

Effects of National Policies on the Demand for Music Education: Evidence from Belgium

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Abstract

In most countries, non-professional and pre-professional music education falls under non-compulsory schooling, and is mainly provided and regulated by music schools. In Belgium, these schools have been publicly subsidised for years, until a fee system was introduced at the beginning of the 1990s. This measure was part of a reform which aimed to improve the organisation and quality of supply. However, it raised broad criticism and fear that attendance would significantly fall. The purpose of this paper is to test this main assumption. Data have been collected for the period 1990-2002 for the almost one hundred music schools in the French-speaking region of Belgium. Information has been completed with socio-economic aspects of the population. The relations between attendance, tuition fees, social and qualitative factors, and competition with private schools are also studied. The results obtained lead to the main conclusion that fees have not affected the overall and especially loyal student population but possibly discouraged poorer and older new entrants.

Keywords: Socio-economic aspects of arts education; Music schools; Empirical analysis of policy.

1 Introduction

In most countries, music and arts education is not part of compulsory education, leaving only spare time for these disciplines. In most European countries, non-professional and pre-professional (i.e. before conservatories) music education (for children and adults) is mainly provided and regulated by public or publicly subsidised music schools. In 1992, their students represented about 7.5 per cent of the higher education population in France (French Ministry of Culture and Francophony, 1993), and about 4.2 per cent of the higher education population of French-speaking Belgium.

Despite a wide branch of economics specialised in education, the economic literature on arts education as such is practically non-existent. The very few studies that do exist have been concentrated on the impact of arts education on arts consumption (Finocchiaro Castro, 2004). In particular, public support to cultural education can be considered an alternative to subsidies for arts consumption (Champarnaud, Ginsburgh and Michel, 2002).

Contributions to the analysis of arts education remain bound to other disciplines of social science, such as sociology, management, behavioural science, philosophy and, of course, education. In terms of ‘benefits beyond the realm of the arts’, most recent behavioural research validates the premise long-held by promoters of the arts concerning a positive linkage between early music instruction and child cognitive development (Bilhartz, Bruhn and Olson, 2000: 615, 633). Furthermore, and of particular importance for cultural professionals, it is shown that music, theatre and other arts lessons given to children will positively affect the corresponding cultural consumption by the same individuals during their adulthood (Orend, 1989; Bergonzi and Smith, 1996; Kracman, 1996). For adults, music education can represent a practice of entertainment, and a way of socialisation (Percy, 1992). Scientists, in particular, would find it useful to learn the mechanisms underlying the construction of art works (Elgin, 2002). Ultimately, active arts exposure has a positive effect on the overall economy (Florida, 2004).

In Belgium, music schools belong to part-time secondary arts education. In French-speaking Belgium, these schools have been essentially free of charge until 1993 when a tuition fee was introduced. This raised economical, administrative and ethical issues.

The fee was part of a broader official measure aiming to improve the entire system of part-time arts education. The two main objectives of this reform were: (i) updating and redefining subsidy quotas allocated to schools, in addition to increasing the flexibility of the underlying rules and (ii) improving the planning of supply and development of pedagogic content. The latter, in particular, implied the reorganisation of courses into four main segments, depending on student age (young or adults) and professional aim (non-professional vs. professional/preparatory to conservatory of music) (Lebrun, 1992). The overall rationalisation was expected to improve the distribution of funds across schools (Moreau, 1992).

Despite the fact that the government justified the fee as a (partial) measure to finance the reform and ‘to make the sector and its users responsible’ (Moreau, 1992: 1), its introduction engendered quite heated reactions among music pupils, their families and educators, who protested that it would cause a drop in both demand and supply of music education (Tulkens, 1993).

This paper aims to study the impact of this change in tuition policy on the demand for music education in Belgium. In particular, it will investigate whether the introduction of the fee affected attendance in terms of its socioeconomic characteristics. It will also look at the fee structure (by age categories), and whether persistence patterns in the demand exist. Section 2 will briefly present the national system of music education, focusing on the French-speaking Community, and its recent history of policy reforms, and Section 3 will introduce the panel. Section 4 will present and discuss different model specifications used to analyse the impact of policy on the demand for music education. Empirical results will be discussed in Section 5. Finally, Section 6 will conclude the paper.

2 Music education in French-speaking Belgium and its recent reforms

In the last decades, educational matters and competencies have been the object of frequent administrative revisions in Belgium. Since 1989, the French-, Dutch- and German-speaking Communities of Belgium have been the public administrations responsible for educational and cultural policy in the three main linguistic areas of the country (Music Council of French-speaking Community of Belgium, 1990: 31).

