

**The lost generation:
The effect of teacher strikes on students
Evidence from Belgium**

Michèle Belot¹

University of Essex

Dinand Webbink²

CPB Netherlands Bureau for Economic Policy Analysis

University of Amsterdam (SCHOLAR)

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In 1990, the French-speaking part of Belgium experienced long strikes in high schools. These events provide a unique setting for investigating the returns to schooling and the effects of teacher absenteeism on the educational and labor market achievements of students. The political division of Belgium in two communities (French and Flemish) provides an ideal setting for a difference-in-differences approach, as only the students in the French-speaking part were affected by the strikes. Using data from the Belgian Household Panel Survey, we compare the relative educational and labor market achievements of the young French and Flemish cohorts. We find evidence that the strikes have damaged significantly the labor market prospects of the young French-speaking generation. Overall, we estimate the negative effect of the teacher strikes on the earnings of young French-speaking people to be around 11.5%.

Keywords: Returns to education, Teacher absenteeism, Natural experiment

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¹ Department of Economics, University of Essex, Wivenhoe Park, CO4 3SQ Colchester, United Kingdom, mbelot@essex.ac.uk

² CPB Netherlands Bureau for Economic Policy Analysis, Postbus 80510, 2508 GM The Hague, The Netherlands, webbink@cpn.nl

1. Introduction

In 1990, the French-speaking part of Belgium experienced long strikes in high schools (spread over a seven-month period). The strikes lead to an unprecedented period of turbulence in schooling, both at primary and secondary levels. Most schools effectively suspended classes for weeks. For students, this period turned out to be some sort of improvised vacation. The popular press talked at the time of a “génération sacrifiée”, i.e. a generation of students “sacrificed” for the good of future generations.

This paper investigates the effect these strikes have had on students and, in particular, on later educational and labor market achievements. The political division of Belgium into two communities (French and Flemish) provides an ideal setting for a difference-in-differences approach, as only the French-speaking schools were affected by the strikes.

We use data from the Panel of Belgian Households Survey and compare the relative educational and labor market achievements of the young French-speaking cohort in comparison to the Flemish cohort. Since we cannot precisely identify who has been affected by the strikes and for how long, we construct the treatment group based on the date of birth and the mother tongue. The vast majority of students attend schools in their own mother language, so those who speak French as their mother tongue and had a school age at the time of the strikes have almost certainly been affected by the strikes.

We find that the young French-speaking cohort performs relatively worse than its Flemish counterparts. They are 10% less likely to have a higher education diploma and, next to that, their net earnings are 10% lower on average. We experimented with different ways of categorizing the treatment group and found our results to be very robust across specifications. The results suggest that something has happened that disadvantaged the young French speaking generation relatively to the Flemish speaking generation, and that this affected those who were enrolled in secondary schools at the time of the strikes.

This study provides original contributions on different levels. First, the setting can be seen as a natural experiment, providing an ideal setting to measure the returns to

schooling. Studies using natural experiment settings to measure the returns to schooling have become quite popular in the recent years³. OLS estimates have long been criticized for being potentially biased since educational attainment is likely to be correlated with other unobservable characteristics such as ability. Hence, researchers have looked for sources of exogenous variation in the length of schooling, which could be exploited to estimate the returns to schooling. The well-known study of Angrist and Krueger (1991), for example, uses the quarter of birth as an instrument to measure the impact of compulsory schooling on earnings. They show that the quarter of birth is indeed related to educational attainment because of school start age policy and compulsory attendance laws. Their IV estimates show that one additional year of compulsory schooling increases earnings by 7.5% on average, which is actually relatively close to the OLS estimates. This is in contrast with other IV studies, which generally find estimates that are significantly higher than the OLS estimates.

More recently and more closely related to our paper, Maurin and McNally (2005) also exploit a period of turbulence in schooling to measure the returns to schooling. Their study uses the Student Revolt of 1968 in France as a source of exogenous variation for educational achievements. They find that the Student Revolt had actually a beneficial effect on educational attainment, as many students succeeded in obtaining a “baccalauréat” which they would have otherwise not obtained. They use this source of variation to measure both the returns to schooling and the intergenerational effects of education. One drawback of their study is that there is no counterfactual, i.e. all students who were enrolled in secondary education in 1968 were hit by the same movement.

The second contribution relates to the effects of teacher and student absenteeism on student performance. This issue has received very little attention in the literature, which is quite striking given the large attention devoted to other characteristics of the “education production function” such as teacher quality, school and class characteristics (class size and peer effects in particular)⁴.

³ See Card, D. (1999) and Harmon et al. (2000) for recent overviews of the literature.

⁴ See Rikvin et al. (2005) for a recent discussion of the effect of teacher and school characteristics on academic achievement. It is noteworthy that they do not even mention the role of teacher absenteeism.

We know of only two studies which have actually looked at the effect of teacher absenteeism on student performance in developed countries. One is by Summers and Wolfe (1977) and the other is by Ehrenberg et al. (1989). They both use school data from the US. The first study finds an adverse effect of teacher absenteeism on student performance, while the second does not.

Next to that, we are aware of two studies on the effects of teacher absenteeism in developing countries. A recent experimental study by Duflo and Hanna (2006) measures the effects of teacher absenteeism on pupil achievements in rural India. They used an incentive scheme aimed at increasing absenteeism and investigate whether it does indeed stimulate teacher attendance and, in turn, improve the performance of pupils.

Our results confirm that teacher absenteeism generates a long-term drop in human capital. We find no evidence that students compensated the losses in terms of schooling due to the strikes.

The remaining of the paper is structured as follows. First, we describe the context of the strikes and the structure of the educational system in Belgium. Second, we review the aggregate trends regarding educational and labor market achievements in both communities. Then, we present the results of the empirical analysis and, finally, we conclude.

2. Belgian education system and the context of strikes

To understand the context of the strikes, it is helpful to mention a few facts about the history of the federalism in Belgium. Belgium became a federal state in 1970. Without getting into the details of the political organization of the state, the federalization of 1970 created new political entities, which are called *regions* and *communities*. There are three regions, corresponding to economic entities (Flanders, Wallonia and Brussels) and three communities, each of them associated with one of the official languages (French, Flemish and German). Over time several departments have been transferred from the federal state to the communities or regions. Hence, the department of education was transferred to the communities in 1988.

