monetary transfer payments (social security cash benefits), gives an incomplete picture of the impact of public action on household income.

In fact, numerous expenses incurred by government bodies directly serve households, increasing their consumption and, implicitly their income, in the form of "non-cash transfer payments". The two main budget items are spending on education and health.

To take this into account, national accounts defined an "adjusted disposable income" for households as the sum of the monetary income and allocated public expenditure which, in 2001, totaled 217 billion euros, representing 19% of the adjusted disposable income.

The effects of public spending are far from negligible considering the volumes of funds corresponding to standard redistribution instruments. In 2000, initial education spending by government bodies in France represented 83.7 billion euros, the total expenses towards family benefits 24 billion euros, housing allowance 12.5 billion euros and *RMI* (minimum income benefit) 4.5 billion euros, and finally, income tax proceeds of 52.7 billion euros.

This spending is obviously not distributed evenly across households. It is therefore legitimate to take a closer look at this spending to throw light upon the impact of government actions on income distribution – one of the areas of analysis explored by Cerc. This is the purpose of this report as regards spending on initial education.

Indeed, income distribution is not the key purpose of education spending. Also, the advantages it offers to families can by no means be summed up to education expenses alone. We must therefore not neglect these effects on the redistribution of the relative positions of households, or simply treat education spending as yet another transfer payment added to the list of monetary transfer payments.

Spending on education is one of the main investments for individuals and for society as a whole.

As a result, the impact on income redistribution must in this case, and more than for any other redistribution mechanism, be measured within the life cycle. Even though, at any time, the income tax paid by certain households, for example those without school-going children, is used for public education spending that benefits others, these persons enjoyed such transfers in their childhood, or for their children, etc. The impact of education on income within the life cycle is extremely difficult to analyze, both conceptually and due to the limitations of the information available. This report gives only an outline.

While redistribution policies aim to reduce or curb inequality in income or in living circumstances observed at present, one of the objectives of the educational system is to promote equal opportunity and thereby reduce future inequality. Its goal is not to address only the differences in financial resources allocated to a specific category of youth or families; it can justify a more substantial budget earmarked for underprivileged students and families.

By addressing the question of financial resources allotted for education, this report focuses on a subject that is vital for analyzing the status of households, in its more imminent aspects and for the future of one and all. It does not however, deal with the impact of education on equal opportunity from all the facets that must be analyzed.

Consequently, this report is a modest attempt to precisely explain the scope of the study as also the concepts and conventions that must be used. The conclusions one can draw from it are partial and omit important dimensions.

After a recap of the socio-demographic characteristics of students (Chapter I) and the analysis of spending on education (Chapter II) based on levels and branches, we can study the distribution of spending on education among the various beneficiary families using, in particular, the original statistics drawn up by *Insee* for this report (Chapter III). Besides the actual public spending on education, we have aid granted to families or students in the form of transfer payments (tax rebates, scholarships, new school year allowance) which participate in income redistribution (Chapter IV). Finally, in Chapter V, we will try to determine the balance between spending on education and the taxes that fund it, by distinguishing compulsory education from further studies, using a spot analysis and from the life cycle perspective.

In the various chapters, the condition in France is compared as far as possible, with that of European and other OECD countries.

This chapter charts the landscape of France's school-goer population while emphasizing two parameters that have a particular incidence on spending on education and its distribution based on family income, namely enrollment rates and the social background of students in the various branches.

FOURTEEN MILLION YOUTH AT SCHOOL

During the 2000-2001 school year, there were 14.4 million students enrolled in metropolitan France; over six million in elementary school and kindergarten, six million in lower and higher secondary schooling, and two million in postsecondary education (Table 1).

Table 1 – Student headcount in 2000-2001

	in thousands
	2000-2001
<i>Kindergarten</i>	2,443
<i>CP-CM2 (1st grade to 5th grade)</i>	3,783
<i>Special education</i>	55
Total elementary level	6,281
<i>Lower secondary school (6th grade to 9th grade)</i>	3,159.4
<i>Higher secondary school vocational education (10th grade to 12th grade)</i>	666.6
<i>Higher secondary school general and technological studies (10th grade to 12th grade)</i>	1,451.1
<i>Individualized education</i>	116.5
<i>Apprenticeship training centers (a)</i>	369.0
<i>Other secondary level training (b)</i>	229.2
Total secondary level	5,991.8
Postsecondary	2,128.8
Total	14,401.6

(a) This item includes postsecondary students.

(b) Secondary level agricultural section, special and health education, social and health training at levels V and IV.

Scope: Metropolitan France, students in public and private schools.

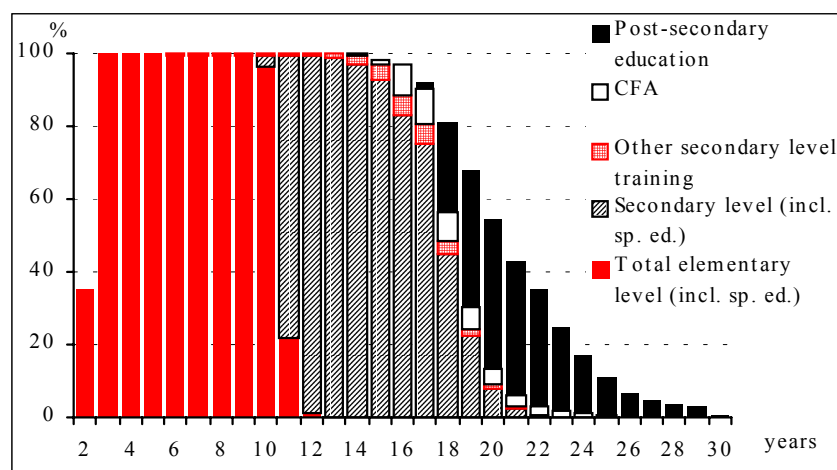
Source: DPD (Direction de la Programmation et du Développement).

France has opted for early education. Enrollment in the *école maternelle* (kindergarten) as of three years became a common occurrence approximately as of 1990. The enrollment rate (percentage of an age class enrolled) at three years almost touched 90% in 1980. These numbers swelled between 1960 (approximately 35%) and 1975 (approximately 75%). The enrollment rate of two-year olds is about 35% since the beginning of the eighties.

Enrollment is thus almost total for generations between 3 and 16 years, i.e. the end of compulsory schooling since 1959 (from 1936 to 1959, it was 14 years). As of 16 years, enrollment rates taper off (Graph 1).

Compulsory education (from 6 to 16 years) makes up 58% of the student headcount. About 17% of the students are less than six years old and about 25% are over sixteen.

Graph 1 – Enrollment rate by age in 1999-2000



Note: CFA: Apprenticeship training center; other secondary level training (see (b) Table 1).

Source: DPD, Repères et références statistiques 2002.

On the whole, the "enrollment expectancy" (sum of the enrollment rates) was 19.1 years in 2000 (Table 2), against 17.2 years in 1985. There was a steady progress in the eighties and early nineties, with an increase of about 0.2 per year from one school year to the next. This growth in enrollment expectancy was due to the extension of schooling beyond 16 years.

Table 2 – Variation in enrollment expectancy

	number of years			
	1985-1986	1990-1991	1996-1997	1999-2000
Total	17.2	18.2	19.1	19.1
Girls	17.3	18.3	19.3	19.3
Boys	17.1	18.1	18.9	18.9
Before age 6	3.3	3.4	3.4	3.4
After age 14	4.9	5.8	6.7	6.6

Source: DPD, L'état de l'école, 2002.

The growth in the average school-going period stalled since the 1997 school year and even showed a slight drop, due to the fall in enrollment rates for 18-21 year age cohort – for example, by about three percentage points in three years for 19-year olds. Enrollment rates for the 22-25 year bracket continue to grow. The fall in enrollment rates for the 18-21 year age cohort would be mostly due to the vocational education career choices made, between 1993 and 1997, by families faced with high unemployment rates, rather than the recovery of economic activity and the fall in youth unemployment rates inciting them to enter the job market earlier (Minni and Poulet-Coulibando, 2001).

Two main factors explain the increase in the numbers enrolled over the long term, namely the demographic wave following the post-world war baby-boom and the gradual introduction of different education levels. Student numbers in *collèges* (secondary schooling up to 9th grade) went up till the mid-eighties, while the headcount in *lycées* (10th, 11th and 12th grades) increased up to the early nineties. Since then, the secondary schooling enrollment numbers have been stable on the whole. The increase in headcount for postsecondary education continued till the mid-nineties.

Table 3 – Progress in enrollment headcount

	in thousands				
	1960-1961	1970-1971	1980-1981	1990-1991	2000-2001
<i>Kindergarten</i>	1,374	2,213	2,384	2,556	2,443
<i>Elementary school</i>	4,997	5,007	4,740	4,149	3,838
Total elementary level	6,371	7,220	7,124	6,705	6,281
<i>Secondary school (6th grade to 9th grade)</i>	2,353	2,920	3,138	3,135	3,160
<i>Apprenticeship training centers</i>	290	233	242	222	369
<i>Secondary school (10th to 12th grade)</i>	887	1,646	2,211	2,605	2,471
Total secondary level	3,530	4,798	5,591	5,961	5,992
Postsecondary	310	851	1,175	1,699	2,128

Source: DPD.

SCHOOLING DURATION COMPARABLE WITH OTHER EUROPEAN COUNTRIES

The age at the end of compulsory schooling in France is comparable to that of our main neighbors. It is 16 years in the United Kingdom, Spain, Sweden, Canada and Denmark. It is lower in Italy (14 years) and in Japan (15 years), and higher in the United States (17 years), Germany, Belgium and the Netherlands (18 years).

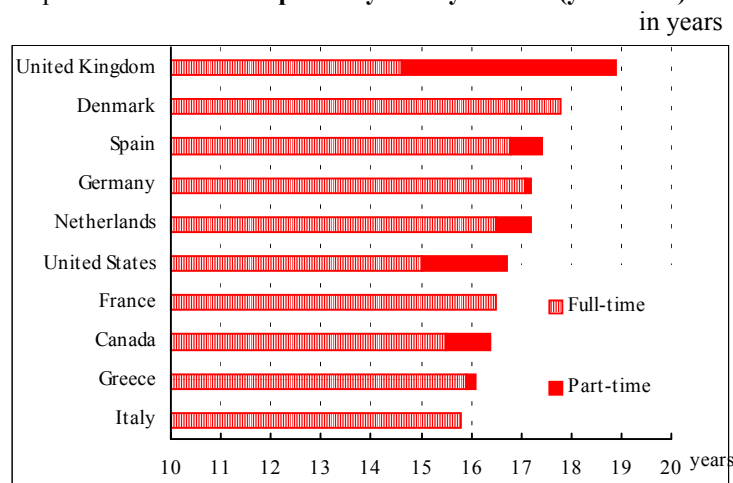
Pre-schooling

France has opted for early education, and stands out from most of its neighbors in this respect. France, Belgium and Italy are the only three OECD countries to have over 90% of their three-year olds in schools. Certain countries (Denmark, Japan, the Netherlands, Spain and the United Kingdom) reach the 90% enrollment rate one year later (Ragoucy, 2002).

Enrollment rates

As regards the enrollment of its youth, France has caught up not only with the United States, but also Denmark and the Netherlands which were ten years in ahead. Other countries such as Germany, Great Britain, Spain or Italy have also recorded very high growth in their schooling system. The enrollment expectancy for 5-year olds in France is comparable to that of our European neighbors (Graph 2), our specificity lies in our comparatively high full-time enrollment figures.

Graph 2 – Enrollment expectancy for 5-year olds (year 2000)



Source: OECD, *Education at a glance* (2002).

If enrollment before five years is taken into account, France's relative position as concerns the total duration of the average school-going period would be higher.

The processes of this growth however differ. Romance-language countries favor full-time enrollment, whereas Anglo-Saxon, Germanic and Scandinavian countries prefer part-time enrollment combined with a phased integration into working life (Chauvel, 1998). For the youth in Romance language countries, the entry into the job market is later and more abrupt, whereas it is earlier and more progressive for the second group of countries (Table 4).

Table 4 – Age as of which half the youth population is on the job market

	EU-15	France	Denmark	Germany	Spain	Italy	The Netherlands	United Kingdom
1987	18	20	16	18	19	20	18	16
1995	20	22	16	19	21	21	18	17

Source: Eurostat, "Labor Forces" surveys (table drawn from Blum, 1997).

At 18, in the fifteen European member states as a whole, 76% of the youth are still in training. This percentage is high in Denmark, Sweden, the Netherlands, Germany, Belgium and France. It is lower in southern European countries (Spain, Italy) and in the United Kingdom.

This education may continue full time without the youth entering the job market. This is the case in particular, in France, Spain, Italy and Sweden. In the other countries, the youth most often divide their time between education and work, either as part of their studies (cooperative education) or separately. For example, France, Denmark or Germany have about the same proportion of young people continuing their studies at 18 years, but of these, less than one out of ten is part of the working population in France compared to nearly eight out of ten in Denmark and over four out of ten in Germany (Table 5).

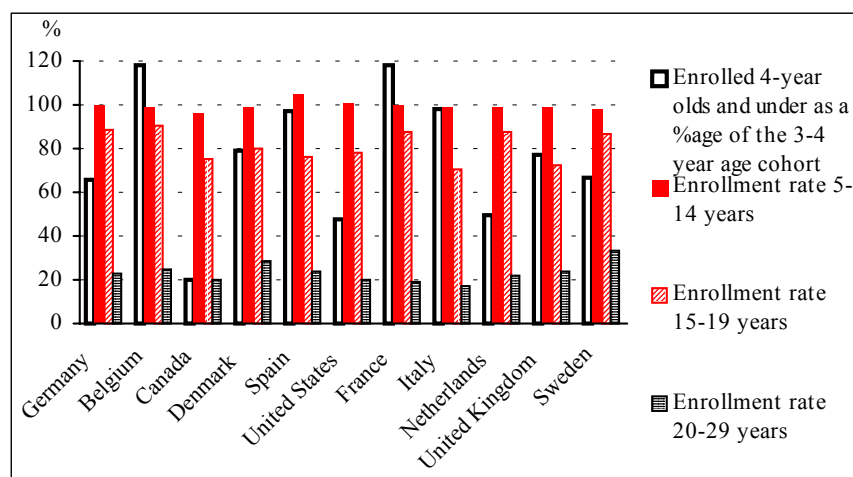
Table 5 – The position of 18-year olds in 1995

	as a %age				
	Total in training	Of which those in training and not working	Of which those in training and working	Not in training and working	Not in training and not working
EU-15	76	59	17	19	5
France	91	84	7	7	2
Denmark	90	30	60	8	2
Germany	87	48	39	10	3
Spain	72	66	6	23	5
Italy	71	64	7	26	3
The Netherlands	83	41	42	12	5
United Kingdom	56	27	29	38	6

Source: Eurostat, "Labor Forces" surveys (table drawn from Blum, 1997).

As concerns enrollment before 20 years, France has a relatively high enrollment rate as compared to the main industrialized countries. For the 20-29 age cohort, however, the enrollment rate is slightly less than the average (Graph 3).

Graph 3 – Enrollment rate in 1999



Note: The ratio of children aged 4 and less to the 3-4 year age cohort exceeds 100% in Belgium and France as it includes children below three years who are enrolled in schools. For Spain, the data on the number of children and the enrollment headcount is not consistent, due to a possible overestimation of the number of students.

Source: OECD, *Education at a glance*.

With the opening-up of the *collège* (secondary schooling up to 9th grade) and higher levels, fewer disparities appear in the access rates to a particular level (especially up to the end of the *collège* level) than in the differentiation between branches, learning difficulties and failure rates.

All students now enter a *collège*. This access rate was about 25% for the pre-world war-born generations and over 95% for the generations born as of the seventies (Duru-Bellat and Kieffer, 2000). At present, about 97% of a generation reach the 9th grade (academic or technological), 70% go up to the 12th grade (level IV), and 62% obtain the *baccalauréat* degree. This democratization of schooling alters but does not do away with the disparity in the results based on social background (insert).

DISPARITIES BETWEEN STUDENTS BASED ON SOCIAL BACKGROUND

The correlation between one's academic destiny and family background is reduced mainly by extending the study duration.

The steady opening-up of the various levels of the education system has undeniably led to a reduction in the academic destiny-social background correlation in the levels that were opened. This is of course the case not only for the access to the 6th grade and the 10th grade, but also to the *baccalauréat* level; as the access rate for the privileged categories has already reached high levels, its variation is less than the access rate for working-class categories. In this light, as concerns the *baccalauréat* degree in the post-world war period, it was 30 times more likely for an executive's child to obtain the *baccalauréat* degree and for a worker's child not to do so, than the opposite scenario. This odd ratio fell to 15 for the sixties generations and has continued to reduce for the recent generations to about 10 (Duru-Bellat and Kieffer, 2000; Thélot and Vallet, 2000; Duru-Bellat, 2002a).

Measuring the correlation between academic destiny and family background

In principle, the overall rise in the rate of access to education can be represented in the differences between social groups or family types, in several ways – the rates may vary in parallel (we then speak of uniform democratization) or come closer together (equalizing democratization), or move further apart (segregative democratization).

The preliminary approach is to use access rates, and measure their differences and variations by simple addition (difference in the rates) or multiplication (ratio of the rates). However, this measurement does not consider the fact that access rates are necessary between 0 and 100%, which may create a problem when these rates get closer to the 100% mark.

The "logistic" measurement takes this specificity into account. It measures the ratio of the probability of an event occurring to the probability of its not occurring (odds ratio). For example, as concerns the access to the *baccalauréat*, we measure the ratio of the probability of an executive's child obtaining the *baccalauréat* and of a worker's child not doing so to the opposite event (i.e. of the worker's child obtaining the *baccalauréat* and the executive's child not doing so). It gives the ratio of the opportunity between the first case and the second.

Other statistics may also be used, such as the results of logistic regression or the part of the academic destiny variance explained by social background variables, or Cramer's V-statistics (overall indicator of the link between two variables, between 0 and 1).

The reduction of social inequality as regards schooling can also be measured using the highest schooling level reached.

The considerable reduction in social inequality as regards schooling stems more from the increased duration of schooling than a weakening of the specific link between academic destiny and social background (Goux and Maurin, 1997a). Even though the increase in the duration of schooling is not uniform (Merle, 2002), it explains 74% of the difference in academic destiny between the generations born in the beginning of the twentieth century and those born around 1970 (for whom the access to the *baccalauréat* was around 50%). The weakening of the link between social background and academic destiny accounts for only 14% of the cases; this is comparable to the percentage attributable to the deformation in the social structure, i.e. 12% (Thélot and Vallet, 2000).

Severe inequality in academic destiny persists, not so much as a result of the father's socio-professional category, as the level of education of the parents (Thélot and Vallet, 2000). While on the one hand, considering the mother's education level along with the father's PSC (profession and social category) further clarifies the explanation for academic destiny, on the other, by substituting the father's PSC with his education level, we often see a stronger link between the parents' characteristics and the academic destiny of their children.

The issue of inequality in access to schooling does not do away with the question of social mobility. In fact, schooling undoubtedly causes more social mobility than the job market (Galland and Rouault, 1996; Goux and Maurin, 1997b; Vallet, 2001).

Gradual growth of disparities

The differences already exist when starting CP (1st grade)

The enrollment rate at two is higher in ZEP's (priority education zones) where early enrollment is encouraged; in such areas, it exceeds 40% in comparison with the national average of 35%.

The data supplied by the 1997 Panel of the DPD on entrants in *CP* (1st grade) point to certain positive effects of schooling at two on the results at the start of *CP*. Although students from underprivileged socio-professional categories (be it of the father or the mother) and those enrolled in ZEP schools obtain lower scores on the average, early schooling brings ZEP students' scores closer to the average (Jeantheau and Murat, 1998). Schooling at two however has little effect on the social inequality of success which remains significant during the first two years of elementary school (Caille, 2001).

The disparities mount in the elementary education level

As of *CP* (1st grade), the students' performance is assessed with greater precision. The differences in the scores obtained by children starting 6th grade are slightly more significant than those of children starting *CE2* (3rd grade) (Table 6).

Table 6 – Scores based on the social origin of children starting *CE2* and 6th grade

	Start of <i>CE2</i>		Start of 6 th Grade	
	French	Mathematics	French	Mathematics
Executives and professionals	79.8	73.8	78.0	74.9
Intermediate professions	77.4	71.7	73.4	70.5
Employees	73.0	69.5	69.5	64.9
Craftsmen, merchants	74.3	68.5	67.9	66.5
Farmers	73.2	69.0	68.7	64.5
Workers	67.5	63.4	63.0	59.1
Not economically active	60.3	54.4	59.2	53.7
Average	72.0	67.1	68.5	64.6
Executive/Worker gap brought to the average	17%	15%	22%	24%

Note: Scores obtained at the start of the school year in September 2000. The assessment protocols were based on a variable number of items (for example, 94 items for assessing French scores in *CE2*), with all scores being brought to 100.

