



Project no: 028412

AIM-AP

Accurate Income Measurement for the Assessment of Public Policies

Specific Targeted Research or Innovation Project

Citizens and Governance in a Knowledge-based Society

Deliverable 1.2c Public education in Belgium

Due date of deliverable: January 2007
Actual submission date: February 2007

Start date of project: 1 February 2006

Duration: 3 years

Lead partner: UA

Revision [draft]

**Project: Accurate Income Measurement for the Assessment of Public Policies
(AIM-AP)**

Part I: Non-cash incomes

Work Package: Publicly provided education services

Country Report Belgium on Education

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1 Introduction

This country report on education in Belgium is part of the European research project AIM-AP (Accurate Income Measurement for the Assessment of Public Policies). We analyse the impact of the inclusion of public education expenditures in the household income on the income distribution in Belgium and the Flemish and French-speaking Community.

In order to do so, we first calculate the average public expenditure per pupil (or student) by level of education and assign this income to households with a person in the relevant level of education. Thereafter we calculate – using the European Survey on Income and Living Conditions (EU-SILC) 2004 – the impact on the income distribution for different breakdowns.

First however, we give an overview of the Belgian education system and of the literature on social inequality in education in Belgium. This facilitates the identification of the relevant breakdowns if we want to measure the impact of public education expenditures on the income distribution.

2 The structure of the Belgian education system

In order to facilitate comparability between different countries, the structure of the description of the Belgian education system is almost entirely based on the documents of Eurydice (Eurydice), the information network on education in Europe. The documents of the Flemish Community and French-speaking Community relate to the school year 2002/2003, the German-speaking Community's document to the school year 2003/2004. Ongoing reforms with respect to the Bologna process are also briefly mentioned.

2.1 Decision-making

In Belgium, five levels of decision-making with their own structures of legislative and executive power can be discerned: the central State, the Communities (Gemeenschappen), the Regions (Gewesten), the provinces and the municipalities. There are three 'economic' Regions (the Flemish, the Walloon and the Brussels-Capital Region) and three 'cultural' Communities (the Flemish, the French-speaking and the German-speaking)¹.

The Regions are responsible for economic policy, energy and scientific policy, public works and transport, town and country planning, the environment and control over the municipalities and provinces. Though the Regions have their own territory, the Communities as such do not have any territory but have authority over their respective language area. In Brussels-Capital, the decrees of the Communities only apply to the institutions that are considered to belong exclusively to one or the other community (e.g. Flemish schools). The Communities are responsible for cultural, linguistic and 'person-related' matters – including education and training – and for scientific research concerning these matters and international affairs relating to these authorities.

Since 1989, authority over education has been almost fully transferred to the three Belgian Communities. Two major exceptions are the fixing of the beginning and end of the compulsory education period and the establishment of the minimum conditions for granting diplomas, which remain a federal matter. Though the education system of the three Communities still have much in common, they have since followed their own paths. (Eurydice, 2006a) However, the specific differences between the Communities usually concern details with little relevance to the purposes of this report. Apart from otherwise mentioned, the characteristics of the Belgian education system as described below, apply to all three Communities. Sometimes, the situation in Flanders is given as an example in the case of a comparable situation in the other Communities.

¹ In the appendix a map of the Belgian state structure can be found.

Table 1: Relative number of pupils and students in every Community by level of regular education (2002-2003)² and relative number of inhabitants by Region (2003)

Pupils by Community	Flemish	French-speaking	German-speaking	Total (%)	Total
Pre-primary education	59.2	40.1	0.7	100.0	401,970
Primary education	56.6	42.6	0.8	100.0	761,484
Secondary education	54.4	44.9	0.6	100.0	800,504
Tertiary education	52.4	47.5	0.1	100.0	298,543
***university	47.6	52.4	0.0	100.0	119,484
***non-university	55.7	44.3	0.1	100.0	179,059
Total	55.8	43.6	0.6	100.0	2,262,501
Inhabitants by Region	Flanders	Wallonia	Brussels Capital region		
Total population 1 st January 2003	57.9	32.5	9.6	100.0	10,355,844

Notes: In contrast with OECD statistics, figures do not include education to adults in basic education, education for social promotion and distance learning. Secondary education includes fourth stage (i.e. post-secondary non-tertiary education in this report).

Source: Own calculations on NIS (2006), *Onderwijs, cultuur en vorming. Schoolbevolking per gemeenschap (schooljaren 1995/1996 – 2003/2004)*, http://www.statbel.fgov.be/figures/d33_nl.asp (19-09-2006) and NIS (2003), *Bevolking op 1 juli 2003 per gemeente*, <http://www.statbel.fgov.be/downloads/pop200307com.xls> (19-10-06)

2.2 Educational institutions

The rationale for the diversified educational landscape in Belgium is the principle of ‘freedom of education’, as expressed in the Art. 24 of the Belgian constitution. The freedom of education comprises both the right to establish schools autonomously (educational freedom) and the free choice of school. Schools can be created autonomously, without any connection with the official authorities. However, if schools wish to grant recognised diplomas and to obtain Community subsidies, they must comply with legal and statutory provisions regarding the organisation of studies and the application of language laws. (Eurydice, 2006a)

The various partners in the educational administration are: the Education Department, the organising bodies (recently called ‘school boards’ (schoolbestuur), i.e. the authority that accepts full responsibility with respect to the educational establishment (inrichtende macht)), the public and private schools.

Schools are grouped in educational networks (onderwijsnetten). An educational network may be organised by the Communities, the Provinces, the Municipalities (public authorities), private individuals, free associations or social profit organisations (private persons). In the legal and statutory provisions, reference is generally made to three educational networks (Eurydice, 2006a, 2006b, 2006c):

1. **Community education** (gemeenschapsonderwijs): the network of Community schools (gemeenschapsscholen, formerly State schools), which have to conform to special regulations concerning neutrality.
2. **Grant-aided official schools** (officieel gesubsidieerde scholen): the network of provincial and local authority schools.
3. **Grant-aided free schools** (gesubsidieerde vrije scholen): the network of schools of which the organising bodies are based on religion (free confessional schools, mainly catholic), schools where education is based on the principles of rational enquiry and

² We call regular education, education for pupils and students from age 2.5 till more or less 25. The specific education possibilities of (part-time) ‘continued learning’ for adults and part-time education in the arts are excluded from this definition.

schools that are not founded on any confessional or philosophical basis. These schools can be described as ‘government-dependent private education’.

Table 2: Relative number of pupils in full-time education in the Flemish and French-speaking Community by type of institution and level of education (2004-2005; 2003-2004)

Flemish Community	Community	Grant -aided free	Grant-aided official		Total
			Provincial	Municipal	
pre-primary	13.9	63.4	0.1	22.3	100.0
***mainstream	13.8	63.4	0.1	22.4	100.0
***special	30.8	62.0	0.0	5.1	100.0
Primary	14.2	63.6	0.2	21.7	100.0
***mainstream	13.7	63.7	0.1	22.3	100.0
***special	21.7	62.2	2.3	13.6	100.0
Secondary	16.6	75.1	3.1	5.0	100.0
***mainstream	16.4	75.5	3.2	4.8	100.0
***special	22.0	64.7	1.7	9.5	100.0
Total	15.2	68.3	1.4	15.1	100.0
French-speaking Community	Community	Grant -aided free	Grant-aided official		Total
			Provincial	Municipal	
pre-primary (mainstream only)	7.7	38.4	0.2	53.7	100.0
primary (mainstream only)	9.3	42.5	0.3	48.0	100.0
secondary (mainstream only)	25.0	59.2	8.4	7.4	100.0
special education	25.1	48.5	8.2	18.2	100.0
total full-time education	16.0	48.8	3.9	31.4	100.0

The (limited number of) pupils in schools under the authority of the Flemish Community Commission and the inter-Community Commission excluded. Fourth stage of secondary education not included (Flemish Community).

Source: own calculations on Flemish Community: Flemish authorities (2006b), *Statistisch Jaarboek van het Vlaams Onderwijs 2004-2005*, http://www.ond.vlaanderen.be/onderwijsstatistieken/2004-2005/jaarboek/inhoud_jb0405.htm (07-09-06), p. 33, 49 and Etnic (2005b), *Enseignement en chiffres 2003-2004*, http://www.statistiques.cfwb.be/publications/pub0001/2003/documents/FR_Enseignementenchiffres2003-2004.xls (16-10-06)

In 2004-2005 68 per cent of all pupils in full-time basic and secondary education in the Flemish Community participated in grant-aided free schools, 16 per cent in grant-aided official schools and the remaining 15 per cent in community schools. (calculations on Flemish authorities, 2006b: 33, 49) The picture is somewhat different in the French-speaking Community where in 2003-2004 49 per cent of all pupils in full-time basic and secondary education attended grant-aided free schools, 35 per cent grant-aided official schools and 16 per cent Community schools (calculations on Etnic, 2005b)³.

Independent (non-subsidised) private educational institutions are very rare and we expect the percentage of pupils visiting these schools being close to zero (it is equal to zero in the OECD on line education database).

³ Throughout the report, we write a thousand as 1,000 and decimals as 0.x .

2.3 General structure of education

2.3.1 Compulsory education

Since 1914 compulsory education has been introduced for all children between the ages of 6 and 12. This was extended in 1953 to the age of 15 and in the 1970s to 16. In 1983, a bill was passed which finally extended compulsory education to the age of 18 for all minors, Belgians and foreigners alike. From the age of 16 (under certain conditions 15), part-time vocational education is possible (Eurydice, 2006a, 2006b, 2006c).

Compulsory education starts at 1 September of the year in which the child is/will be 6 years old and comprises 12 entire school years. It ends on the 18th birthday or on 30 June of the year in which the pupil will be 18 years old. (Flemish authorities, 2006b: 18) The start of compulsory education normally coincides with the start of primary education. In general, pre-primary education is available for children from 2.5 to 6 years, primary education for children from 6 to 12 years and secondary education for young people from 12 to 18 years. Although education is compulsory only from the age of 6, around 99 per cent of 3 years old toddlers already attends pre-primary education.

Though there is no obligation of school attendance (there is only an obligation of 'learning'), only a very small share of the 6-18 years old population does not attend education in a school. For instance in Flanders only 0.03 per cent of pupils attend basic education (i.e. pre-primary and primary education) and only 0.07 per cent secondary education at home (Flemish authorities, 2006b: 46).

Full-time compulsory education ends at the age of 16 (in some cases 15). Nevertheless, a rather small share of pupils attend part-time secondary education: during the school year 2004-2005 about 1.4 per cent of all pupils in secondary education attended part-time secondary education in the Flemish Community and during the school year 2003-2004 about 2.0 per cent in the French-speaking Community (own Calculations on Flemish authorities, 2006b and Etnic, 2005a).

2.3.2 The structure of the Belgian education system

Both mainstream primary and mainstream secondary education comprise 6 consecutive years. Since 1989, full-time secondary education has been separated into three stages of two years each. From the second stage, the pupil can choose between four different types of education, subdivided into many particular courses of study. The four different types of education (in the Flemish Community) are⁴:

1. **vocational secondary education** (bso, beroeps secundair onderwijs): a practical type of education in which young people learn a specific vocation in addition to receiving general education;
2. **secondary education in the arts** (kso, kunst secundair onderwijs): a broad general education which is combined with active art education;
3. **technical secondary education** (tso, technisch secundair onderwijs): a type of education in which the emphasis is laid on general and technical theoretical subjects;
4. **general secondary education** (aso, algemeen secundair onderwijs): a broad general education which particularly provides a firm foundation for going into higher education.

After the fourth year of secondary education, pupils can opt for part-time (vocational) education (Eurydice, 2006a, 2006b, 2006c).

⁴ The types of education differ between the Communities, though 'general', 'technical' and 'vocational' education can be found in all three Communities.

Table 3: Relative number of pupils in full-time secondary education in the Flemish Community by type of education and type of institution (2004-2005)

	Community	Grant-aided free	Provincial	Municipal	Total grant-aided official	Total
second stage	100.0	100.0	100.0	100.0	100.0	100.0
*** general	43.6	47.9	6.4	21.7	15.4	44.5
*** technical	21.7	33.1	47.3	34.4	39.6	31.8
*** arts	2.3	1.2	6.6	6.9	6.7	1.9
*** vocational	32.4	17.8	39.7	36.9	38.3	21.8
third stage	100.0	100.0	100.0	100.0	100.0	100.0
*** general	34.8	39.4	5.5	15.6	11.1	36.2
*** technical	24.2	34.4	43.4	33.2	37.6	33.0
*** arts	2.3	1.4	6.9	8.4	7.7	2.1
*** vocational	38.7	24.8	44.2	42.8	43.6	28.7

Number of pupils in the Flemish Community Commission excluded.

Source: own calculations on Flemish Community: Flemish authorities (2006b), *Statistisch Jaarboek van het Vlaams Onderwijs 2004-2005*, http://www.ond.vlaanderen.be/onderwijsstatistieken/2004-2005/jaarboek/inhoud_jb0405.htm (07-09-06), p. 33, 49

Higher education is provided at both universities and non-university institutions of higher education (hogescholen). As a result of the Bologna process, important differences between the three Communities emerge. As far as the German-speaking Community is concerned, most young people study in the French-speaking Community or in Germany, since the provision of higher education in their Community is not widespread. Therefore, no large reforms associated with the aims of the Bologna process have been initiated in the German-speaking Community's higher education institutions. In the French-speaking and the Flemish Community however, the bachelor (180 ECTS) – master (60 or 120 ECTS) structure will be completely introduced by 2009, respectively 2010. From a redistribution and public expenditure perspective, an important difference between the two communities arises: in the French-speaking Community, some masters and one bachelor (midwifery) will weight 60 ECTS more than in the Flemish Community, and thus last one (notional) year longer. (Eurydice, 2005: 49-57)⁵

2.4 Financing

The main financial resources of the Belgian education system come from: the Belgian State and the Communities, the provinces and municipalities (in grant-aided official education), ecclesiastical authorities and private persons (in grant-aided free education), and the parents (Eurydice, 2006a). This is broadly confirmed by OECD statistics.

⁵ Although education is a Community matter, child benefits are not. Since the right to child benefits is (also) dependent on participation in education, this disparity can cause a redistribution side-effect from the Flemish to the French-speaking Community.