The Flemish and French communities are roughly equivalent in size. The Flemish community is somewhat larger than the French community (*about 5.5 millions against 3.9 millions in 2005*). The German community, on the other hand, is much smaller (less than 100 000 people in 2005).

The strikes in the year 1990 were a protest against the policy of the government of the French community. The crisis had longstanding roots, probably starting around 1986, when the Belgian federal government decided to reduce the budget deficit substantially. The plan implied substantial cuts in public expenditures, and namely in education, more specifically in the schooling infrastructure and the labor costs in secondary schools. The situation in the French community deteriorated with the constitutional reform of 1988, transferring the education department from the federal government to each community. Each community would receive a budget from the federal government, according to a rule determined in the so-called “Loi de financement” of 1989. The allocation rule was based on the respective “needs”, defined as a function of the population under 18. One major issue in this law was that it did not encompass the possibility of revalorization of the salary scales in the education system. Any salary increase would have to be financed by the own means of the communities. In those times, the French community had large deficits and could therefore not cope with extra costs in education. There was a general feeling of a deteriorating situation in schools, because of a lack of financial means. The salaries of the teaching staff had been frozen for several years, and there was no sign of improvement. The teaching staff felt betrayed and a great disagreement followed. The months of May and June were marked by repeated days of strikes, with school periods in between. The summer vacation (July and August) followed, while the conflict between teachers and public authorities remained unsolved. The strikes started again in September with the beginning of the new schooling year. The period of turbulence reached a peak in October and ended after a full six weeks of uninterrupted strikes from mid-October up to the end of November 1990, when the parties finally settled.

The strike was widely spread; all the secondary schools and 90% of the primary schools were closed. Schools decided more or less on their own how they would cope with the loss associated with the perturbation of the schooling year. In many

schools, the amount of material covered has been significantly reduced. The exam period, taking place in June, was severely disturbed in many schools. Some schools cut substantially the number of exams.

The strikes lead to an unprecedented period of turbulence in schooling, particularly for those enrolled in secondary schools. There was a constant uncertainty about when the strikes would end. For most students, this period turned out to be some sort of “improvised vacation”. It is hard to obtain more than anecdotic information about what the students did during that period of time. One Belgian news magazine, *Le Vif L’Express*⁵, reports the results of a small-scale study undertaken by two insiders of the movement (a director of a school and one of the teachers) on a sample of 400 students attached to different schools in the region of South-Luxembourg. They find that the most popular activities during this “forced vacation” were watching TV, listening to the radio and meeting with friends. A large majority did use the time to review the material already covered in class.

No matter how the students coped with the period of turbulence, it is clear that the period of strikes seriously perturbed five months of schooling in total. Although the first two months mainly coincided with the exam period, the last three months truly sacrificed learning time.

We now turn to the description of the aggregate trends in terms of educational achievements and compare them across communities.

3. Aggregate trends

We first present some general information about the global macroeconomic trends in each region, in particular with respect to the labor market conditions. The general picture of Belgium is that the North (Flanders) is richer and performs better than the South (Wallonia) (see Table 1). The labor market conditions are also clearly better in the North than in the South. Figure 2 compares the evolution of unemployment rates in both regions since the beginning of the seventies⁶. The

⁵ We are very grateful to Dorothée Klein, journalist at *Le Vif L’Express* who was in charge of the coverage of the strikes in the French community. She provided us a large number of her own articles, one of them reporting on the study of Gauché and Lefin mentioned here.

⁶ We borrowed the graph from Dejemeppe and Saks (2004)

divergence in unemployment rates appeared at the beginning of the eighties, where Flanders succeeded in reducing its unemployment rate while Wallonia did not. Since the beginning of the nineties, the relative differences in labor market conditions between the North and the South have ceased to increase but remain substantial. In 2000, the unemployment rate was equal to 20% in Wallonia and only 6% in Flanders.

In terms of educational achievements, the picture is again one of contrasts between the North and the South. We refine our description by showing statistics at the province level. There are 10 provinces in Belgium, 5 are in Flanders and 5 are in Wallonia. Brussels-capital has a special status and forms a region in itself. As we will show below, Brussels-capital is mainly French-speaking. We report statistics based on the national Census⁷.

Let us first consider the average number of schooling years in each province and look at how it evolved over time (Table 2). Clearly, the average educational level has increased over time, surely because of the democratization of education in the seventies. There is no clear North-South division there.

The picture is slightly different when we consider the average number of years of schooling of the youngest cohort (Figure 3). As De la Croix and Vandenberghe (2004) note, the dualism North-South clearly emerges here. Four of the five Walloon provinces have a lower average educational level than the Belgian average. This suggests that Wallonia may have performed worse in raising the educational level of its youngest cohort. This is worth noting in the context of this paper as part of this cohort has been affected by the strikes of 1990.

We now look in more detail at the aggregate educational achievements by considering the relative shares of population with a university degree. Again, the comparison across cohorts should be enlightening. In particular, we compare the youngest cohort (25-34 years old) to the cohort just ten years older (35-44). Figure 4 shows clear and revealing trends: While the shares of people with a university degree were higher among the youngest cohort on average in Belgium, these shares were actually *lower* in two of Walloon provinces (Namur and Liège). In all

⁷ The tables correspond to those presented by De la Croix and Vandenberghe (2004). We refer to them for a detailed description of these statistics.

Flemish provinces, the youngest Flemish cohort had a larger fraction of people with a university degree than the older cohort. Figure 5 shows that the percentages of people with a higher vocational degree or first level university degree increased sharply in Walloon provinces and, in particular, in those two provinces where the shares of people with a university degree fell. Hence, these aggregate statistics suggest that Walloon students were more likely to enroll in higher vocational education than Flemish students.

To get some more insight at what may have happened in the French Community, we report statistics regarding the number of students enrolled in higher education (Figure 6). We both report the absolute numbers and growth rates. Student participation in higher education followed an upward trend over time in both higher vocational education and at university. But although they evolved closely together until 1990, their evolution seemed to have diverged since then. The growth rate of the population in higher vocational education increased substantially in 1991 (by 8%) and 1992 (by 12%), and fell down afterwards. Although the university population was growing at a relatively high rate in these years too (around 4%), there is clear break around these years. Student numbers remained quite steady after that. In the second half of the nineties and early two-thousand, student growth rates varied between -2 and 2%.