Music schools – contrary to totally private institutions – are subsidised at about 95 per cent by the French-speaking Community (Chleide, 1993). Their mission is to organise an education of so-called ‘socio-cultural promotion’ in the domains of music, choreography, and ‘art of speaking’ or theatre. This type of education belongs to the artistic secondary part-time education. As Giot (2002: 20) describes it, music schools have a ‘double function’: they ‘provide a basic training, contributing to culture and citizenship’, and ‘form autonomous music amateurs of good level’; and they ‘prepare pupils to pursue their music studies at higher levels’.

The great majority of music schools are ‘municipal’, and the rest are ‘free’. In the former, the municipality is the ‘competent authority’ for the school ‘with respect to the subsidising authority, the nomination of the director, teachers and administrative personnel, the respect of subsidising rules, the application of the law for the organisation of courses ...’. On the other hand, the competent authority ‘has limited financial responsibility, connected with the management of the building(s), instrumental resources, pedagogic tools, and the partial taking over of the administrative personnel’ (Chleide, 1993: 1). Free schools lack the municipalities support.

Schools can be attended by both children and adults, with children enrolling from the age of 7 or even 5 (preparatory level). Two types of training are offered, non-professional, and preparatory ones (in order to enter the music conservatory, therefore especially for children). Courses are either individual or collective, depending upon the discipline and its methodology, even if recent trends stress the collectivisation of courses. They are part-time, usually in the afternoon or in the evening, and at the week-end (Music Council of French-speaking Community of Belgium, 1990: 178). In general, they do not exceed four hours per week.

Music schools and conservatories share some of their own teachers (Giot 2002: 21). A minority of music schools (previously only academies) also collaborate with one or more secondary schools of the same district, by providing music classes in the context of arts humanities (by one hour per week during the first two years of the secondary programme) (Music Council of French-speaking Community of Belgium, 1990: 199, and Wangermée, 2000: 205).

Music education is also supplied by private schools (usually non-profit organisations) and by single teachers. This segment of the market is characterised by a degree of product differentiation. In addition to supplying classes that are similar to those provided publicly, private schools frequently offer less common disciplines and/or teaching methodologies. Private schools are usually more limited in number and are subject to less binding requirements in terms of teacher qualifications.

Until 1992, there were essentially no enrolment fees for music schools (Music Council of French-speaking Community of Belgium, 1990: 178). Each school was subsidised on the basis of hours taught, for a total weekly amount of about 27,000 hours (school average of 287 hours), and a public cost of about 1.8 billion BEF (almost 45 millions EUR) per year.

A major problem in school subsidising was that, at the end of 1992, each school's funding quota was still the same as ten years prior, without reflecting any changes in the distribution of the student population. This crucially resulted in funding disparities between schools. For example, in 1992, for every 1,000 students enrolled, schools were obtaining anywhere between 220 and 565 subsidised hours per week (Chleide: 1994).

Blocked quotas did not prevent schools from accepting further students. As stated in AEMS (2001: 8), 'several schools accepted (fostered) supernumerary in some classes...., for different reasons (non negligible financial contribution to the competent authority via a complementary tuition fee, skimming of students, teachers' sake of protection of their own job in case of dropout,)' Nevertheless, after an inquiry carried out by the Association of Subsidised Music Schools (AEMS), at the end of the 1980s and early 1990s waiting lists varied between 5 per cent and 40 per cent of enrolled students.

At the beginning of the 1990s, a reform of music schools was proposed. Its main purpose was to improve the quality and the organisation of supply, including the redefinition of its mission and major goals. The reform also stipulated the introduction of a fee with the stated purpose to finance updating of the quotas of hours taught, and to support the whole reform and its new foreseen pedagogic activities.

The fee was introduced in the 1993-94 academic year (Order 02-03-1993): 1,500 BEF (37.18 EUR) for students aged between 12 and 17 years included and 4,500 BEF (111.55 EUR) for those older than 17 years. For pupils under 12 years, and/or with at least two brothers/sisters already enrolled in an art school, and for those already enrolled in art humanities (in high school) or in another art school, attendance remained free. The same applied to students who were fully unemployed, or to those receiving a guaranteed minimum income benefit.

In the 1997-98 academic year, the fee for pupils under 18 was raised to 2,000 BEF (49.58 EUR) and that for adults to 5,000 BEF (123.95 EUR) (Order 07-10-1997). This represented an increase of 33 per cent and 11 per cent respectively of the initial fees introduced in 1993-94. Adult students enrolled in part-time secondary schools, full-time schools or socio-promotional schools were allocated the right to a reduction of 2,000 BEF.