Table 4: Direct expenditures to educational institutions by Community and funding source (millions of current euro's, 2001, 2003)

	Flanders (2001)		Wallonia (2001)		Belgium (2001)		Belgium (2003)
	abs.	%	abs.	%	abs.	%	abs.
Government expenditures (all levels)	8,543	91	6,362	95	14,904	92	15,777
***Central government expenditures	1,180	14	932	15	2,113	14	2,240
***Regional government expenditures	7,148	84	5,055	79	12,202	82	12,878
***Local government expenditures	215	3	375	6	589	4	658
Private expenditures	796	8	333	5	1,130	7	973
***expenditures of households	522	65	271	81	793	70	815
***expenditures from private entities other than households	275	35	62	19	337	30	158
Funds from international agencies and other foreign sources	67	1	30	0	97	1	78
All sources (public, private and interantional)	9,406	100	6,725	100	16,131	100	16,828

Relative expenditures as a percentage of immediate supra-level.

No information on expenditures by Community for 2003. It is not clear whether the German-speaking Community is included in the figures of the French-speaking Community (Wallonia) or not.

Source: OECD Statistics on line (06-11-06)

The existence of the several educational networks is reflected in considerable differences in public spending per pupil. In 2003, the average expenditure per pupil in ordinary basic education (basisonderwijs) was € 3,407/pupil: with an average of € 4,117 /pupil in the community network, €3,320 /pupil in the grant-aided official network, and €3,275 /pupil in the grant-aided free network. The figures reflect the problem of the resource distribution among the networks (MVG, education department, 2002, Eurydice, 2006a).

As far as pre-primary, primary and secondary education in the Flemish Community are concerned, from an inequality perspective it is important to mention the 'Decree on equal opportunities in education' which came stepwise into force on 1 September 2002 and 1 September 2003⁶. The decree is aimed at the realisation of optimal learning and development opportunities for all pupils, the prevention of exclusion, segregation and discrimination, and at promoting social cohesion⁷. The three main components of the decree are: the right to enrol in the school of the parents' choice, the foundation of 'Local Consultative Bodies' (*Lokale Overlegplatforms*, LOP's), and the implementation of an integrated support for schools with many pupils who possibly face unequal opportunities. On the basis of certain socio-economic background characteristics of pupils, schools can get extra financial support in the form of what is called "GOK-hours" ("GOK=Gelijke OnderwijsKansen", or Equal Education Opportunities). In practice, GOK-hours stand for extra teaching hours (if sufficient hours, extra teachers) which are financed by the GOK-subsidy and which have to be dedicated to additional support for pupils with learning difficulties⁸.

If public expenditures for primary and secondary education are expected to reduce income inequality due to the universal character of education, the 'selective' extra financial support for schools with many pupils with a poor socio-economic background could be expected to have an extra inequality-reducing effect. Therefore, it should be interesting to include these extra expenditures in our analysis. However, as we do not have information in the micro-data on which school pupils are attending, this cannot be taken up.

⁶ "Decreet betreffende gelijke onderwijskansen-I" of 28 June 2002, published in the Belgian Bulletin of Acts, Orders and Decrees on 14-09-2002. More background information can be found in the brochure "Equal educational opportunities for every child... schools are working on it", Flemish authorities (2006a).

⁷ Art. I.3 of the Decree of 28 June 2002 on equal opportunities in education-I.

⁸ Art. VI.5, 14-15 of the Decree of 28 June 2002 on equal opportunities in education-I.

Table 5: Percentage of schools with GOK-hours, GOK-pupils, pupils which score on at least one GOK-indicator and total number of GOK-hours. Flemish Community (2002, 2005)

	01-02-2002	01-02-2005
Basic education		
% schools with GOK-hours	76.6	82.0
Average % of GOK-pupils	18.6	20.5
Total number of GOK-hours	37,825	40,478
% pupils which score on at least one GOK-indicator	21.2	25.3
First stage secondary education		
% schools with GOK-hours	56.9	60.3
Average % of GOK-pupils	18.3	17.9
Total Number of GOK-hours	5,503	6,580
% pupils which score on at least one GOK-indicator	20.4	21.0
Second and third stage secondary education		
% schools with GOK-hours	16.9	15.6
% GOK-pupils	5.4	5.0
Total Number of GOK-hours	2,582	2,704
% pupils which score on at least one GOK-indicator	13.5	12.5

GOK-pupils are only counted in schools with extra GOK-hours. Pupils which score on at least one GOK-indicator are GOK-pupils, but pupils which only score on the indicator 'Dutch is not language spoken at home' are not. In the latter case only pupils in schools with extra GOK-hours are counted. Numbers counted in February 2002 are the numbers applied – on the basis of this counting – starting from the school year 2003 – 2004 (in 2002-2003 some transitional rules applied). GOK-indicators in the second and third stage of secondary education differ from those used in the first stage. In this case (second and third stage), also pupils which scored on the GOK-indicators but did not receive GOK-hours are counted as GOK-pupils.

Source: APS (2006), *VRIND 2006*, p. 150

2.5 Overview of the Belgian system

In the table below the 'regular' education system is presented. The so-called 'permanent education' for adults is not presented; permanent education consists in 1) Basic education for adults, 2) education for social promotion (secondary and tertiary non-university) and 3) 'distance learning'. Furthermore there is part-time education in the arts, but although this type of education is subsidized to a certain degree, it is usually not considered to be a part of the education system (for the obvious reason that it cannot be a substitute for regular education).⁹

⁹ An illustrated overview of the (Flemish) regular education structure is presented in the appendix.

Table 6: The structure of the Belgian regular education system

• Basic education		
1. Pre-primary education Duration of studies: 3.5 years Mainstream (normal) or special (from 3 years 99%)	Ages 2.5-6	Non-compulsory
2. Primary education Duration of studies: 6 years Mainstream (normal) or special	Ages 6-12	Compulsory
• Secondary education		
1. Lower (first stage) secondary education Duration of studies: 2 years	Ages 12-14	Compulsory
2. Upper (second and third stage) secondary education Duration of studies : 2x2 years a. General secondary education (30% of students) b. Technical or Vocational (incl. arts) (70% of students) Special education: Secondary school	Ages 14-18 (14-19 in some cases)	Compulsory
3. Fourth stage of secondary education (in our simulations this is post-secondary, non-tertiary education)	Ages 19-21	Non-compulsory
• Tertiary education		
1. Non-university tertiary education short type (ISCED-97 5B) Duration of studies: 3-4 years (52% students)		
2. Non-university tertiary education long type and university education (ISCED-97 5A) Duration of studies : 4-7 years (48% of students)		

Figures: OECD statistics on line (19-06-2006), reference year: 2002/2003 (2003)

3 Social inequality in the Belgian education system: a literature overview

In this section, we present the core themes in the literature on social inequality in the Belgian education system. It should be stressed, that publications which discuss the education system in all three Communities in Belgium together are hard to find¹⁰. Consequently, we do not always know if we can really generalise findings for instance about the Flemish system to the whole of Belgium (where relevant, this is clearly mentioned). By bringing together findings on both the Flemish and the French-speaking Community's education systems, this literature study clearly adds to the interesting field of education-research in Belgium after the regionalisation of the authority over education.

Although this study focuses on the distributional effects of public education expenditures, we will elaborate on the core themes in the literature on the broad subject of 'social inequality and education in Belgium'. At all levels of the Belgian education system, large inequalities occur. Clearly the education system not only offers new opportunities to upward mobilisation, it also produces and perpetuates social inequalities (De Boyser, 2005: 73; Groenez et al., 2003: 53; Nicaise, 2001: 223).

3.1.1 Inequality before primary education

Participation in pre-primary education is very high in Belgium: in the Flemish Community since 1991 more than 99 per cent of all 3 years old children **attend pre-primary education** (Van Landeghem and Van Damme, 2004a: 21). The OECD (2005: 248) confirms this figure for Belgium as a whole.

Whereas in Flanders 16.4 per cent of the 2.5 - 3 years olds do not attend pre-primary school, this percentage is much higher for children of low-skilled parents, inactive parents, parents that have never worked, children with a non Western European / USA nationality and children that speak at home a non-European language. Additionally, boys participate at that age much less than girls in pre-primary education. However, the isolated effect of nationality or activity status of the parents on non-participation of 2.5 years old children becomes insignificant in a logistic regression analysis done by Groenez et al., 2003: 10-13¹¹. Gender and age in months are the only two variables with a significant effect on participation (Of the 2.5 - 3 years old, boys participate less than girls and children older than 2.5 years participate more than children of 2.5 years old).

4 per cent of all toddlers **lag behind** in the last year of pre-primary education in the Flemish Community, almost 5 per cent of all toddlers in the French-speaking Community and more than 9 per cent in the German-speaking Community (Etnic, 2006a; Abteilung Unterrichtswesen, 2006a: 3). Children with a non Western-European (or USA) nationality, boys, children of unskilled parents (especially mother), children of inactive or self-employed parents and children of lone parents are more likely to lag at least one year behind. (Flanders, Groenez et al., 2003: 10-13)

3.1.2 Inequality during primary education

In the Flemish Community, in the school year 2004-2005 about 13 per cent of pupils with the Belgian nationality lagged at least one year behind in primary education, for children without the Belgian nationality, this figure amounted to 52 per cent. Irrespective of nationality the share of pupils with **a lag of at least one year** is nowadays higher than ten years ago. (APS, 2006: 131; De Boyser, 2005: 74) Whereas in Flanders in the first year of primary education 9

¹⁰ One major exception is Education at a Glance from the OECD – which in most cases unfortunately does not offer a breakdown for the different Communities.

¹¹ The authors point out that this is probably due to high collinearity between nationality and the activity status of the parents.

per cent of all pupils lag at least one year behind, this number increases to around 15 per cent in the sixth year of primary education. The same variables that correlate with a lag in the last year of pre-primary education correlate with a lag in primary education. Professional status of the father (and to a lesser degree of the mother), nationality and family situation (mother lives with a partner or does not live with a partner) are the best predictive variables as far as an educational lag is concerned: children without a Western European / USA nationality, children of inactive/low skilled or self-employed parents, and children of a lone mother are significantly more likely to lag at least one year behind in primary education. (Groenez et al., 2003: 15-18) In the French-speaking and German-speaking Community, in the school year 2004-2005, about 22, respectively 21, per cent of all pupils in the sixth year of mainstream primary education lagged at least one year behind (Etnic, 2006a; Abteilung Unterrichtsvesen, 2006a: 3).

The same variables seem to be good predictors as far as the likelihood to participate in **special primary education** is concerned. Whereas on average 5 per cent of pupils attend special primary education, this percentage is at least twice as much for children of low-skilled parents, children without a Western European / USA nationality, and children of lone parents. Boys are also more likely to be in special education than girls. Here again, professional status of the father, the gender of the pupil and the family situation are by far the best predictive variables. The correlation between nationality and the likelihood of being in special primary education seems to evaporate, which suggests that the socio-economic background in general is more decisive than nationality. (Groenez et al., 2003: 20-22)

3.1.3 Inequality during secondary education

a. PISA-results (OECD Programme for International Student Assessment)

It could be argued that one of the implicit assumptions in this study is that a higher cost per student corresponds to a higher quality of education¹². If performance on for instance mathematics, sciences and reading comprehension is to a high degree not a function of personal capacities and effort, but rather a function of the quality of education, we could use the PISA-results as a proxy for the latter. Nevertheless, it is important to mention what the OECD reports in Education at a Glance 2005: education expenditures per student is not always a good indicator of the quality of education. Although expenditures are modest in primary education and the first stage of secondary education in countries as Australia, Belgium, Japan and others, their 15 years old students perform very well in mathematics (OECD, 2004: 167).

The picture that emerges from the OECD PISA-research is that **15 years old Belgian pupils** (i.e. pupils attending school in Belgium) **perform on average (very) well** in the area of mathematics, problem solution, reading comprehension and sciences, compared with their contemporaries in other OECD countries. On the other hand, **large differences persist** between and within different educational institutions. (OECD, 2004: 99, 297- 303; 315-316; OECD, 2005: 58-90) Important to note, is the fact that to a certain degree, the inter-institutional variance, is due to differences between the Flemish, the German-speaking and the French-speaking Community, with the Flemish pupils performing (much) better than pupils in the German-speaking and French-speaking Community (OECD, 2004: 98, 479-485). On the other hand, there seems to be a (much) stronger link between socio-economic background of pupils and their performance in the PISA-research (on mathematics) than in OECD countries

¹² Imagine 2 pupils with exactly the same capacities and school effort. One pupil attends school in a costly, wasteful, inefficient institution with low-quality education, the other attends school in a rather cheap but very efficient institution that provides high-quality education. Both children have the same capacities, but due to the poor quality of the education received, one pupil ends up with lower performances than the other child. Is it in this case still possible to state that – ceteris paribus – the ‘utility’ for the first pupil is higher simply because the cost per student is higher in the inefficient institution?

on average. The gap between Belgian and non-Belgian pupils is nowhere as wide as in the Flemish Community¹³ (APS, 2006: 123; De Boyser, 2005: 75-76).

b. Lagging behind and the ‘waterfall-effect’

The share of pupils which **lag at least one year behind**, amounts to 36 per cent in the second year of the third stage of mainstream secondary education in the Flemish Community, 39 per cent in the German-speaking Community and 53 per cent in the French-speaking Community (school year 2004-2005), the share of pupils which lag at least one year behind among girls is considerably smaller than the share among boys in all three communities. Furthermore, in the Flemish Community 72 per cent of pupils without Belgian nationality lag at least one year behind, versus 33 per cent of Belgian pupils. Large differences persist between the different study orientations (sixth year of secondary school). In the Flemish Community only 15 per cent of pupils in general education lag at least one year behind, compared to 44 per cent in technical education, 50 per cent in education in the arts and 58 per cent in vocational education. In the French-speaking Community the percentage of pupils which lag at least one year behind is 24 per cent in general education, 52 per cent in ‘transitional’ technical education, 68 per cent technical education ‘of qualification’ and 76 per cent in vocational education. Similar figures can be found in the German-speaking Community (APS, 2006: 131; Etnic 2006b; own calculations on Abteilung Unterrichtswesen, 2006b: 11)

Table 7: Percentage of pupils lagging at least one year behind in the sixth year in mainstream primary education and the second year, third stage in mainstream secondary education (2004-2005)

	Total	Boys	Girls	Belgian	Not Belgian
Sixth year of primary education					
***Flemish Community	14.9	16.0	13.8	12.9	51.8
***French-speaking Community	21.8	23.6	19.9	-	-
***German-speaking Community	21.3	24.8	17.4	-	-
Second year of third stage in secondary education					
***Flemish Community	35.6	42.5	28.7	34.5	72.1
***French-speaking Community	53.0	59.8	46.8	-	-
***German-speaking Community	38.6	46.3	38.6	-	-

Source: Flemish Community: APS (2006), *VRIND 2006*, p. 131; French-speaking Community: Etnic (2006a), *Retards et redoublements – Enseignement primaire ordinaire*; Etnic (2006b), *Retards et redoublements – Enseignement secondaire ordinaire*; German-speaking Community: Calculations on Abteilung Unterrichtswesen (2006a), *Analysen zum Regelgrundschulwesen*, p. 4 and Abteilung Unterrichtswesen (2006b), *Analysen zum Regelsekundarschulwesen*, p. 12

In the Flemish education system a – much debated – ‘waterfall-effect’ can be observed: pupils which have not passed and have to repeat the same year, often change from general education to technical education or education in the arts, from technical education to education in the arts or vocational education and so forth. This explains partially why the share of pupils that lag at least one year behind is much bigger in vocational education. *Changes from orientations with a lot of mathematics or demanding language classes to less abstract orientations within general or technical education are also very common. Usually, orientations ‘lower in the waterfall’, are considered to be ‘easier’¹⁴ and are associated with a lower social status. Often parents recommend their 12 year old pupils to try to attend an*

¹³ One of the reasons could be the exceptional performance of Belgian pupils in the Flemish Community.