We now zoom on the numbers of first generation of students at university (Figure 7), which should give a better idea of why we observe these changes in growth rates around 1990. The number of first-year university students was following an upward trend until the beginning of the nineties, and then fell during the first half of the nineties and remained steady after that. Again, the break we observe seems to coincide with the timing of the strikes.

Finally, we report the success rates of freshmen enrolled at one of the universities of the French Community, according to the academic year of enrollment (Figure 8). We observe a substantial drop in the success rates of first-year university students in the academic year following the strikes (1991-1992). The success rate in 1991 is around 4 percentage points lower than the success rate in 1989 (which was then around 40%). The success rates seem to recover slightly after that, but remain substantially lower than their pre-1990 levels.

Summarizing, the aggregate trends suggest that the overall educational achievements of the French speaking population have deteriorated relatively to the Flemish speaking parts. The younger cohort has a relatively lower educational level and is less likely to have a university degree. We also observe a sharp fall in the success rates of first-year students at university, coinciding exactly with the timing of the strikes.

4. Empirical analysis

4.1. Data

We now turn to the empirical analysis. We use data from the PSBH (Panel Study on Belgian Households (PSBH)), which is a panel survey undertaken by a consortium of Belgian universities. There are 11 waves in the survey, from 1992 up to 2002. Our objective is to compare the labour market outcomes and in particular, the earnings of those who were hit by the strikes and those who were not. Given that only part of the country was affected, these strikes offer an ideal setting for a difference-in-differences approach.

4.2. Identification of the treated group

First, we need to *identify* those who have been hit by the strikes. As we mentioned above, only the schools in the French community have been affected by the strikes. We do not have precise information about where people attended schools in our sample, but the political organization of the country is such that it is very reasonable to assume that the large majority of people (probably more than 95% of the people) attend schooling in their own mother language.

Indeed, the linguistic regime in schools is determined by law and is part of the very delicate question of linguistic division in Belgium. The current linguistic border is from 1962, which attributed a “language status” to each Belgian municipality (Flemish, French, German or Bilingual as in the region of Brussels-capital). The language of the municipality determines the language of schools and administrative services. The labeling of each community as “French-speaking” or “Flemish-

speaking” was based on official census data on the most frequently spoken language. However, because of political pressures, the data used for the division of 1963 actually used information from 1947. Indeed, since 1961, questions about languages spoken have been forbidden from official national censuses. This probably resulted in a “wrong” labeling of some communities and created some uprising especially among the French-speaking people living in communities close to Brussels. The division has large implications for schooling, as people are obliged to enroll in schools teaching in the language of their municipality. Only those living in the region of Brussels-Capital or in one of 16 local municipalities with a special status⁸ can choose freely the school of their choice.

Hence, although it may be problematic for a few municipalities, it is very reasonable to assume that most Belgians do attend schooling in their own mother language. Therefore, we believe that the mother language is a good proxy for being potentially affected by the strikes.

In order to identify who was enrolled in secondary school at the time of the strikes, we use information on the date of birth. In theory, Belgian students should finish secondary school in the year where they turn 18.⁹ This means that those who were born in 1972 and after have been affected by the strikes with certainty. We should be careful though in identifying those who were not affected by the strikes. A substantial part of students lag behind in practice, such that it may be wrong to assume that those born in 1971 and before have not been affected by the strikes. The aggregate statistics from the French Community show that more than a third of students enrolled in *general* education (which includes around 90% of the population of students) lag behind by at least one schooling year. Around 10% of the students lag behind by two schooling years or more, and 5% by three schooling years or more. Those shares are substantially higher in technical and professional schools, where more than two-thirds lag behind by at least a schooling year.

⁸ The borders of the communities were defined in 1962, and each local municipality received an official language status. 16 communities where it was believed that there was a large presence of the other language group received special rights, in particular the rights to access administrative and educational services in their own language.

⁹ The legal rule regarding the age of schooling is such that all children should enroll in the first year of primary school in the year in which they turn 6. Schooling is compulsory until the age of 18 and the traditional scheme (primary and secondary levels) consists of 12 years of schooling.

Knowing this, we eliminated those born in 1971 from the sample, to avoid problems of misclassification.

Also, it is important that the only difference in treatments between the two Communities come from the strikes. There should be no other important change that would have affected a generation (born before 1970 or after 1972) differently in each community. We will discuss this at length when presenting the results.

The panel covers the period of 1992 up to 2002. In 1992, those who have been affected by the strikes would still be very young (20 or 21 years old maximum) and would therefore be in the early stages of their career or still enrolled in higher education. In our sample, the average age of first entry into the labor market is 20 years old, so the later years of the panel should be more informative about the actual educational and labor market outcomes of those who have been affected by the strikes.

We first consider the sample of the most recent wave (2002), such that the eldest people of the “treated” generation are at most 29 years old, which means that, on average, they have been on the labor market for 9 years or less. We restrict the sample to those individuals which have either French or Flemish as their mother tongue, excluding 161 individuals.

4.3. Summary statistics

We first consider the distribution of the population across mother languages and show how it relates to the region of residence. Our sample fits well the aggregate statistics in terms of languages spoken. We have 58% of native Flemish speaking and 39% of native French speaking. Table 4 shows the geographical distribution of people according to their mother tongue. The geographical clustering is striking: Almost all French speaking people are located in Wallonia and Brussels, while almost all Flemish speaking people are located in Flanders. This shows that Belgium has very little cultural mixing and shows that identifying the treated group by the mother language makes total sense.

More than 96% of the people in our sample have the Belgian nationality.

The share of people with a paid job is substantially lower among the young French-speaking than among the young Flemish-speaking and older generations. Only

43% of the young French-speaking people have a paid job, against 54% of the young Flemish-speaking people.

The educational achievements of the young French generation are also lower on average than those of the Flemish. The share of people who has obtained a diploma from higher education of any type (vocational or university degree) is 28% in the young French-speaking generation, against 33% among the Flemish-speaking.

Finally, the average net monthly income is lower among the young French generation in comparison to the young Flemish. The relationship is opposite for the older generations.

4.4. Strikes and earning capacity

We start the analysis by looking at the effect of the strikes on earnings. We have better data on net monthly wage incomes than on gross monthly wage incomes. Given that the income tax system is determined at the national level, differences in net monthly incomes across communities must correspond to differences in gross monthly incomes and, therefore, in earning capacity.