Sources: Andrieux, Dupé and Robin, 2001; Andrieux, Brézillon and Chollet-Remvikos, 2001.

The magnitude of these differences however seems relatively small as compared to those measured in the secondary school level.

A more marked differentiation in the secondary school level

The development of social inequality as regards schooling becomes increasingly manifest in the *collège* level. Based on a follow-up of a student sample from the start of the elementary level, Duru-Bellat, Jarousse and Mingat (1993) state that there is as much disparity in the results linked to social background during the first two years of *collège*¹ as in the entire past education of these students.

The access to the general or technological section of the higher secondary level is deeply affected by the social background of students; in the eighties, the access rate varied from 87% for executives' children to 32% for workers' children. Of these 55 points, the differences at the end of the elementary level account for about 20 points. Therefore, about 35 points would have been observed in *collège*, which represents a marked increase in social differentiation as regards schooling.

Differences in repeat rates

The differences in orientation choices based on socio-professional categories are also seen in the number of repeaters. There is a considerable social disparity in the access to the 8th grade without repeating a year, for students starting in the 6th grade. On an average, repeat rates are about 10% in the 6th and 5th grades; 5% of executives' children repeat at least one of these years against 44% of unskilled workers' children, and 51% of children of non-working parents (for students starting 6th grade in 1995, Poncet, 2000).

These disparities are further amplified at the start of the higher secondary level. Of the children starting 6th grade in 1989, 59% reach the general or technological section at the higher secondary level with only 47% of nonrepeaters. 90% of executives' children reach the general or technological section of the higher secondary level as compared to 42% of workers' children. 90% of executives' children reach the general or technological section of the higher secondary level as compared to 32% of workers' children. While 80% of the students reach the general or technological section of the higher secondary level without repeating a year at the *collège* level, the proportion reaches 87% for executives' children and 76% for workers' children. The gaps are slightly greater in the case of the access to the 11th grade of the general or technological section, given the possibility of taking up a vocational adjustment program after a *Brevet d'études professionnelles* (BEP diploma of occupational studies) (Coëffic, 1998).

The learning gaps mount up through the schooling period, and those observed at the *lycée* level are considerable – about 44% of 15-year olds are below par, varying from 17% of senior executives' children to 59% of workers' children (Insee, 2002).

Social background and orientation

When differentiating between the various education paths, orientation comes forth as an important discriminating factor based on the social background of secondary level students (Duru-Bellat, 2002b).

(1) The disparity in results measured in any phase of an education path may be partially due to the outcome of the differences at the end of the earlier phase. Strictly speaking, we cannot state that the extra gap is created, for example, by the *collège*.

Students at the end of compulsory schooling

The ambitions of families for their children greatly depend on their social status – with schooling being constant, executives and parents with higher education levels seem more ambitious (Chausseron, 2001) and orientation decisions sometimes reinforce these differences in the parents' plans for their children.

The importance of orientation choices increases at the postsecondary level where the branches available are highly diverse. Of the students who obtained a scientific *baccalauréat* on time or in advance (a population that has already gone through several education filters), about 50% of executives' male children and 30% of executives' female children opt for preparatory courses for *grandes écoles* (higher education institutions) compared to only 19% of workers' male children and 9% of workers' female children (Caille, Lemaire and Vrolant, 2002).

A snapshot view of the students at the end of compulsory education clearly shows the disparity of education paths based on the socio-professional category of the head of the family (Table 7).

Although few students give up their studies (3% on an average), their presence in the lower secondary level points to the fact that there are twice as many workers' or employees' children who are behind in their studies as executives' children. Conversely, there are three times more executives' children than workers' children who are ahead (and who are, in particular, in the general section of the 12th grade).

Table 7 – The position of 16-year olds

average for the years 2000 to 2002

	Farmers, Craftsmen	Executives, Professionals	Intermediate Professions	Employees	Workers	All
Discontinued their studies	3	0	1	3	4	3
<i>Collège</i> and special education	9	6	7	16	15	11
10 th grade general or technological section, and 11 th grade general section	52	72	60	41	32	48
12 th grade general section	7	12	8	6	4	7
Apprenticeship training	10	3	10	13	19	12
<i>CAP</i> , <i>BEP</i> and other short-term technical or vocational diplomas	13	4	10	16	21	14
11 th and 12 th grade vocational or technological section and other long term technological or vocational education	5	3	4	5	5	5
All	100	100	100	100	100	100

Note: The ages are calculated by generation; for example, for the Employment survey of March 2002, 16-year olds belong to the 1985 generation (they were 16 years old at the start of the school year in September 2001).

Sources: Insee, Employment surveys; Cerc calculations.

As concerns the orientation to branches other than the general section, about 20% of workers' or employees' children choose the short-term technological or vocational track compared to only about 3% of executives' children. This contrast is also seen in the apprenticeship track.

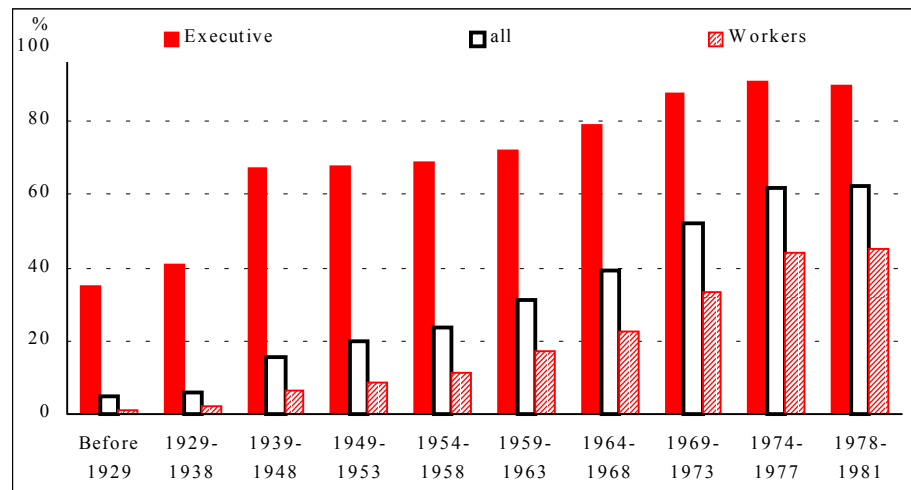
Differences at the *baccalauréat* level

Since the mid-nineties, the proportion of *baccalauréat*-holders in a generation has stabilized just below 60% against 30 to 40% for generations born in the sixties, and less than 20% for those born before 1950. The increase is linked to a rise in success rates in the general section *baccalauréat*, as also to the creation in 1965 and the development of technological *baccalauréat* degrees followed by vocational *baccalauréat* degrees (1985).

While about 70% of a generation reach the *terminale* (12th grade), just over 60% actually obtain "*le bac*", of which about 32% receive a general *baccalauréat*, 17% a technical *baccalauréat*, and 11% a vocational *baccalauréat*. The disparity between socio-professional categories remains significant – about 90% of executives' children compared to about 45% of workers' children (Graph 4).

The differences however decrease slightly over time. For post-world war generations, the gap was about 60 points, whereas for those born in the sixties, it was 55 points.

Graph 4 – *Baccalauréat* success rate by generation



Sources: Duru-Bellat and Kieffer (2000) up to the 1959-1963 generations and Employment surveys, *Insee*; Cerc calculations.

The access to the various branches of the *baccalauréat* brings to light an over-representation of executives' children in the general section *terminale* (12th grade) and of workers' children in the vocational section, whereas for the other PSC (farmers, merchants, craftsmen, intermediary professions, employees and not economically active), the distribution between the various branches is fairly homogeneous.

The orientations of *baccalauréat*-holders after "*le bac*" vary sharply based on their previous education path. After the *baccalauréat*, about 11% of holders discontinue (or suspend) their studies. Nearly all general *baccalauréat*-holders and 83% of technological *baccalauréat*-holders continue their studies, whereas 70% of vocational *baccalauréat*-holders give up their studies. The branches chosen by those who continue to the postsecondary level vary widely based on their age, their schooling and social background, and the geographical proximity of the branches available.

The differences at 18

The distribution of the 18 age cohort reveals a rapid development of differences in education paths in the years that follow the end of compulsory schooling (Table 8).

The proportion of workers' children who give up their studies is six times greater than executives' children, and four times greater than employees' children. One out of two executives' children is already in postsecondary education (university or preparatory courses for *grandes écoles* (CPGE)) as compared to one out of six workers' children.

Table 8 – The schooling of 18-year olds

	Farmers, Craftsmen	Executives	Intermediate professions	Employees	Workers	All
Discontinued their studies	16	5	11	23	28	19
<i>Collège</i> , special education, apprenticeship, <i>CAP</i> , <i>BEP</i>	13	4	11	18	22	16
10 th and 11 th grades (all branches)	9	7	11	11	10	10
<i>Terminale</i> (12 th grade) (all branches)	28	24	26	24	23	24
<i>IUT</i> , <i>STS</i> , other advanced technical diploma courses, health education and social studies diplomas	16	15	16	10	8	12
University and preparatory courses for <i>grandes écoles</i>	19	45	25	13	9	19
	100	100	100	100	100	100

Note: The ages are calculated by generation – for example, for the Employment survey of March 2002, 18-year olds belong to the 1983 generation (they were 18 years old at the start of the school year in September 2001).

Sources: Insee, Employment surveys; Cerc calculations.

POSTSECONDARY EDUCATION

The increasing number of *baccalauréat*-holders and the higher frequency of continued education after "*le bac*" have stepped up the postsecondary level headcount from 1.2 million in 1981 to 1.7 million in 1991, and stabilized at just over 2.1 million since the mid-nineties.

Diversity of postsecondary branches

Due to the diversification of postsecondary branches, the numbers in University (excluding university-level technological and engineering institutes) have gradually decreased. In the mid-eighties, it massed about two-thirds of the postsecondary headcount, compared to about 60% in 2001, accounting for 1.3 million students.

Table 9 – Postsecondary headcount

in thousands

	1980-1981	1990-1991	2000-2001
Preparatory courses for <i>grandes écoles</i>	40.1	67.5	69.5
Technical college departments	67.3	199.1	242.8
University institutes of technology (IUT)	53.7	74.3	118.8
Universities	790.8	1,080.2	1,253.0
<i>First stage (undergraduate studies years 1 and 2)</i>			585.5
<i>Second stage (undergraduate studies years 3 and 4)</i>			480.0
<i>Third stage (graduate studies)</i>			187.5
Engineering schools	37.0	57.6	95.2
Business, management and accounting schools	15.8	46.0	63.6
Paramedical and social studies schools	91.7	70.4	92.2
Other institutions	78.5	103.6	190.1
Total	1,174.9	1,698.7	2,128.8

Scope: Metropolitan France.

Source: DPD.

Student numbers in University institutes of technology (*IUT*), created in 1966, have grown quite steadily to reach a current figure of about 120,000 students, accounting for 6% of the postsecondary headcount.

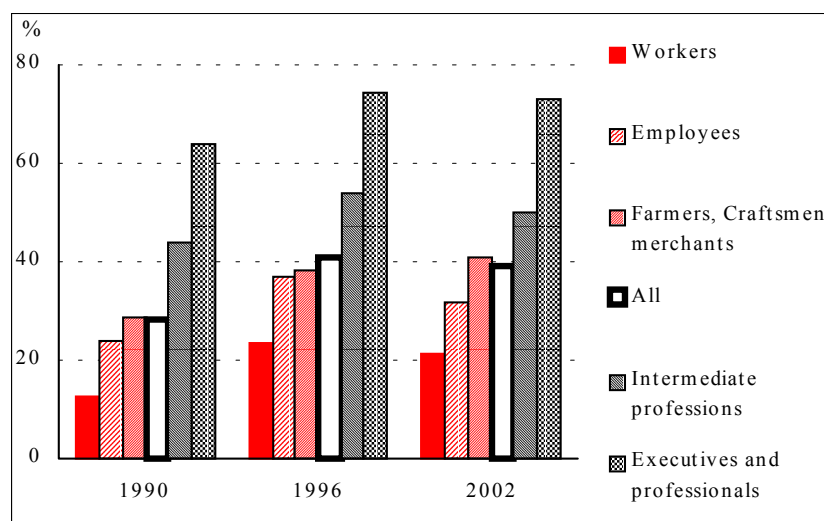
The numbers in technical college departments (*STS*) tripled in the eighties and stabilized at about 230,000 since 1992-1993, accounting for 11% of the postsecondary headcount since the early nineties.

On the whole, the total number enrolled in preparatory courses for *grandes écoles* (*CPGE*), engineering, business, management or accounting schools and in paramedical or social studies schools tallies with the general increase in the postsecondary headcount, representing about 11% of the total since the early eighties. This stability reflects the stagnation in the numbers enrolled in *CPGE* and engineering schools, a considerable growth in the numbers enrolled in business, management and accounting schools, and a slight drop in the paramedical or social studies schools' numbers.

Differences in the access to postsecondary education

In the nineties, the opening-up of the access to the *baccalauréat* stepped up the enrollment rate of the 20-21 year age cohort by about ten points in the various socio-professional categories, without modifying the hierarchy (Graph 5).

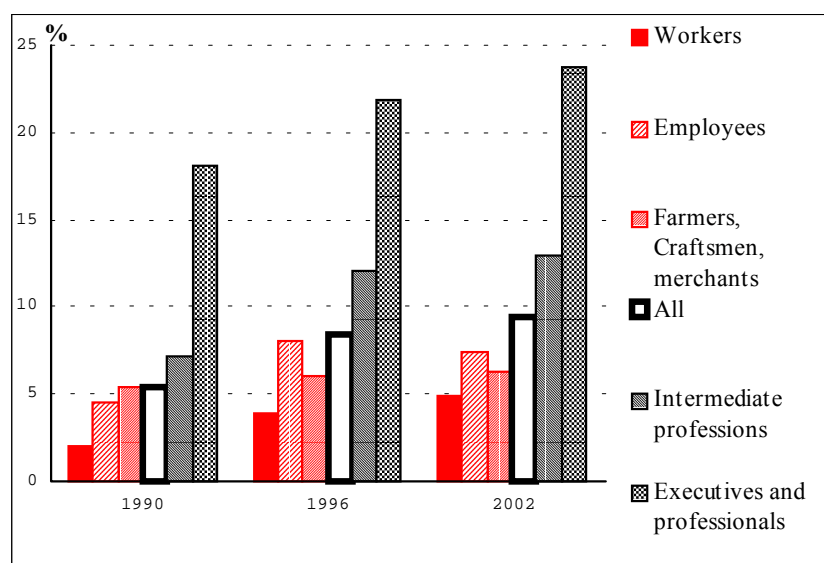
Graph 5 – Enrollment rate of the 20-21 year age cohort based on the parents' PSC



Sources: Insee, Employment surveys; Cerc calculations.

As concerns education beyond the postsecondary level, the enrollment rates at 24-25 years are also greatly affected by the parents' socio-professional category. Although these rates continued to grow at the end of the nineties, the differences between the PSC remained stable or increased (Graph 6).

Graph 6 – Enrollment rate of the 24-25 year age cohort based on the parents' PSC



Sources: Insee, Employment surveys; Cerc calculations.

There are distinct differences in access rate based on the postsecondary branches. Workers' children make up 11% of university students and 21% of technical college departments (STS) students, but only 5% of preparatory course students. Conversely, senior executives' children comprise 33%, 15% and 50% approximately.

The differences are especially noticeable in the more prestigious branches such as *Polytechnique*, *ENA* (*grande école* for training government officials), *HEC* (*grande école* for management and business studies), *ENS* (reputed training college for teachers and researchers), where children of senior executives or teachers accounted for 80% of the total in the early nineties, given that these branches were less accessible than the rest of the schooling system, and the University, in particular (Euriat and Thélot, 1995).

SUMMARY

The demographic wave and the gradual opening-up of successive levels of secondary education stepped up the student numbers in the lower and higher secondary levels and beyond. This growth has however leveled off for several years now, at the elementary and secondary levels and more recently (mid-nineties) at the postsecondary level. Two characteristics set us apart from our neighbors, namely early enrollment before the compulsory schooling period, and a comparatively low postsecondary headcount.

Besides, the sustained opening-up of secondary and postsecondary education has not tempered the disparities in education paths with respect to the student's social background, and a great deal is yet to be accomplished in terms of equal opportunity.

These factors play a crucial role in the spending structure and its distribution among the various families. The next two chapters analyze these points.

In all developed countries, spending on education represents considerable budgets in terms of the transfer payments granted. People generally analyze only the impact of these transfer payments on income redistribution. This report is an attempt to take into account the public education spending as an “in-kind” transfer ; but we restrict our analysis to spending for initial education. Continuing education¹, an increasingly important theme in numerous countries, is not discussed in this report.

The "spending on initial education" discussed in this report includes only expenses relative to initial education and not the wider concept of domestic spending on education, used by the Ministry for National Education in education accounts (see insert).

The spending on initial education totaled about 88.5 billion euros for the year 2000. Public spending accounted for 83.7 billion euros (i.e. 6% of the GDP). For the purposes of comparison, the total spending towards family benefits totaled 24 billion euros, housing allowance 12.5 billion euros and *RMI* (minimum income benefit) 4.5 billion euros, and proceeds from personal income tax 52.7 billion euros.

SPENDING ON INITIAL TRAINING IN FRANCE

Public spending in favor of households with school-going children includes educational expenses within educational institutions, totaling about 80 billion euros; it is discussed in this chapter. This expense also includes various transfer payments granted to households towards educational expenses, such as scholarships, the new school year allowance, tax rebates, and other allowances (about 4 billion euros). These are dealt with in Chapter IV.

We can break down the educational expenses within educational institutions into three sets:

- actual education expenses (staff wages and infrastructure expenses) for the major part (86%),
- ancillary activities (administration, orientation, canteen and boarding, school medical care, etc.) totaling 9%,
- expenses towards schooling-related goods and services (school transportation, book supplies, staff training, etc.) accounting for 5% .

Over the past twenty years, public spending on initial training has gone up slightly faster than the GDP (Graph 1). We can note two sections in this period where growth levels peaked. The first, in 1982, corresponds to a notable increase in the available facilities. The second, from 1988 to 1992, tallies both with the new recruitment and revised statuses especially for "*professeurs des écoles*" (elementary school teachers), and the effort to expand postsecondary education (Esquieu and Jacquot, 1999).

(1) The vocational training satellite account estimated this expenditure at 22 billion euros in 1999. It partially matches the education account (for example, in the case of apprenticeship). Besides, the concepts are different as the vocational training satellite include, for example, the stipend paid to trainees or cost exemptions.

Spending on initial education

This report analyzes the redistributive impact public spending on initial education only, and does not include continuing education.

As a result, it does not cater to General Education Concepts and Accounts. Domestic spending on education (*DIE*) groups together the entire spending on education in metropolitan France by all entities involved, be they public or private (companies and households).

To assess the spending on initial education, we have therefore excluded out-of-school training expenses (which mainly comprise continuing education) from the domestic spending on education. The teaching staff training expenses have however, been included in the aggregate spending on initial education.

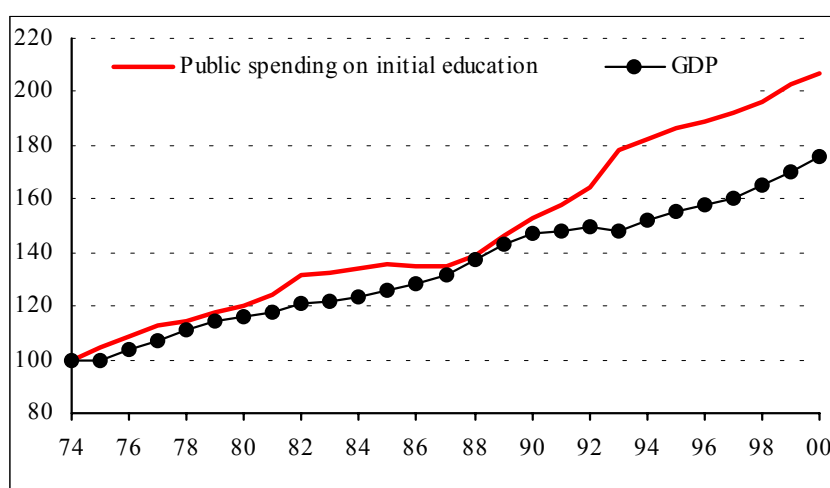
Apprenticeship expenses, included in the domestic spending on education, are also taken into account in the spending on initial education. The apprenticeship expenses included in the Education Accounts are limited to the training expenses in apprenticeship training centers and apprenticeship preparatory courses. Other apprenticeship-related expenses (training in the work place, apprentice compensation, cost exemptions) are not included in the Education Accounts and have also been excluded in this report.