¹⁴ Usually they are considered to be intellectually less demanding, without considering the degree of ‘practical difficulty’.

orientation 'as high as possible' in this hierarchy, arguing they can always 'sink to an easier orientation'. (comment of the authors)

Table 8: Repeaters and the waterfall-effect in Flanders (2002-2004)

school year	school year 2003-2004 in				
		GSE	VSE	SEA	TSE
2002-2003 in	GSE	72.1	0.9	2.6	24.3
	VSE	0.2	96.1	0.8	2.9
	SEA	2.5	6.2	73.5	17.9
	TSE	0.8	8.7	1.5	89.0

GSE = general secondary education, VSE = vocational secondary education, SEA = secondary education in the arts, TSE = technical secondary education.

Relative number of repeaters in mainstream secondary education by type of education, school year 2002-2003 and 2003-2004. Are excluded from these figures: first stage, non Dutch speaking new inhabitants (anderstalige nieuwkomers), 3rd year 3rd stage VSE, 4th stage, modular and special education.

Source: APS (2006), VRIND 2006, p. 132

c. Unqualified outstream

In 2005, about 13 per cent of all 18-24 years olds which participate no longer in any kind of education had **left secondary education without a higher secondary qualification**, the share being 12 per cent in the Flemish Region, 13 per cent in the Walloon Region and 16 per cent in the Brussels-Capital Region. Everywhere the share is larger among males than among females. (FOD Economie – Algemene Directie Statistiek – Enquête naar de arbeidskrachten, 2006) With an overall percentage of about 13 per cent, Belgium comes close to the European target set at 10 per cent by 2010. (De Boyser, 2005: 77) However, if one considers only pupils which left school in 2001 with a qualification of *full-time* higher secondary education and regardless of participating in another form of education, the share of school leavers without a qualification amounts to 18 per cent in the Flemish Community, to the share being 22 per cent among boys and 14 per cent among girls. (Van Landeghem and Van Damme, 2004b: 27)

3.1.4 Inequality during tertiary education

Boys participate less than girls in higher education. In both university and non-university higher education the share of male students in 2004-2005 was about 45 per cent. It is only in the academic year 1996-1997 that the share of female students surpassed for the first time the male students' share. (Figures Flemish Community, APS, 2006: 126) Furthermore, a link exists between household income and participation in academic bachelors and masters (ISCED 5A), especially as far as participation in university education is concerned: the share of students participating in university education in the highest quintile is three times larger than this share in the lowest quintile (survey data from 1997, Cantillon et al., 2005: 7).

Table 9: Participation in higher education (HE) by income quintile, Flanders, 1997

	Income quintile	Total participation in higher education	Non-university HE 1 Cyclus	Non-university HE 2 cycli	University	Share in 18-25 years olds in HE
Share in 18-25 years olds by income quintile	1.	29	18	4	7	15
	2.	26	14	5	7	17
	3.	31	17	5	10	22
	4.	39	16	8	15	21
	5.	46	19	7	21	25

HE 1 Cyclus = professional bachelor (non-university higher education), HE 2 Cycli = academic bachelor or master in non-university higher education.

Income quintiles calculated on the basis of equivalised total disposable income, survey data SEP-PSBH, 1997

Source: Cantillon et al. (2005), *Student in de 21^{ste} eeuw*, p. 7

Educational qualification and activity status of the parents correlate highly with students' participation in higher education, especially in the case of boys. For instance in 2003-2004, 89 per cent of all pupils whose mother held a qualification of higher education, began higher education studies after they had completed secondary education. In the same year, only 44 per cent of pupils whose mother was low-skilled, enrolled in higher education studies after they had completed secondary education. (Figures Flemish Community, APS, 2006: 151-152)

Cantillon, Verbist and Segal (2005, 2006), recently simulated the total educational cost per student in higher education in Flanders on the basis of survey data of 1997, updated to 2004 and calculated the distribution of the Flemish and federal education subsidies. This is a wider definition of education as the one used in this paper, as it includes both cash benefits and the value of services.

Table 10: Average amount of education services for 18-25 years olds, per student in higher education and per receiving student, Flanders, 2004

	Average amount in euro (*)		share with this subsidy in total group (**)
	per student in higher education	per receiving student	
Direct education provisions			
Subsidies to education institutions	8,610 (73,1%)	8,610	100%
Student services (***)	198 (1,7%)	198	100%
Scholarships higher education	366 (3,1%)	1,556	23%
Indirect education provisions			
Child benefit	2,059 (17,5%)	2,125	97%
Tax exemptions for children	432 (3,7%)	559	78%
Total	11,665 (100,0%)		

(*) average per year, figures updated to 2004 by means of the average consumption price index.

(**) i.e. all 18-25 years old students in higher education (N=487).

(***) services to students financed by the education institutions themselves (e.g. through registration fees) excluded.

Source: Cantillon, Verbist and Segal (2006), *Student in de 21^{ste} eeuw*, p.2. MISIM on the basis of SEP-PSBH 1997, updated to 2004.

The total cost per student amounted in 2004 to 11,665 Euro. The majority of these expenditures are provided on a 'universal' basis. Since participation in higher education is unequally distributed among the 18-25 years olds, higher income groups benefit more from

these subsidies than lower income groups. Of the total ‘subsidy’ per student calculated by Cantillon et al. (2006: 2-3), only about 3 per cent is targeted to lower income groups: the scholarships and a small part of the child benefits. So even if the complete cost per student is taken into account, a very unequal distribution appears: whereas the lowest quintile benefits from only 12 per cent of the total education subsidies, the highest quintile benefits from 34 per cent of total education subsidies.

Table 11: Distribution of the total amount of higher education services among the 18-25 years olds, yearly amount* by income quintile, Flanders, 2004**

Income quintile	Subsidies to education institutions	Student services	Scholarships	Child benefits	Tax exemptions for children	Total
1	11%	12%	54%	12%	6%	12%
2	12%	12%	18%	13%	10%	12%
3	18%	19%	14%	21%	20%	19%
4	24%	24%	11%	23%	26%	23%
5	35%	34%	3%	31%	37%	34%
Total	100%	100%	100%	100%	100%	100%

(*) average per year, figures updated to 2004 by means of the average consumption price index.

(**) distribution on the basis of the 18-25 years olds’ participation in higher education, MISIM, SEP-PSBH survey 1997 (N=487).

Source: Cantillon, Verbist and Segal (2006), *Student in de 21^{ste} eeuw*, p. 5

4 Estimating expenditures per student: relevant breakdowns

In this section we aim at showing at which stages large differences in expenditures per pupil (student) can be expected to occur in the Belgian education system. However, not all these differences can be accounted for in this paper.

The description of the educational system in Belgium, reveals interesting breakdowns, which are – at least partly – confirmed by figures of national sources.

The first breakdown concerns the **language community** to which the student belongs: the Flemish, the French-speaking and the German-speaking Community. This is a logical breakdown, since education budgets of these communities are strictly separated. Data on Community expenditures per pupil for education, reveal significant differences between the Flemish Community and the French-speaking Community, although these data can only be used in an indicative way, since comparability is not assured (e.g. it is not clear whether R&D expenditures are included in the data of the French-speaking Community). It is important to note that we cannot use these data for our simulations, since federal and local education expenditures are excluded and since comparability of the figures is difficult to trace.

Table 12: Community expenditures per pupil/student by Community and by level of education (financial year 2003, current prices)

level of education	Flemish Community	French-Speaking Community
Mainstream basic education	3,424.42	2,727.13
special basic education	10,229.13	
mainstream secondary education	6,878.73	5,554.01
special secondary education	15,186.67	
special education (all levels)		10,713.22
non-university tertiary education	6,256.51	4,737.08
university education	13,593 (1)	7,726.14
part-time education in the arts	969.57	
education for social promotion	650 (2)	

Administrative figures, comparability of the data is not assured.

(1) Including Community budget for scientific research; (2) mainly salaries, education for social promotion is to a large extent financed by registration fees.

Source: Flemish authorities (2006b: 737); Etnic (2005a: 53)

The second breakdown concerns the **level of education** (pre-primary, primary, secondary, post-secondary non tertiary, tertiary, secondary and tertiary education for social promotion, other types of permanent education). The usual breakdown between the first stage of secondary education on the one hand and the second and third stage on the other, is irrelevant in Belgium from a compulsory vs. non-compulsory perspective. However, the divide could be interesting, since pupils can choose between general, technical, vocational education and education in the arts only from the second stage.

The third breakdown regards the **type of institution**. Therefore, at least a distinction has to be made between community education, grant-aided official education and government dependent private institutions (grant-aided free education). In 2003, in the Flemish Community the average expenditure per pupil in ordinary basic education (basisonderwijs) was € 3,407/pupil: with an average of € 4,117 /pupil in the community network, € 3,320 /pupil in the grant-aided official network, and € 3,275 /pupil in the grant-aided free network (MVG, education department, 2002, Eurydice, 2006a). Community data give only a partial picture, since these do not include provincial and municipal expenditures (and therefore underestimate the expenditures per pupil of this category). Neither do these data include (the rather limited) federal education expenditures.

Table 13: French-speaking Community's direct expenditures to education institutions per pupil/student and by type of institution (2003-2004)

		community	grant-aided official	grant-aided free	total
Basic education	Total	3,031	2,869	2,770	2,842
	pre-primary	2,511	2,528	2,463	2,502
	primary	3,260	3,071	2,916	3,023
Secondary education	Total	6,276	6,228	5,219	5,645
	mainstream	6,316	6,262	5,212	5,654
	part-time	4,659	4,973	5,631	5,188
Special education	Total	14,100	10,357	10,474	11,352
Non-university tertiary education	Total	5,981	4,609	4,330	4,772
University education	Total	9,169	-	7,246	7,761

Source: Etnic (2005a), *Statistiques de l'enseignement de plein exercice et budget des dépenses d'enseignement. Annuaire 2003-2004*, Bruxelles,

http://www.statistiques.cfwb.be/publications/pub0011/2003/documents/FR_Annuaire_0304_vol_I.PDF (18-09-06), p. 53

A last cross-cutting breakdown concerns the time spent in education: **full-time or part-time**. This breakdown raises the difficult question about how educational expenditures are divided between full-time and part-time students.

Furthermore, on each level of education, further relevant breakdowns should be made:

1. On the level of **primary and secondary education**, a distinction could be made between **special and mainstream primary education**¹⁵. In the case of the Flemish Community, a further distinction between schools which benefit from the decree on equal opportunities in education and others is extremely relevant from a redistribution point of view: the extra financial sources in the framework of the decree on equal opportunities are in fact aimed at redistribution¹⁶.
2. On the level of **secondary education** a further distinction should be made between the **different types of education**: vocational, technical and general secondary education, and secondary education in the arts: these different types are likely to have different infrastructural needs (and funds).
3. On the level of **tertiary education** a distinction should be made between **non-university higher education of the short type** (professional bachelors), **non-university higher education of the long type** and **university higher education**. Since participation is rather equal across income groups in non-university tertiary education of the short type, but unequal in non-university education of the long type and university education, this breakdown is very relevant (see the literature study on inequality in the Belgian education system and Cantillon et al., 2005). Furthermore, university education should be broadly subdivided into humanities, science and medical sciences and civil engineering: (at least in the Flemish Community), for each student in medical sciences or civil engineering, a university gets 1.5 times more than for a student in sciences and 3 times more than for each student in humanities.

A visual representation of the optimal breakdowns of the Belgian education system, can be found in the appendix.

¹⁵ Although this distinction clearly points to real differences in public education expenditures per pupil, it seems not desirable to account for this difference in accordance with the method we apply in this paper: to the extent that higher expenditures correspond to higher needs, it cannot be said that *ceteris paribus* pupils' welfare in special education is higher than in mainstream education.

¹⁶ Although a redistribution from rich to poor individuals is not the objective, this redistribution is likely to be an outcome of this programme since the GOK-indicators correlate negatively with income.

Of course, some breakdowns are more important than others. It is even a question if all breakdowns are desirable. For instance a distinction of mainstream and special education may be an indispensable breakdown if one wants to estimate the exact cost per pupil, but from a redistribution of living standards point of view this is hardly defensible, the more if extra expenditures in special education directly correspond to extra needs. In addition, in some schools more and more is done in order to include disabled children in mainstream education. Community, level of education, type of institution and full-time/part-time education appear to be to most important and relevant breakdowns.

The table below present the various breakdowns that are considered in the simulation, as well as the breakdowns that were not possible to simulate, mainly due to lack of information in the dataset.