Table 5 presents the estimated coefficient of the interaction between being French speaking and being born after 1972, for different specifications. Note that the separate dummies for being French-speaking and being born after 1972 have both a significant and negative effect on earnings.

The results show that, on average, the young French speaking generation is earning significantly less. The estimated difference in earnings varies between 7 and 10%, which is quite substantial.

Including controls actually increase the magnitude of the effect, which suggests that the composition of the French speaking population seemed to have changed in a favorable way in terms of earning capacity.

We should be careful though when interpreting these results. We think of two possible alternative explanations for the relatively low earnings of the young French-speaking generation. First, given that the education system was split in 1988, differences in education policies constituted *de facto* different treatments of the younger generations of Flemish and French-speaking students. Also, the strikes in the French Community happened for a reason, French-speaking teachers were

complaining about a general deterioration of the quality of the schooling environment. So it could be that both communities did indeed face different situations and that the learning environment was less favourable in the French Community than in the Flemish Community. Second, we know that the macroeconomic conditions in the South deteriorated relatively to the North. It is well-known that young people are relatively more hurt by less favorable labor market conditions, so we should be careful that the effect we are capturing is most likely due to the strikes themselves and not to any other major change that could have affected the young French-speaking generation differently from the young Flemish-speaking generation.

One way of addressing this issue is to compare close generations. We know that only those born after 1972 have been affected by the strikes. Those born just a few years before (for example between 1964 and 1970) probably faced a similar situation in schools as those born just after 1972, but were not confronted with the strikes. We argue that if there is a significant difference in earnings between the generation hit by the strikes and the generation relatively close in age, it is much more likely that the difference comes from the strikes.

We therefore now construct a variable with three age categories: 1) Born before 1964, 2) born between 1964 and 1970, 3) born between 1972 and 1978. Again, we introduce interaction dummies between each of these categories and the mother language.

The results are reported in Table 6. The interaction effect between the period of birth and the mother language spoken is only significant for those born between 1972 and 1978. Hence, those born between 1964 and 1970 who presumably face relatively similar schooling environment and economic conditions are not systematically different across regions.

4.5. Strikes and having paid work

We now turn to the effect of strikes on labor market participation. We investigate whether the young French-speaking generation differs systematically in her propensity of having a paid job. The evidence suggests that they do. Table 7 reports the results of the DD estimates. When using the entire sample of the old generation

(all those born before 1970), we find being French-speaking and born after 1972 reduces the probability of having paid work by around 6%. However, the effect is only significant when we exclude controls for the type of education acquired.

We introduce the more refined variable for the period of birth. Although the estimated coefficient is again larger for the youngest generation, suggesting that it has been more affected than the generation born between 1965 and 1970, the effect is never significant (see Table 8). We can therefore not conclude that there has been a clear break in participation behavior that would coincide with having been hit by the strikes.

4.6. Strikes and educational achievements

The next question is whether the strikes had any impact on the educational choices of the young French-speaking generation. The aggregate trends suggest that the success rate in the first year has substantially dropped after 1990. Therefore, it seems worthwhile to investigate whether the strikes had any impact on higher education achievements. We constructed a dummy variable equal to 1 if the highest diploma obtained is a higher education diploma and equal to 0 if it is a lower-level diploma.

The results of the DD estimates are reported in Table 9. We find strong and robust evidence that the young French speaking generation is significantly less likely to have a diploma from higher education. The magnitude of the effect is around 10%. Again, we investigate whether this effect truly reflects a break coinciding with the timing of the strikes or reflects a trend that was already present. We report the results with the refined categories of birth dates (see Table 10). We find that the educational achievements of the youngest generation (born between 1972 and 1977) are significantly lower than those of the middle generation (born between 1964 and 1970) and of the control-group generation (born before 1964). Thus, the fall in educational achievements we observe in the French speaking part does not seem to reflect a clear trend, but seems to coincide with the period of the strikes.

4.7. Robustness checks

Our results so far clearly rely on our strategy of identification of the “treated” group. Since we do not exactly know *who* was really affected by the strikes, we experimented with a series of alternative variables to check the robustness of our results.

First, we used the variable based on region of residence instead of mother language. As we mentioned earlier, there is a close relationship between the two so we would not expect the results to be dramatically different.

The results are very similar¹⁰. The DD-estimates show that the gap in earnings between the young French and young Flemish is 10% larger than the one between the old French and old Flemish generations. Also, we find no evidence of a general trend, i.e. the generation close in age (born between 1964 and 1970) is not systematically different than the one born before 1964. The negative difference-in-differences only appears for the youngest generation, i.e. the one that has been affected by the strikes.

The results are also remarkably similar regarding the probability of having paid work and the probability of having a higher education diploma. Again, we find evidence that the young generation living in Wallonia and Brussels is less likely to have a paid job and a diploma from higher education. The effects are of the same magnitude as when measured with the language variable.

The main concern remains that the young generation faced a different schooling and / or macroeconomic environment. We cannot be certain that comparing with a generation closer in age wipes out the issue entirely.

We therefore experimented with smaller age categories. The problem is then that the size of the “treated” sample shrinks and the identification relies on less than 100 people, which we see as problematic as well.

We restricted the sample to those born between 1967 and 1970 on the one hand and those born between 1972 and 1975. All the effects we found earlier survived but remain strongly significant only for the earnings variable. According to our estimates, the strikes have lead to a reduction of 11% in net earnings, which confirms the estimate we found earlier.

¹⁰ The regression results are available upon request.

It is hard to think of any other plausible explanation for this substantial change in earnings capacity across people so close in age. We therefore argue that the teacher strikes is the most plausible explanation for this substantial change.

5. Conclusion

This paper uses unique evidence on the effect of teacher strikes on educational attainment and labor market achievements. We use a long period of strikes in Belgian French-speaking high-schools in 1990 as an instrument to measure both the returns to schooling and of teacher absenteeism on the long-term achievements of students.

The strikes resulted in seven months of almost no schooling in French-speaking schools and, therefore, constitute a natural experiment which effectively reduced the amount of human capital accumulated by one generation.

We use data from the PSBH (Panel Study on Belgian Households (PSBH)) and use the most recent wave (2002) to measure the effects of strikes on educational achievements and labour market performance of students.