The idea was to have the fee cashed by the French-speaking Community and to redistribute 60 per cent of it to schools. The expected benefit to schools was 60 million BEF (nearly 1.5 million EUR, the equivalent of 60 full-time teachers' annual gross salaries), that is 60 per cent of the 100 million BEF collected in fees (nearly 2.5 million EUR). Given that the total cost of this type of music education was about 2 billion BEF (almost 46 million EUR, previously totally subsidised), fees would contribute by only 3 per cent ca. (Moreau, 1992).

It is worth considering that, before (and after) the introduction of the fee, there was an already widespread practice among schools of charging their students a (sometimes) 'optional' financial contribution. This was intended to help schools cover the costs of facilities, courseware and music instruments, or, as for free schools, to compensate the missing public subsidies. This unofficial contribution varies considerably across schools, and was asked of every student, without any particular age distinction. A very rough estimate positions it in a range of 5-25 EUR for municipal schools, and up to 125 EUR for free schools.

Eventually, the introduction of the fee would affect more free than municipal schools. For example, at the beginning of the 1990s, the free school of Liège-Grétry already charged its pupils 4,000 BEF (almost 100 EUR) per year. With the fee introduction, the school was faced with the problem of how much to charge their students, maintaining its budget and cashing only one part of the official fee (Renette, 1994).

Finally, note that at the beginning of the 1990s, the cost of a year of two hours a week of private tuition was estimated at around 7,500 BEF (186.92 EUR) per student (Lebrun, 1992: 11), showing a higher efficiency with respect to the public school (which had average cost of about 600 EUR).

The main 'ethical and administrative' (Chleide, 1993: 1) criticism or fear at the time of the reform was that the financial benefits to schools would have been paid *de facto* by a reduction of the student population and, ultimately, by a loss of teaching positions. In addition, teachers faced a decrease in total hours taught that would be brought about by the pedagogic reorganisation and collectivisation that would later be introduced in 1998 (Moreau, 1992).

After the tuition fee reform, and the updating of subsidising quotas in 1998, other reforms were undertaken (Giot and Baye, 2003a and 2003b, and Giot, 2002). The main one, by Order 2-6-1998, mainly introduced organisational and pedagogic changes. A major change consisted in the semi-collectivisation of non-professional courses, justified by social and financial reasons. In the meantime, the basis for teachers' salary had been changed from the number of assigned pupils to the time spent in class, contrary to the determination of subsidising quotas of schools, rebased on the number of pupils (Giot, 2002).

Reforms in the official network were accompanied by the entry into the market of new private schools proposing alternative pedagogic approaches, advertised as more 'collective, mobilising and creative' (Giot 2002: 26), even if with less certified teachers than in public schools (Percy, 1992).

If we look at aggregate data of music schools population for the 1980-2002 period in Table 1, we can see a quite stable population in the first half of the 1980s. A decline in student numbers was registered right after and just before the introduction of the fee system. During the 1990-2001 period, the student population was relatively constant. The slight decrease in the year of the introduction of the fee (1993-94) was immediately compensated over the following two years, before the pedagogic reorganisation that occurred in 1998-99 (and, according to Grafé (1990), already under discussion and experimented in a few schools since 1990-91).

Table 1: Total student attendance (all schools) 1980-2002 – aggregate data

Academic Year	Attendance	$\Delta\%$	Academic Year	Attendance	$\Delta\%$
1980-81	79,854	-	1991-92	70,862	1%
1981-82	78,399	-2%	1992-93	71,436	1%
1982-83	79,726	2%	1993-94	68,920	-4%
1983-84	79,607	0%	1994-95	71,130	3%
1984-85	80,169	1%	1995-96	75,132	6%
1985-86	79,328	-1%	1996-97	74,178	-1%
1986-87	62,836	-21%*	1997-98	74,688	1%
1987-88	(no data)	-	1998-99	76,171	1%
1988-89	76,836	22%*	1999-2000	78,213	3%
1989-90	(no data)	-	2000-01	76,085	-3%
1990-91	69,915	-9%	2001-02	77,732	2%

Notes: (*) computed from most recent available data.

Therefore, at first sight there is not a negative and lasting impact of the introduction of the fee. The non negative trend would be consistent with the presence of waiting lists in many music schools (Giot and Baye, 2003a). Moreover, possible falls in the demand due to the introduction of the fee might have been limited, at least in the short run, by students' initial investments – notably, previous years spent in learning music and the purchase of music instruments and/or other class material. For example, at the end of the 1990s, about one half of teenage students owned one or more music instruments in Paris. Nevertheless, students do not seem sensitive to invest in a music instrument in the medium-long run (Percy, 1992, and Giot, 2002: 23).