Table 14: Breakdowns taken up in the simulation

<u>Simulated breakdowns</u>	Comment
Community	Flemish and French-speaking Community
Level of education	Pre-primary; primary; secondary; tertiary
Level of education – detailed	Secondary: lower secondary; upper secondary; post-secondary non-tertiary Tertiary: non-university short (1 cycle - professional bachelor); non-university long (2 cycles); university
Full-time/part-time	All students are assumed to be full-time, except students in higher education social promotion which are all considered as part-time (50%)
<u>Not simulated breakdowns</u>	
Type of institution	No information in dataset whether pupil is enrolled in public or government dependent private education. Nevertheless, we calculated the expenditures per pupil/student.
Special/mainstream education	No information in dataset
Type of secondary education	Not possible in dataset to distinguish for 12-16 year old between general, technical, vocational, arts secondary education; calculation of expenditure per pupil impossible.

We encountered some problems in calculating the expenditure per pupil, especially in the case of the breakdown by Community. First we elaborate on the data-problems by data level and by breakdown. The exact way in which we calculated our estimates, is presented in the next section.

5 Data: possibilities and limitations

For the simulation of the redistributive impact of education expenditures, data on three levels are required: we need the data in order to calculate the average education expenditures per pupil/student, which means: comparable data on (1) expenditures and (2) on the number of pupils/students and (3) we need micro data on effective participation and household income.

In order to calculate the expenditures per pupil/student we gathered **data of national and regional education authorities** and of the **OECD** (Education at a Glance and the online database). For comparability reasons, we only used OECD data to calculate expenditures per pupil/student.

5.1 Expenditures per pupil/student

In our simulations we use as a starting point, **expenditures per pupil/student** as delivered for the international comparison by Panos Tsakloglou. These figures, based on Education at a Glance 2006, are calculated as the share of public expenditures in total education expenditures to educational institutions per pupil/student (in full-time equivalents). All expenditures are converted to current national prices (mainly 2003). In order to calculate the necessary coefficients for more detailed breakdowns (by Community and type of institution) we had to fall back on the OECD online education database (not the Education at a Glance database).

In most cases we only have **budget information** and no information on effective expenditures (both OECD figures and Community administrative data deal only with budget figures). The major exception is the French Community, which presents expenditures ‘on the basis of realisations’. However, (in the long run) budgets and real expenditures can be expected to become quite similar to each other.

We include **investment** figures of the OECD for the school year 2003. We did not calculate an average over the last 5 or 10 years, since these figures are not available in the OECD database. Disaggregated administrative Community data learn that this is no real problem since investment spending in both the French-speaking and the Flemish Community was relatively stable over the last five years and investment spending consists of only a small share in total education spending¹⁷. Education at a Glance figures of investment spending as a percentage of total expenditures on education institutions in 2003 for Belgium as a whole, remain also beneath 3 per cent.

¹⁷ The drop in investment spending in 2004 is probably due to the Regional elections in 2004, but even then, the effect on total education expenditures was relatively very small.

Table 15: Investment spending as a percentage of total public direct education spending by level of education (Budget Flemish Community, 2003-2005)

	2003	2004	2005
Basic education	2,98	2,29	2,66
secondary education	1,99	1,85	2,14
non-university tertiary	3,63	3,12	3,37
university	3,77	3,13	3,54
Total	2,43	2,04	2,33

Source: Own calculations on Flemish authorities (2006b: 733-734)

Table 16: Evolution of investment spending by Flemish Community (corrected for price evolution) (2000-2005)

	2001	2002	2003	2004	2005	average
Basic education	100	99	104	83	96	96
secondary education	100	99	93	88	101	96
non-university tertiary	100	99	99	85	92	96
university	100	99	99	83	94	95
Total	100	99	99	85	97	95

Source: Own calculations on Flemish authorities (2006b: 733), average consumer price index NIS.

A major problem with the OECD figures on expenditures and participation deals with the **mixture of expenditures/students in education for adults** (social promotion, distance learning, basic education) **and expenditures/students in regular education**. On the one hand the great majority of adults participates in part-time education, on the other hand is education for social promotion to a large extent financed by registration fees (For Flanders: Flemish authorities, 2006b: 737, see also above ‘relevant breakdowns’). Given the relative big share of adults in education for social promotion in general and secondary education in particular, expenditures per pupil in secondary education in the baseline will be underestimated. In the Flemish Community for instance, 39 per cent of all pupils in secondary education (full-time, part-time and social promotion) are in social promotion secondary education. In 2003, public expenditures per adult in social promotion (secondary and tertiary) accounted for only 9 per cent of the expenditures per pupil in regular mainstream secondary education.¹⁸ Since not only participation figures, but also education expenditures for social promotion are mixed up with expenditures for regular secondary and tertiary education, an individuation of adults in secondary education on the basis of age, would be a very partial solution. We partly fixed this problem by assigning to students in education for social promotion only half of the amount assigned to students in full-time education. Due to lack of data, we did not assign half of the amount to pupils in part-time secondary education or part-time regular tertiary education¹⁹. Nevertheless, if we assign half of the amount to students in education for social promotion, we probably overrate the amount for students in education for social promotion. Since

¹⁸ These figures need to be treated with some caution since they are based on the number of ‘financiable’ students. Additionally, only the education budget of the Flemish Community is taken into account, the expenditures of provinces and municipalities (26 per cent of adults in social promotion secondary and tertiary education), being left out of consideration. (own calculations on Flemish authorities, 2006b: 45).

¹⁹ Part-time education is relevant from the age of 15. Only a very small share of pupils in regular secondary education attend part-time education (during the school year 2004-2005 only about 1.4 per cent of all pupils in secondary education attended part-time secondary education in the Flemish Community and during the school year 2003-2004 about 2.0 per cent in the French-speaking Community) (own Calculations on Flemish authorities, 2006b and Etnic, 2005a).

government expenditures for social promotion per student can be expected to be more than twice less than expenditures per pupil for pupils/students in regular education, also the amount for pupils in full-time regular secondary education remains underestimated.

As a rule, we assigned the fourth stage of secondary education in the micro-data to secondary education. Similarly, we included ‘post-secondary non-tertiary’ education in secondary education as far as the calculation of the expenditures per pupil/student is concerned.

A last important limit deals with **tertiary education**: in the OECD *expenditure* database, no distinction can be made between different types of education (non-university short type, non-university long type and university). This is a serious limit since previous research on the Flemish Community revealed that in the nineties participation rates by household income were rather equal in non-university (short type) education, but very unequal in university education (Cantillon et al., 2005: 7; see the literature study above and see also below, EU-SILC 2004 confirms these findings). Moreover, spending amounts per student differ for the various types.

As a rule, we subtracted direct expenditures to education institutions for **research and development** (R&D) from direct expenditures on tertiary education to education institutions.

In order to calculate the coefficients for more detailed breakdowns, we used on line statistics. Some of the expenditure figures are reported as ‘**not allocated by level of education**’. On average 2.3 per cent of all direct expenditures were not allocated by level (2003). After subtracting expenditures for research and development, we assigned these expenditures to the different levels of education weighting them by the relative share of the education level in total expenditures. We allocated these expenditures always at the end of the calculation (in the case of the breakdown by level of education, Community and type of institution, we first calculated all the breakdowns, including for expenditures not allocated by level and thereafter we assigned these expenditures to the various levels).

5.2 Micro-data: EU-SILC

The **Belgian EU-SILC of the survey year 2004** (with income data of 2003) provides the micro data. This is currently the most recent and most suitable dataset for our purpose. However, there are some assumptions and adaptations we have made, which will be discussed briefly in this section.

In the EU-SILC, no information is available on the level of education in which pupils between 12 and 16 years old (i.e. pupils of 13, 14 or 15 years old) participate. In order to solve this problem, we assigned pupils by year of birth to primary, lower secondary and upper secondary ‘at random’, by applying participation rates in the different levels of education for each year of birth (OECD figures, 2002-2003). We calculated the relative number of pupils/students by level of education and by age and compared these figures with OECD statistics. The resulting figures in the micro data matched pretty well with the OECD statistics. One exception concerns the EU-SILC participation rates of persons aged 24 and over. But we are convinced that on this point there is probably rather a problem with OECD statistics than with EU-SILC data. The rather high participation rates in lower and upper secondary education refer probably to participation in education for social promotion and not to regular secondary education²⁰.

Absolute estimates of the number of pupils and students in Belgium made with EU-SILC differ most in the case of pre-primary education. In all other cases, figures come ‘close enough’, straightforward conclusions being hard to make, since the three datasets utilise different definitions.

²⁰ The tables can be found in the appendix.

Timing. In the EU-SILC (2004), information is gathered about participation in education in the school year 2004/2005 and the income situation in 2003. In the Flemish Community, participation in education is always counted on the 1st February²¹, in the French-speaking Community on 1st October²² and in the German-speaking Community on the 20th December. Information on expenditures always refers to a financial (“calendar”) year and not to a school or academic year. In order to calculate public education expenditure per pupil/student we use most recent OECD data (2003) as far as expenditures are concerned and the number of pupils/students in the school year 2002-2003 (since this has the biggest overlap with the financial year 2003). Thereafter we assign these expenditures per pupil/student to pupils and students in accordance with their education participation in the school year 2004-2005. As a result there is a mismatch between education participation (2004-2005) and simulated income (2003). We do not correct for this mismatch.

Table 17: Number of students per education level according to various sources

Education level	EU-SILC 2004	OECD	Belgian administrative data
Pre-primary	332,738	399,168	402,140
Primary	736,922	755,447	753,130
Secondary	1,015,449	1,176,372	810,572
- lower secondary	327,075	418,356	
- upper secondary	661,361	758,016	
- post sec. non tertiary	27,013	53,618	
Tertiary (incl.social promotion)	382,770 (444,579)	374,532	302,416
Total (incl.social promotion)	2,521,748 (2,529,688)	2,759,137	2,268,420

EU-SILC 2004 figures refer to school year 2004/2005, OECD figures to school year 2002/2003 and Belgian administrative data to school year 2003/2004. Differences between the different sources are probably not due to differing moments of measurement since both OECD figures and Belgian administrative data show little variation over time. One important reason for differences between Belgian and OECD data is the inclusion of students in education for social promotion in OECD figures, although they are excluded in national data.

Source: Own calculations EU-SILC 2004; OECD on line statistics; own calculations on NIS (2006), *Onderwijs, cultuur en vorming. Schoolbevolking per gemeenschap (schooljaren 1995/1996 – 2003/2004)*, http://www.statbel.fgov.be/figures/d33_nl.asp (19-09-2006)

²¹ As far as tertiary education is concerned, only the ‘regular principal enrolments’ (regelmatige hoofdinschrijvingen) are registered. In doing so, every registration represents a different enrolled student. In the case of partial education in the arts (deeltijds kunstonderwijs), social promotion (onderwijs voor sociale promotie) and BIS (begeleid individueel studeren, ‘guided individueel learning’), the number of registrations is counted, which can be higher than the number of persons since it is possible to enrol in different courses at the same time. As far as ‘education for social promotion’ is concerned, the number of registrations in the period 1 February 2004-31 January 2005 is counted. (Flemish authorities, 2006b: 21-24) We suppose that these specifications apply also to the number of pupils/students communicated by the Flemish authorities to the OECD.

²² In the French Community, pupils and students are counted on several different moments: in general statistics on the 1st October the total number of pupils is counted and on the 1st December the total number of students in non-university tertiary education. Different moments apply as far as counting is concerned for financial reasons: 1st October, 10 January, 2 May (mainstream pre-primary), 15 January (primary, secondary and special education), 1st February (non-university tertiary education). (Etnic (2005a: 4)

6 Distribution of beneficiaries

The following table presents the distribution of beneficiaries across quintiles in EU-SILC 2004 and gives a breakdown in major categories of education level. Quintiles are constructed on the basis of equivalent disposable income. Secondary education includes secondary and post-secondary non-tertiary education. The expected pattern appears: secondary education is relatively more important in the first quintile, and in the middle of the income distribution. Tertiary education on the contrary tends to be concentrated more in the top of the income distribution.

Table 18: Distribution²³ of education level across quintiles, population shares of beneficiaries, Belgium, 2004.

Quintile	Population share of beneficiaries						
	Pre-primary	Primary	Secondary	Tertiary	All	All (compulsory)	All (non-compulsory)
	A	B	C	D	E	E.1	E.2
1 (bottom)	21.9	20.2	23.9	17.6	21.4	21.8	20.4
2	18.0	19.3	20.7	16.8	19.3	20.5	17.0
3	20.9	20.2	21.4	20.4	20.8	21.3	19.8
4	24.5	20.9	18.4	24.7	21.1	20.1	21.7
5 (top)	14.8	19.4	15.7	20.4	17.5	16.4	21.1
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	332737	736001	1013587	444579	2526907	1484062	706378
n	457	1027	1312	541	3337	2007	868

Source: own calculations on EU-SILC Belgium 2004

Table 18 (continued): Distribution of education level across quintiles, share of actual beneficiaries per age group, Belgium, 2004.

Quintile	% actual beneficiaries per age group			
	3-5 years	6-11 years	12-17 years	18-25 years
	Pre-primary	Primary	Secondary	Tertiary
1 (bottom)	93%	95%	92%	26%
2	95%	96%	96%	31%
3	100%	96%	94%	39%
4	97%	94%	94%	38%
5 (top)	100%	99%	98%	34%
All	97%	96%	94%	34%

Source: own calculations on EU-SILC Belgium 2004

The share of actual beneficiaries is more than 90% for individuals aged between 3 and 18 years. This is slightly lower than what OECD figures suggest: although OECD figures point to participation rates of 100 per cent, we find rates between 93 and 99 per cent in EU-SILC (2004). A limited number of respondents in EU-SILC reported no education participation for children at compulsory education age; it is not entirely clear whether this corresponds to a real situation, or that it is due to misreporting. For tertiary education we find a participation rate of 34% among the 18-25 year old. Participation is lowest in the bottom quintile, and highest in the upper middle of the income distribution.

²³ For the distributional analysis we only include those whose post-government income is strictly positive.