We find that the strikes had a large negative effect on the young French-speaking generation, both by reducing the overall educational attainment and the earning capacity. Hence, students do not seem to have succeeded in compensating for the losses in terms of schooling due to the strikes. They also do not seem to catch up. More than 10 years later, they earn 10% on average than the young Flemish-speaking generation.

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Table 1 - GDP/capita in 1990 GK\$

	Belgium	Brussels-Capital	Wallonia	Flanders
1980	14,467	23,827	11,921	14,250
1990	17,194	26,152	13,841	17,589
1995	18,308	27,700	14,628	18,857
2000	20,042	30,324	16,014	20,643

Source: OECD regional statistics

Table 2 – Average number of years of schooling (25+)

	1961	1991	2001
Antwerp	6.56	9.09	10.16
Limburg	6.25	8.96	9.74
East Flanders	6.12	8.94	9.98
West Flanders	6.32	8.93	9.9
Flemish Brabant	6.57	9.53	10.41
Brussels-capital	7.62	9.26	10.31
Walloon Brabant	7.06	10	11.03
Namur	6.73	9.19	10.17
Luxembourg	6.27	8.98	9.72
Liege	6.87	9.08	10.09
Hainaut	6.37	8.72	9.77

Source: De la Croix and Vandenberghe (2004), based on Census data.

Table 3 – Percentage of the population with a university degree (2001)

	25-34	35-44
Flanders		
Antwerp	17.3%	12.30%
Limburg	11.54%	8.70%
East Flanders	12.76%	8.08%
West Flanders	15.48%	11.24%
Flemish Brabant	22.07%	15.22%
Brussels-Capital	27.61%	24.38%
Wallonia		
Walloon Brabant	24.11%	21.48%
Namur	9.42%	13.45%
Luxembourg	14.48%	8.21%
Liège	9.47%	10.13%
Hainaut	9.71%	6.88%
Belgium	16.45%	12.91%

Source: De la Croix and Vandenberghe (2004), based on Census data.

Table 4 – Summary statistics of treated and non treated groups

	Young French-speaking (born after 1972) (= treated)	Young Flemish-speaking (born after 1972)	Old French-speaking (born before 1972)	Old Flemish-speaking (born before 1972)
Living in Flanders (%)	3.45	99.50	2.87	98.36
Female (%)	53.20	49.92	53.22	52.61
Belgian (%)	96.31	99.33	96.27	99.06
Working (%)	43.35	54.10	51.28	55.98
Higher education diploma (%)	27.96	33.50	34.49	29.96
Average age	23.39	23.19	53.38	52.26
Average net monthly earnings (BEF)	43,944	46,834	61,095	57,227

Table 5 - Strikes and earning capacity – DD estimates (1)

	(1)	(2)	(3)
Dummy French speaking	.019 (.98)	.009 (.52)	-.019 (1.17)
Dummy After 1972	-.230*** (9.17)	.081* (1.83)	.060 (1.55)
Dummy After 1972 X French speaking	-.068* (1.64)	-.084** (2.16)	-.100*** (2.90)
Controls for individual characteristics	No	Yes	Yes
Controls for highest diploma and sector of occupation	No	No	Yes
N. observations	1551	1550	1536
Adjusted R-squared	.096	.304	.259

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Table 6 - Strikes and earning capacity – DD estimates (2)

	(1)	(2)	(3)
Dummy French speaking	.015 (.69)	.008 (.40)	-.015 (.82)
Dummy 1964– 1970	-.142*** (5.58)	.029 (.81)	-.004 (.14)
Dummy 1972 – 1978	-.242*** (8.53)	.087 (1.23)	.031 (.50)
Dummy 1964-1970 X French speaking	.006 (0.14)	-.001 (.02)	-.014 (.41)
Dummy 1972-1978 X French speaking	-.052 (.045)	-.053 (1.23)	-.061* (1.61)
Controls for individual characteristics	No	Yes	Yes
Controls for highest diploma and sector of occupation	No	No	Yes
N. observations	1478	1477	1463
Adjusted R-squared	.095	.165	.408

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Table 7 - Strikes and participation – DD estimates (1)

	(1)	(2)	(3)
Dummy French speaking	-.046*** (2.66)	-.041** (2.08)	-.052** (2.47)
Dummy After 1972	-.010 (.44)	.291*** (5.81)	.224*** (4.16)
Dummy After 1972 X French speaking	-.061* (1.68)	-.060* (1.66)	-.023 (.58)
Controls for individual characteristics	No	Yes	Yes
Controls for highest diploma and sector of occupation	No	No	Yes
N. observations	4646	4645	4599
Pseudo R-squared	.003	.445	.482

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Table 8 - Strikes and participation – DD estimates (2)

	(1)	(2)	(3)
Dummy French speaking	-.045** (2.37)	-.033 (1.30)	-.052** (2.00)
Dummy 1964– 1970	.381*** (14.25)	-.012 (.24)	-.033 (.62)
Dummy 1972 – 1978	.350*** (11.58)	-.011 (.12)	-.056 (.60)
Dummy 1964-1970 X French speaking	-.034 (.61)	-.052 (.90)	-.056 (.92)
Dummy 1972-1978 X French speaking	-.088 (1.54)	-.080 (1.37)	-.040 (.63)
Controls for individual characteristics	No	Yes	Yes
Controls for highest diploma	No	No	Yes
N. observations	4115	4114	4076
Pseudo R-squared	.094	.459	.500

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Table 9 - Strikes and higher education – DD estimates (1)

	(1)	(2)	(3)
Dummy French speaking	.047*** (2.92)	.060*** (3.64)	.057*** (3.43)
Dummy After 1972	.042* (1.95)	-.152*** (6.43)	-.153*** (6.43)
Dummy After 1972 X French speaking	-.096*** (3.00)	-.104*** (3.35)	-.102*** (3.23)
Controls for individual characteristics	No	Yes	Yes
Controls for highest education of parents (dummies)	No	No	Yes
N. observations	4600	4599	4498
Adjusted R-squared	.002	.035	.035

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Table 10 - Strikes and higher education – DD estimates (2)

	(1)	(2)	(3)
Dummy French speaking	.042** (2.27)	.061*** (3.21)	.060*** (3.15)
Dummy 1964– 1970	.188*** (7.09)	.002 (.07)	.011 (.40)
Dummy 1972 – 1978	.270*** (8.72)	.002 (.07)	.005 (.13)
Dummy 1964-1970 X French speaking	.040 (.91)	.025 (.58)	.013 (.29)
Dummy 1972-1978 X French speaking	-.065 (1.46)	-.075* (1.71)	-.076* (1.71)
Controls for individual characteristics	No	Yes	Yes
Controls for highest education of parents (dummies)	No	No	Yes
N. observations	4077	4076	3989
Pseudo R-squared	.033	.066	.068

T-statistic is between brackets, * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Individual characteristics include: age, age-squared, gender and a dummy for Belgian nationality.