What can be inferred about the composition of demand itself? Propensity for music education is also influenced by social origin, since more persistent or regular players come from families of musicians (Green, 2000). In addition, economically disadvantaged people and their families may be negatively affected not only by the direct education costs (Green, 1997, cited in Giot and Baye, 2003b, Card 12: 3), but also by indirect costs of transportation, accompaniment, and study support (French-speaking Green Party of Belgium, 2002).

Therefore, it is not straightforward to draw conclusions on the quantitative and qualitative impact of the reforms undertaken in music education.

3 The database

A panel has been collected for the student population of the 92 music schools of the official network of publicly subsidised schools in the French speaking regions of Wallonia and Brussels-Capital for the 1990-91 to the 2001-02 academic years.

Figure 1 maps out the distribution of music schools in the 74 municipalities of Brussels and Wallonia. This means that a municipality can host more than one, and up to 10 schools (or 11, before the merger), as in the case of Charleroi. Note that main concentrations are in Brussels (centre of the map), and in Charleroi (south of Brussels), while the presence of music schools in the southern part of Wallonia is relatively rare. 84 schools are municipal, 7 are free, and 1 is religious (Saint Grégoire

in Tournai). Especially after the 1998 Order, which has favoured the financing of existing schools over the establishment of new ones (Chleide, 1998), many schools comprise an increasing and variable number of annexes in the same or nearby municipalities.

Figure 1: Distribution of music schools in Brussels and Wallonia

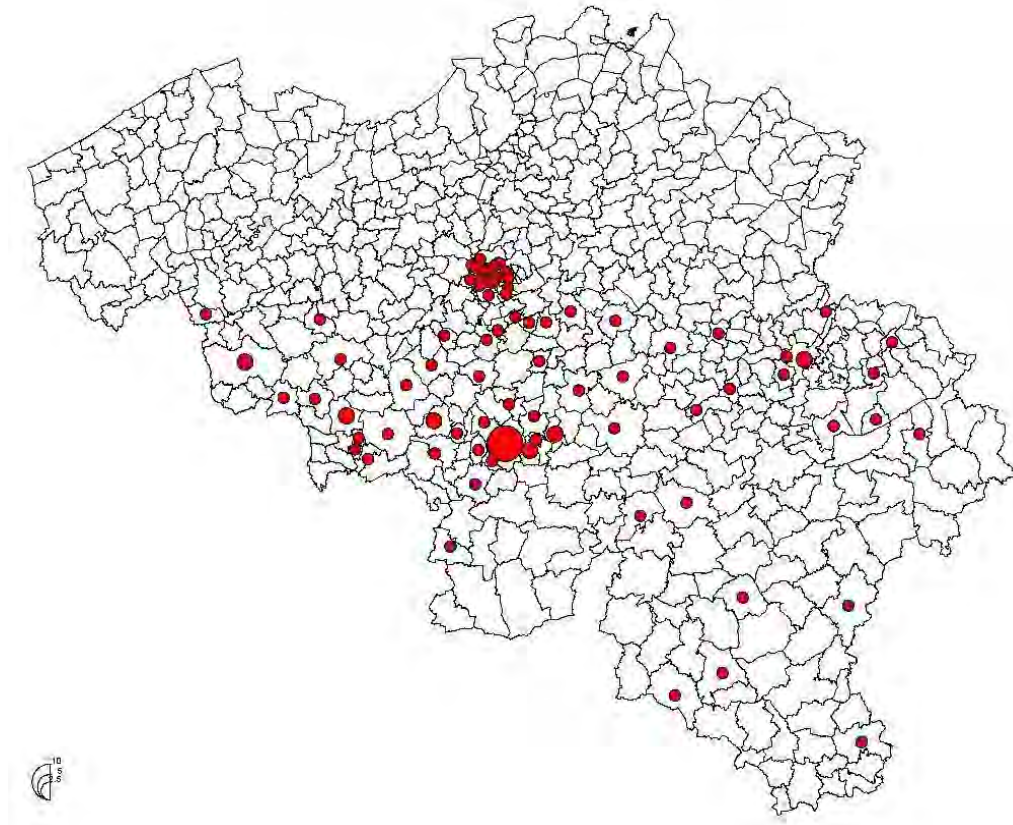


Figure 2 displays the yearly attendance levels in Brussels and the 5 provinces of Wallonia, collected by the Administration of the French-speaking Community of Belgium from 1990-91 to 2001-02. For each province, the number of schools is indicated in parenthesis.