A more detailed breakdown for secondary education reveals no major difference between lower and upper secondary education. For post-secondary non-tertiary education there is a higher share of beneficiaries at the bottom, but this is merely indicative, as the number of students in this category is too small. With respect to tertiary education, it is striking that participation in non-university education of the short type is predominantly concentrated among lower income groups, whereas the more academic programs attract relatively more students from higher income groups. For social promotion, we find no clear-cut pattern, but also here the number of individuals is rather small.

Table 19: Distribution of education level across quintiles, detailed breakdown for secondary and tertiary education, population shares of beneficiaries, Belgium, 2004.

Quintile	Population share of beneficiaries							
	Secondary education			Tertiary education				
	Lower sec.	Upper sec.	Post-sec. non-tert.	Non univ, short	Non univ, long	Univer-sity	Social promotion	Other
	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
1 (bottom)	21.6	24.8	27.4	23.6	14.3	16.1	15.2	6.7
2	20.4	20.4	31.3	20.6	15.6	13.4	23.9	0.0
3	22.7	21.2	9.4	25.8	17.2	21.2	13.8	0.0
4	20.4	17.3	23.1	17.7	31.0	28.0	17.4	42.9
5	14.9	16.3	8.9	12.3	21.8	21.2	29.7	50.4
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>N</i>	327075	659499	27014	122399	84944	175428	53869	7941
<i>n</i>	434	844	34	155	106	204	66	10

* “Other” are those individuals that could not be classified in one of the 4 other categories of tertiary education.

Source: own calculations on EU-SILC Belgium 2004.

7 Distribution of education expenditures

The first breakdown we simulated, is a basic breakdown by level of education. We make a distinction between pre-primary, primary, secondary and tertiary education. As described above, students in ‘permanent education’ are included in the figures of students in regular education. We always calculate the equivalent net disposable household income, using the modified OECD equivalence scale. In the simulations households with a net disposable household income less than zero were excluded.

7.1 Effects on the income distribution: basic results

For the basic simulation we use the figures centrally delivered by the project, based on Education at a Glance. Total expenditures on education institutions per student have been multiplied by the share of public expenditures in total expenditures and converted to current national prices. The resulting expenditures per pupil/student are presented in the table below.

Table 20: Public expenditures per student on education institutions by level of education (basic simulation) (full-time equivalents, 2003)

	Including R&D	excluding R&D	R&D per student
Primary	4,662	4,662	
secondary	5,814	5,814	
Tertiary	8,440	5,809	2,631

Source: OECD, Education at a Glance on line statistics

Inclusion of public education expenditures has an equalising effect: the income share in the bottom quintile increases from 8.5% to 9.1% while that of the top quintile decreases from 35.4% to 33.8%. Adding these expenditures to disposable income leads to a substantial increase of around 13%. Education transfers going to pupils at compulsory age is responsible for the major part of this increase; transfers aimed at students at non-compulsory age (which corresponds mainly to tertiary education, and for a small part to secondary education (post-secondary non-tertiary education and because of school lagging) are less important, but still account for an increase in disposable income of around 4%. The increase in disposable income is far more important for lower incomes than for the higher, and this is the case for all types of education. The pattern of mean non-equivalent amounts is more capricious: the amount is highest for the bottom quintile (mainly due to primary and secondary education, which is also reflected in the amount for pupils at compulsory age). Amounts are also high in the middle of the distribution (3d and 4th quintile), where we find the highest amounts for tertiary education.

If we look at a more detailed breakdown for secondary and tertiary education, then for all categories of secondary education the increase in disposable income is highest for the lower income groups, and decreases in function of income. This is not entirely the case for tertiary education categories: for university education the increase of disposable income is indeed highest in the bottom quintile, but second highest in the 3d and 4th quintiles.

Table 21: Distribution of public education transfers across quintiles, % increase in disposable income, Belgium 2004.

Quintile	Income Share in %		% Increase in disposable income						
	Baseline	Income+ all education transfers	Pre-primary	Primary	Secondary	Tertiary	All	All (compulsory)	All (non-compulsory)
	A	B	C	D	E	F	G	G.1	G.2
1 (bottom)	8.8	9.4	3.3	9.0	16.1	4.2	32.5	21.0	8.2
2	14.2	14.7	1.7	5.2	8.6	2.6	18.1	12.0	4.3
3	18.4	18.8	1.5	4.2	6.9	2.6	15.1	9.6	4.0
4	23.4	23.4	1.3	3.4	4.7	2.4	11.8	7.1	3.4
5 (top)	35.2	33.7	0.5	2.1	2.5	1.2	6.3	3.8	2.0
All	100.0	100.0	1.3	3.8	5.9	2.2	13.2	8.3	3.6

Source: own calculations on EU-SILC Belgium 2004

Table 21 (continued): Distribution of public education transfers across quintiles, mean transfer per capita, Belgium 2004.

Quintile	Mean transfer per capita (not equivalized)						
	Pre-primary	Primary	Secondary	Tertiary	All	All (compulsory)	All (non-compulsory)
	C	D	E	F	G	G.1	G.2
1 (bottom)	122.4	333.9	677.0	206.6	1340.0	822.2	392.2
2	100.5	319.0	585.5	191.3	1196.3	773.0	317.5
3	117.0	332.9	605.4	243.5	1298.7	801.0	380.8
4	137.4	345.0	523.9	294.2	1300.5	748.7	414.4
5 (top)	82.8	319.5	442.5	231.3	1076.0	599.3	394.0
All	112.0	330.0	566.8	233.4	1242.3	748.8	379.8

Source: own calculations on EU-SILC Belgium 2004

Table 22: Distribution of public education transfers across quintiles, detailed breakdown for secondary and tertiary education, % increase in disposable income, Belgium 2004.

Quintile	% increase in disposable income							
	Secondary education			Tertiary education				
	Lower sec.	Upper sec.	Post-sec. non-tert.	Non univ, short	Non univ, long	University	Social promotion	Other
	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
1 (bottom)	5.0	10.7	0.5	1.6	0.7	1.5	0.2	0.0
2	2.9	5.4	0.3	1.0	0.5	0.9	0.2	0.0
3	2.5	4.3	0.1	0.9	0.4	1.1	0.1	0.0
4	1.8	2.7	0.1	0.5	0.6	1.1	0.1	0.1
5	0.8	1.6	0.0	0.2	0.3	0.6	0.1	0.1
All	2.0	3.7	0.1	0.6	0.5	0.9	0.1	0.0

Source: own calculations on EU-SILC Belgium 2004

Table 22 (continued): Distribution of public education transfers across quintiles, detailed breakdown for secondary and tertiary education, mean transfer per capita, Belgium 2004.

Quintile	Mean transfer per capita (not equivalised)							
	Secondary education			Tertiary education				
	Lower sec.	Upper sec.	Post-sec. non-tert.	Non univ, short	Non univ, long	Univer-sity	Social promotion	Other
	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
1 (bottom)	197.6	458.8	20.7	80.6	34.0	79.1	11.5	1.5
2	186.5	375.4	23.6	70.5	37.1	65.7	18.0	0.0
3	207.6	390.7	7.1	88.2	40.9	104.1	10.4	0.0
4	186.4	320.0	17.4	60.6	73.5	137.4	13.1	9.5
5 (top)	136.5	299.3	6.7	42.1	51.8	103.8	22.4	11.2
All	182.9	368.8	15.1	68.4	47.5	98.0	15.0	4.4

Source: own calculations on EU-SILC Belgium 2004

For measuring the effect on inequality, we have calculated several indicators for income excluding and including education transfers. The inequality indices are the Gini and the Atkinson index (with inequality aversion parameter set at 0.5 and at 1.5); poverty is measured with the Foster-Greer-Thorbecke (FGT) indices with parameters 0 (poverty head count), 1 (normalized poverty gap) and 2 (intensity of the poverty gap). The poverty line is set at 60% of median equivalent income; it is recalculated for the various income concepts (i.e. income excluding and including education transfers).

All indicators report a reduction of inequality and poverty due to the inclusion of these public transfers in the income concept. As can be expected, the strongest effect comes from transfers going to pupils at compulsory age. Secondary education is a very important redistributive instrument, because participation is higher in the lower income groups, and because of the substantial amounts. Tertiary education is less important, mainly because of the distribution pattern of participation.

The more detailed breakdown across education levels shows that the effect of upper secondary education is stronger than that of lower secondary education (because of a higher number of pupils in upper secondary education, as it accounts for 2/3 of the regular secondary education system). Among tertiary education transfers for non-university education of the short type (professional bachelors) are more equalising than the academic programs (non-university long type; university).

Table 23: Effect of public education transfers on inequality and poverty indices, Belgium 2004.

Inequality and poverty indices	Value of the index for baseline income and income plus public education transfers							
	Baseline	All	All (compulsory)	All (non-compulsory)	Pre-primary	Primary	Secondary	Tertiary
	A	B	B.1	B.2	C	D	E	F
Gini	0.2655	0.2439	0.2504	0.2614	0.2625	0.2594	0.2534	0.2639
Atkinson 0.5	0.0603	0.0507	0.0535	0.0583	0.0588	0.0572	0.0548	0.0595
Atkinson 1.5	0.2409	0.2038	0.2184	0.2308	0.2338	0.2269	0.2165	0.2393
FGT0	0.1540	0.1417	0.1437	0.1449	0.1516	0.1485	0.1428	0.1512
FGT1	0.0422	0.0360	0.0374	0.0397	0.0402	0.0393	0.0382	0.0417
FGT2	0.0192	0.0151	0.0161	0.0180	0.0180	0.0173	0.0168	0.0189
Inequality and poverty indices	Proportional change of index in %							
		All	All (compulsory)	All (non-compulsory)	Pre-primary	Primary	Secondary	Tertiary
		B	B.1	B.2	C	D	E	F
Gini		-8.1	-5.7	-1.6	-1.2	-2.3	-4.6	-0.6
Atkinson 0.5		-16.0	-11.3	-3.4	-2.5	-5.2	-9.1	-1.4
Atkinson 1.5		-15.4	-9.3	-4.2	-2.9	-5.8	-10.1	-0.7
FGT0		-8.0	-6.7	-6.0	-1.6	-3.6	-7.3	-1.8
FGT1		-14.6	-11.3	-6.0	-4.7	-6.9	-9.3	-1.1
FGT2		-21.3	-15.9	-6.2	-5.9	-9.7	-12.4	-1.7

Source: own calculations on EU-SILC Belgium 2004

Table 24: Effect of public education transfers on inequality and poverty indices, detailed breakdown for secondary and tertiary education, Belgium 2004.

Inequality and poverty indices	Value of the Index						
	Secondary education			Tertiary education			
	Lower sec.	Upper sec.	Post-sec. non-tert.	Non univ, short	Non univ, long	University	Social promotion
	E.1	E.2	E.3	F.1	F.2	F.3	F.4
Gini	0.2614	0.2570	0.2650	0.2640	0.2653	0.2653	0.2654
Atkinson 0.5	0.0583	0.0564	0.0601	0.0597	0.0602	0.0602	0.0603
Atkinson 1.5	0.2302	0.2256	0.2405	0.2399	0.2402	0.2408	0.2409
FGT0	0.1482	0.1430	0.1515	0.1537	0.1536	0.1526	0.1539
FGT1	0.0403	0.0393	0.0419	0.0420	0.0424	0.0420	0.0422
FGT2	0.0181	0.0174	0.0191	0.0191	0.0192	0.0190	0.0192
Inequality and poverty indices	Proportional change in index in %						
	Secondary education			Tertiary education			
	Lower sec.	Upper sec.	Post-sec. non-tert.	Non univ, short	Non univ, long	University	Social promotion
	E.1	E.2	E.3	F.1	F.2	F.3	F.4
Gini	-1.6	-3.2	-0.2	-0.6	-0.1	-0.1	-0.1
Atkinson 0.5	-3.4	-6.5	-0.3	-1.0	-0.2	-0.3	-0.1
Atkinson 1.5	-4.4	-6.3	-0.1	-0.4	-0.3	0.0	0.0
FGT0	-3.8	-7.2	-1.6	-0.2	-0.3	-0.9	-0.1
FGT1	-4.4	-6.9	-0.6	-0.4	0.5	-0.4	0.0
FGT2	-5.8	-9.1	-0.2	-0.2	-0.1	-0.8	0.1

Source: own calculations on EU-SILC Belgium 2004

Table 25: Distribution of public education transfers across socio-economic characteristics of the household, Belgium 2004.

Characteristic of household or household head	A	B-Mean	C-Mean	B	C	D	E	F	G	H	I
Household type											
Older single persons or couples (at least one 65+)	15.5	13577	13605	0.82	0.72	0.2%	0.1052	0.1056	0.3	12.2	14.9
Younger single persons or couples (none 65+)	22.6	18862	19226	1.14	1.02	1.9%	0.1689	0.1653	-2.1	28.6	33.9
Couple with children up to 18 (no other HH members)	37.8	17155	21142	1.03	1.13	23.2%	0.1133	0.0698	-38.4	32.0	23.9
Mono-parental household	5.8	11568	16606	0.70	0.88	43.6%	0.1092	0.0547	-50.0	4.7	2.9
Other household types	18.3	16794	18486	1.01	0.98	10.1%	0.1177	0.0904	-23.2	16.1	15.0
% Within groups inequality							0.1252	0.0999	-20.2	93.7	90.5
% Between groups inequality							0.0084	0.0105	24.9	6.3	9.5
Socioeconomic group of HH head											
Blue collar worker	19.0	15698	18313	0.95	0.97	16.7%	0.0766	0.051	-33.9	10.9	8.7
White collar worker	32.7	21222	24111	1.28	1.28	13.6%	0.0788	0.06	-24.3	19.3	17.6
Self-employed	10.3	16846	20162	1.01	1.07	19.7%	0.1906	0.127	-33.2	14.7	11.9
Unemployed	8.1	10608	13355	0.64	0.71	25.9%	0.1097	0.087	-20.6	6.6	6.4
Pensioner	23.8	14321	14609	0.86	0.78	2.0%	0.1149	0.112	-2.5	20.4	24.1
Other	6.2	11542	13491	0.70	0.72	16.9%	0.2038	0.139	-31.8	9.5	7.8
% Within groups inequality							0.1087	0.085	-22.3	81.4	76.5
% Between groups inequality							0.0241	0.026	6.0	18.1	23.2
Educational level of HH head											
Tertiary education	29.7	21045	23746	1.27	1.26	12.8%	0.1155	0.0901	-22.0	25.7	24.2
Upper secondary education	35.4	16332	18715	0.98	1.00	14.6%	0.1077	0.0819	-24.0	28.5	26.2
Lower secondary education	15.6	14514	16559	0.87	0.88	14.1%	0.1282	0.1019	-20.5	15.0	14.4
Primary education or less	19.4	12206	13398	0.74	0.71	9.8%	0.1115	0.0950	-14.8	16.2	16.7
% Within groups inequality							0.1140	0.0900	-21.0	85.3	81.5
% Between groups inequality							0.0187	0.0199	6.4	14.0	18.1
Age of HH member											
Below 25	29.5	15669	19637	0.94	1.04	25.3%	0.1273	0.0802	-37.0	28.1	21.4
25-64	53.9	17992	19859	1.08	1.06	10.4%	0.1354	0.1125	-17.0	54.7	54.9
Over 64	16.6	13729	13829	0.83	0.74	0.7%	0.1083	0.1078	-0.4	13.5	16.2
% Within groups inequality							0.1285	0.1022	-20.5	96.2	92.6
% Between groups inequality							0.0051	0.0082	61.1	3.8	7.4
ALL		16598	18791	100	100	13.2	0.1336	0.1104	-17.4	0.0	0.0

Source: own calculations on EU-SILC Belgium 2004

Columns: A: Population share; B and C (mean equivalent income relative to the national mean; distributions baseline income (B) and income plus public education transfers (C); D: % increase in mean equiv. Income; E and F: inequality index (mean log deviation, distributions of income without and with public education transfers); G: % change in inequality; H and I: % contribution to aggregate inequality (distributions of income without and with public education transfers)

Table 26: Effect of public education transfers on poverty indices across socio-economic characteristics of the household, Belgium 2004.