Figure 1 – Political organization of Belgium

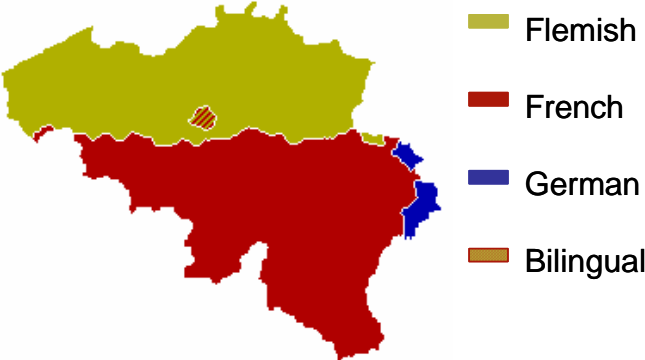
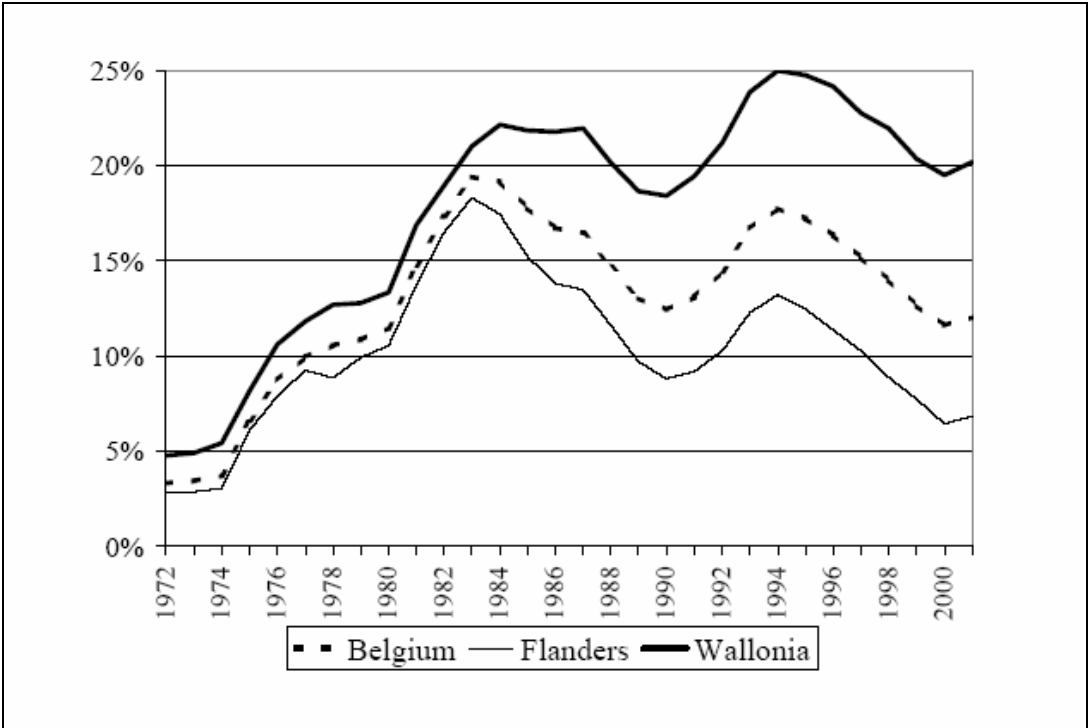
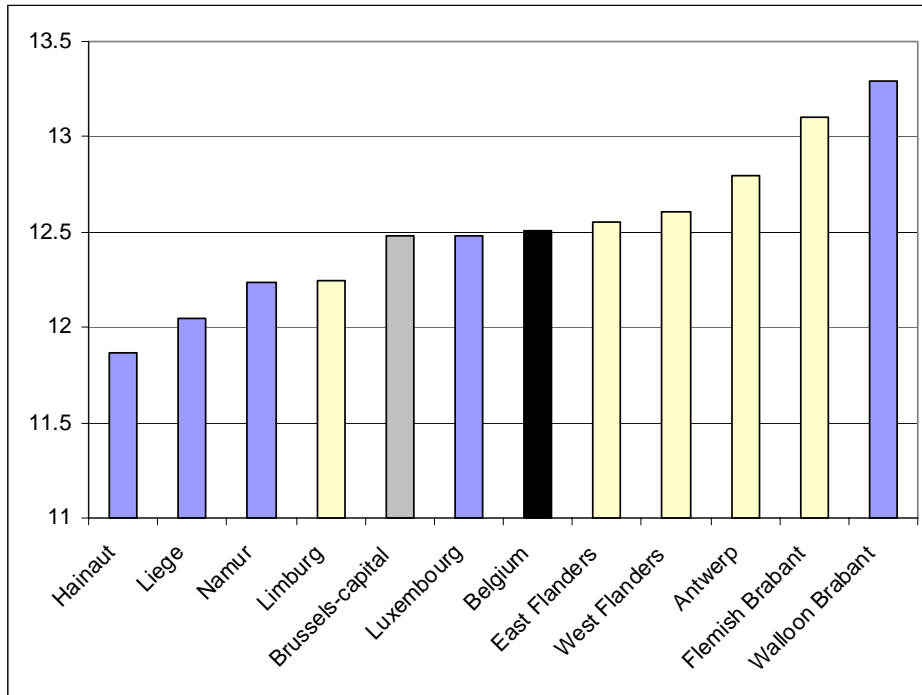


Figure 2: Regional unemployment rates



Source: Dejemeppe and Saks (2002)

Figure 3 - Average number of years of schooling (2001)



Source: De la Croix and Vandenberghe (2004)