Student attendance comprises music, theatre and dance students, where, on average, music students account for more than double of dance and theatre students considered altogether. Since attendance is computed in January, possible dropouts have already taken place earlier in the academic year. Unfortunately, data about age distribution or other demographic characteristics are not available for the whole period (Bodson, 1998: 9), nor about cohorts. Note, however, that in Brussels and in Wallonia the share of adults attending music schools may be considerable and even higher than that of children, and not necessarily in disadvantaged areas (Lebrun, 1992: 3, and Giot and Baye, 2003b, Card 13: 1), where music (and arts) courses can mean to fight criminality (Percy, 1992). Adult students may attain even 80 per cent of the student population, as in the Saint-Gilles (Brussels) municipal school in 1992-93. From available academic years (1999-2000 to 2001-02), we also know that pupils at the

preparatory level (therefore aged under 15 years) oscillated around 15,000 units, representing about 22 per cent of the entire student population. Overall, there were twice as many female as male students.

Figure 2: Music schools' students in Brussels and Wallonia, 1990-2002

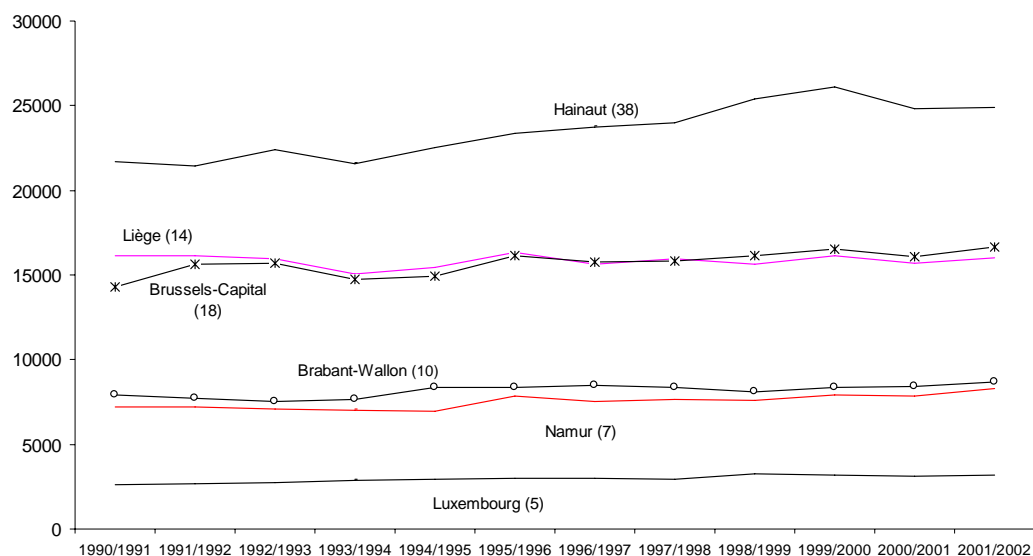


Table 2: Descriptive statistics

Variable (per school/municipality)	Mean	Std Dev	Min	Max
Yearly attendance	801.14	445.12	99	2,711
No. of teachers in 1990	29.30	12.51	12	83
No. of teachers in 2000	33.41	13.72	12	78
No. of types of classes in 1990	19.62	5.06	10	34
No. of types classes in 2000	19.70	5.66	6	36
No. of private schools in 1990	0.99	1.60	0	9
No. of private schools in 2000	1.04	1.68	0	6.5
No. collabt.s w/ sec. schools 1990	0.62	1.14	0	4
No. of annexes in 2000	2.15	2.83	0	14
Real ave. income (EUR, base 1996)	8,890	1,834	4,249	15,264
Population, Children	4,284	4,853	384	17,142
Population, Teenagers	3,685	4,189	346	15,456
Population, Adults	32,104	37,296	2,678	128,434
Population, Retired	8,911	10,707	687	36,887

Table 2 provides descriptive statistics for the main variables observed. As explained, yearly attendance includes three domains. Since information about income levels and age distribution of students is not available, we used yearly data on the general population of the municipalities hosting the music schools as proxies, assuming no mobility of students across municipalities. The panel was completed with qualitative aspects of music schools, such as the number of teachers and the number of types of offered classes (such as piano, violin, saxophone, voice, etc.), the numbers of

collaborations with secondary schools and annexes, and the quantity of private schools in or close (< 5 km) to the municipality hosting a given school. These data are available from the 1990 and 2000 censuses on music schools (Music Council of French-speaking Community of Belgium, 1990, and Wangermée, 2000). Unfortunately, data for private individual teachers are not available at all (Music Council of French-speaking Community of Belgium, 1990: 207).