To define the public share of this total, the **initial funding approach** has been used, such that government transfer payments to households by way of schooling aid (mainly scholarships, new school year allowance (*ARS*) and the flat-rate tax rebate for students) are taken into account in the public spending on initial training. Besides, the mandatory funding of education costs by companies, mainly the apprenticeship tax, is taken into account as a public expense.

In total, for the year 2000, the domestic spending on education totaled 98.2 billion euros, and the total for initial education represented 88.5 billion euros, of which public spending accounted for 83.7 billion euros.

Graph 1 – GDP and public spending on initial training

100 base index in 1974



Note: Expenses in constant euros.

Scope: Metropolitan France.

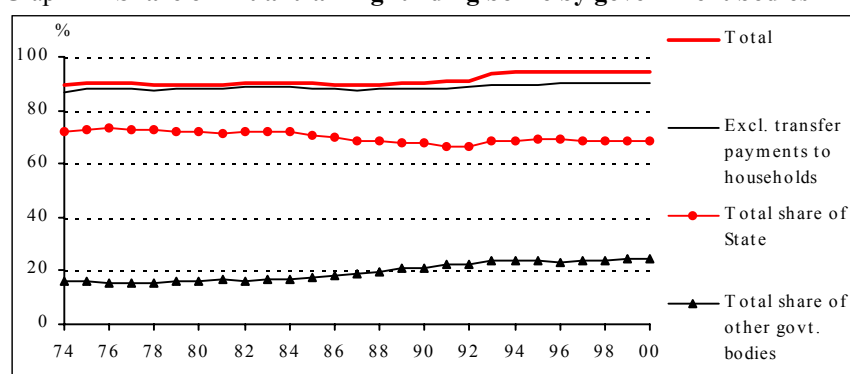
Sources: Education accounts (*DPD*); Cerc calculations.

The spending has however, not increased homogeneously. Between 1980 and 2000, it rose by 45% for the elementary level (with constant prices), by 64% for the secondary level, and by 107% for the postsecondary level. However, the increase in postsecondary spending was largely absorbed by the increased headcount in this level (+68%), whereas the headcount in the secondary level barely grew over the period (+7%) and that of the elementary level shrank (-13%).

INCREASED FUNDING BY GOVERNMENT BODIES

The share of the spending borne by government bodies has gone up slightly in the past decades (Graph 2). It rose from 89% in 1974 to 90% in 1980, remained constant during the eighties (90% in 1990) and rose again during the first half of the nineties (94% since 1995).

Graph 2 – Share of initial training funding borne by government bodies



Note: This is the share in initial funding.

Scope: Metropolitan France.

Sources: Education accounts (DPD); Cerc calculations.

This increase results from the actions of local government bodies, especially due to the infrastructure expenses they bear. Besides, the State has stepped up its spending on aid to households, particularly with the development of the new school year allowance.

Costs per student

On an average, the annual expense per student was 6,100 euros in 2000. The costs vary widely depending on the students' education tracks.

Differences by education levels

The average expense per student varies mainly with the education level, especially due to the differences in teaching (number of hours of teaching per student, number of students in a class, hourly cost differences based on the status of the teaching staff). This expense totals 4,000 euros in kindergarten, 4,200 euros at the elementary level, 7,650 euros at the secondary level, and 8,200 euros at the postsecondary level.

The differences are also significant within these levels themselves, due to the specific nature of certain branches.

The differences are quite obvious in the secondary level – the expense per student is 6,750 euros in the elementary level (*collège*) and 8,000 euros in the general section of the secondary level, 9,000 euros in the vocational section of the secondary level, and 10,000 euros in the technological section of the secondary level. It is about 4,190 euros for apprenticeship.

The differences build up between branches in the postsecondary level (Martinez, Ragoucy and Berreur, 2000 and 2001). The costs at the University amount to 6,500 euros, but reach 8,600 euros in *IUT* (University institute of technology), 10,200 euros in the *STS* (Technical college departments), 11,500 euros for university engineering training, and 12,600 euros in *CPGE* (preparatory courses for *grandes écoles*).

At present, it is impossible to make a finer distinction between the costs per branch in postsecondary education, in particular for the various university and university-level branches. This should however be possible in the future with the new version of education accounts.

Little-known local disparities in the spending

The sources of local disparities in public spending per student are numerous. They may pertain to state-funded expenses and those funded by the different local government bodies.

The local disparities in spending may stem from the demand for education; in particular, the enrollment rates are not homogeneous for the access to kindergarten and for continuing one's studies beyond compulsory schooling. Factors such as the density of the population also impact the numbers in classes (for example, in rural areas). Also, student-teacher ratios do not always keep pace with demographic changes, be it upward or downward, affecting the students.

The development of branches (technological or vocational teaching) may depend on the characteristics of the school-goer populations as also the local economic environment.

Local disparities may also arise due to specific efforts made in special zones such as *ZEP's* (priority education zone). Finally, the factors that draw the staff to a particular branch lead to a concentration of *agrégés* (successful candidates in the *agrégation* competition for teachers) and/or experienced teachers in schools in the heart of towns rather than in the outskirts.

The local government bodies' spending on education naturally contributes to enhancing these disparities. For example, the average operating expenses per student for the *départements* (which varies less than investment expenses) totaled 390 euros in 2000¹. In the same year, eight *départements* spent less than 200 euros per student on operating expenses, and three *départements* over 800 euros per student².

The sources available for analyzing local disparities in educational expenses are not sufficient at this stage to enable including this aspect in this report's analysis of the redistributive impact of spending on education.

(1) Source: *Les finances des départements en 2000*, DGCL (Directorate-general of local government bodies), Home Ministry.

(2) See also *Cour des Comptes* (French court of accounts) 1995.

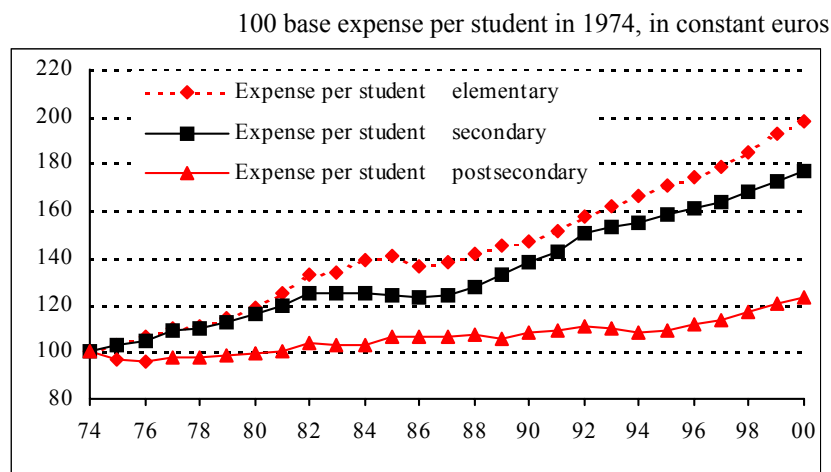
Additional differentiation may exist, especially as concerns priority education costs. However, there is no assessment of the difference in cost for students enrolled in *ZEP*² schools.

These cost differences by branch are considerable, when cumulated over the entire schooling period. Typical samples of the projected costs (excluding repeaters) in certain areas of education may throw light on the dispersion of the total spending. In the costs for the year 2000, the cost of training a student for the *BEP* at 17 was approximately 78,000 euros for the entire schooling period. It was about 96,000 euros for a vocational *baccalauréat* and 85,500 euros for a general or technological *baccalauréat*. At the postsecondary level, as concerns diplomas obtained by general *baccalauréat*-holders, it was 106,000 euros for a *BTS* (employment-oriented technician qualification diploma), 103,000 euros for a *DUT* (a less specialized employment-oriented technician qualification diploma), both of which are two-year diplomas; for a *licence* (three-year degree) it was 105,000 euros; for a university degree in engineering (two years of preparatory courses and three years of engineering degree courses at the university), it was about 145,500 euros.

Sharp rise in the elementary and secondary levels

The growth in spending in the past decades stems more from the increased expense per student than from the greater number of students enrolled (Esquieu and Jacquot, 1999). Between 1974 and 2000, teaching expenses rose by 96%, whereas the number of students went up by only 16%. The increase in unit costs per student mainly concerned the elementary and secondary levels, and to a smaller extent, the postsecondary level (Graph 3).

Graph 3 – Variation in the expense per student 1974-2000



Source: DPD.

(2) The rough estimate available today does not however show a clear differentiation. Two main factors may in fact induce a differentiation in cost, namely the teaching rates (higher in *ZEP* schools) and teachers' wages (DPD, 1998). While there are approximately 7% more teachers per student in *ZEP*'s, due to smaller numbers in classes, the information available suggests that the average expense per teacher in *ZEP* schools is, on the whole, quite close to the average. In fact, the positive effects of the annual bonus are more or less offset by the lower average age of these teachers. Teachers in *ZEP* schools are about two years younger than all other teachers, i.e. 41.4 years on an average against 43.5 years.

Several factors underlie the rise in the expense per student in the elementary level (98% from 1975 to 2000). Student numbers in each class continued to decrease in the *maternelle* (kindergarten) and in the *primaire* (elementary section) – while there was a 10% decrease in the number of students since 1980, the number of teachers increased by approximately 5%. Besides, employee costs went up as the average age of teachers increased, as also due to the revision of their status to *professeur des écoles* in 1989.

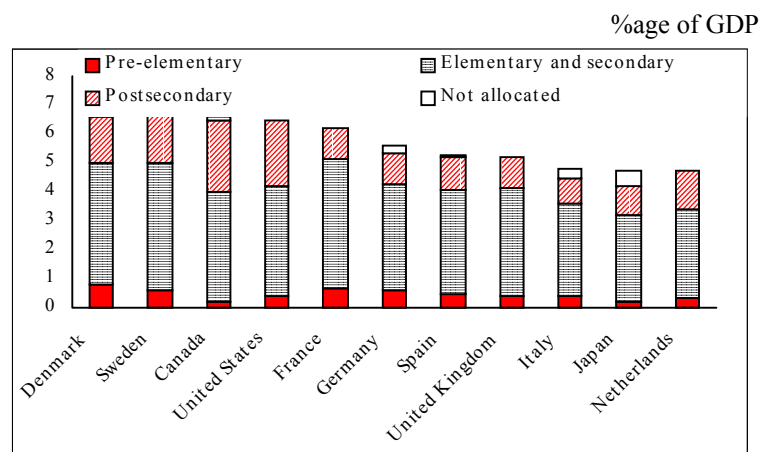
In the secondary level, the increased education cost (72% from 1975 to 2000) is mainly due to a sharper rise in the number of teachers than in the number of students; since 1980, student numbers have risen by about 7%, whereas the number of teachers has increased by about 20%, i.e. three times faster. The increased expense per student in the secondary level is partially due to the students' moving to more expensive branches of education (technological and vocational sections at the postsecondary level and *lycées*). It is also due to the funding effort made by the *départements* and regions towards building and maintaining infrastructures (*collèges* and *lycées*). Finally, the rise in employee costs also contributed to the increased expense, especially due to the revaluation of the teaching career.

The growth in the expense per postsecondary student was, however, much slower (23% between 1974 and 2000), pointing to a slightly greater increase in facilities than in student numbers. This was particularly the case between 1990 and 1995, a period in which the average expense per student remained stable in constant euros. However, as of 1995, the hike in spending was sharper than ever; it increased by 14% between 1995 and 2000, compared to only 11% between 1975 and 1995, whereas the headcount slowed down its growth from 1994 to 1996, and began to move downward in 1997.

SPENDING ON EDUCATION IN FRANCE AND ABROAD

The overall efforts made for initial training are comparatively greater in France than in most other OECD countries. The public and private spending on education within educational institutions (insert), according to OECD data, totaled 6.2% of the GDP in France in 1998, which exceeds the OECD average of 5.8% of the GDP for that year (Graph 4).

Graph 4 – Comparative share of education spending by schooling level



Note: Spending within educational institutions in 1998.

Source: OECD, *Education at a glance* (2002).

Scandinavian countries: Denmark (7.2% of the GDP), Sweden (6.8%) and Norway (6.9%) make sizable efforts for education; they are comparable in France, Canada (6.2%) and the United States (6.4%). These figures are however considerably lower in most of the other countries, such as Germany (5.6%), Spain (5.3%), Italy (5%), the United Kingdom (4.9%), Japan (4.7%) and the Netherlands (4.6%).

These results however vary with the schooling level concerned. In terms of the percentage of the GDP, spending is high in France for the pre-elementary level (*maternelle*) due to the comparatively early enrollment (see Chapter I). This is also the case for the elementary and secondary schooling levels.

If we cumulate the spending at the pre-elementary, elementary and secondary levels for France, we obtain 5% of the GDP, which is among the highest in OECD countries. Only the Scandinavian countries reach comparable ratios (5.4% in Denmark, 5.1% in Sweden, 5.0% in Norway) and in most of the other countries, the percentages are considerably less, namely 4.3% in Canada and Germany, 4.1% in the United States and Spain, 3.4% in the Netherlands, and 3.2% in Japan.

Conversely, with 1.1% of the GDP attributed to postsecondary education, the outlay in France seems small. In the United States (2.3%), Canada (1.9%), Sweden (1.7%) and Denmark (1.5%), the outlay for postsecondary education is clearly larger than in France. It is at a comparable level in the Netherlands (1.2%), Spain (1.1%), Germany and Japan (1%). These estimates nevertheless include spending on research that varies in each country (insert). However, if we consider the factors available for estimating the postsecondary level spending excluding research, the result would not be different; the financial outlay for higher education is relatively small in France.

The level of spending is based on two key factors, namely the size of the student population and the structure of the expense per student.

France has a large student population. The percentage of students aged below 20 years in the total population is relatively high, and the age cohort of which over 90% goes to schools is the widest among OECD countries. This fact contributes to the massive spending for the pre-elementary, elementary and secondary schooling levels. On the other hand, the enrollment rate of the 20-29 age bracket is only slightly less than most OECD countries (see Chapter I).

The differences in the costs per student also play an important part. We can use two approaches to explain the international comparison. The first of these is based on absolute amounts and refers to the comparative capacity of the countries to face international competition, through the level of training of its labor force. The second is based on the extent of the outlay for education, in view of national wealth; for this, OECD uses the expense per student measured against the GDP per inhabitant.

International comparison of spending on education

The indicators presently used in the international comparisons are mainly based on "spending on initial education within educational institutions".

This concept is similar to that of public spending for education in educational institutions as explained above (80.1 billion euros in 2000), except that it does not include the continuing education of teachers, but does include all the spending by households within these educational institutions.

The international comparison of spending on initial education is based on a common data gathering system used by UNESCO, the European Union and OECD. In this report, we have used the data published by OECD in its publication entitled *Education at a glance*. This data is however not available for all the member states. By "OECD average" we mean the non-weighted average of OECD countries.

On the whole, the main difficulties for international comparison stem from the differences in the extent of wage-dependent social contributions in the various social security systems, the differences in the extent of ancillary services supplied (or not supplied) by the education system itself (canteen and boarding) and included (or not included) in the spending on education, the heterogeneous quality of national statistics on private education expenses, and the reliability of the statistics on expenses funded by households.

At the elementary and secondary levels, the improvements made in the statistical indicators for many years now and the relative homogeneity of the scope of teaching activities allow for a satisfactory comparability of spending on education. However, at the pre-elementary education level, the diversity in the activities themselves calls for a cautious interpretation of the results. For certain countries, we must distinguish between mere day care facilities and pre-schooling.

In the case of postsecondary education, the research expenses considered in the various countries differ. These expenses are in fact included in the aggregates published by OECD, under postsecondary spending. They are not necessarily posted in the same manner in all the countries concerned, as the integration between research organizations and postsecondary education varies in each case. We can cite the specific example of the *CNRS* or *INRA* budgets that are not included in this aggregate for France. In the light of the above, we made a distinction between teaching expenses and research expenses, whenever this information was available.

Expense per student

Levels

The initial education expense per student appears relatively modest in France, when compared to northern European countries (Denmark, Norway, Sweden), or the United States. It seems to be bigger than in Germany, Italy, the United Kingdom or the Netherlands. Finally, Spain appears to be far behind in terms of education expense per student.

We could object that this result, expressed in current value, is subject to exchange rate changes, and that it is preferable to compare the data in terms of the purchasing power parity (PPP). OECD in fact published this data expressed in purchasing power parity. However, given the recent debate on the measurement of purchasing power parities and its consequence on the classification of countries, it seemed preferable to use the current value. This is not called to question when compared with data expressed in PPP.

Table 1 – Average expense per student in 1999

	in euros				
	Pre-elementary	Elementary	Secondary	Post-secondary	<i>Post-secondary excluding research</i>
United States	6,279	6,176	7,653	18,033	16,058
Canada	3,356	4,494	4,494	11,430	9,460
Germany	4,822	3,729	6,449	10,151	6,288
Australia		3,822	5,389	9,224	6,599
Austria	4,775	6,174	7,993	11,345	
Belgium	2,789	3,633	5,923	8,938	
Denmark	4,652	7,430	8,431	11,782	8,572
Spain	1,957	2,551	3,414	4,005	3,040
France	3,807	4,038	6,979	7,676	6,476
Italy	4,120	4,297	5,231	6,061	
Norway	12,997	6,576	8,474	13,438	
The Netherlands	3,442	3,723	5,072	10,991	6,674
United Kingdom	6,150	3,579	5,534	9,428	6,039
Sweden	3,716	6,278	6,469	15,565	8,093
OECD average	3,609	3,892	5,128	8,641	

Source: OECD, *Education at a glance* (2002).

For postsecondary expenses in particular, two assessments are given – one including research expense and the other attempting to exclude the same. Although France rises to a more favorable position after this correction, the gap with countries such as the United States, Denmark or Sweden remains wide.

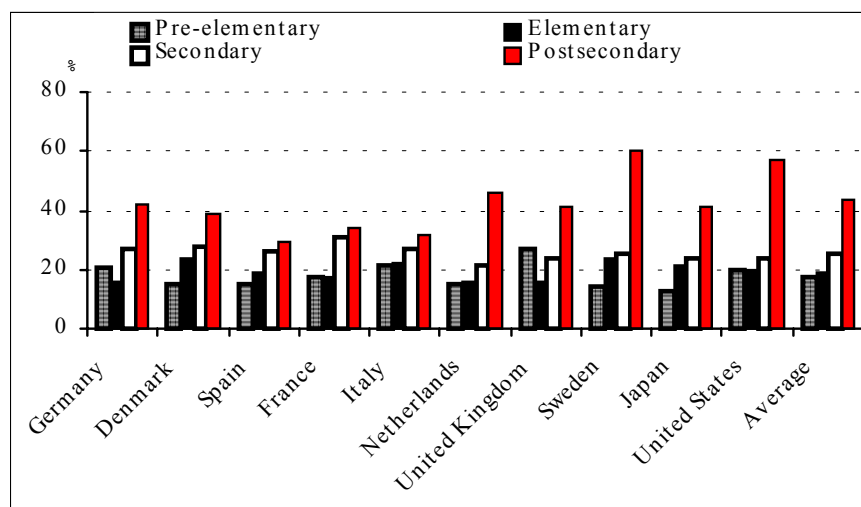
It would be unwise to suggest that a gap in the efficiency of the spending, in France's favor, could compensate for these differences in the level of spending. This observation which deserves to be examined in more detail, raises some issues if we consider that the quality of the initial education is a determining factor of professional qualification and structural competitiveness.

Relative outlay

France's expense per student at the pre-elementary and elementary levels against its GDP per inhabitant is comparable (17% and 18%) to the OECD average. However, for students in the secondary level, these figures are quite clearly higher than the OECD average – 31% of the GDP per inhabitant compared to an average of 25% (Graph 5). This specificity of France is partly due to the large gamut of options available resulting in more teachers per student, and is further accentuated by the stable or even decreasing number of students in the elementary or secondary levels, whereas the number of teachers has not reduced and has even continued to grow.

While there is usually a considerable gap between the spending levels in the secondary and postsecondary levels, in the case of France, Spain and Italy, this gap is much narrower. Also, the expense per postsecondary student in France (34% of the GDP per inhabitant) is lower than in most major industrialized countries. While it is slightly lower in Spain or Italy (30% approximately), it falls within 40% and 50% of the GDP per inhabitant in Germany, Japan, the Netherlands and the United Kingdom. It even crosses 60% in Sweden and the United States.