Figure 4 – Shares of the population with a university degree

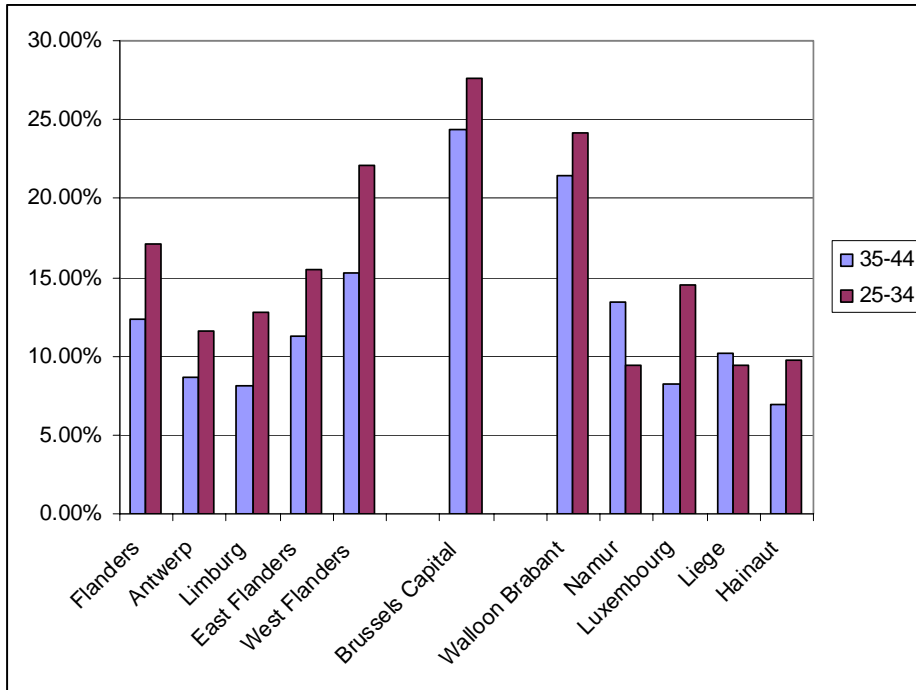


Figure 5 – Shares of the population with a higher vocational or first-level university degree

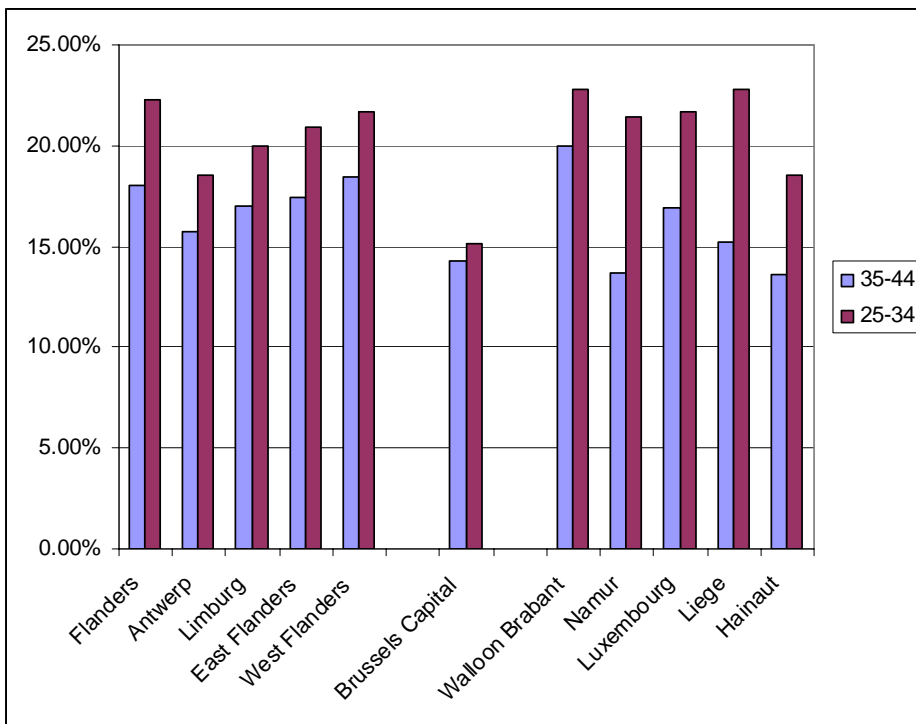
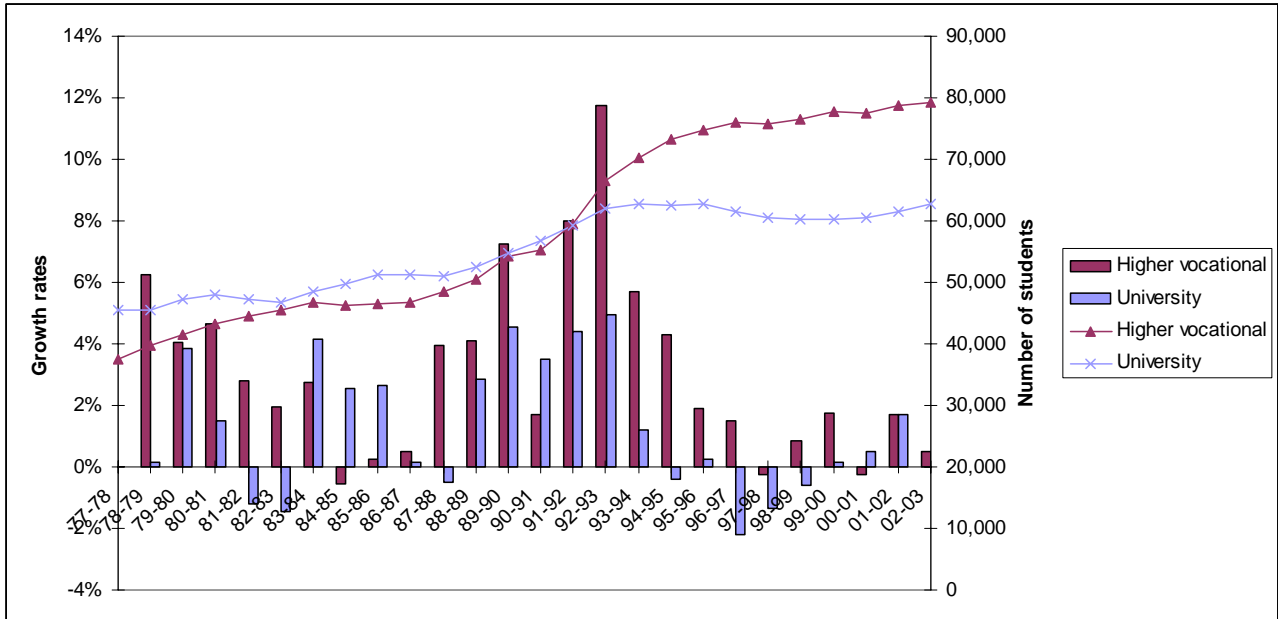
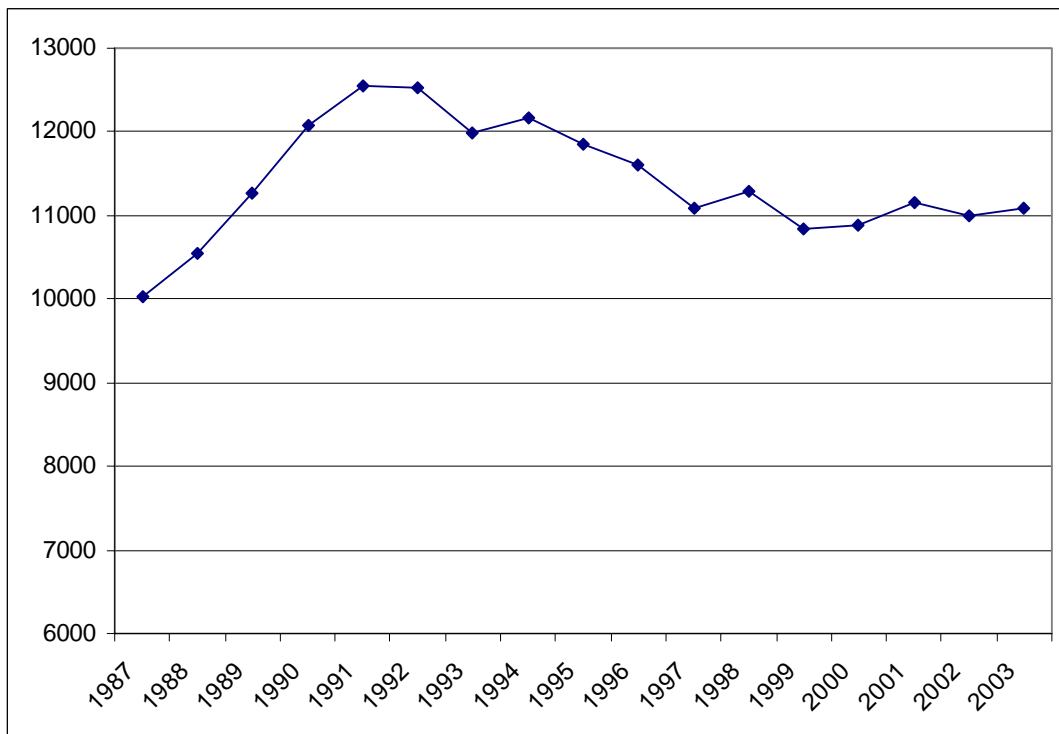