4 Modelling the policy impact on the demand for music education

As we have explained, the demand for music education can be conditioned by socio-economic factors, such as income and social environment. It also implies an investment in initial training and material tools.

Green (1997, quoted in Giot and Baye, 2003a: 11), observed that for socially disadvantaged classes the lack of financial means is the main cause for not practicing music. The effects of learning music on human capital are socio-economically determined as well. Bilharts, Bruhn and Olson (2000: 630-631) found that children belonging to higher income families, when compared with less advantaged groups, show a higher cognitive development together with more out-of-class music treatment by their caregivers, resulting in a higher quality of in-class instruction time. Kracman (1996) and Orend (1989) show that outside-of-school lessons – typically reflecting the special interests and efforts of the family – have a relatively larger impact than in-school lessons for performing arts (rather like visual arts training on museum attendance).

Our main interest is to test whether there are differences in attendance behaviour between municipalities belonging to different groups of income (poor, medium, rich). Municipalities were quite stable in terms of income-group, since each yearly average income group tended to reflect period-average income group. Therefore, for our purpose, three major groups of average income of the municipalities hosting schools (and, by assumption, attendance) will be considered with respect to the considered period. More precisely, the ‘poor’ group comprises 33 schools in municipalities with average income lower than 7,985 EUR, the ‘medium’ one, 29 schools in municipalities with average income comprised between 7,985 and 9,200 EUR, and the ‘rich’ one, 30 schools in municipalities with average income higher than 9,200 EUR.

Similarly, possible differences in attendance induced by the policy reform and its fee structure by age (children, teenagers adults and retired people), will be tested through cross effects between year dummies and yearly levels of population by age groups in a specification apart.

Investment effects will be dealt with through a dynamic approach. As explained in Section 3, the length of the entire course would lead to assume a persistent demand for music education. In particular, students may continue for more than one year because of both the know-how and the monetary investment. The first one corresponds to the efforts spent in starting a brand new discipline (music), the second one to the purchase of courseware and (if not rented) of a music instrument. Despite the unavailability of information on cohorts, through the dynamic version of the model, we will try to capture the persistence effect.

The policy impact on music education is explained by the following model:

$$\ln STU_{it} = \alpha + \mu_i + \sum_{j=2}^3 \lambda_j \delta_{j,i} + \sum_{j=1}^3 \gamma_j \ln STU_{i,t-1} \delta_{j,i} + \sum_{j=1}^3 \sum_{k=1}^K \beta_{k,j} \ln x_{k,it} \delta_{j,i} + \sum_{j=1}^3 \sum_{\tau=2}^{12} \theta_{\tau,j} z_{\tau} \delta_{j,i} + v_{it}$$

where $STU_{i,t}$ is the attendance or student population of school i in year t , with $i = 1, 2, \dots, 92$, and $t = 1, 2, \dots, 12$. $x_{k,it}$ is the k -th time-varying characteristic, with $k = 1, 2, \dots, K$.

$STU_{i,t-1}$ is the lagged dependent variable, that is the observation on the same series for the same school in the previous year.

The group of dummies z_{τ} control for year effects, where z_{τ} takes the value 1 for the observation taking place in year $\tau = t$. Through the year dummies, we want to control for the presence of shocks in attendance that would be possibly caused by policy changes. In particular, we would like to know whether the drop in attendance in 1993-94 following the introduction of the fee (i.e. the $\theta_{\tau,j}$ coefficient for that year) was the same for any income group of the municipality.

The group of dummies $\delta_{j,i}$ control for the three groups of average income. Therefore, the $\beta_{k,j}$ and $\theta_{\tau,j}$ coefficients can be considered as cross effects between the three types of municipalities (poor, medium, rich, $j = 1, 2, 3$) and the other explanatory variables.