Graph 5 – Expense per student expressed in terms of GDP per inhabitant



Note: Data for the year 1999.

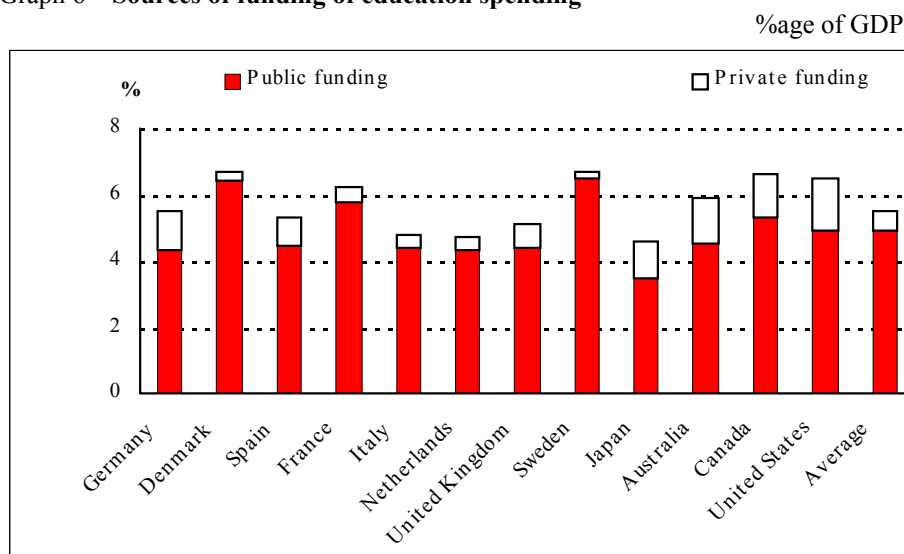
Source: OECD, *Education at a glance* (2002).

The lower expense per student in the postsecondary level is less marked if we exclude research expenses. France would then be closer to the median for the expense per postsecondary student (Ragoucy, 2002), but would still be far behind the Scandinavian countries and even farther from the United States.

Public spending levels higher in France

The sources of funding (public and private funding) of spending on education vary considerably in the OECD countries. While education spending as a share of GDP in France (6.2%) is close to that of the United States (6.4%), the sources of funding differ greatly. Public funding accounts for 5.9% in France as compared to 4.8% in the United States (Graph 6).

Graph 6 – Sources of funding of education spending



Note: Spending within educational institutions in 1999.

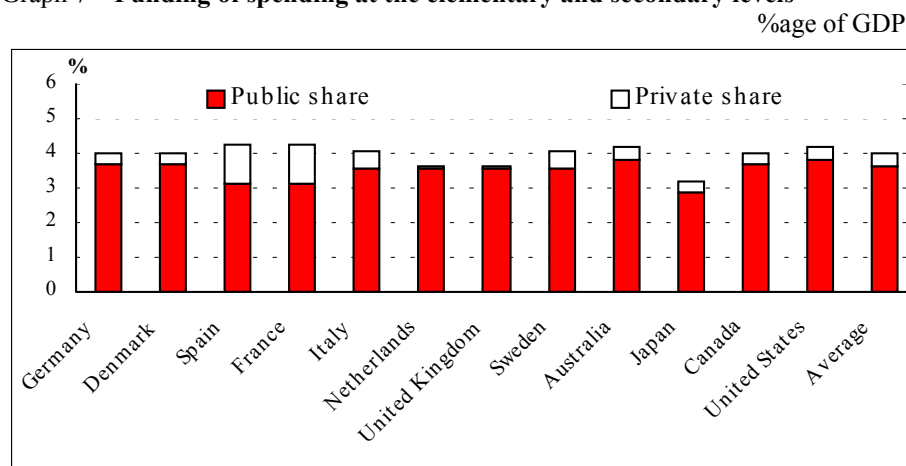
Source: OECD, *Education at a glance* (2002).

In France, public funding caters to a large portion of spending on education (94%), at six points above the OECD average. The share of public funding in certain other countries also exceeds 95%, namely Denmark, the United Kingdom, Italy, Sweden, and the Netherlands. Conversely, in Germany (78.5%), the United States and Japan (75%) and, to a lesser extent, Spain and Canada, the share of public funding is relatively small.

The majority of the countries have opted for mainly public funding for the elementary and secondary levels. France is nevertheless a little higher than the average; in 1998, public funds accounted for 95% compared to the OECD average of 91% (Graph 7).

Given the relatively large spending called for at these schooling levels, especially the pre-elementary and secondary levels (see above), the public spending in France, measured as a share of the GDP, is therefore high.

Graph 7 – Funding of spending at the elementary and secondary levels

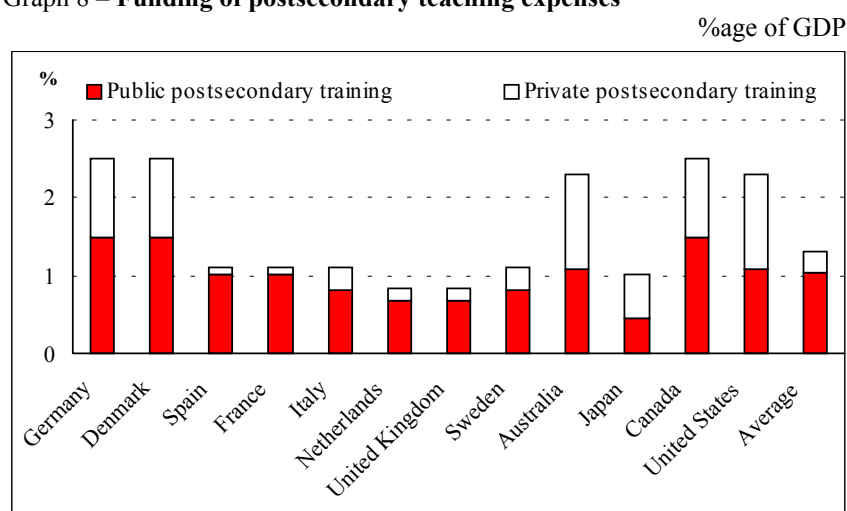


Note: Spending within educational institutions in 1999.

Source: OECD, *Education at a glance* (2002).

Postsecondary education funding further differentiates the countries concerned. The share of public funding is smaller in Japan (42%) and in the United States (52%), whereas it exceeds 95% in the Netherlands or in Denmark. In France, this figure is about 90%, against the OECD average of 82%. Given the slightly lower outlay for postsecondary education, the public spending for postsecondary education appears nevertheless to be comparable to that of the other major OECD countries, when measured as a share of GDP (Graph 8).

Graph 8 – Funding of postsecondary teaching expenses



Note: Spending within educational institutions in 1999.

Source: OECD, *Education at a glance* (2002).

Public spending for initial training represents a sizable investment in France; France invests a relatively greater portion of its wealth (of its GDP) than the average of OECD countries. This considerably high spending level is partly due to the proportion of youth in the French population that is still high (Cerc, 2002), and the average schooling period. When measured in terms of expense per student, however, the spending on education is not particularly high.

SUMMARY

In comparison with Scandinavian countries or the United States, spending in the secondary level seems rather high, and, on an average in the postsecondary level, it seems low. The latter observation raises a problem.

The growth in the collective outlay for the postsecondary level in France was, to a large extent, absorbed by the increased headcount. The relatively large outlay in the secondary level and the overall budget constraint in the funding method that is mainly public, can explain this shortfall.

To clarify this diagnostic, the knowledge of the spending on education³ must be considerably improved in France. It is particularly important to better the knowledge of costs in the postsecondary level between the different branches and the different levels. For the University, in particular, it is essential to have a better knowledge of the costs of the branches in the general section (based on the discipline chosen) and in more profession-oriented branches.

(3) We must also mention the progress to be made in the knowledge of the local diversity in costs which also has a significant impact on the distribution of spending between families, as described in chapter III.

This chapter focuses on analyzing the distribution of public spending on education between the various households.

INTRODUCTION

The redistribution by government authorities through social contributions and tax deductions as also through "cash benefits" has been analyzed in numerous studies in recent years, such as *CAE* reports, and studies conducted by *Insee*, *DREES*, and *CNAF*.

These studies being traditionally limited to monetary transfer payments, they do not retrace all the actions of government authorities that affect the income and consumption of households. It is necessary to take into account the non-cash services that government bodies provide, such as education or health services.

The spending by government bodies varies widely between countries, and creates a bias risk in international comparisons. Furthermore, for reasons of international harmonization, national accountants now use the "adjusted disposable income" concept, by adding the value of individualized public spending for households to the monetary disposable income.

It would be useful to stretch the income distribution analyses to cover the adjusted disposable income. Public spending on education was funded by a tax that was already included in the measurement of monetary redistribution. Then, not taking into account the distribution of public education spending between households with school-going children, provides a biased picture of the distribution itself. The ongoing works of statisticians are targeted at testing its feasibility. This report is part of this effort.

For example, public spending on postsecondary education mainly benefits the more well-to-do sections of the population, given the differences in access rates. Considering the spending on education in favor of families with postsecondary students would reduce the importance of net transfers (net contribution deductions) by these well-to-do households towards the lesser-privileged categories, as shown in the usual studies.

This chapter however, focuses mainly on the analysis of the distribution of public spending on education between the various households with children of school-going age. Their inclusion in the income distribution analysis raises certain issues that are described in Chapter V.

This chapter restricts its analysis to public spending on education "within institutions". The analysis of transfer payments for schooling is given in Chapter IV.

CONVENTIONS REQUIRED FOR THE ANALYSIS

In order to study the distribution of spending on education among households based on their income level, we must establish various conventions. They are essential for understanding the results and must therefore be specified and discussed beforehand.

Students not living with their families

The inclusion of students who do not live with their initial family poses a problem in income redistribution analyses. An adequate solution is required for the analysis of the distribution of spending on education.

In studies on income distribution, the base unit is the household, i.e. a set of people sharing the same accommodation. Students living away from home form separate households. They usually have low personal incomes and we are often unaware of the aid they may receive from their families. They are therefore placed, to an extent artificially, in the lower rungs of income distribution¹, often below the poverty line. In its recent publications on income distribution, *Insee* in fact excluded student households from the households considered for the study. This of course, cannot be done when analyzing spending on education. We must find the most appropriate manner in which we can include these separate student households in the population of households used in the education spending distribution study.

There are two stances of public education systems that may throw light on the approach to be used. In certain countries (especially those in northern Europe), students are considered as being independent of their families; therefore the factors used for granting aid or calculating tuition fees are means-tested against the student's own income. From this angle, it would be logical to consider all students, whether or not they live with their families, as independent units for whom spending on education and aid are allocated. However, a study of the income-based distribution of spending on education using this assumption does not give any information on the social background of the students.

In other countries, the students are considered as members of the initial family for the purposes of calculating aid², whether or not they actually live with their families. This is the case, in particular, in southern European countries and France. From this viewpoint, it would be quite logical to attach the students living on their own (in their own accommodation or in a boarding facility, campus, etc.) to their parents' household. This unit would be termed "dynastic family" (we could also speak of dynastic household, but it was considered preferable to differentiate this term from the standard statistical vocabulary, and from the standard "household" and "housing unit" concepts). This was the approach used by Albouy, Bouton and Roth (2002) (insert). We have also opted for this approach in this report.

(1) They do not however appear as often at the bottom levels of consumption and lifestyle classifications.

(2) At least up to a certain age – 24 years, for example, in the United States.

"Dynastic Families"

For the purposes of calculating the distribution of spending on education among families, students living independently have been pegged to the household of their initial family, under the term "dynastic family". The non-cash aid represented by the public spending for education is thus allocated to the initial family, whether the student lives with the family or not. This approach was used for all students aged less than 25 years.

"Dynastic families" were also reconstituted for young people aged less than 25 years who have terminated their studies, whether they were working or were unemployed, and regardless of their housing status. This was necessary to ensure a homogeneous definition of the units analyzed. A null education expense is allocated to such dynastic families.

The size of the dynastic family (its number of consumption units) is recalculated by considering each student as one consumption unit, if he or she lives alone in his or her own accommodation (given this fact, there is no economies of scale for housing, transportation, etc.).

The classification of dynastic families based on income per consumption unit raises the question of the income of young people.

If we consider the income of those who have stopped their studies and are working, they would be automatically placed relatively higher on the scale. Integrating the income of these young people with the dynastic family income would create an artificial flow in the income distribution; on the one hand, it would move up the income distribution of dynastic families with young people working earlier and who benefit less from spending on education, and on the other hand, it would move down the distribution of dynastic families with young people who continue their studies longer and who therefore benefit more from the spending on education.

To avoid this bias, we opted to classify dynastic families by the parents' income alone. Besides, young people's earnings are not included in the calculation of disposable income, although the transfer payments they enjoy are integrated.

What reference income can we use?

Public spending on education is distributed between families with children. These families also enjoy transfer payments due to the presence of their children, such as, for example, family allowances or tax rebates (family quotient). We obtain a different picture of the situation depending on whether we distribute the spending on education based on the initial income (income from one's job or its replacement – retirement pension, unemployment allowance) or on disposable income (after tax and contribution deductions). Classifying households based on the initial income per adult equivalent (i.e. by dividing the income by the weighted size of the family, or "consumption units"), that is on their standard of living (disposable income per adult equivalent) changes the position of households with children in the overall hierarchy of households. Following the studies on the impact of family policies on the standard of living, the households are classified according to their initial income per adult equivalent, in this chapter.

Besides, the use of the "dynastic family" approach raises the question of initial income (income from one's job or replacement income) of young people pegged to their initial family. Considering this income would move the families in which young people have stopped studying to work, higher in the income scale. It is therefore preferable, when studying the distribution of spending on education among dynastic families, to consider the parents' initial income only (insert).

On the whole, as in the standard analysis of deductions and transfer payments, the distribution of family (dynastic family) income after deductions and monetary transfer payments seems much less dispersed than before their inclusion (Table 1).

Table 1 – **Distribution among "dynastic families" with children aged 3 to 24 years based on the parents' initial income and disposable income**

in euros

	Parents' initial income per CU decile limits	Standard of living decile limits (disposable income per CU)
1	4,541	6,965
2	7,066	8,532
3	9,088	9,971
4	11,157	11,396
5	13,163	12,806
6	15,456	14,384
7	18,132	16,448
8	21,645	19,108
9	28,505	24,292

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: *Insee-DGI*, Tax Income 1997 survey (updated for 2001), *Ines* model, *Insee* calculations.

DISTRIBUTION OF SPENDING ON EDUCATION

Three factors of unequal distribution

This part draws on a recent micro-simulation study conducted by *Insee* (Albouy, Bouton and Roth, 2002) to provide the main results available on the distribution of spending on education between "dynastic families".

There are three factors that may lead to the distribution of spending on education, at one point, being not proportional to initial income.

The incomes of families with children are below the average

Income from one's activity generally increases with age, as also income from one's assets. The higher deciles therefore include more households that are older in age. Besides, especially for retired persons, the children are no longer dependents (even under the dynastic family concept as they are over 24-years old). Also, the number of children is higher in low-income populations than in the more fortunate categories. This is enhanced by the fact mentioned above that, with the initial income level being the same, families with children are automatically placed lower in terms of income per adult equivalent.

Children in the school-going age bracket (and spending on education) tend to concentrate more towards the lower end of the general income distribution. Thus, 20% of children aged 3 to 24 years live in "dynastic families" in the first decile of initial income per adult equivalent, and about 46% of the 3-24 year age cohort belong to the first three deciles (Table 2).

This higher concentration of children in the first deciles is also seen in the more restrictive scope of families with at least one child aged between 3 and 24 years.

Table 2 – **Distribution of the number of children aged between 3 and 24 years within the entire population**

1 st decile	20.5
2 nd decile	14.1
3 rd decile	11.2
4 th decile	9.9
5 th decile	8.9
6 th decile	8.0
7 th decile	7.6
8 th decile	6.7
9 th decile	6.5
10 th decile	6.4

Note: Initial income deciles (excluding children's income) per adult equivalent, calculated for all dynastic families.

Sources: Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

As a result, the distribution of initial income of families likely to benefit from spending on education (families with children aged between 3 and 24 years) is pushed down comparatively to the initial income of the general population of households. On the whole, 50% of the families are placed among the 40% of households with the lowest initial income per adult equivalent (Table 3).

Table 3 – **Distribution of income (per CU) in the entire population and in families with children of school-going age**

	Dynastic families general population deciles	Deciles of dynastic families with children aged 3 to 24
1	5,869	4,541
2	8,637	7,066
3	10,881	9,088
4	13,040	11,157
5	15,198	13,163
6	17,561	15,456
7	20,431	18,132
8	24,398	21,645
9	31,786	28,505

Note: The above figures are the income decile limits. This is the initial income of dynastic families (excluding the children's income) per adult equivalent, expressed in euros.

Sources: Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

The postsecondary enrollment rate increases proportionately to income

Enrollment rates (the proportion of children of an age bracket continuing their studies) differ markedly as of the end of compulsory education based on social background (Chapter I) or income (Table 4).

Table 4 – Enrollment rates by family income decile

	School-going age cohort distribution (in thousands)	Proportion of young people enrolled in schools in the 3-24 year age group	... Share of postsecondary students
1 st decile	2,286	80	6
2 nd decile	1,978	78	7
3 rd decile	1,735	81	8
4 th decile	1,605	83	9
5 th decile	1,529	84	11
6 th decile	1,478	87	13
7 th decile	1,420	87	12
8 th decile	1,378	90	14
9 th decile	1,361	92	18
10 th decile	1,393	94	21
<i>All</i>	<i>16,164</i>	<i>85</i>	<i>11</i>

Note: Initial income deciles per adult equivalent (excluding children's income).

Scope: Dynastic families with at least one child aged 3 to 24 years.

Sources: Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

Less than a quarter of the 18-24 year age cohort in the initial decile families go for higher studies, as compared to clearly more than one of two children from families in the last deciles³. These figures could suggest that top income deciles benefit more from public spending on postsecondary education.

The costs vary between levels and branches

Finally, education spending per student also depends on the branch chosen and the actual schooling process. Here, we have a combination of effects.

Firstly, repeaters considerably hike up the expense per student over the entire schooling period. More specifically, children belonging to the high-repeat rate social (and standard of living) categories are over-represented in the elementary and lower secondary levels. This induces greater spending on education for the elementary and lower secondary levels, for the low income-bracket population.

Also, the spending per student is not uniform across education levels (Chapter II), and the teaching cost per branch differs considerably. In the elementary or secondary levels, special or professional training is usually more expensive than general education. In the postsecondary level, *IUT* (University institute of technology) and *STS* (Technical college departments) courses on the one hand, and preparatory courses for *grandes écoles* on the other, are more expensive than conventional university courses.

(3) This result reveals the fact that as income generally increases with age, families with children of postsecondary education age are higher up in the income hierarchy, although this effect is far from dominant – the disparity in income growth with age is less pronounced than the inequalities of income based on one's profession.

Within these segments, the scientific one are more expensive than any other, and profession-oriented education such as *IUP* (University institute of professional education) and the *DESS* (business-oriented postgraduate diplomas) are also more expensive than the other branches. Children from privileged families are more often in these relatively expensive branches, than the others.

These different effects must be singled out in order to better interpret the results of the calculations of the allocation of public spending on education for each family standard-of-living bracket. In other terms, we must take into account the scope and conventions used by the authors of the various studies, sometimes due to the limited information available.

Limitations of information

The *Insee* study examines the spending on education within dynastic families with children in the school-going age bracket.

The spending on education apportioned between families varies within the elementary level (3,718 euros for kindergarten and pre-elementary, 3,894 euros up to the 5th grade, 8,102 euros for special elementary education), in the lower secondary level or similar (6,064 euros for *collège* (6th to 9th grade), 10,654 euros in the special lower secondary education), and in the higher secondary level or similar (7,165 euros for the general section of the secondary level, 9,146 euros for the technological section of the secondary level, 8,322 euros for the vocational section of the secondary level, and 3,923 euros for apprenticeship).

For the entire postsecondary level, the average spending is 6,366 euros. One of the limitations of this exercise stems from the fact that the spending on education could not be differentiated in the postsecondary level, as the information available at present is insufficient to ascertain the branch followed by each student. This may lead to an underestimation of spending on postsecondary education biased towards better-off families, in the light of the differentiation in orientation choices in the University based on social background (Chapter I).

Also, the differences in budget outlay in each branch at the elementary and secondary levels (in *ZEP* schools, for example) could not be taken into account. They may possibly⁴ lead to an underestimation of the spending in the elementary and secondary levels biased towards low-income families.