Characteristic of household or household head	Poverty rates					
	A	B	C	D	E	F
Household type						
Older single persons or couples (at least one 65+)	15.5	20.0	32.0	59.4	20.2	35.0
Younger single persons or couples (none 65+)	22.6	12.9	19.0	46.8	19.0	30.3
Couple with children up to 18 (no other HH members)	37.8	12.4	5.7	-53.9	30.5	15.3
Mono-parental household	5.8	33.9	10.4	-69.5	12.7	4.2
Other household types	18.3	14.9	11.8	-20.8	17.6	15.2
					100.0	100.0
Socioeconomic group of HH head						
Blue collar worker	19.0	9.9	5.6	-43.4	12.4	7.6
White collar worker	32.7	2.5	1.8	-26.2	5.3	4.3
Self-employed	10.3	19.3	11.2	-42.1	13.1	8.2
Unemployed	8.1	42.9	32.0	-25.4	22.8	18.4
Pensioner	23.8	18.8	28.0	48.9	29.4	47.5
Other	6.2	42.0	31.7	-24.5	17.1	14.0
					100.0	100.0
Educational level of HH head						
Tertiary education	29.7	6.2	4.9	-21.9	12.2	43.0
Upper secondary education	35.4	13.2	10.9	-17.4	30.9	19.0
Lower secondary education	15.6	20.2	17.0	-16.2	20.9	27.7
Primary education or less	19.4	28.2	30.9	9.8	36.0	10.4
					100.0	100.0
Age of HH member						
Below 25	29.5	18.1	8.2	-54.5	34.6	17.12
25-64	53.9	12.5	12.2	-2.1	43.6	46.43
Over 64	16.6	20.2	31.1	54.1	21.7	36.44
					100.0	100
ALL		15.4	14.2	-8.0		

Source: own calculations on EU-SILC Belgium 2004

Columns: A: Population share; B and C :Poverty rate (FGT0) distributions baseline income (B) and income plus public education transfers (C); D: % change in poverty; E and F: % contribution to aggregate poverty (FGT0), distributions of income without and with public education transfers)

Table 26 (continued): Effect of public education transfers on poverty indices across socio-economic characteristics of the household, Belgium 2004.

Characteristic of household or household head	Normalised poverty gap (FGT1)					FGT2				
	G	H	I	J	K	L	M	N	O	P
Household type										
Older single persons or couples (at least one 65+)	0.0445	0.0727	63.6	16.4	31.4	0.0171	0.0274	60.1	13.8	28.2
Younger single persons or couples (none 65+)	0.0401	0.0520	29.5	21.6	32.7	0.0206	0.0249	20.9	24.4	37.4
Couple with children up to 18 (no other HH members)	0.0356	0.0141	-60.3	31.9	14.8	0.0169	0.0057	-66.1	33.3	14.4
Mono-parental household	0.0798	0.0206	-74.1	10.9	3.3	0.0343	0.0084	-75.4	10.3	3.2
Other household types	0.0445	0.0352	-21.0	19.3	17.8	0.0191	0.0139	-27.3	18.2	16.8
				100.0	100.0				100.0	100.0
Socioeconomic group of HH head										
Blue collar worker	0.0225	0.0154	-31.7	10.3	8.2	0.0099	0.0069	-29.9	10.0	8.8
White collar worker	0.0067	0.0049	-26.5	5.2	4.5	0.0029	0.0022	-26.5	5.1	4.7
Self-employed	0.0687	0.0376	-45.3	17.1	10.9	0.0378	0.0194	-48.6	20.7	13.4
Unemployed	0.1137	0.0721	-36.6	22.1	16.3	0.0448	0.0266	-40.7	19.2	14.4
Pensioner	0.0476	0.0673	41.5	27.2	44.8	0.0197	0.0265	34.6	24.8	42.1
Other	0.1215	0.0883	-27.3	18.1	15.3	0.0614	0.0402	-34.4	20.2	16.7
				100.0	100.0				100.0	100.0
Educational level of HH head										
Tertiary education	0.0209	0.0153	-26.9	15.0	12.8	0.0188	0.0120	-35.9	19.0	15.3
Upper secondary education	0.0343	0.0255	-25.9	29.3	25.4	0.0120	0.0148	22.7	27.8	23.7
Lower secondary education	0.0591	0.0469	-20.7	22.3	20.6	0.0148	0.0271	83.3	22.5	22.3
Primary education or less	0.0713	0.0752	5.5	33.4	41.1	0.0271	0.0297	9.7	30.6	38.7
				100.0	100.0				100.0	100.0
Age of HH member										
Below 25	0.0511	0.0222	-56.5	35.7		0.0237	0.0096	-59.5	36.4	18.2
25-64	0.0361	0.0325	-10.0	46.2		0.0171	0.0143	-16.4	48.2	48.6
Over 64	0.0460	0.0720	56.4	18.1		0.0178	0.0273	53.3	15.4	33.2
				100.0					100.0	100.0
ALL	0.0422	0.0360	-14.6			0.0192	0.015	-21.3		

Source: own calculations on EU-SILC Belgium 2004

Columns: G and H :Poverty index (FGT1-normalized poverty gap) distributions baseline income and income plus public education transfers; I: % change in poverty; J and K: % contribution to aggregate poverty (FGT1), distributions of income without and with public education transfers); L and M :Poverty index (FGT2) distributions baseline income and income plus public education transfers; N: % change in poverty; O and P: % contribution to aggregate poverty (FGT2), distributions of income without and with public education transfers

The tables above show the effect of the inclusion of public education transfers in the income concept across various characteristics of the household. These transfers improve the relative income position of couples with children, of mono-parental households and of younger persons. In general within-group inequality (measured with the mean logarithmic deviation) decreases for the various characteristics. Between-group inequality on the contrary increases, and very significantly between household types and age of the household member (which is not a surprising result). Poverty goes down after inclusion of education transfers for all groups, except for singles/couples without children (both older and younger) and for pensioners, which are the expected results.

7.2 The Regional Dimension: Breakdown by Community

For more than 15 years now, education is a Community matter. Apart from this legislative and organisational reason, financial and social reasons can be added which make a breakdown by Community highly relevant. Not only does education participation show different patterns in the different Communities, also do financial resources differ between the Communities.

In what follows, we only consider the Flemish and the French-speaking Communities. Due to a lack of data we assumed that pupils attending school in the German-speaking Community participated in a school under the French-speaking Community. From a Belgian point of view, this is no serious limit since only 0.6 per cent of all pupils in regular education attend education in the German-speaking Community (NIS, 2006). We first elaborate on the calculation of the expenditures per pupil, whereafter we present the effects on the income distribution.

We excluded expenditures on R&D from the analysis (we subtracted them from expenditures on tertiary education).

7.2.1 Calculation of expenditures per pupil/student

OECD statistics offer no consistent breakdown by Community. We asked the Flemish and French-speaking Community for the disaggregated OECD data, but so far the French-speaking Community was unwilling to offer us these disaggregated data (06-11-06).

The use of **administrative data of the three Communities** themselves is a problem since these do not include the federal education expenditures and the education expenditures of provinces and municipalities (which results in an underestimation of grant-aided official education expenditures per pupil). It is possible to gather the information on education expenditures of provinces and municipalities ourselves, but due to time limits we have not tempted to do this so far. Consequently, we cannot use these Community administrative data on expenditures in order to compile aggregated data on education in Belgium (which would also be helpful for a more detailed breakdown by level of education). A calculation of the number of pupils/students using these data would be possible, but the Education Department of the Flemish Community strongly dissuaded us to combine Community participation numbers with OECD expenditure figures.

In the **micro-data** of EU-SILC, we have information on the region where the household lives, but we do not know in which Community pupils/students go to school. We neither have a proxy variable such as the language in which the EU-SILC 2004 questionnaire was filled in. This is especially important in the Region of Brussels-Capital and in the German-speaking Community, but also in other cases we only know where pupils live and not where they go to school. However, we estimate the number of pupils going to schools in another Community rather low.

Assigning pupils and students to the different Communities, we made two major assumptions:

- (1) Pupils and students participate in education in the Region they live in. This means: pupils and students which live in the Flemish Region attend school / university under the Flemish Community, pupils and students living in the Walloon Region (i.e. the German-speaking Community included), participate in education under the French-speaking Community.
- (2) Pupils and students living in the Region Brussels-Capital attend school (university) under the French-speaking Community.

Especially the second assumption is debatable. There are no language counts in the Brussels region; an indication of the number of Dutch- and French-speaking inhabitants is provided by the percentage of persons which voted for a Flemish candidate during last Regional elections (2004). Less than 14 per cent of all valid votes in the Region Brussels Capital went to Flemish parties. As far as this figure can be extrapolated, this means that we wrongly assigned more or

less 14 per cent of all pupils and students living in Brussels-Capital to the French-speaking Community. However, an increasing number of non-Dutch speaking inhabitants of Brussels choose a Flemish school for their children (especially for pre-primary and primary education); unfortunately, we do not know how many pupils living in the Region Brussels-Capital attend schools under the Flemish or the French-speaking Community. Hence, we underestimate the number of pupils in the Flemish community and overestimate those in the French-speaking Community. The situation is probably less problematic for tertiary education, as students attending higher education in the Region Brussels-Capital, but having their domicile in the Flemish Region are (in accordance with the first assumption) assigned to tertiary education under the Flemish Community. The bulk of Flemish students in the Region Brussels-Capital fall into this category.

Table 27: Public expenditures per pupil/student by Community and level of education (2003)

	Belgium	Flanders	Wallonia
pre-primary	3,500	3,453	3,570
primary	4,662	4,698	4,616
secondary	5,814	6,026	5,551
tertiary	5,809	6,022	5,555

Share by Community: participation figures refer to 1999, budget figures refer to 2001.

Source: own calculations on Education at a Glance (OECD, 2006) and OECD on line education statistics (09-10-06)

As mentioned before, in order to calculate the expenditures per pupil for each Community, we departed from the same 2003 data used in the breakdown by level of education as presented in the previous section. Since in the OECD statistics on line no consistent breakdown by Community can be found, we applied the shares of both Communities in the number of pupils/students in 1999 and in the 2001 budget on the 2003 expenditures per pupil/student figures. Hence, we assumed that for each level of education the budget share of the Flemish and French-speaking Community remained constant between 2001 and 2003 and that their relative share in tertiary education expenditures corresponds to their relative share in 2003 R&D expenditures. Furthermore we assumed that the relative share of both Communities in the number of pupils remained constant between 1999 and 2003 for each level of education²⁴. Except for pre-primary education, expenditures per pupil (student) are higher in Flanders than in Wallonia. This is especially the case in secondary and tertiary education. Consequently, we expect that these difference in amounts will increase inequality between the Regions.

²⁴ A comparison with national data for 1999 and 2003 showed that this assumption can be sustained.

7.2.2 Effects on the income distribution

The table below presents the distribution of students living in the three regions over (Belgian) income quintiles. Students in the Brussels region and in Wallonia are mainly found at the lower end of the income distribution (43% of all students in Brussels, resp. 25% in Wallonia in the bottom quintile), and this is especially the case for secondary education (also primary in Brussels and pre-primary in Wallonia). This is not the case in Flanders, where students are more concentrated in the upper part of the income distribution (and this for roughly all education levels). These distributions patterns of course reflect the unequal socio-economic situation in Belgium: Flemish households/individuals are situated relatively more in the upper part of the income distribution than their Brussels and Walloon counterparts. This structure, however, would lead us to expect that public education transfers will reduce inequality between the regions.

Table 28: Distribution of education level across quintiles, per the regions, Belgium, 2004.