Time-varying explanatory variables explain the characteristics of demand, as well of supply. They include the logarithms of the following:

- The level of yearly real income (base 1996) in Euros per inhabitant of the municipality of school i . Assuming no mobility of students across municipalities, the independent variable should be positively correlated with pay attendance. Note also, that the coefficient of this explanatory variable represents income elasticity.
- The level of yearly population of the municipality of school i , considering the age categories of the fee: children ($5 \leq \text{age} < 12$), teenagers ($12 \leq \text{age} < 18$), and the rest (>18). The last fee category has been further divided into adults ($18 \leq \text{age} < 65$) and retired ($\text{age} \geq 65$), because of different consumption patterns (e.g., adults usually attend music classes more than retired people). Assuming no mobility of students across municipalities, we want to measure the different sensitivities of the four age groups to the introduction of the fee. We would expect a relatively positive relation between attendance and children (not affected by the introduction of the fee), and the opposite for adults (the most exposed to the introduction of the fee). Alternatively, this group of continuous variables can be crossed with year dummies, in order to directly test the effect of the reforms by the age/fee category.

Time-invariant dummies that describe schools (spread of activity in nearby annexes, variety or number of types of classes supplied, presence of private schools, presence of a conservatory of music, location in metropolitan area, whether the school

is free or municipal, etc.) may not fully capture schools' heterogeneity. Therefore, school-fixed effects, which accounts for the comprehensive effect of each school, would be a more appropriate model. This would include μ_i as a component of the error term $\varepsilon_{it} = \mu_i + v_{it}$ with $E(v_{it} v_{is}) = 0$ for $t \neq s$, and μ_i ranging from μ_2 to μ_{92} .

Since our model may contain too many parameters due to cross effects between the three income groups of the municipalities (poor, medium, high), the various types of population by age (children, teenagers, adults, retired), etc., it has been simplified as much as possible through restriction tests.

5 Empirical results

The main results are illustrated in Table 3 and Figure 3. Overall, the presence of cross effects of income groups is an outcome in itself, since it confirms that poor, medium-income and rich municipalities are accompanied by distinct attendance habits. Income-group dummies performed better than yearly income, whose coefficient is never significant, not even when we do not control for cross effects of income groups with other explanatory variables. Remarkably, when including its lag, attendance is better explained by cross effects between income groups and independent variables other than year dummies, such as population by fee or age category and school characteristics. As we will see, this is mainly due to the fact that the lag of the dependent variable captures the majority of the dynamic effects.

A second general result is that the fee negatively affected attendance only in the year of its introduction (1993-94). Afterwards, a rather positive trend followed. Figure 3 plots the percent variations on attendance from the estimated coefficients of the year dummies (with regard to 991-92 academic year), after having controlled for other demand characteristics. The general positive trend of attendance shown in Figure 2 is here enhanced.

As we have explained, prior to 1993-94 schools already asked of their students a financial contribution that varied from school to school. We also tried to evaluate the impact of the policy reform by fee category (static and dynamic models including cross effects between year dummies and population by age/fee category were estimated, without bringing significant results). Yet, we cannot conclude that the demand for music education is fee inelastic. As we have seen, waiting lists existed prior to the introduction of the fee. Therefore, the introduction of the fee may have simply absorbed the excess demand. Note also, that possible shifts of the demand curve are taken into account through demand controls (such as yearly income, yearly population by age, income-groups and time dummies).

Contrary to expectations, our estimates show a highly positive relationship between attendance and the adult population of lower income, which is the most affected by the introduction of the fee. This result might be interpreted in two ways: on average, attendance would be higher in relatively older and poorer municipalities; or, assuming that the age and income composition of a municipality reflects that of its school/s (no mobility of students across municipalities), the demand for music education would tend to be boosted by the most relatively charged category, that is poor adults. After having taken into account cohort or persistence effects, the portion of adults in low-

income municipalities has a decreasing impact over time. In other words, even if poor adults appear to be dedicated students, their effect on the growth rate of attendance tends to slowly diminish in the long run.