Spending per family

Of the three effects of differentiation mentioned earlier, only two are fully taken into account; firstly, households with children are most often placed lower in the general income distribution, and secondly, the enrollment rate in postsecondary education increases proportionately to income.

However, the third factor, i.e. the variability of costs, is taken into account only partially, due to the lack of the cost breakdown by different branches in the postsecondary level.

(4) If, and this remains to be verified, the cost per student is higher in each branch in *ZEP* schools.

Based on these hypotheses and within families with children of school-going age, public spending on education is targeted more at the low initial income classes. The difference in public spending on education per family is practically equal to the difference in the number of children enrolled in each family (Table 5) – the gap between the first decile (+33%) and the tenth decile (-5%) represents about 40% of the average spending. However, the impact of the concentration of spending in the first few deciles is tempered if we consider the differences in enrollment rates.

If the enrollment rate were identical in the different deciles, the spending would indeed be more concentrated in the first few deciles. The differences in enrollment rates reduce the concentration of spending on education in the lower part of income distribution, by about a third.

Table 5 – Public spending on education by family with children of school-going age

	Spending per family (thousand euros)	Deviation from the average		
		... Spending per family	... Number of children enrolled per family	... Number of children of school-going age in each family
1 st decile	11.6	32	33	41
2 nd decile	9.9	13	12	22
3 rd decile	9.0	3	3	7
4 th decile	8.5	- 3	- 3	- 1
5 th decile	8.3	- 5	- 6	- 5
6 th decile	8.3	- 5	- 6	- 9
7 th decile	7.9	- 10	- 9	- 12
8 th decile	7.8	- 11	- 10	- 15
9 th decile	8.0	- 9	- 9	- 16
10 th decile	8.3	- 5	- 5	- 14
All	8.8	0	0	0

Note: Initial income deciles (excluding children's income) per adult equivalent.

Scope: Dynastic families with at least one child aged 3 to 24 years.

Sources: DPD, Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

Spending per child

The average public spending on education per child enrolled, for all education levels, is barely differentiated across family income deciles (but the differentiation of costs within a given branch is not entirely taken into consideration).

However, as enrollment rates increase considerably in proportion to income deciles, the public spending per child of school-going age rises based on the initial income of families. This illustrates the importance of the factors that differentiate between education paths when analyzing the distribution of spending on education – for each child of school-going age, the spending is 10% higher than the average in the higher portion of the families' income distribution (initial income), and 7% lower in the first decile.

Table 6 – Distribution of spending on education per child

	Number of children of school-going age (thousands)	Number of children enrolled (thousands)	Spending per child enrolled		Spending per child of school-going age	
			(thousand euros)	Deviation from average	(thousand euros)	Deviation from average
1 st decile	2,286	1,821	5.4	- 1	4.3	- 7
2 nd decile	1,978	1,539	5.5	1	4.3	- 8
3 rd decile	1,735	1,413	5.5	0	4.5	- 4
4 th decile	1,605	1,331	5.5	0	4.6	- 2
5 th decile	1,529	1,288	5.6	1	4.7	1
6 th decile	1,478	1,285	5.5	1	4.8	4
7 th decile	1,420	1,242	5.4	- 1	4.8	2
8 th decile	1,378	1,239	5.4	- 2	4.8	4
9 th decile	1,361	1,249	5.5	0	5.1	9
10 th decile	1,393	1,304	5.5	0	5.1	10
<i>All</i>	<i>16,164</i>	<i>1,3712</i>	<i>5.5</i>	<i>0</i>	<i>4.7</i>	<i>0</i>

Note: Initial income deciles (excluding children's income) per adult equivalent.

Scope: Dynastic families with at least one child aged 3 to 24 years.

Sources: DPD, Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

The distribution of spending at the postsecondary level clearly illustrates this aspect. While, based on the hypothesis in this assessment, the spending per postsecondary student remains constant across income deciles, the enrollment rates in the postsecondary level for the 18 to 24 year age cohort varies by about 20% in the first few deciles to over 60% in the later deciles. This results in a very high variability in the spending per child of school-going age. This spending is therefore 50% less than the average in the first decile, and 90% greater than the average in the last decile (Table 7).

Table 7 – Impact of enrollment rate on the spending on postsecondary education

	Children aged 18 to 24 (thousands)	Post-secondary students (thousands)	Enrollment rates (a)	Spending (thousand euros)	Spending per child of school-going age	
					(thousand euros)	Deviation
1 st decile	731	132	18	0.8	1.1	- 49
2 nd decile	701	131	19	0.8	1.2	- 47
3 rd decile	575	147	26	0.9	1.6	- 27
4 th decile	516	146	28	0.9	1.8	- 19
5 th decile	502	167	33	1.1	2.1	- 6
6 th decile	458	187	41	1.2	2.6	16
7 th decile	425	173	41	1.1	2.6	16
8 th decile	403	195	48	1.2	3.1	37
9 th decile	417	249	60	1.6	3.8	70
10 th decile	432	289	67	1.8	4.3	90
<i>All</i>	<i>5,160</i>	<i>1,815</i>	<i>35</i>	<i>11.6</i>	<i>2.2</i>	<i>0</i>

(a) The enrollment rate is apparent – it is the ratio of the postsecondary headcount to the number of 18 to 24-year olds.

Scope: Dynastic families with at least one child aged 3 to 24 years.

Sources: DPD, Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

Public spending in favor of households with school-going children includes not only the actual spending on education (Chapter II) but also transfer payments granted for pursuing one's studies. These are mainly in the form of scholarships, the new school year allowance (*ARS*), and certain tax rebates.

The redistribution engendered by these transfer payments, analyzed in this chapter, is already integrated for the most part, in conventional redistribution studies.

SCHOOLING AID

Households enjoy certain monetary transfer payments that are directly linked to their children's schooling. These are in the form of tax rebates, scholarships and schooling-related benefits (such as the new school year allowance *ARS*), representing a total of about four billion euros¹.

Table 1 – **Schooling-related spending**

	thousand euros
Scholarships	1.7
Other social benefits (<i>ARS</i>)	1.3
Tax spending	1
Total	4

Scope: Dynastic families with at least one child aged 3 to 24 years.

In the scope of the redistribution study based on transfer payments for schooling only, neither family benefits nor housing aid is considered.

All of the family benefits are not taken into account, as they are paid to families with children whether or not they go to school, as a part of the family policy.

The various forms of employment aid and first job seekers allowances are not integrated either (subsidized jobs in the public sector, cost exemptions specifically targeted at young people such as in cooperative contracts)². In fact, these transfer payments are part of the effort to improve the conditions of access to employment, and are not aimed at schooling or as an outlay for initial training.

Housing allowance problem

Students and other young people living away from the family are eligible for housing allowance. The means-tested housing aid covered 671,000 students who no longer live with their parents as on December 31, 2000. In 1998, it totaled 760 million euros, accounting for 7% of the total spending on housing aid (estimation drawn from de Foucauld and Roth, 2002). Children aged below 21 years are entitled to the housing allowance only if their parents do not receive a family allowance.

Besides, children aged below 21 living with their parents, be they students or not, are taken into account for calculating the housing allowance, until they complete their 21st year, provided that they do not receive an income exceeding 55% of the minimum wage (*SMIC*).

(1) This total of 4 billion euros is different from the figure mentioned in Chapter II (3.6 billion euros), despite a narrower scope, as it includes tax spending resulting from children being pegged to the household beyond 21 years (see below).

(2) The share of teaching expenses in the spending on cooperative education is however considered in this report (Chapter II). It is not integrated as a transfer payment for schooling but under the actual teaching expense (Chapter III).

The students can therefore be indirectly covered, as their parents receive the housing aid concerned. In 1998, about 816,000 children were covered by housing aid grants, due to their dependent status, although it was not always possible to distinguish those who were students.

As the housing allowance is not subject to the student status, we could consider that it is not a specific schooling aid. It is however necessary to analyze its redistribution mechanism from a qualitative aspect. In France, financial aid to students is based on the students' being pegged to their families : on the one hand, scholarship amounts are calculated based on family income (and not the student's income alone), and on the other hand, the students are included in the family quotient for income tax calculations, even if they live separately (see below).

However, the provisions for housing aid do not follow its principle, given that the housing aid granted to a student is based exclusively on the students' own income. This inconsistency in the governing rules most probably causes a reverse redistribution effect that must be analyzed in more detail. In fact, it is most often in relatively well-to-do families that we come across children living separately from their families (all other factors being constant, such as the respective location of the domicile and the schooling institution). These students and their families benefit doubly from the housing allowance that does not take into account the family income, and the income tax rebate they are entitled to, through the family quotient applied.

Scholarships

Scholarships are mainly granted on the basis of social criteria, except for graduate-studies scholarships (3rd stage) which are based on university criteria. The scholarship amounts and brackets at the secondary level differ considerably from those of graduate-level scholarships.

Scholarships in the secondary level

Scholarship amounts at the lower secondary (*collège*) level are calculated using three rates based on the dependents (number of children) and the family resources. The scholarship is paid in three equal installments, at each quarter, after deducting any amounts payable for school lunches or full-board. At the start of the 1999-2000 school year, about 23% of lower secondary students were awarded a scholarship. The outlay for these scholarships was 116 million euros.

Scholarship amounts for students at the higher secondary level (intended for students in the three branches of the *lycée* and students preparing a *CAP* or a *BEP*) are expressed as multiples of a base unit of 39.36 euros, with the number of parts varying from 3 to 10, based on the family income and the number of dependents.

Table 2 – Annual scholarship amount for *collèges* and *lycées* (year 2002-2003)

in euros

Scholarships at the <i>collège</i> level (three grades)	56.1; 179.1 and 288.9
Scholarships at the <i>lycée</i> level	118.1 to 393.6
Allowance for entry into 10 th grade, 11 th grade and <i>Terminale</i> (12 th grade)	213.4
Supplies allowance	336
Qualification allowance	428.6
Boarding allowance	231

Note: For *collège* level scholarships, amount for 2001-2002.

Source: French Ministry for National Education.

Lycée level scholarships may be accompanied by allowances, such as allowance for entry into the 10th, 11th and 12th grades (not paid to repeaters), qualification allowance (paid to scholarship-holders in the 1st and 2nd years of the two-year *CAP* or *BEP* diploma, enrolled in the 3rd year of the three-year *CAP* after the 7th grade, preparing for a *CAP* diploma after the 9th grade) or supplies allowance (paid to 1st year students in certain specialization courses of *CAP*, *BEP*, technological *baccalauréat* or technician's diploma). Finally, an allowance is available for secondary school scholarship students in boarding. It was 231 euros for 2002-2003, and is deducted quarterly from the boarding bill.

At the start of the 2000-2001 school year, about 26.3% of higher secondary students (in metropolitan France and overseas *départements*) were granted a scholarship. The outlay for these scholarships was 412 million euros in 2000.

Post-secondary education scholarships

Scholarships based on social criteria are awarded to students in the first two stages of postsecondary education enrolled in institutions under the supervision of the French Education Department. The criteria used differ from those applied for *lycées* scholarships. In 2000-2001, 61% of the scholarship recipients based on social criteria were from worker, employee or inactive families.

Six grades are used, starting from grade 0, that corresponds to a waiver of the registration fees and social security contribution, to grades 1 through 5, that correspond to an additional payment of 1,278 to 3,456 euros (start of university year 2001).

Table 3 – Postsecondary scholarships (year 2000-2001)

	million euros	
	Headcount	Amounts paid
Scholarships based on social criteria	460,706	1,072
Grade 0	29,984	-
Grade 1	88,368	105
Grade 2	49,611	88
Grade 3	50,396	115
Grade 4	49,745	139
Grade 5	184,512	602
Study allowances	8,090	22.6
Scholarships based on university criteria	15,036	54

Source: Robin and Theulière, 2002.

The grade is determined using income levels, the number of factor points that depends, in particular, on the distance between the family and the school, and the family status.

Specifically, the number of dependents who are students is a factor that is considered with a weighting that is three times greater than for other dependent children³.

(3) For an annual income of about 38,000 euros, the average number of factor points of the beneficiaries is ten, of which six are due to the presence of other children in the postsecondary level. If the number of dependents was calculated on the same terms, without considering their enrollment in postsecondary education (i.e. one factor point), the number of factor points used for scholarship calculation would be reduced by four points, and consequently, with only six points, these families would probably no longer be eligible for scholarships.

As a consequence, when income levels rise, the number of brothers and sisters in postsecondary education has a more important weight on the award of the scholarship (Robin and Theulière, 2002).

In principle, a scholarship recipient is not allowed to work or receive unemployment benefits. This rule does not favor access to postsecondary education by students from modest backgrounds. It is in fact specific to France, as most other countries with scholarship systems authorize aggregating (capped) personal earnings and scholarships.

Also, study allowances are granted for unstable events that may occur during the year of study (for example, family break-up, divorce, separation, illness, and unemployment), of an amount equal to one of the five grades for social criteria-based scholarships. To be eligible, the concerned students must live on their own. In 2000-2001, 8,100 allowances of an average of 2,790 euros were paid.

In total, for the school year 2000-2001, 460,706 social criteria-based scholarships were awarded, totaling 1.07 billion euros (i.e. 2,327 euros on an average). The proportion of students receiving scholarships based on social criteria increased to 27.3% (27.7% if we include study allowances) from about 23% in the mid-nineties. This is a result of the “Social Plan for Students” through which the grade 0 was created, and the number of scholarship-holders in grades 1 through 5 was increased.

The postsecondary scholarships based on university criteria include public service scholarships (3,456 euros), scholarships for the postgraduate *DEA* and *DESS* courses (3,780 euros), *agrégation* scholarships (4,077 euros), merit scholarships (6,102 euros, 500 students since the 1998 school year).

New School Year Allowance

Students aged 6 (on February 1st following the new school year) to 18 (on September 15th of the school year) are entitled to the new school year allowance (*ARS*). The means testing is based on the sectional net income for the previous year (approximately the taxable income). For the start of the 2002 school year, the net income considered was capped at 16,140 euros for one child (plus 3,725 euros per additional child). The allowance amount was 249 euros. For the year 2000, *ARS* was granted to three million families, totaling a spending of 1.3 billion euros (metropolitan France).

The new school year allowance was created in 1974 has been modified several times since, in particular in 1990 where the 16-18 year age cohort was included.

The main modification was the *ARS* markup for the start of the 1993 school year. Initially an exceptional measure, as in 1977 and 1979, it has been renewed every year since 1993, which practically quadrupled the average allowance amount. At the outset, the government paid back the markup to the *CNAF* family allowance fund. Since the 1999 new school year, *ARS* is paid to families with a child entitled to no other aid. As of the 2001 school year, *ARS* was made a permanent measure, and represents 73.22% of the *BMAF* (monthly family allowance base) and is revalued against this base.

Tax Rebates

Only tax rebates granted specifically for a child's education must be considered as schooling aid. The spending pegged to the family quotient, for children up to 21 years, is not included in this calculation. Also, deductions for child support are not included, whether or not they pertain to school-going children⁴. However, non-minor students may request to be assigned to their parent's tax household up to the age of 25. This increases the family quotient⁵. The tax benefit resulting from the assignment of children aged 22 to 25 years was about 750 million euros (with approximately 1.5 billion euros for the entire 18-25 year age cohort). Furthermore, the assignment of non-minor children who are continuing their studies entitles the families to a tax rebate against education fees (153 euros for higher secondary students and 183 euros for postsecondary students). This represented a tax benefit of 250 million euros in 2000. The tax spending for the education of children therefore totaled about 1 billion euros.

Other Aid

Certain students may be granted interest-free loans to cover part of their educational expenses. These loans are repayable by the students within ten years after the completion of the studies for which the loan was contracted. These loans are granted based on loan fund availability and the applicants' social status. A student cannot however, receive a postsecondary education scholarship (except at level 0) and an interest-free loan in the same university year. For the university year 1998-1999, about 4,500 interest-free loans at a variable rate depending on the *académies* (educational areas) were granted, totaling 838,000 euros (de Foucauld, Roth, et al., 2002).

The scholarships are sometimes supplemented by other exceptional aid granted from various social funds. This aid for students is managed and decided upon locally; it is need-based and limited to fund availability.

At the postsecondary level, over 5.8 million euros were granted to more than 31,000 students, by way of the university solidarity fund including funds for better student conditions and the student loan guarantee fund, representing 183 euros on an average in 1998 (Amrouni and Rastier, 2001).

REDISTRIBUTIVE IMPACT OF SCHOOLING AID

The works conducted by the Youth autonomy commission and the more recent extension of these works (Albouy, Bouton and Roth, 2002) can be used to analyze the redistributive impact of schooling aid as a whole (excluding housing aid), by integrating scholarships to the transfer payments that are usually considered in redistribution analyses (the new school year allowance and tax spending).

As with all family aid, schooling aid integrates the dimension of a horizontal redistribution between households without school-going children and families with school-going children. To highlight the vertical redistribution effects, it would be interesting to consider the distribution of these aid amounts between "dynastic households" only, with at least one child aged between 3 to 24 years (Chapter III).

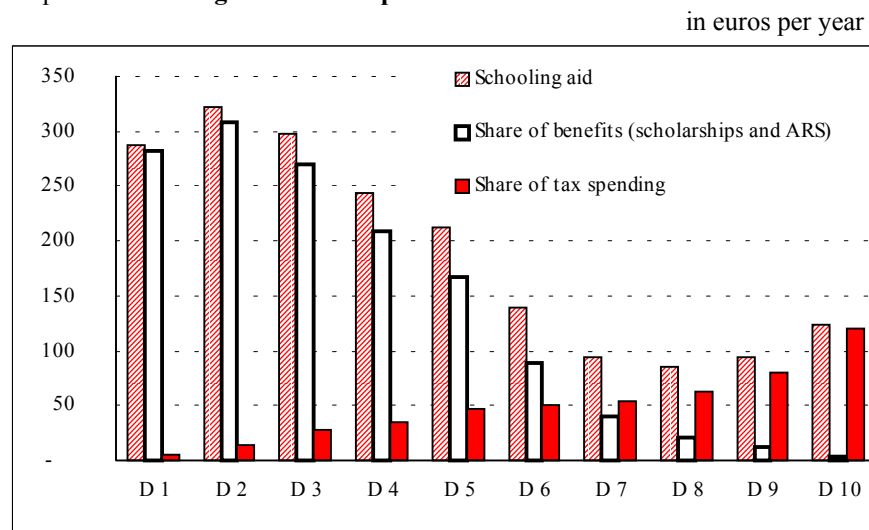
(4) The deduction for child support represented a tax expense estimated at 500 million euros for 2000 (Youth autonomy commission).

(5) In the case of children who have set up their own household, the tax benefit is granted in the form of a deduction calculated on the parents' taxable income of 25,083 euros per dependent.

In the vertical redistribution effects, households in the first few income deciles benefit more from scholarships and *ARS*, while those in the deciles higher up in the income distribution benefit more from tax rebates.

On the whole, schooling aid amounts (by consumption unit) are greater for the first few deciles. They decrease gradually up to the eighth decile, and go up again for the last two deciles, due to the increased tax rebate (Graph 1). This is partially linked to the fact that families with school-going children are relatively more often in the lower standard of living categories (Chapter III).

Graph 1 – Schooling aid amounts per CU



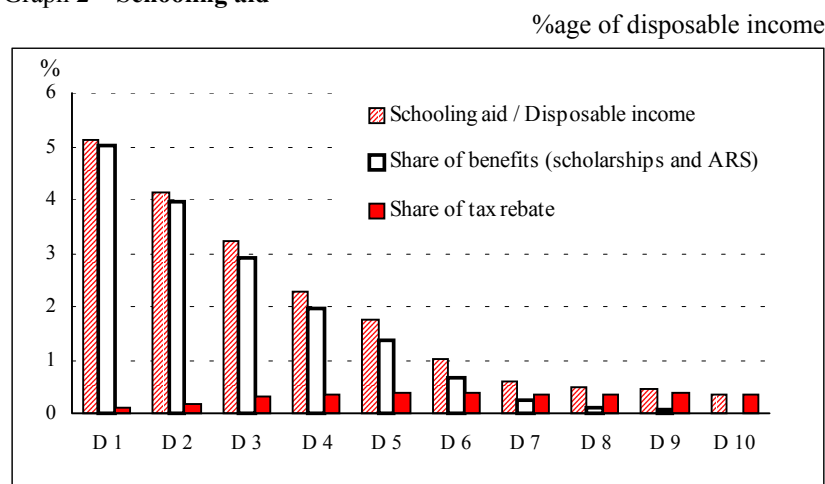
Note: Disposable income per CU deciles.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: *Ines* model, *Insee* calculations.