Quintile	Population share of beneficiaries, Brussels				
	A Pre-primary	B Primary	C Secondary	D Tertiary	E All
1 (bottom)	37.3	43.9	47.8	37.9	43.2
2	31.2	18.8	23.4	16.0	21.6
3	8.1	8.3	11.5	16.2	11.2
4	6.6	8.8	9.0	14.6	9.8
5 (top)	16.8	20.2	8.3	15.3	14.3
All	100.0	100.0	100.0	100.0	100.0
<i>N</i>	34596	71445	95203	54538	255782
<i>n</i>	61	138	163	89	451

Quintile	Population share of beneficiaries, Flanders				
	A Pre-primary	B Primary	C Secondary	D Tertiary	E All
1 (bottom)	13.5	13.7	17.8	13.8	15.4
2	13.9	18.7	20.9	20.0	19.3
3	24.0	19.6	23.0	15.4	20.9
4	30.6	26.6	19.1	26.1	23.8
5 (top)	18.1	21.3	19.2	24.7	20.6
All	100.0	100.0	100.0	100.0	100.0
<i>N</i>	176540	403024	605428	236032	1421024
<i>n</i>	228	519	724	268	1739

Quintile	Population share of beneficiaries, Wallonia				
	A Pre-primary	B Primary	C Secondary	D Tertiary	E All
1 (bottom)	29.6	23.8	28.3	16.0	24.9
2	20.0	20.4	19.4	12.3	18.5
3	20.0	24.3	21.1	29.7	23.5
4	20.9	15.5	20.1	26.3	19.9
5 (top)	9.5	16.1	11.1	15.7	13.2
All	100.0	100.0	100.0	100.0	100.0
<i>N</i>	121603	261531	312954	154009	850097
<i>n</i>	168	370	425	184	1147

Source: own calculations on EU-SILC Belgium 2004

The higher spending-per-pupil amounts in Flanders should lead to an increase in inequality between the regions, whereas the distribution of students should lead to a decrease. A priori we cannot say which effect will be strongest. The table below shows that inequality between the regions is strongly reduced (with 22%) due to public education transfers; this means that the effect of the distribution of Flemish, Walloon and Brussels students outweighs the effect of difference in amounts. Inequality within each region is reduced in the three regions, but most strongly in Brussels and Wallonia.

Table 29: Effect of public education transfers on inequality and poverty indices, within and between region inequality, Belgium 2004.

	A	B-Mean	C-Mean	B	C	D	E	F	G	H	I
Region											
Brussels	9.7	15723	17913	0.95	0.95	13.9%	0.2226	0.1735	-22.1	16.1	15.2
Flanders	57.8	17277	19473	1.04	1.04	12.7%	0.1179	0.1008	-14.5	51.0	52.7
Wallonia	32.5	15653	17850	0.94	0.95	14.0%	0.1316	0.1065	-19.1	32.0	31.3
% Within groups inequality							0.1325	0.1096	-17.2	99.1	99.2
% Between groups inequality							0.0012	0.0009	-22.4	0.9	0.8
ALL		16598	18791	100	100	13.2	0.1336	0.1104	-17.4	0.0	0.0

Source: own calculations on EU-SILC Belgium 2004

Columns: A: Population share; B and C (mean equivalent income relative to the national mean; distributions baseline income (B) and income plus public education transfers (C)); D: % increase in mean equiv. Income; E and F: inequality index (mean log deviation, distributions of income without and with public education transfers); G: % change in inequality; H and I: % contribution to aggregate inequality (distributions of income without and with public education transfers)

7.3 By type of institution, Community and level of education

As mentioned in the overview of the Belgian education system, from a financing point of view, a distinction has to be made between Community education, grant-aided official education and grant-aided free education.

This breakdown cannot be done as the micro-data do not contain information on the type of institution in which persons participate. Assigning pupils at random to the different types of institution makes – according to the authors – little sense, since it can be expected that type of institution and household income are correlated (the higher the income, the higher the chance that a pupil participates in grant-aided free education, at least in Flanders). Nevertheless, in order to gain some insight in the possible impact of this breakdown, we make an estimate of the average amount per pupil by level of education, Community and type of institution, and then try to make some predictions on the impact on inequality of this breakdown.

A breakdown by type of institution is available in the OECD database. However, no distinction can be made between Community education and grant-aided official education (provincial and municipal) which are both included in the category ‘public education’. Grant-aided free education is referred to as ‘government-dependent private education’. In the OECD on line statistics a breakdown by level of education and type of institution can be found for most years (including 2003). However, the last breakdown by Community dates back to 1999 as far as participation rates are concerned and back to 2001 as far as expenditures are concerned. We chose to stick as much as possible to the original data. Since a breakdown by type of institution is available for 2003, we assumed that the share of each Community in the number of pupils remained constant between 1999 and 2003 for each type of institution. The same

holds for the shares in public expenditures to education institutions between 2001 and 2003. This may seem to be strange: although the organisational structure of education is in the order ‘Community – level of education – type of institution’, we applied the order ‘level of education – type of institution – Community’ in order to be able to derive the original 2003 data for both level of education and type of institution. The following table presents the different amounts per pupil:

Table 30: Estimated public direct expenditures to education institutions per pupil/student by level of education, type of institution and Community (full-time equivalents, 2003)

	Belgium			Flanders			Wallonia		
	total	public	gov dep	total	public	gov dep	total	public	gov dep
pre-primary	3,500	3,979	3,098	3,453	4,037	3,165	3,570	3,930	2,926
primary	4,662	5,436	4,032	4,698	5,684	4,177	4,616	5,232	3,758
secondary	5,814	6,634	5,313	6,026	6,755	5,768	5,551	6,540	4,595
tertiary	5,809			6,022			5,555	5,644	5,380

Public = Community education and grant-aided official education; gov dep = government-dependent private education (grant-aided free education); secondary includes post-secondary non-tertiary education.

Share by Community (in type of institution by level of education): participation figures refer to 1999, budget figures refer to 2001.

Source: own calculations on Education at a Glance (OECD, 2006) and OECD on line education statistics (09-10-06)

What can be learnt from this estimation?

- (1) On all relevant levels of education public expenditures to public education institutions per pupil are considerably higher than those to grant-aided free education institutions.
- (2) In absolute terms the gap is the smallest in pre-primary education and the largest in primary education.
- (3) The same conclusions hold for Flanders and Wallonia, but differences are considerably bigger in Wallonia than in Flanders, especially in the case of secondary education: expenditures per pupil to grant-aided free secondary education institutions are on average almost 1950 euros (or one third) lower than expenditures per pupil to public education institutions.
- (4) Holding the type of education institution constant, for all education levels (pre-primary-secondary) public expenditures per pupil are higher in Flanders than in Wallonia. Consequently, the higher average expenditure per pupil found in pre-primary education is entirely due to differing shares of public and government-dependent private education in the number of pupils. Especially in pre-primary and primary education a larger share of pupils attends public education in Wallonia than in Flanders, causing on average a rather small difference in expenditures per pupil, although in both public and government-dependent private education expenditures per pupil are higher in Flanders than in Wallonia²⁵.
- (5) The fact that we do not account for these differences in amounts between types of institutions, probably leads to an underestimation of the equalizing effect of public education transfers as measured in our basic simulation. Since it can be expected that type of institution and household income are correlated (the higher the income, the higher the chance that a pupil participates in grant-aided free education, at least in

²⁵ As shown in Table 2, the larger share of public education institutions in Wallonia is in pre-primary and primary education entirely due to the big share of grant-aided official education, more than twice as large compared to this share in Flanders.

Flanders), the higher amounts for public institution probably lead to a higher equalizing effect of education transfers.

Table 31: Share of public and government-dependent institutions in the total number of pupils and share of the Communities in the total number of Belgian pupils (full-time equivalents, 1999 and 2003)

	Belgium			Flanders			Wallonia		
	total	public	gov dep	total	public	gov dep	total	public	gov dep
pre-primary	399,168	46	54	61	35	64	39	63	38
primary	755,447	45	55	56	36	63	44	57	43
secondary	1,024,694	38	62	55	30	69	45	47	54

Public = Community education and grant-aided official education; gov dep = government-dependent private education (grant-aided free education); secondary includes post-secondary non-tertiary education.

The total of each Community is the share of each Community in the total number of pupils in Belgium by level of education. Figures of Belgium refer to 2003, figures of the Communities and their relative share in the total number of pupils refer to 1999.

Source: Own calculations on OECD on line education statistics database (09-10-06).

In addition, the gap between public and government-dependent private education is probably underestimated due to the inclusion of secondary education for social promotion in our figures. As a proxy, the share of part-time pupils in public secondary education (40 per cent) is twice as large as in grant-aided free education in Flanders and three times as large (37 per cent) in Wallonia. Since – according to administrative Community figures of Flanders – expenditures per student for secondary education for social promotion are less than one tenth of those for regular secondary education, even if we count these students only half of pupils in regular secondary education²⁶, they get a disproportionately large part of the expenditure pie, especially in public education. Consequently, we can expect the gap in regular secondary education between public and government-dependent private education institutions and between Flanders and Wallonia to be even bigger.

²⁶ Almost all these students are in part-time education and therefore receive a weight of only 0.5 in comparison to pupils in regular full-time secondary education.

8 Conclusion

In this report, we analysed the impact of public education expenditures on the income distribution. We took into account three breakdowns: a limited breakdown by level of education, an extensive breakdown by level of education and a breakdown by Community and level of education. In addition we calculated the expenditure per pupil/student by type of institution, Community and level of education in order to catch a glimpse of the effect of the differing financing of public and government-dependent private education.

Whereas participation in pre-primary and primary education is equally distributed across the income distribution, participation in secondary education tends to be concentrated more in the first quintiles of the income distribution. Participation in tertiary education on the other hand, is concentrated more in top of the income distribution. In accordance with previous research on the Flemish Community by Cantillon et al. (2006), we found big differences between different types of tertiary education: participation in non-university tertiary education of the short type is concentrated in the first quintiles and participation in the more academic programmes (non-university of the long type and university education) is clearly concentrated among the higher quintiles.

Adding public education expenditures to disposable household income, increases household income on average with around 13 per cent. As was expected, public education expenditures reduce income inequality: the share of the bottom income quintile increases slightly and the share of the top quintile decreases. The effect remains consistent if we take also other inequality measures into account. The strongest effect comes from transfers to pupils at compulsory age. Expenditures for secondary education have the strongest effect, because participation is higher in the lowest quintiles and because of the substantial amount of the transfers. Among tertiary education, non-university tertiary education is the most equalising due to the larger share of the lowest quintiles in this type of tertiary education.²⁷

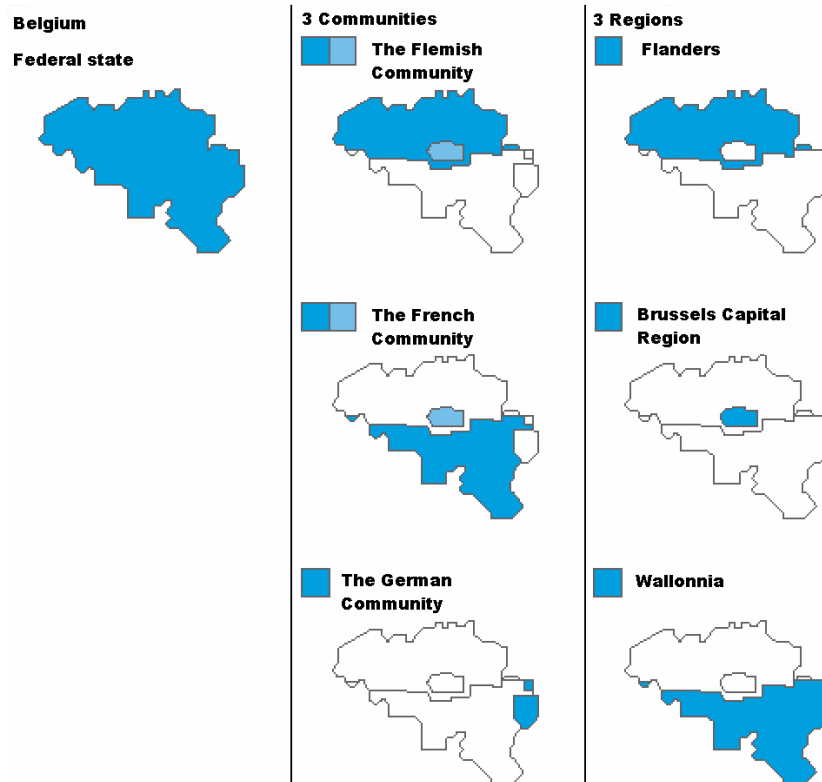
The regional dimension is highly relevant in Belgium, as education is to a large extent a matter of the Communities. In spite of higher public expenditures per pupil/student in Flanders (Flemish Community) than in Brussels-Capital and Wallonia (both French-speaking Community in this analysis), inter-regional inequality is strongly reduced by public expenditures. The reason lies in the diverging socio-economic situation in Belgium: Flemish households are relatively more concentrated in the upper quintiles than their Brussels and Walloon counterparts. Inequality within each region is reduced in the three regions, but most strongly in Brussels and Wallonia.

²⁷ In our analysis, we excluded public expenditures to universities for research and development. This assumption is only partly correct, since we expect that these expenditures affect also the quality of tertiary (especially university) education. Including these expenditures does not change the picture very much: education expenditures keep their inequality-reducing effect, although the effect is reduced due to unequal participation in tertiary education.