Figure 6 – Total number of students enrolled in higher education



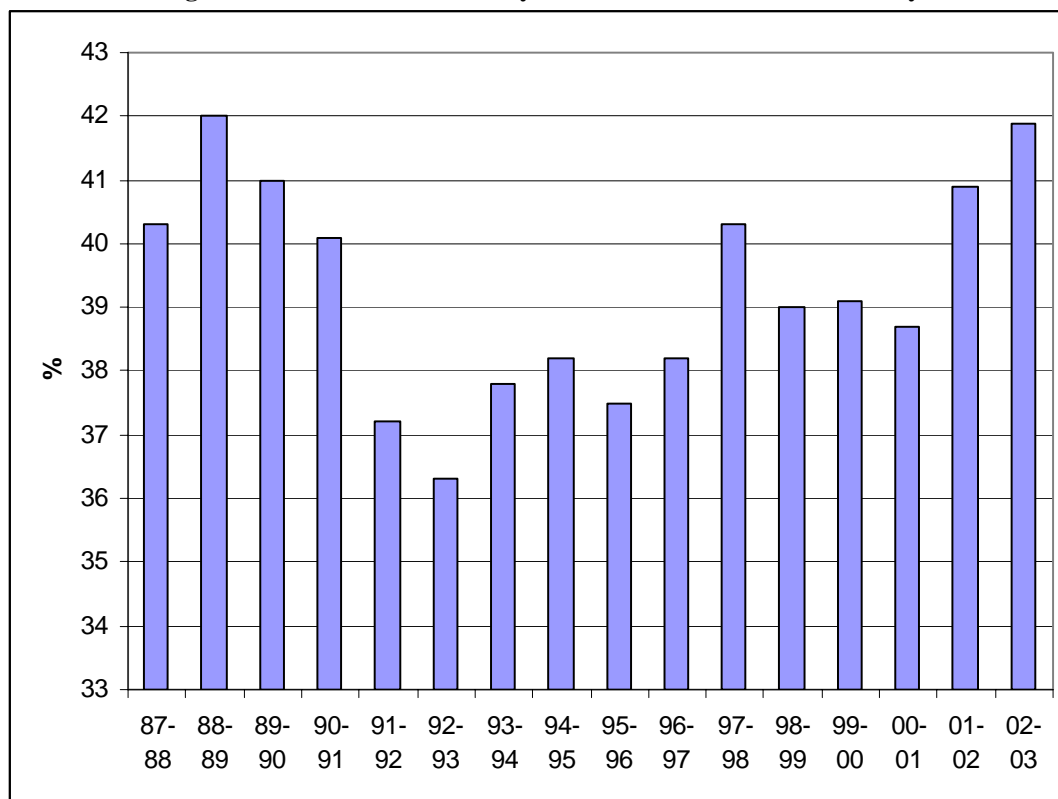
Source: French Community Statistics

Figure 7 - Number of first-year students enrolled at university (first generation)



Source: Cref (Conseil des Recteurs des Universités Francophones de Belgique)

Figure 8 - Success rates of first-year students enrolled at university



Source: Cref (Conseil des Recteurs des Universités Francophones de Belgique)