The redistribution through schooling aid results from opposite effects; the *ARS* and scholarships on the one hand, and tax savings on educational expense, especially in the postsecondary level, on the other hand. The overall effect is however redistributive given that households in the first few deciles receive transfer payments that represent a greater fraction of their disposable income than households in the higher deciles (Graph 2). On the whole, the redistributive impact of schooling aid is slightly toned down due to the tax spending effect.

Graph 2 – Schooling aid



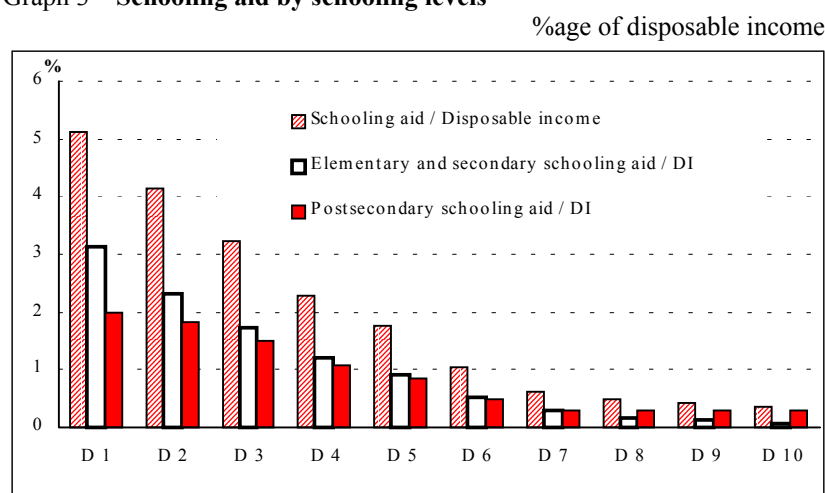
Note: Disposable income per CU deciles.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: Ines model, Insee calculations.

Over three-quarters of tax spending is in the form of tax rebates for students over 21 years who are pegged to their families (see above). Therefore, dynastic families with a child in the postsecondary level benefit more from tax spending (Graph 3).

Graph 3 – Schooling aid by schooling levels



Note: Disposable income per CU deciles.

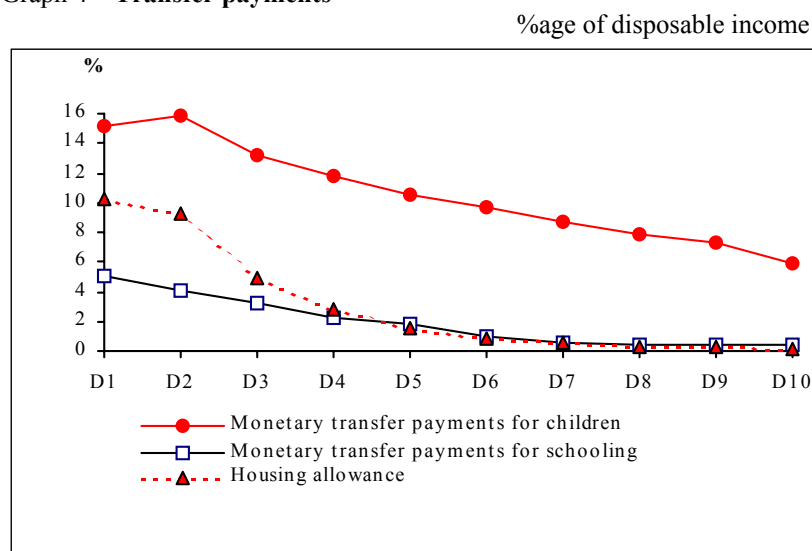
Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: Ines model, Insee calculations.

The redistributive impact of schooling aid is more substantial in the case of aid granted to elementary and secondary students, than to postsecondary students.

Although schooling aid is globally redistributive, to what extent can these effects be reconciled with those of conventional redistribution mechanisms? We make a comparison against the main transfer payments, namely monetary transfer payments for children (family benefits and tax rebates such as for the family quotient) and housing aid. Schooling aid in terms of volume, has less impact on household income, especially for households in the first few deciles (Graph 4). Its redistributive impact is relatively lower.

Graph 4 – Transfer payments



Note: Disposable income per CU deciles.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

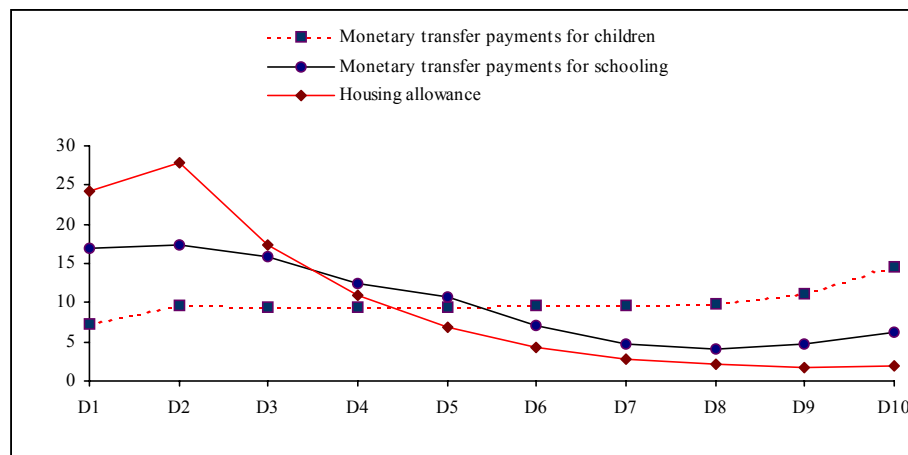
Sources: *Ines* model, *Insee* calculations.

To offset this size effect linked to the financial masses earmarked for the various transfer payments, we can study the distribution of spending based on the income deciles for each of these transfer payments. This is a different exercise; it no longer describes the redistribution resulting from a given transfer payment, but rather its redistributive power for a fixed volume of spending.

The distribution of transfer payments for schooling occupies an intermediate position in the French transfer payments system, in that it is concentrated more towards the lower rungs of the distribution than those of transfer payments granted for children (partially due to the tax spending in favor of children), but far less than housing allowance (Graph 5).

On the whole, the redistributive capacity of schooling aid appears to be greater than that of monetary transfers in favor of children. While the first three deciles receive about 50% of the transfer payments for schooling (56% for aid in the elementary and secondary levels, and 44% for the postsecondary level), they receive only 26% of child transfer payments. This specification of child transfer payments stems from the combined effects of family benefits (partly means-tested) that serves the first half of the income distribution more, and tax spending that better serves the second half of the distribution.

Graph 5 – Distribution of the various transfer payments based on disposable income per CU deciles



Reading: The first decile of the disposable income per CU distribution receives 24% of the housing allowance.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

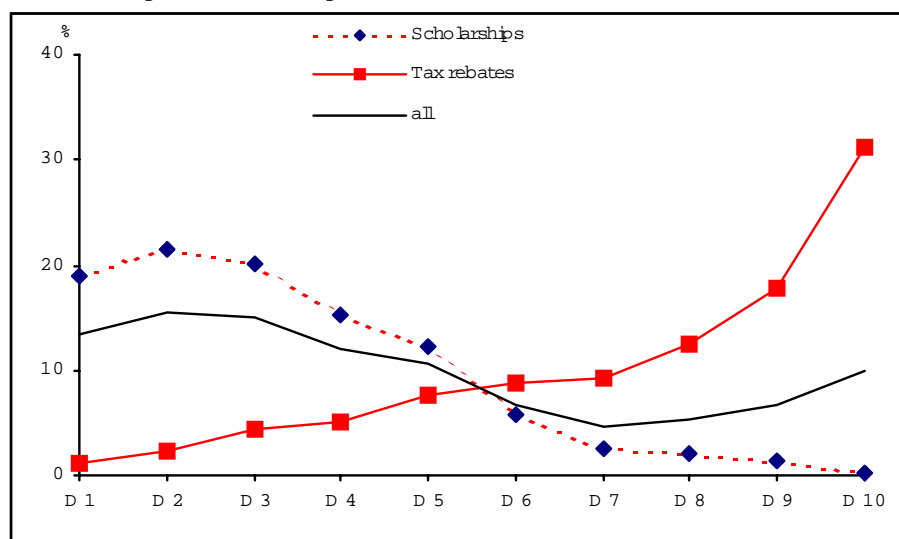
Sources: Ines model, Insee calculations.

Postsecondary students can receive two forms of aid, namely scholarships (means-tested for family income) of about 1 billion euros, and tax rebates totaling about 0.6 billion euros.

STUDENT AID

The redistributive impacts of each differ considerably; scholarships have a very high redistributive profile unlike tax rebates (Graph 6).

Graph 6 – Distribution of transfer payments for postsecondary schooling based on disposable income per CU deciles



Reading: See Graph 5.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: Ines model, Insee calculations.

Besides, the student aid system appears to have a smaller scope as compared to the usual figures for other countries (Table 4).

Table 4 – Government financial aid to students in Europe (1995)

	Financial aid to students as a share of GDP	Share of the student population receiving scholarships and loans	
		Scholarships	Loans
Sweden	0.59	78	58
Norway	0.73	66	68
Finland	0.41	66	28
Denmark	0.63	91	41
The Netherlands	0.41	78	12
United Kingdom	0.47	96	59
Belgium	0.20	19	0
Germany	0.10	16	16
France	0.10	21	0
Spain	0.06	14	0
Italy	0.05	3	0

Note: Financial aid including registration fees waiver and *excluding* family allowances, tax benefits and including loans at their face value.

Source: Eurydice (1999), school year 1995-1996.

Of course, the student social plan has considerably stepped up aid in the form of scholarships since the year of comparison. Also, housing allowance and tax rebates are not included in the data in the above table, while France undoubtedly uses these mechanisms more extensively. However, taking these factors into account would barely change the diagnostic.

SUMMARY

The monetary aid – excluding housing allowance – for schooling (4 billion euros) is modest compared to the other transfer payments as a whole.

The redistributive impact of schooling aid however differs according to the schooling level. Schooling aid at the elementary and secondary levels is far more redistributive than that of postsecondary education. The relative neutrality at the postsecondary level results from the coexistence of two instruments, namely means-tested scholarships that trigger a positive redistribution, and tax rebates granted to households with children in postsecondary education that reverse it.

Besides, the public outlay for postsecondary schooling aid is considerably less than that of our partners; relatively few students can obtain scholarships, and France does not have a government loan system for students.

INTRODUCTION

Chapter III presented an analysis of an income-based distribution of public spending on education (excluding monetary transfer payments) between households. The differences are particularly conspicuous for post-compulsory or postsecondary education. They stem from enrollment rates and could well be accentuated if we differentiated by cost per branch.

This result, a common feature for the majority of countries, sparked extensive studies on the question of the redistributive impact of public-funded spending on education, right from the end of the sixties in the United States, and from then on in various European countries. The approach used most often is to compare spending on education against the tax deductions required to fund it, and assess the net result for the different categories of households¹. Such studies are relatively rare in France (Lévy-Garboua, 1975, Hatchuel, 1976, Mendès-France, 1987, Plassard and Bergès, 1998, Hugounenq, 1998, Albouy, Bouton and Roth, 2002).

These analyses of the redistributive impact of spending on education sustain debates on the balance to be found between public and private funding of spending on education, especially where higher education is concerned. This balance should enable combining economic efficacy and an improved access to education, to further equal opportunity.

This chapter goes into the heart of this debate to highlight the different viewpoints. It is divided into three parts that deal with the following themes in the order below.

- **Public spending on education is funded by taxes.** Comparing the distribution of this spending against that of tax is therefore a necessary step for assessing its redistribution impact. At one point, public spending on education benefits households with children of school-going age, and is partly funded by households without children. This results in a spot horizontal redistribution dimension. However, households without school-going children could be potential beneficiaries of spending on education if they have school-going children in the future, or if they were beneficiaries in the past (for households of working or retired persons who had school-going children). In any case, each tax payer benefited from public spending on education in his or her childhood. The horizontal redistribution dimension (from childless households to families with school-going children) also appears as an agreement between generations. Besides the horizontal redistribution dimension, public funding of education can also introduce a vertical redistribution aspect (between households with different standards of living), for example due to enrollment rates or the differences in education paths.
- Also, spending on education is a form of investment that calls for dynamic effects to be considered; in redistribution terms, the results of the analysis of spending on education can differ based on whether we use a spot or static approach, or study the impact of spending on education within the life cycle or even in intergenerational terms. In fact, spending on education steps up the expectancy of future gains for the students when they start working.

(1) These works were conducted within the scope of the economics of education and used in discussions on the balance between public and private funding. They have not, in general, been put in the context of the overall income distribution.

Beyond this fact, spending on education is beneficial to society as a whole, given the positive externalities it generates. Its "social return" is an economic argument that justifies a major contribution by government authorities in its funding.

- In order to develop post-compulsory education, the spending must cater not only to the actual education expenses, but also the daily cost of living of the students. The breakdown of the total cost between government authorities, students and their families, and possibly other contributors such as companies or various institutions (foundations, etc.) varies considerably in each country. Significant changes have already been implemented or are being discussed in several countries; they may contribute to the debate in France. In broad outline, in France, spending on education is to a large extent public-funded, and aid to students takes more often the form of tax reductions for the family than of a direct grant to the students (lower proportion of scholarship-holders, student loans practically nonexistent). In 2001-2002, the Youth autonomy commission studied the issue of aid to students for their living expenses (de Foucauld, Roth et al., 2002).

But first, we must go back to the question of the pertinence of the study on government-funded spending on education, seen from the income redistribution angle. Every household in which a child accesses a public-funded education, benefits from a "non-cash transfer payment". Could we however consider a family allowance, for example, to be another form of a monetary transfer payment? The answer to this question is not obvious. In fact, the family allowance gives the family extra buying power that it can use as it chooses. We can liken non-cash transfer payments to the spending for the service used being given back to the households with constraints for using this surplus. In a strict approach, this constraint must be considered when assessing the non-cash transfer payment², as pointed out by R. Hugounenq (1998) in the introduction to a previous study for the Cserc which is used below. It is generally accepted that such non-cash transfer payments are less useful to the beneficiary than monetary transfer payments of the same amount for which the beneficiary has greater freedom of use, even though it must be used for educational expenses (this is the case for education vouchers that are becoming increasingly popular in the United States). As this impact cannot be evaluated, we generally estimate this non-cash transfer payment based on the cost it represents for the public fund provider (through public spending on education).

The dynamic analyses of the redistribution mechanisms for spending on education, outlined at the end of this chapter, use another approach. It measures the usefulness of the spending on education in terms of the additional income it represents for the beneficiary (net income discounted to its present value over the life cycle).

(2) Note that this problem also exists and is sometimes omitted in conventional studies on redistribution, when speaking of "allocated monetary transfer payments" such as the housing allowance, which is also a transfer payment that is granted and calculated for a specific consumption.

STATIC ASPECTS OF REDISTRIBUTION

One of the founding works on the analyses of static redistribution brought about by spending on education caused a major controversy in the United States. This was a study of public spending for postsecondary education in California, conducted by Hansen and Weisbrod (1969). The diverse studies and debates sparked off by this initial research emphasized (Johnson, 2002) the importance of the conventions applied for this type of study (insert).

The importance of the conventions adopted

The results vary according to the conventions used in each of the studies. These conventions mainly concern the population on which the redistributive impact is assessed, and the nature of the tax deduction used.

- *Area of study and nature of the redistribution analyzed*

In principle, the area of the study must naturally cover all households. It is a fact that all households are taxable, whether or not they have children, and whether or not the children are enrolled in schools. It largely appears that it is the childless households who pay for households with children – in this light, horizontal redistribution comes up first. The main result of a study (Plassard and Bergès, 1998) in which households were classified by their profession and social category, was that households of retired people massively funded education for the other categories. We cannot therefore interpret these results from the aspect of redistribution between social classes.

Several studies center on families with children (this is the case with Hansen and Weisbrod (1969) or more recently, Johnson (2002)) using a sample of young students for whom the education path and its cost is compared against their initial family's income or their own future income. This procedure eliminates some of the horizontal redistribution impact mentioned above and moves closer to the question of the distribution of educational expenses within families based on the income characteristics. This approach was adopted in the study by *Insee* whose results are cited in this report.

- *Household classification criteria and interpretation of the results*

The interpretation of the results is highly influenced by the household classification criteria. Due to the lack of data on the income of students' initial families, certain studies in France use the PSC (profession and social category) (Lévy-Garboua, 1975, Hatchuel, 1976, Mendès-France, 1987, Plassard and Bergès, 1998). Even though, on an average, there is a link between one's PSC and the household's income level, this relation is not strong enough – and even less so in the case of the relation between one's PSC and the standard of living (income per consumption unit) – for the results of these studies to be interpreted in terms of spending redistribution by income level. Therefore, in Bergès and Plassard's conclusion that senior executives benefit more than workers from public funding of postsecondary education, the result refers more to the differentiation between education paths due to the cultural and social capital of the different social categories. The study deals more with intergenerational social mobility of which income level is only one of the many explanatory factors.

The Hansen and Weisbrod study is another example of the importance of the conventions applied for classifying households. These authors start with a classification of students based on the level of public spending on education in the schools they go to. They then analyze the income distribution of the students' families and conclude that the public funding of the postsecondary public schooling in California has an anti-redistributive impact. Their approach however introduces a calculation bias compared to ordinary studies on redistribution.

Insert cont'd

The households must in fact be classified according to their income level to assess the amount of the spending that they benefit from. Johnson (2002), who made two types of calculation on the same student sample, demonstrates that Hansen and Weisbrod's results are not incompatible with a neutral or positive redistribution.

Conventions on the spending funding method

When education spending that households benefit from is compared against the contribution of these households to the funding through deductions, we can use various assumptions regarding the tax deduction. If we apply the rule of non-allocation of incomes to expenses, the most reasonable convention to use would undoubtedly be that of a tax deduction with the average progressive characteristics of all tax deductions (a). We could also use a taxation proportional to initial income (or tax income) or take only income tax-based funding into account, as it is progressive in relation to the initial income. Deduction proportional to income is the hypothesis used most often in static redistribution studies (b). In this report, we have used the hypothesis of deductions proportional to disposable income; it was not feasible to apply the slightly progressive deduction rates in France to the dynastic family data.

We must bear in mind that the progressive or regressive redistribution results of spending on education partly depend on our assumptions of the progressiveness of the funding method. The soundness of the conclusions must be tested for the different variants of tax deduction that may be used.

(a) In this case, for France, the direct and indirect tax deductions on pre-tax disposable income is slightly progressive; it varies by about 15% to 20% all along the income distribution curve (*Insee*, 1997).

(b) Dynamic studies of yield from education (see below) often use the impact of progressive income tax only.

Horizontal redistribution

The horizontal redistribution corresponds to income transfer payments between households in the same income bracket, but with a different family makeup. Public spending on education benefits households with children of school-going age, and is partly funded by households without children, such as childless single persons or couples, households with children who are no longer in school, and retired persons (Table 1).

Table 1 – **Distribution of spending on education based on family size (year 1994)**
thousand euros

	Average per household			Average per consumption unit		
	Disposable income (1)	Educational expense (2)	(1)/(2)	Disposable income (1)	Educational expense (2)	(1)/(2)
Single persons (a)	13.3	0.3	1.9	13.3	0.3	1.9
Couple without children (a)	24.2	0.2	0.7	16.1	0.1	0.7
Couple or single-parent family, with one child	26.7	3.5	3.1	14.6	1.9	13.1
Couple with 2 children	32.1	6.7	20.8	14.4	3.0	20.5
Couple with 3 children	33.2	12.0	36.3	12.3	4.3	35.1
Other (b)	27.2	2.4	8.7	13.1	1.0	7.3
All	23.4	2.6	11.1	14.3	1.2	8.3

(a) In this study, students who do not live with their family are considered as separate households (single person or couple) that may be included under one of the above headings.

(b) The other cases may be households that include individuals other than the reference person, the spouse and the children.

Source: Hugounenq, 1998. The study is based on a Family budget survey.

If we assume a funding by tax proportional to disposable income, we have a clear horizontal redistribution (Table 2).

Table 2 – **Horizontal redistribution (year 1994)**

	Disposable income	Educational expense	Tax (a)	thousand euros Net transfer payment
Single person	13.3	0.3	1.5	- 1.2
Couple without children	24.2	0.2	2.7	- 2.5
Couple or single-parent family, with one child	26.7	3.5	3.0	0.5
Couple with +2 children	32.1	6.7	3.6	3.1
Couple with 3 children	33.2	12.0	3.7	8.4
Other	27.2	2.4	3.0	- 0.7
All	23.4	2.6	2.6	0

(a) We assume a 11% tax proportional to the disposable income that funds the expense.