Appendix

Annex I: The Belgian state structure and the structure of the Belgian regular education system

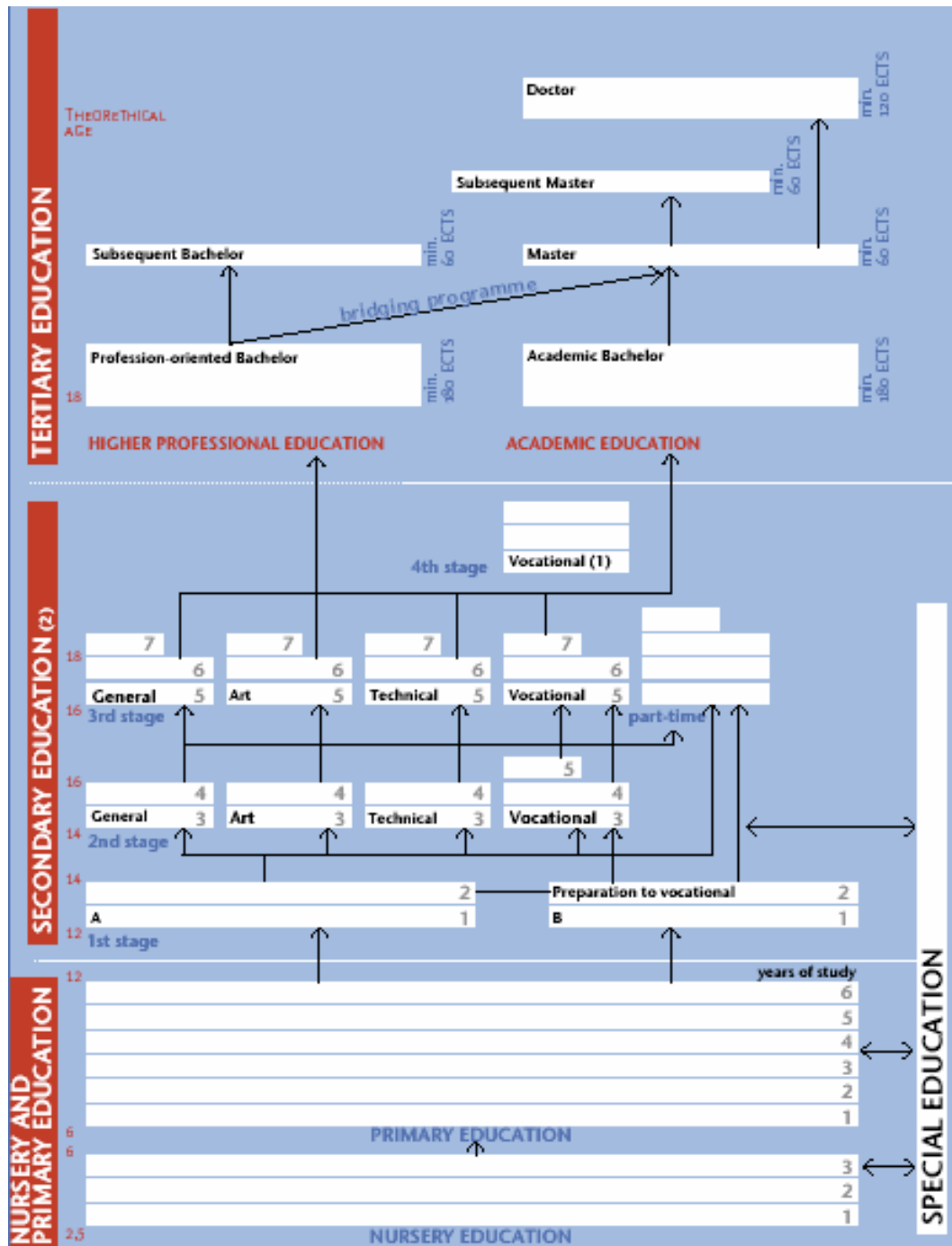
Figure 1: The Belgian state structure



Source: Federal Government on line: <http://www.belgium.be> (14-09-06)

Annex II: The structure of the Belgian education system

Figure 2: The structure of the Belgian regular education system (Flemish Community)

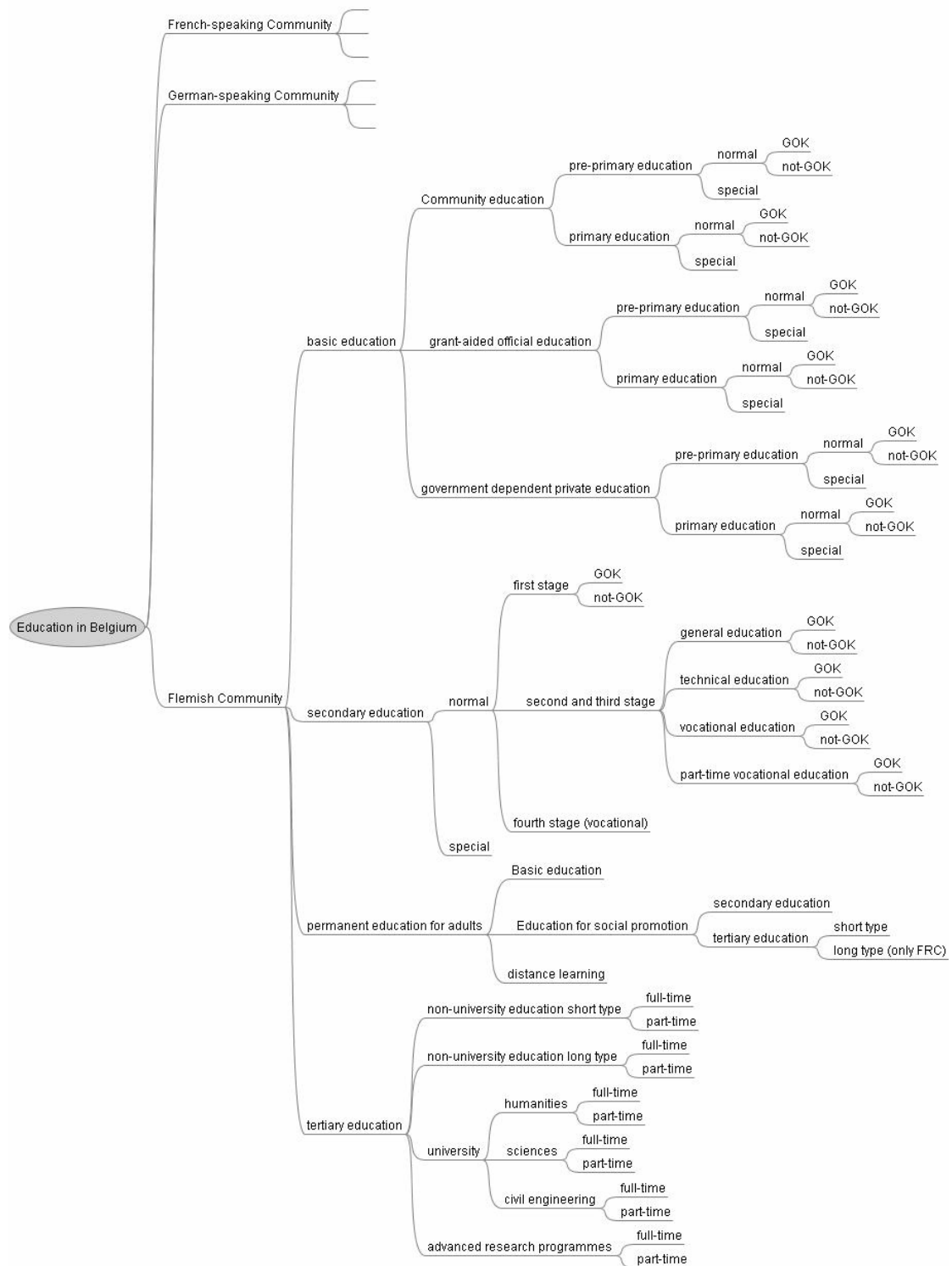


Similar figures representing the French-speaking Community's system and the German-speaking Community's system can be found in respectively Communauté française (2006: 7-10) and Abteilung Unterrichtswesen (2004: 12).

Notes: In addition to the levels of education included in the diagram, there are also types of education related to lifelong learning (part-time education in the arts and adult education, continuing education, supervised individual study (BIS), and adult basic education). (1) All students who have successfully passed the 3rd stage or passed an entry test, have access to the 4th stage of vocational training. (2) Modular education is not divided in stages and years of study and thus is not represented in the diagram.

Source: Ministry of the Flemish Community (2005), *Education in Flanders*, Brussels, p. 13

Figure 3: The Belgian education system: optimal breakdowns (2004-2005)



Note: The breakdown by type of institution as shown for basic education (i.e. pre-primary and primary education) has to be applied also on secondary and permanent education for adults. Furthermore, except for the GOK-breakdown, the different breakdowns as shown in the case of the Flemish Community, have to be applied also on the French-speaking Community. Tertiary education is in the German-speaking Community limited to non-university short type education. Permanent education for adults is almost always part-time education. University tertiary education for social promotion does not exist anywhere in Belgium, non-university tertiary education long type only exists only in the French-speaking Community.

Annex III: Comparison of the micro-data with OECD figures

Table 32: Comparison of regular education participation per age group, OECD statistics (2003) and EU-SILC (2004)

Age	Total		Pre-primary		Primary	
	OECD	EU-SILC	OECD	EU-SILC	OECD	EU-SILC
3	99,6	95,9	99,6	95,9	0,0	0,0
4	100,5	98,9	100,5	98,9	0,0	0,0
5	100,5	98,4	99,2	95,0	1,3	3,4
6	100,3	98,7	5,1	7,6	95,2	91,1
7	100,3	97,3	0,2	0,4	100,1	96,9
8	100,2	98,8	0,0	0,0	100,2	98,8
9	100,1	98,5	0,0	0,0	100,1	98,5
10	100,1	95,2	0,0	0,0	100,1	95,2
11	100,0	100,0	0,0	0,0	98,5	95,4
12	100,1	100,0	0,0	0,0	22,2	24.9
13	100,4	100,0	0,0	0,0	3,0	0.0

Age	Total		Lower secondary		Upper secondary		Post-secondary		Tertiary	
	OECD	EU-SILC	OECD	EU-SILC	OECD	EU-SILC	OECD	EU-SILC	OECD	EU-SILC
12	100.1	100.0	77.9	75.1	0.0	0.0	0.0	0.0	0.0	0.0
13	100.4	100.0	96.1	100.0	1.3	0.0	0.0	0.0	0.0	0.0
14	100.6	100.0	30.6	31.5	69.7	68.5	0.0	0.0	0.0	0.0
15	101.6	100.0	9.1	14.3	92.5	85.7	0.0	0.0	0.0	0.0
16	100.4	96.2	3.2	0.7	97.2	95.2	0.0	0.4	0.0	0.0
17	103.6	97.5	4.6	3.2	97.8	91.9	0.2	0.7	1.1	1.7
18	88.0	90.2	2.9	2.4	43.6	47.8	6.4	7.1	35.1	32.8
19	76.1	80.9	3.2	2.0	19.0	19.1	7.5	8.5	46.5	51.3
20	67.3	61.4	3.3	0.0	9.5	9.5	7.2	1.8	47.2	50.4
21	52.9	48.5	3.3	0.0	6.5	5.4	3.3	0.0	39.8	43.1
22	41.3	45.8	3.5	0.7	5.7	5.1	1.7	1.8	30.4	38.2
23	30.3	27.4	3.6	0.0	5.3	1.8	0.8	0.0	20.5	25.6
24	23.6	20.5	3.8	0.6	5.4	2.5	0.8	0.0	13.6	17.4
25	20.0	9.1	3.8	0.0	5.3	1.4	1.6	0.4	9.2	7.3
26	17.6	7.9	3.8	0.6	5.2	3.1	1.6	0.0	7.1	4.2
27	15.3	6.9	3.7	0.7	5.2	1.2	0.7	0.0	5.7	5.0
28	12.7	12.2	3.5	0.0	4.2	5.3	0.6	0.0	4.5	6.9
29	11.3	9.4	3.1	0.0	3.9	2.0	0.5	0.0	3.7	7.4

Possibly problematic figures are set in bold.

Source: OECD education at a Glance 2006 (on line database); EU-SILC 2004, own calculations.

Annex IV: Education transfers including R&D expenditures

Table 33: Distribution of public education transfers across quintiles, % increase in disposable income, Belgium 2004

Quintile	Income Share in %		% Increase in disposable income						
	Baseline	Income+ all education transfers	Pre-primary	Primary	Secondary	Tertiary	All	All (compulsory)	All (non-compulsory)
	A	B	C	D	E	F	G	G.1	G.2
1 (bottom)	8.8	9.3	3.3	9.0	16.1	6.0	34.4	21.0	10.1
2	14.2	14.7	1.7	5.2	8.6	3.7	19.3	12.0	5.5
3	18.4	18.7	1.5	4.2	6.9	3.8	16.3	9.6	5.2
4	23.4	23.4	1.3	3.4	4.7	3.5	12.9	7.1	4.5
5 (top)	35.2	33.9	0.5	2.1	2.5	1.8	6.8	3.8	2.6
All	100.0	100.0	1.3	3.8	5.9	3.2	14.2	8.3	4.6

Source: own calculations on EU-SILC Belgium 2004

Table 33 (continued): Distribution of public education transfers across quintiles, mean transfer per capita, Belgium 2004

Quintile	Mean transfer per capita (not equivalized)						
	Pre-primary	Primary	Secondary	Tertiary	All	All (compulsory)	All (non-compulsory)
	C	D	E	F	G	G.1	G.2
1 (bottom)	122.4	333.9	677.0	300.2	1433.5	822.2	485.8
2	100.5	319.0	585.5	277.9	1282.8	773.0	404.1
3	117.0	332.9	605.4	353.8	1409.1	801.8	490.3
4	137.4	345.0	523.9	427.4	1433.7	749.7	546.6
5 (top)	82.8	319.5	442.5	336.0	1180.8	600.1	497.9
All	112.0	330.0	566.8	339.1	1347.9	749.3	484.9

Source: own calculations on EU-SILC Belgium 2004

Table 34: Effect of public education transfers (including R&D) on inequality and poverty indices, Belgium 2004

Inequality and poverty indices	Value of the index for baseline income and income plus public education transfers							
	Baseline	All	All (compulsory)	All (non-compulsory)	Pre-primary	Primary	Secondary	Tertiary
	A	B	B.1	B.2	C	D	E	F
Gini	0.2655	0.2447	0.2504	0.2623	0.2625	0.2594	0.2534	0.2647
Atkinson 0.5	0.0603	0.0510	0.0535	0.0586	0.0588	0.0572	0.0548	0.0598
Atkinson 1.5	0.2409	0.2051	0.2184	0.2323	0.2338	0.2269	0.2165	0.2407
FGT0	0.1540	0.1447	0.1437	0.1447	0.1516	0.1485	0.1428	0.1533
FGT1	0.0422	0.0369	0.0374	0.0404	0.0402	0.0393	0.0382	0.0424
FGT2	0.0192	0.0154	0.0161	0.0184	0.0180	0.0173	0.0168	0.0192
Inequality and poverty indices	Proportional change of index in %							
		All	All (compulsory)	All (non-compulsory)	Pre-primary	Primary	Secondary	Tertiary
		B	B.1	B.2	C	D	E	F
Gini		-7.8	-5.7	-1.2	-1.2	-2.3	-4.6	-0.3
Atkinson 0.5		-15.4	-11.3	-2.9	-2.5	-5.2	-9.1	-0.9
Atkinson 1.5		-14.9	-9.3	-3.6	-2.9	-5.8	-10.1	-0.1
FGT0		-6.0	-6.7	-6.1	-1.6	-3.6	-7.3	-0.5
FGT1		-12.6	-11.3	-4.2	-4.7	-6.9	-9.3	0.5
FGT2		-19.8	-15.9	-4.3	-5.9	-9.7	-12.4	0.1

Source: own calculations on EU-SILC Belgium 2004

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