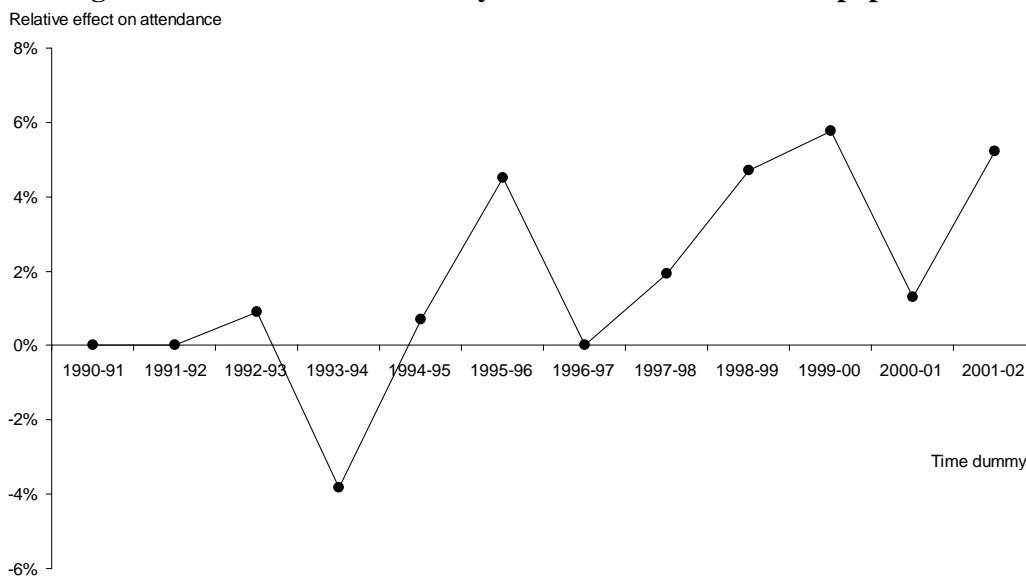
Finally, our results show the existence of a persistence effect in attendance. By including the lagged dependent variable in the regressors, we notice that the variation in student population is mainly explained by its previous levels. If past attendance increases by 100 per cent, current attendance increases by 60 per cent. As expected, the effects of schools' time-fixed characteristics (the presence of a conservatory of music in the vicinities, to schools' location in metropolitan areas, and whether they are free or municipal) are captured by the lagged dependent variable.

Table 3: Policy impact on music education

Dependent variable: ln (attendance)	coefficient	error
Lag (1) attendance	0.592*	(0.026)
Income	0.004	(0.097)
(Population) Children in Low-income municipality	-0.081	(0.164)
(Population) Children in Medium-income municipality	0.289	(0.162)
(Population) Children in High-income municipality	0.182	(0.144)
(Population) Teenagers in Low-income municipality	-0.262	(0.206)
(Population) Teenagers in Medium-income municipality	0.087	(0.162)
(Population) Teenagers in High-income municipalities	0.084	(0.165)
(Population) Adults in Low-income municipality	0.733*	(0.338)
(Population) Adults in Medium-income municipality	-0.767*	(0.280)
(Population) Adults in High-income municipality	-0.281	(0.342)
(Population) Retired in Low-income municipality	0.457*	(0.198)
(Population) Retired in Medium-income municipality	-0.257	(0.135)
(Population) Retired in High-income municipality	0.024	(0.113)
No. of disciplines & Low income	-0.083*	(0.039)
No. of disciplines & Medium income	-0.080	(0.052)
No. of disciplines & High income	-0.022	(0.064)
Constant	1.961	(1.867)
Time dummies	see Figure 3	
R ²	0.547	(0.981)
No. Obs.	1,012	

Notes: All continuous explanatory variables are log-transformed. For school effects coefficients are not shown, and overall R² shown in parenthesis). Coefficients marked with ** are significantly different from 0 at 99% level, those marked with * are at 95% level.

Figure 3: Estimated time-dummy relative effects on student population



6 Conclusions

Arts education contributes in a decisive way to the development of the skills necessary to know, appreciate and eventually create art and culture, favouring diversity. Despite its fundamental contribution to human and cognitive development and a sustainable cultural demand, arts and music education remain marginal in compulsory education and, overall, in public policies and funding. This empirical study has offered a unique opportunity for economic investigation to gather limited existing statistics and to test whether and to which extent public authorities could intervene in favour of music education.

We first illustrated how in the last fifteen years the French-speaking Community of Belgium represents a very interesting case study for policy-makers in the field of music education, where the system of public music schools was reorganised, and pedagogic changes were adopted. The initial period also included the introduction of a fee, raising fears and generating protests that the demand for music education would fall.

In order to substantiate this main concern, we collected a panel for the period 1990-2002 for the almost one hundred schools in Brussels and Wallonia, including socio-demographic aspects, as well as qualitative characteristics about the supply. By applying a dynamic model, we tested whether policy changes affected the demand for music education during the whole period. In particular, we controlled for the three main income groups (poor, medium, rich) of the municipalities hosting the schools, the fee structure and persistence effects.

Our findings were quite surprising. The adopted reforms saw indeed a rise in the general levels of attendance, despite the introduction of the fee. Contrary to expectations, poorer municipalities – theoretically the most affected ones – positively reacted to the introduction of the fee, even if with a decreasing trend in attendance.

We might conclude that demand generally withstood the introduced fee. Overall, the applied fee and its structure was not only compatible with the surplus demand and students' prior ability to pay for music tuition but also with a certain persistence or loyalty pattern of students and, finally, with non-competition from private schools.

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