Source: Hugounenq, 1998.

The result would be even more striking if we used the dynastic family approach. The impact is sufficiently great for it not to be affected by the assumption of the taxation type.

Vertical redistribution

Vertical redistribution corresponds to income transfer payments between households in different income brackets, but with the same family make-up (or between households that would be of the same size if we use consumption units). As spending on education benefits all households with school-going children, we can draw closer to vertical redistribution by using dynastic families with at least one child aged 3 to 24 years³. The results may vary depending on whether we focus on all expenses or only spending on postsecondary education.

Another distinction can be made between spending for the compulsory schooling period and spending on post-compulsory studies. This distinction can be made by age cohort or by clubbing the higher secondary schooling with postsecondary education.

We can thus compare the spending on education that benefits dynastic families with at least one child aged 3 to 24 years, against their income and the taxes they pay. To do so, we must apply the tax rate that balances the spending on education, for the entire population.

Considering all spending on education, the average amount per consumption unit decreases proportionately to income, given the higher concentration of children in the lower rungs of the distribution (Table 3). However, for post-compulsory education (including in this case, all higher secondary and postsecondary education expenses), the distribution is fairly homogenous across deciles. Finally, if we consider spending on postsecondary education only, it is the richer deciles that benefit the most (even though, in this case, we do not differentiate by cost per branch in the postsecondary level).

(3) It does not seem necessary at this juncture to break down the impact according to the different categories of dynastic families with at least one child aged 3 to 24 years. In fact, as the main differentiation factor for the benefits received is the number of children, it is already considered in the analysis.

Table 3 – Educational expenses by family disposable income decile

thousand euros

	Initial income per CU	Disposable income per CU	Educational expense			"Disposable income adjusted for educational expense"
			Total	Share of post-compulsory education	Post-secondary education	
1 st decile	3.6	5.6	3.5	1.5	0.4	9.1
2 nd decile	5.7	7.8	4.1	1.4	0.4	11.9
3 rd decile	7.9	9.2	4.0	1.6	0.5	13.3
4 th decile	10.0	10.7	3.8	1.6	0.5	14.5
5 th decile	11.9	12.1	3.8	1.6	0.6	15.9
6 th decile	14.1	13.6	3.7	1.6	0.6	17.3
7 th decile	16.6	15.4	3.7	1.5	0.6	19.1
8 th decile	19.6	17.7	3.7	1.6	0.7	21.3
9 th decile	24.6	21.3	3.7	1.7	0.8	25.0
10 th decile	43.1	34.0	3.8	1.8	0.9	37.9
All	15.4	14.5	3.8	1.6	0.6	18.3
10 th decile/ 1 st decile	11.8	6.1	1.1	1.2	2.6	4.1

Notes:

(1) Families with children of school-going age (between 3 and 24 years) are classified into deciles of disposable income per CU.

(2) By post-compulsory education in this case, we mean the higher secondary level and the postsecondary level.

(3) The income and expenses by decile are the average amounts per consumption unit.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

Integrating the tax-funded spending on education would slightly alter the diagnostic (Table 4). All families with children of school-going age benefit from a positive transfer payment given that spending on education is also funded by childless households.

The high public share of spending on education has, on the whole, a vertical redistribution impact between families; the first decile receives a net amount exceeding 2,800 euros, whereas the last decile is a net contributor. This however mainly stems from compulsory schooling as also higher secondary education, given the considerably higher proportion of students in this schooling level, regardless of the income level. However, at the postsecondary level, the net transfer payment is lower and remains fairly constant across deciles⁴.

The essence of these results would not be altered if we were to use a deduction with the average progressiveness of the entire French tax system.

The result of the redistributive impact of the overall spending on education is not specific to France. O'Donoghue (2002) drew similar conclusions for eight European countries (including France) based on the data of the European panel of households. In all, if we consider the overall spending on education, the redistributive nature of the deduction and transfer payment system is enhanced.

(4) These results are also found in the study by Hugounenq (1998), even though this study was weakened by the failure to reclassify students in their initial families.

Table 4 – Redistributive impact on families with children

thousand euros

	Disposable income	Net transfer payment: Educational expenses minus tax		
		Total	Post-compulsory education	Postsecondary
1 st decile	5.6	2.9	1.2	0.2
2 nd decile	7.8	3.2	1.1	0.3
3 rd decile	9.2	2.9	1.1	0.3
4 th decile	10.7	2.6	1.0	0.3
5 th decile	12.1	2.4	1.0	0.4
6 th decile	13.6	2.1	0.9	0.3
7 th decile	15.4	1.9	0.8	0.3
8 th decile	17.7	1.6	0.7	0.3
9 th decile	21.3	1.2	0.7	0.5
10 th decile	34.0	- 0.2	0.1	0.3
All	14.5	2.1	0.9	0.3
Taxation rate		11.8%	4.9%	1.8%

Notes:

(1) Families with children of school-going age (between 3 and 24 years) are classified into deciles of disposable income per CU.

(2) The tax that balances the educational expense is applicable to the entire population and not to families alone, resulting in a net transfer payment received by all families. The net transfer payment is equal to the educational expenses less the tax paid.

(3) The income and expenses by decile are the average amounts per consumption unit.

Scope: Dynastic families with at least one child aged 3 to 24 years. Families with a negative initial or disposable income were excluded.

Sources: Insee-DGI, Tax Income 1997 survey (updated for 2001), Ines model, Insee calculations.

The redistributive capacity of public spending on postsecondary education seems to be low. This result appears to be valid not only for France but also for the other European countries (O'Donoghue, 2002). However, one of the shortcomings of these studies is the failure to adjust the costs at the postsecondary level.

However, considering the cost differences between branches and between institutions may not necessarily modify this result. In a study on the redistributive impact of public-funded spending on postsecondary education in the United States, which in fact takes into account the cost differences between students (branch chosen as also the cost differences between the institutions that these students go to), Johnson (2002) concludes that the redistribution is neutral or slightly positive.

How can we interpret this conclusion given that the access to postsecondary education is largely a privilege of children from better-off families, resulting in the mass of non-cash transfer payments (public spending for postsecondary education) increasing proportionately to income? The result reveals that the inequality of access to postsecondary education is less blatant than the inequality of income. Given this fact, the increase in the tax (assumed to be at a uniform rate) that funded the spending is steeper than the spending itself.

DYNAMIC ANALYSIS ELEMENTS

The major objection raised against the results given in this part of the chapter is that they ignore the dynamic nature of spending on education.

These criticisms are of two types. On the one hand, although at one point, the tax paid by childless households funds the spending on education in favor of families with school-going children, we must consider the fact that they did benefit from spending on education in their youth. On the other hand, although at one point, households in the higher income brackets benefit more from the spending on postsecondary education, in the future, these students will pay back a part of the spending that they enjoyed, through the higher income tax they are likely to pay because of higher studies.

These criticisms also raise the question – discussed in the introduction to this chapter – of the measurement of the value (usefulness) of a transfer payment as seen by the family. In the first part, (in what we term static analysis), we considered that this value was equal to the spending amount. Using the life cycle approach would be tantamount to stating that the value to be assigned to the non-cash transfer payment is equal to the net income resulting from the additional education received, discounted over the life cycle.

The return of education

A transposition of the static or spot approach given above in a life cycle approach could be achieved by calculating, for each person, the present value of the spending on education that the person enjoyed over his or her life cycle, and the present value of the person's income. Depending on the income classes, one could study the net positive or negative transfer payment (spending on education less the average tax that funded the education).

Studies of this type are rare, and the works conducted on this theme are mainly centered on the impact of continuing one's studies beyond the compulsory schooling period and into postsecondary education, in particular, and do not give an appraisal of the transfer payments linked to the overall compulsory schooling period. A recent summary was given by Blöndal, Field and Girouard (2002). In this approach, are compared the extra earnings, discounted over the life cycle, resulting from the access to an additional level of training (for example, obtaining a university degree in the first stage, i.e. undergraduate years 1 and 2, etc.) against the cost of this training. Thus three aspects of the return from education can be defined, namely for the individual, for society, for public finance (see insert).

Individual, social and fiscal returns

Individual return

On the individual level, are compared the private gain (i.e. the NPV of the extra income less tax deductions resulting from the additional education level attained and the reimbursement of student loans, if any, contracted to pay for these studies) against the individual cost, composed of the educational expenses borne by the individual or by the family (registration fees, books purchased, etc.) and the loss in earnings due to the individual's not being able to work full-time, or to work at all during the study years, all expenses being calculated net of loans and scholarships.

Social return

A similar calculation is made from the viewpoint of the society as a whole. On the cost side, is used the total cost, i.e. the sum of the private cost and the public-funded spending on education. The gain is the sum of private gains of each individual, to which the social security and tax deductions on this income are added. To this social gain, must also be added an estimation of the positive outcome of the investment on education; this factor is generally ignored, as the positive income cannot be measured with precision.

Fiscal return

From the viewpoint of public finance, it is worthwhile to match the additional social security and tax deductions generated, against the public spending on education.

Private return

Three factors influence the extra income generated by one's additional studies, discounted over one's life cycle, namely the difference in wage rates (the bonus linked to a given level of education), the decrease in unemployment risk, and the increase in the activity rate. The influence of these factors varies according to the level of education and the country concerned. In the countries of northern Europe where the delta in wages is relatively small based on education levels (the overall wage inequality is lower), and with all other factors being constant, the private return from postsecondary education tends to be lower than in France and even more in countries such as the United Kingdom or the United States, in which the wage differentials are more marked.

On the cost side, we have, in particular, the duration of the studies and the tuition fees charged (high in the United States or in the United Kingdom) that tend to cut down the private return, or the amount of student aid received (high in northern European countries) that steps up the private return.

On the whole, the available estimations seem to indicate that the private return from postsecondary education is relatively high. For example, the estimate for men by Blöndal, Field and Girouard⁵ ranges from 8% in Japan or Italy, to nearly 19% in the United Kingdom; with about 11% in the countries of northern Europe (Denmark, Sweden) where the greater extent of aid offsets the lower pure wage differential. The return in France seems to be relatively high at about 14%.

(5) The taxation used in this study was progressive income taxation.

Social return

The social return also exceeds the interest rate. The estimate by Blöndal, Field and Girouard (2002) for postsecondary education and for men, ranges from 6 to 15% in the countries concerned, with about 13% in France.

Fiscal return

Finally, the fiscal return figures are positive, but lower than the private return or the social return. Most of the studies indicate that the fiscal yield from investment in education is positive, given that the spending by local government organizations pays off at a later stage, with the present value exceeding the initial cost.

**Dynamic
redistributive
impact**

These overall results do not portend the possible distribution impact ensuing from the private return from education. A complete assessment of the dynamic redistributive impact, however, seems difficult to obtain with the fragmented and incomplete results we have at hand. Certain facts, however, come to the surface.

Blöndal, Field and Girouard (2002) underline the fact that despite the consistent opening-up of postsecondary secondary education since a few decades, postsecondary students are still mainly from relatively privileged families, thus benefiting more from public funding and better income prospects. The study also states that integrating the impact of tax deductions that fund public spending only marginally decreases the private return from education, even in countries where direct taxation is more important, such as the United States, the United Kingdom or the Netherlands (OECD, 2002). This is true even for France, where the proportion of direct taxation is relatively small (Cerc, 2002).

In his study on the United States conducted on a sample of young people, Johnson first analyzes the static redistribution (see above) and then calculates the redistributive impact based on the future income of these students.

He concludes that the change in prospects does not undermine his conclusion of a moderately⁶ progressive redistributive impact of public spending on postsecondary education.

Although the fiscal return from spending on education is positive on the whole, it appears to be lower than the private return for individuals. This does not seem to have any incidence on the distribution for spending on compulsory schooling, as the entire population benefits from it. This may not hold true for post-compulsory education. Heavy public funding of non-compulsory education, and notably postsecondary education, given that the access rates are not homogeneous (to a large extent due to the effects of the selection process and previous failure), plays a part in widening future income gaps within the population.

(6) This impact is however attenuated since only the last decile is a net contributor in this case, whereas the net gains of the other nine deciles are comparable.

A more precise study of the dynamic redistribution phenomena could not be conducted for this report. It would appear that using the microsimulation instruments at hand could help refining the diagnostic, provided that progress is made in the knowledge of costs by branch in the postsecondary level.

**FUNDING OF
POSTSECONDARY
EDUCATION:
A COMPARISON
ACROSS COUNTRIES**

The second part of this chapter, especially the dynamic analysis, raises the question of the terms of funding that affect the private return from postsecondary education. Two aspects must be considered, namely the sharing of the educational expenses between public funding and the contribution by the student or his/her family on the one hand, and the share of government aid towards the students' living expenses during their studies, on the other.

The last part of this chapter studies the experiences in the various countries in these two fields.

In France, despite the social plan for students, the level of educational expenses remains relatively low (Chapter II), especially within the University, and the registration fee amount is also low. While the direct educational expenses are mostly funded by the central and regional budget, student aid levels are however modest (Chapter IV).

The postsecondary education registration fees in France are relatively low. For the 2002-2003 academic year, they totaled 137 euros (excluding social security of 174 euros) for most university courses, 265 euros (for certain *maîtrise*, *IUP*, *DEA* and *DESS* courses), 352 euros for medical studies, and 398 euros for engineering schools. Certain postsecondary courses call for relatively high tuition fees (business schools, private profession-oriented training courses, etc.). Moreover, student aid levels are quite modest; student loans that are extremely rare, means-tested scholarships, reduced social security contributions, and housing allowance if the student lives away from home. During the initial stages of postsecondary education at least, students are considered less as independent adults investing in their studies and more as young people dependent on their families – the parents' income is a factor applied for awarding scholarships, and the use of the tax rebate instrument for families reflects this trend that is common to several southern European countries.

In the northern European countries (Sweden, Norway, Denmark), educational expenses at the postsecondary level are clearly higher than in France, and registration fees are nonexistent. Furthermore, these countries use a massive student aid system for covering the students' living expenses. Also, this aid system is generally independent of the income of the student's family.

In Sweden, there are neither family allowances for students nor fiscal aid, but the students can avail of student accommodation or health insurance aid. No tuition fee is charged.

The student aid system, which since the post-world war period was mainly based on a loan program without means-testing, was amended in 1988 to step up the scholarship award program that represented only 5% of the aid.

Since then, students can avail of scholarships (non repayable) and low-interest loans; 30% of the aid is granted in the form of a scholarship (1,900 kronas per month equivalent to approximately 210 euros, for nine months) and 70% in the form of a loan (up to 4,955 kronas per month, i.e. approximately 545 euros, over nine months).

The means test considers only the student's own income and not the parents' or spouse's income. The eligibility criteria also include the student's pass rate, i.e. at least 75% in each half-yearly exam (75% in universities, 100% for more profession-oriented courses). The students are expected to start paying back their loans six months after they complete their studies; the repayments represent 4% of the tax revenue (a one-year time lag with actual income). The repayment period is not limited, and depends on the amounts borrowed, the rates, and the amounts paid back.

Approximately eight out of ten students receive a scholarship, and six out of ten are granted loans, and the loans represent 70% of the student aid.

In Norway as well, no registration fees are charged. A loan-based aid system to students to help them cover their daily needs, was set up as early as 1947. At present, aid is granted through a combination of scholarships and loans. Scholarships are awarded only to students who live away from their parents. All students may apply for loans, whether or not they live in their parents' home. The loan amount for a student living away from home was capped at 5,778 euros per year in 1995 (5,072 euros if the student lived in his or her parents' home). Loans and scholarship awards are subject to the students' following the standard schooling timetable.

In 1995, about seven out of ten students received scholarships or loans representing an annual average amount of 6,693 euros, and loans made up about three quarters of the aid to students.

The loans remain interest-free for the duration of the schooling, and the interest rate is applied upon the completion of one's studies. Loans are expected to be paid back over twenty years; the repayments may be capped at 6% of the borrower's gross income, and canceled in the case of a permanent disability (or death).

In Denmark, where registration fees are not charged either, students can avail of scholarships and low-interest government loans. This aid is not incompatible with a certain degree of personal means. Students who pursue their studies while in gainful employment are also eligible. The amount is paid out in fixed monthly installments (for 70 months), covering a normal study duration of 5 years with a tolerance for a 12-month delay. However, the students can use it for several short-term training courses, be they consecutive or not. The payment is suspended if there is a break in the studies.

The maximum scholarship amount is higher for students living away from their family, whereas the loan amount is the same for all students. The scholarship amount does not depend on the family income or on the number of children, if any. The interest rate for loans is 4% during the studies, and later pegged to the central bank minimum interest rate, increased or decreased by annual decision of Parliament. The interest is tax-deductible. The loans are repayable one year after the completion of one's studies, and over a period of 7 to 15 years.

About 90% of students are covered by scholarships and 40% by loans, although loans account for almost three quarters of the total aid paid out (aid granted in the form of scholarships or loans).

In Germany, educational expense in the postsecondary level is relatively moderate (comparable with the French average if we exclude the research part). It is almost entirely borne by government authorities; there are no registration fees (except in two *Länder*) although students are expected to contribute towards various aid services, health insurance and union membership.

The German student aid system is based mainly on *Bäfog*, which is half scholarship and half loan. The maximum amount ranges from 342 euros per month for students living with their parents, to 462 euros for those who have left home. The amounts are greater in the *Länder* in the West. Up until 1974, *Bäfog* was composed of scholarships only. It was then a combination of scholarships and loans, and later made up of loans only between 1983 and 1989. *Bäfog* is attributed based on university criteria (results of the previous year), and the parents' income is a deciding factor. Over the past thirty years, student numbers have tripled, but *Bäfog* beneficiaries' numbers have remained markedly constant – less than 20% of students are awarded this aid at present.

The loans are interest-free, and repayment starts in the fifth year after the completion of one's studies and may last 15 years, with a minimum monthly payment of 102 euros.

The parents of students may also receive education allowances (102 euros per month for students living with their parents up to 179 euros for those who no longer live at home), or tax aid.

In the Netherlands, the educational expense per student is comparable with that of France (excluding research spending). The registration fees are the same for all full-time students following a normal education path, regardless of the University or the professional training institution; it was 1,304 euros for the year 2000-2001⁷. These fees represent about 20% of the direct teaching cost.

The student aid system in the Netherlands is based on three main programs – a scholarship program, a loan program, and a loan program that may be converted into a scholarship program if the student's results meet certain conditions.

All full-time students receive a basic aid for the duration of their postsecondary studies (four or five years). The students receive this aid in the form of a loan that may be converted entirely into a scholarship if they meet certain criteria of progress in their studies. For this, they must pass 50% of their exams in the first year and the following years, without falling behind by more than two years in all. In 2001, the maximum monthly amount of this aid was 67 euros for students living with their parents and 206 euros for students who had left home. The students may opt to request for only a part of this aid, so as to reduce their debt if they do not meet the performance criteria.

(7) The institutions may alter the fee amount payable by part-time students, or those who are more than two years behind the normal course level.

Due to the increasing numbers of students who combine studies (sometimes part-time) and a job position (also part-time), a decision was made, as of the 2000-2001 academic year, to increase the period in which the student can finish his or her studies by converting the loan into a scholarship to ten years (instead of six).

The students may avail of additional scholarships that are awarded based on the parents' income. This scholarship applies the same performance conditions as the previous one. The maximum amount (awarded to students whose parents earn less than 23,600 euros) is 196 euros per month for students living with their parents and 212 euros for students who have left home. It is awarded only for the normal study duration.

Finally, the students can contract a loan with interest payment, of up to 229 euros per month. This program is not means-tested. There is also a special loan program for students whose parents do not wish to participate in their educational expense.

The students are allowed to have a personal net income of 8,850 euros; beyond this amount, the aid amount is reduced.

Loan repayment starts two years after the end of one's studies; the interest accrues as of the loan start date and must be paid back within fifteen years. Persons with low income levels may be granted an arrangement calculated based on their financial standing.

In the United Kingdom⁸, the educational expense per student is quite close to the figures in France (excluding research expenses). In July 1997, following the publication of the *Dearing* report, the government announced reform plans for funding postsecondary education and student aid. Students who started their postsecondary studies as of the 1998-1999 academic year were required to contribute towards the cost of their studies.

The amount is calculated using the student's own income, as well as the family's and spouse's incomes. For the 2001-2002 academic year, the maximum fees was 1,100 £ or about 1,700 euros (for income figures exceeding 30,502 £ or about 47,000 euros). For incomes lower than 20,480 £ (31,500 euros), the fees are waived. About 50% of the students are exempted from paying fees.

In 1990, England decided to freeze scholarships and phased in a loan system which is the main funding means for students today – since the 1999-2000 academic year, means-tested scholarships have practically disappeared from England, but are partially maintained in Northern Ireland and Wales.

Since September 1998, the maximum loan amount granted to a student is determined by the competent Local Education Authority, upon which the student can choose an amount not exceeding this ceiling. The maximum amount for the year 2002/2003 is 3,905 £ (4,815 £ in London). One quarter of the loan amounts is means-tested. These are zero-interest loans, and their repayment is adjusted based on income.

(8) The applicable terms differ slightly between England, Wales, Scotland and Northern Ireland.

The annual repayment is 9% of all income over 10,000 £ (16,000 euros), capped at 833 £ per month. If the income is lower than 10,000 £, the repayment is suspended.

The English system is directly inspired by the ongoing experiment in Australia for over ten years now.

The case of **Australia** is, in fact, frequently cited in international analyses of university education funding. After it did away with all fee payments between 1974 and 1985, this country reintroduced them gradually, mainly in 1989 with the Higher Education Contribution Scheme. The reason for reintroducing tuition fees was the escalating public spending on education due to the sharp increase in headcount which tripled between 1973 and 1997, at a time when the competition by other areas of use of public spending was stiff (retirement pensions and health insurance) and, when policies were oriented more towards a decrease in mandatory deductions.

The expense per student is higher in Australia than in France (although it is comparable if we exclude the spending on research), but the share of this expense borne directly by government authorities is however smaller than in France.

When they were reintroduced, the fee amount was uniform and called for a contribution of about 20% of the average educational cost. Since 1997, these fee amounts have gone up once more, and are now differentiated based on three levels, corresponding respectively to 2,045, 2,913 and 3,409 euros (for the year 1999). The differentiation partly reflects the cost differences, but also the differences in future income prospects. Through this reasoning, law studies, which are not expensive, call for high fee payments. About 20% of the students are exempted from paying fees, mostly based on the type of studies they pursue.

Students have the option of paying the fees at the start of the academic year (they pay 25% less in this case) or contracting a loan. 71% of students (figures for 1997) choose deferred payment. Since 1998, partial down payment and deferred payment can be combined.

The loans have two main specifications – they have a null real interest rate (the amounts borrowed are inflation-indexed) and the repayments are subject to income conditions. The interest collection is handled by the tax authorities, based on the progressive tax principle. Payments are collectible only if the beneficiary's income exceeds 13,400 euros per year approximately. Beyond this threshold, the repayments are calculated based on income, using a progressive income bracket scale in which the rates range from a minimum of 3% to a maximum of 6%.

To meet the other educational expenses such as books, etc., or living expenses (housing, food, transportation, etc.), scholarships or allowances may be granted based on the student's income, or the parents' income if the student is not considered to be independent. A specific feature of these scholarships is that the student can opt to convert a part of the scholarship payment into an interest-free loan for twice the amount, repayable according to the terms applicable for tuition fee loans. The annual loan amount cannot exceed 3,800 euros.

The Australian system can be assessed retrospectively, at least as concerns the impact of the reintroduction of tuition fees in the end of the eighties. The introduction of rather high tuition fees, combined with the development of a loan system whose repayment terms offer an insurance to students in the event of a professional failure, does not seem to have affected enrollment rates; the rate of participation in postsecondary education has remained buoyant and, in particular, for students from lesser privileged social categories. Besides, it was feared that the repayment default rate would be high, especially in the case of students whose studies led to only average income prospects, thus increasing the expense for public finance. It appears, in fact, that repayment rates were very high, at least for loans contracted up until 1997 when the fees amount increased (Dawkins, 1999, cited by CPB-CHEPS, 2001).

The analysis of the experiences of other countries as concerns the division of the funding of education spending between public funding and tuition fees, reveals vastly diverse circumstances. This is also true of the aid granted to students for covering their tuition fees and for their living expenses.

Without it being a one-on-one relationship, it would appear that the factors considered for this arbitration include the expectation of additional income through one's higher studies. This expectation of increased income is further enhanced, as wage inequity is high and linked to the level of one's studies (or qualification), and the risk of unemployment also varies widely according to the same parameters. In configurations such as these that we find, for example, in the United States, the United Kingdom or Australia, the existence or the implementation of high tuition fees is less of an impediment to continuing one's studies, as the private return remains high despite the expensive tuition fees. This may not hold true for countries in which income inequities are lower – a fact that may further explain the reason why tuition is not charged in several northern European countries. The situation in France appears to be quite unique – the gain expectancy from higher education is quite high, but the tuition amounts are low.

Besides, student aid systems based on government loans are developing in several countries, and may in certain cases replace the scholarship systems.

There are two reasons why a government loan system with low or no interest, is better suited to the nature of educational investment rather than a system based on ordinary bank loans.

Firstly, the outcome of one's studies is uncertain. This contributes to limiting the bank loans offered, and shoot up interest rates due to the absence of collateral. Several students therefore hesitate to contract such loans given that the repayment burden may be excessive if they do not achieve academic or professional success.

Secondly, given the community interest in developing higher education, the government loan interest rates may be lower than the market rate.

One interesting formula used increasingly in several countries (be it to pay for the student's tuition or cover his or her living expenses) is to modulate the repayment based on the student's income level once he or she has started working, and apply a floor limit under which the repayment is suspended. This gives the student an insurance in case of failure.

SUMMARY

From the analysis in this chapter, we can conclude firstly, that the non-cash transfer payments through public spending on education considerably strengthen the redistribution, both horizontal and vertical, resulting from cash transfers (social benefits, especially family benefits and tax deductions), in France (and abroad).

We obtain a diagnostic similar to the Smeeding and al. (1993) study that analyzes the redistributive impact of non-cash government aid (health, education and housing) in certain industrialized countries⁹. This redistributive impact stems mainly from spending on compulsory schooling and higher secondary education.

Public spending on postsecondary education does not have a marked redistributive impact in one way or the other. This result may be skewed given that the variability of cost between branches could not be integrated. However, in studies abroad that may have considered this factor, the result still stands. It reveals, in particular, that the inequality of access to postsecondary education is less blatant than the inequality of income.

However, the question of a greater opening-up of access to postsecondary education in order to contribute to equal opportunity, remains unresolved.

Also, the private return from higher studies is high in all countries and in France, in particular. In the case of France, this results both from the wide wage differences and the risk of unemployment based on one's education level, and the meager contribution by students or their families to the funding of direct educational expenses. The social return is also high, emphasizing that a greater opening-up of higher education can be beneficial to society as a whole.

This may be achieved through aid to students by developing a loan system in which repayments are based on the students' future income. A lot can be learned from the experiences of other countries in this area. This type of policy is already established or is being developed in many countries, whereas in France this approach is practically not in use.

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In its second report, Cerc spoke of the increasing levels of educational expenses, largely funded by the State and local governments. It emphasized that omitting this aspect from analyses of income distribution (as also social security transfer payments or deductions) would skew the assessment of redistribution, in the broad sense of the term, i.e. the measures taken by government authorities to alter the relative income circumstances and living conditions of households.

This report, which focuses mainly on the study of the distribution of spending on education between families with children of school-going age, provides supplementary information that can link the two areas of study, namely income distribution and differentiation in schooling paths.

After having recapped the main results, and in keeping with the investigation tasks entrusted to it, the Council draws three sets of conclusions – improving the statistical data, the development of the studies that seem necessary, and public policy proposals.

We remind you that when addressing the allocation of the outlay for education, this report does not study the impact of education on equal opportunity from all the aspects that must be assessed. The influence of the socio-cultural level of families, the organization of studies and education paths, the content and quality of teaching, the schooling orientation mechanisms, the transitions from schooling to the job market, and the link between initial training and continuing education, must also be analyzed. The conclusions we can draw from this report are therefore partial and omit equally important dimensions.

EDUCATIONAL EXPENSE AND FAMILY INCOME

Government authorities play a part not only by funding the actual educational expenses but also by granting schooling-specific aid to families or students.

We can break down public spending on education and aid to families into three components – for compulsory schooling (up to the age of 16), for non-compulsory pre-schooling that is nevertheless widespread, and for continued studies beyond the compulsory schooling level (i.e. approximately in the higher secondary and postsecondary levels).

In the first two categories, public spending on education and other schooling aid benefit proportionally more families in the lower living standards bracket, especially due to the greater number of children in the lower rungs of the distribution. Their redistributive impact is manifest.

Given their magnitude and their profile, they are more redistributive than all family transfer payments put together (which include family benefits and tax rebates based on the family quotient), but less so than family benefits alone. 39% of family benefits go to families in the first three deciles of standard of living, and 20% to the last three deciles, whereas the figures for the family quotient impact are 5% and 62%. As concerns spending on education in the pre-elementary, elementary and lower secondary levels, 34% benefits the first three deciles, and 27% the last three deciles.

Transfer payments that benefit the first three and last three deciles

	Amounts in billion euros	Share of the first three deciles	Share of the last three deciles (a)
MONETARY TRANSFERS FOR CHILDREN	26.2	26	36
<i>Family benefits without means-testing</i>	13.3	37	23
<i>Means-tested family benefits</i>	3.4	48	8
Total family benefits	16.7	39	20
Tax rebates	9.5	5	62
EDUCATIONAL EXPENSES			
<i>Kindergarten and elementary</i>		32	28
<i>Educational expenses for the lower secondary level</i>		37	25
During "compulsory" schooling and kindergarten	42.7	34	27
<i>Educational expenses for the higher secondary level</i>	21.1	35	26
<i>Educational expenses in the postsecondary level</i>	11.7	23	39
During post-compulsory schooling	32.8		
MONETARY TRANSFERS LINKED TO SCHOOLING			
<i>Elementary and secondary levels</i>	2.0	56	8
<i>Postsecondary level</i>	1.9	44	22
%age of children aged below 25 years		36	26

(a) Disposable income deciles.

Scope: Dynastic families with children aged 3 to 24 years.

Transfer payments linked directly to schooling (scholarships, the new school year allowance, tax rebates) are redistributive on the whole, although to a greater extent in the elementary and secondary levels than in the postsecondary level.

Public funding of educational expenses for the postsecondary level, however, benefits better-off families more, due to the differences in access rates – only 23% goes to the first three deciles against 39% to the last three deciles. This result does not differentiate the educational costs based on the various branches of postsecondary education. However, given the significantly higher cost of preparatory courses for *grandes écoles* and training in these institutions (in which the majority of students come from higher socio-professional backgrounds), the distribution of educational expenses in favor of well-to-do families is most certainly underestimated.

If we compare the educational expenses that benefit the families and the tax deduction that served to fund them, we have three clear-cut considerations:

- Firstly, the horizontal redistribution from households or families without children of school-going age towards families with school-going children;
- Secondly, the redistributive characteristic of public spending up to the higher secondary level, within families with children in the school-going age bracket;
- Finally, the relative neutrality of the funding of postsecondary educational expenses that reflects the fact that the inequality of access to postsecondary education is less pronounced than the inequality of income.

On the whole, the shift from the usual disposable income approach to that of disposable income extended to include educational expenses considerably modifies the conventional analyses of redistribution. The main impact is the call for a reclassification of households on the income scale based on whether or not they have school-going children. This would highlight the horizontal redistribution mechanisms in our society.

This change of approach would also move the poverty threshold upward (the median income calculated on the basis of the adjusted disposable income is higher than the median income calculated on the basis of ordinary disposable income). This would however reduce the poverty rates of families with school-going children.

IMPROVING THE STATISTICAL DATA ON REDISTRIBUTION

Despite the normally implied limitations of the conventions to use in statistical calculations, the Council deems it necessary to regularly draw up statistics on income distribution that integrate the "non-cash transfer payments" such as public spending on education. This is necessary not only for analyzing inequities in France, but also for international comparisons given the extent of the private contribution towards educational expenses, that varies across countries, or the different forms of public aid to students.

The solution used in this report, i.e. the use of dynastic family as the statistical unit, is undoubtedly useful for processing the case of students who live away from their homes, but is clearly not a substitute for the standard approach of analysis based on households (persons sharing the same accommodation). What is called for is additional statistics, drawn up on a regular basis, to account for the distribution of "adjusted disposable income".

Progress in this direction however implies that the basic statistical information on spending on education must be enhanced. The gaps that exist at present also weaken the assessment of the redistributive impact of the spending on education discussed in this report.

To begin with, progress must be made in the knowledge of costs of the different branches, especially in postsecondary education. Besides, a better knowledge of the social background of students in each branch also seems necessary in order to advance.

Unlike other countries, for example the United States, information on the social background and parental income of the students, and of students in higher education in particular, is not abundant in the statistical sources of the Ministry for Education.

Besides, the surveys conducted on households (Employment survey, for example) do not give sufficient details of the education paths followed by students.

Statistical data must also be enhanced at the local level in order to assess the educational success factors, as also the disparities in educational expenses and their impact on families. It is necessary to have a more refined differentiation between the spending by the State and by the local government bodies (see Chapter II). This greater knowledge of local information would become all the more crucial as the educational system may be increasing decentralized.

BOOST THE STUDIES ON THE DYNAMIC EFFECTS OF SPENDING ON EDUCATION

One of the major impacts of education is to change the future income prospects of those who benefit from it. We must go beyond a purely static approach to the redistribution resulting from public spending on education, to assess the impact on income over the life cycle.

This dynamic analysis calls for an estimation of the private yield from spending on education, which is only outlined in this report. There are too few studies based on this approach that include France. Besides, the information required to move from an overall analysis of the yield from post-compulsory education (and postsecondary education in particular) to an analysis differentiated by family category or student category, remains inadequate. This also justifies the enhancement of the statistical data mentioned above. Cerc will endeavor to spur the research in this area by calling upon the study centers that have the necessary microsimulation tools.

PROPOSALS

The analyses given in this report, especially the international comparisons of spending on education underline the diagnostic factors that concern education but which are out of its scope, and refer to areas that have already been analyzed by Cerc in its previous reports, namely the negative effects on employment and the social inequalities of failure at school, the need to step up the efforts made for education, especially at the postsecondary level, while maintaining access conditions that are less dependent on the family circumstances.

Fighting failure at school

Cerc's previous report, "The Long Road to the Euro", emphasized a worrisome aspect of increasing qualification levels – while the average level of training has gone up quite consistently, in the last fifteen years in particular, the proportion of students failing at school and leaving school without recognized training remains very high. These contribute to the reproduction of employment and income inequities at the intergenerational level.

These failures do not result only from the working of the teaching system, but also, to a large extent, from the socioeconomic characteristics of families.

Cerc, with its various partners, has undertaken the analysis of the key factors of the future of children from underprivileged families (and especially those factors that influence education paths). These themes will be dealt with in its future reports. The combat against failure in school undoubtedly calls for greater qualitative and quantitative efforts within schools, targeted at students who show a risk of failure, and must consider the fact that failure starts very early on in the students' lives and often builds up.

Funding of postsecondary education

In France, the educational expense per student seems low in the postsecondary level, when compared to various industrialized countries, and the United States or the Scandinavian countries in particular. If this observation is confirmed through a more detailed analysis of differentiation by branch, it would undoubtedly be important to find a means of closing this gap in education levels, so that France does not lag behind in an area that is a vital factor of its

structural competitiveness. The analysis of this issue is, however, out of the scope of this report.

The diagnostic deserves to be refined further, but it appears to focus mainly on general paths offered in University and less on other paths, such as in the *grandes écoles*, for instance. Another observation made was that the major share of spending on education is borne by the community as a whole, and students and their families are rarely called upon to share in the educational expenses, even in the branches that have a high private yield¹.

This situation in France is partly due to the constraints in the overall funding for education. The public outlay in France for education is considerably high as a share of the GDP, and the outlay for secondary education has consistently gone up, although the effects of the demographic wave have worn off. In the outlay for postsecondary education, however, and for general courses at the University, in particular, the evolution was far more modest, even though it was necessary to cater to the mass generalization of postsecondary education and the changing profiles of students due to the opening-up of the University.

Certain countries that recorded similar demographic changes in the postsecondary level resorted to more widespread registration and tuition fee requirements. This is the case especially in Australia, the United Kingdom and the Netherlands. Others, such as the Scandinavian countries, have not followed this course.

The Council does not intend to give its verdict on either choice. It deems it necessary however, to study the measures to be taken such that the access to postsecondary education does not accrue the risks of eviction of students from modest backgrounds. The access to postsecondary education calls for the students and their families to be able to pay both for living expenses and tuition.

Certain countries, especially the Scandinavian countries consider the student to be a young adult, independent of his or her initial family. Government aid is calculated based on the student's own income and living conditions, and is paid directly to the student, while the family does not receive any tax benefits from their children's enrollment in postsecondary education.

France, like other countries in southern Europe, has opted for the family angle for its student aid system, whether this aid is granted for covering tuition or daily expenses. Students are considered to be dependents of their families for government aid calculations.

Three type of student aid coexist in France; the calculation of scholarships and tax aid reflects this principle. Scholarships are awarded based on family income; students are included as dependents in the family quotient used to determine the income tax and also generate tax aid, in proportion to the parents' income (up to a ceiling limit). Housing allowances do not apply these criteria, as they do not depend on the family income (although students can continue to generate tax rebates for their families).

On the whole, the aid system for postsecondary education does not appear to specifically favor students from modest backgrounds. Although scholarships

(1) Certain course programs, such as in business schools for example, do require high tuition fees, but this is not the case, for example, in engineering *grandes écoles*.

contribute towards a redistribution in favor of families from modest backgrounds, tax rebates and possibly housing aid benefit richer families more.

It would seem fit to accompany the opening-up of postsecondary education with better aid facilities to students of modest origins. This of course, cannot be done by further reducing income tax. This leaves us with the question of stepping up scholarships or introducing the loan system.

As concerns scholarships, one initial step to be taken would be to accept their being cumulated with the student's earnings, up to a ceiling limit that must be determined. However, increasing the level and coverage of scholarships may meet with budgetary constraints, especially if significant efforts were to be made to increase the level of expense per student, at the same time.

It would be worthwhile studying the creation of a low-interest government loan system for funding one's studies, with repayment terms dependent on the student's future income.

From the spot budget cost viewpoint, setting up a government loan system costs as much as a scholarship system, but the future reimbursement limits the net budgetary charge to the interest-rate differential and possible repayment defaults.

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ARS	Allocation de rentrée scolaire (New school year allowance)
BEP	Brevet d'études professionnelles (Diploma of occupational studies)
BMAF	Base mensuelle des allocations familiales (Monthly family allowance base of calculation)
BTS	Brevet de technicien supérieur (Employment-oriented technician qualification diploma)
CAE	Conseil d'analyse économique (Council for economic analysis)
CAP	Certificat d'aptitude professionnelle (Vocational training certificate)
CFA	Centre de formation des apprentis (Apprenticeship training center)
CNAF	Caisse nationale des allocations familiales (French national family allowance fund)
CNRS	Centre national de la recherche scientifique (French national center for scientific research)
CPB-CHEPS	Central Planning Bureau- Center for Higher Education Policy Studies
CPGE	Classe préparatoire aux grandes écoles (Preparatory courses for <i>grandes écoles</i>)
DESS	Diplôme d'Études Supérieures Spécialisées (Business-oriented postgraduate diploma)
DGCL	Direction générale des collectivités locales (Directorate-general of local government bodies)
DGI	Direction générale des impôts (French tax authority)
DIE	Dépenses intérieure d'éducation (Domestic spending on education)
DOM	Département d'Outre-mer (French overseas <i>département</i>)
DPD	Direction de la programmation et du développement (Directorate for programming and development)
DREES	Direction de la recherche, des études, de l'évaluation et des statistiques (Directorate for research, studies, evaluation, and statistics)
DUT	Diplôme universitaire de technologie (A less-specialized employment-oriented technician qualification diploma)
INRA	Institut national de la recherche agronomique (French national institute for agricultural research)
INSEE	Institut national de la statistique et des études économiques (French national institute of statistics and economic studies)
IRPP	Impôt sur le revenu des personnes physiques (Personal income tax)
IUP	Institut universitaire professionnalisé (University institute of professional education)
IUT	Institut universitaire de technologie (University institute of technology)
OECD	Organization for Economic Cooperation and Development
PSC	Profession and Social Category
PIB	GDP (Gross Domestic Product)
PPP	Purchasing Power Parity
RMI	Revenu minimum d'insertion (minimum income benefit)
SMIC	Salaire minimum de croissance (Minimum wage)
STS	Section de techniciens supérieurs (Technical college departments)
CU	Consumption Unit
UNESCO	United Nations Educational, Scientific and Cultural Organization
ZEP	Zone d'éducation prioritaire (Priority education zone)