Inter-regional educational discrepancies in Belgium. How to combat them?

Written for the Re-Bel initiative

Rethinking Belgium's institutions within the European Context

April 2010

V.Vandenberghe

Vincent.vandenberghe@uclouvain.be

UCL-IRES-Economics School of Louvain (ESL)

Acknowledgements

Some of the facts and views exposed in this document where first developed in a report written at the invitation of the Bank Degroof Foundation. We would like to express our gratitude to the Bank Degroof Foundation for its support. Others come from an article prepared for the 2007 edition of the "Congrès des économistes belges de langue française".

- the report can be downloaded at http://perso.uclouvain.be/vincent.vandenberghe/Papers/DegroofVF.pdf

- while the article (in French) is accessible at
http://perso.uclouvain.be/vincent.vandenberghe/Papers/Decrochage_Capital_Humain_Gouvernancef.pdf

Contents

FOREWORD

1. Good-quality education is crucial for individuals. The international evidence suggests that equiping youth with formal skills is key in putting them on a successful life and career track. But human capital and education are also important for nations and communities. Moreover, in a federal context like the Belgian one, characterised by: *i)* uniform wage/price formation mechanisms, *ii)* a strong aversion to income inequality and, *iii)* generous welfare transfers, combatting educational discrepancies across regions should also be viewed as a way to ensure the federation's long-term stability.

2. This text comprises three main sections. Section 1 adopts a long-term perspective regarding educational performance. It tries to trace the origins of the interegional educational attainment gap opposing the Flemish- and French-Speaking regions . Section 2 assesses the various (historical and contemporary) factors that could explain the inter-regional performance gap, whereas Section 3 discusses at greater length the likely role of school governance.

3. The text essentially shows that the performance gap between the Belgian regions started to materialised and become statistically significant probably as early as in the mid-1950s. Closing the gap is thus likely to take time. Turning to the reforms that could help achieve this goal, the text identifies *better (or at least more coherent) school governance* in the French-Speaking Community as a promising avenue.

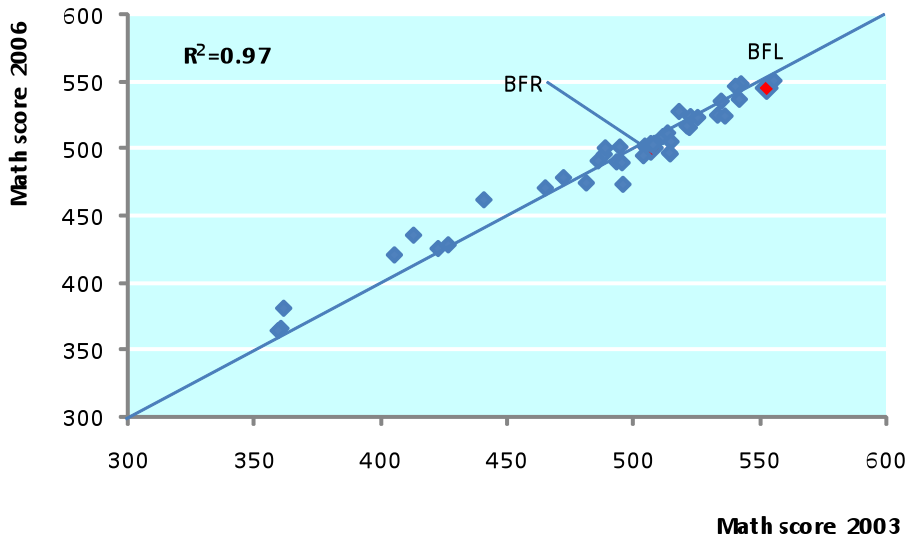
1. THE LONG-TERM EMPIRICAL EVIDENCE ABOUT INTER-REGIONAL DISCREPANCIES

1.1. PISA 2003 vs. 2006

4. At the aggregate level — that of a country or a sizeable community — educational outcomes evolve very slowly and gradually. The comparison of PISA[1] 2003 and 2006 country-mean scores in maths (Figure 1.1) provides a quick illustration of this simple idea. These aggregates barely changed in three years[2], both in absolute and relative terms, despite many policy initiatives by decision-makers dissatisfied with their position in the PISA 2003 league table.

Figure 1.1. **PISA 2003 and 2006 results**

Country mean scores in Mathematics



Source: PISA, OECD, 2003 and 2006

5. For instance, the poor results of the French-Speaking Community of Belgium highly publicised since the late 1990s due to the availability and also the growing popularity of international surveys measuring educational attainment in a comparable way (TIMSS[3], PIRLS[4], PISA), have been around for a long time; for much longer than most analysts usually assume. And the deterioration of the French-Speaking education system's effectiveness relative to that of Flanders or neighbouring countries has its roots in a quite distant past; well before the 1980s (with

1 The OECD's Programme for International Student Assessment.

2 The same could be said of standard errors measuring the inequality of attainment between pupils within each country.

3 Trends in International Mathematics and Science Study.

4 Progress in International Reading Literacy Study. Both TIMSS and PIRLS are developed and implemented under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

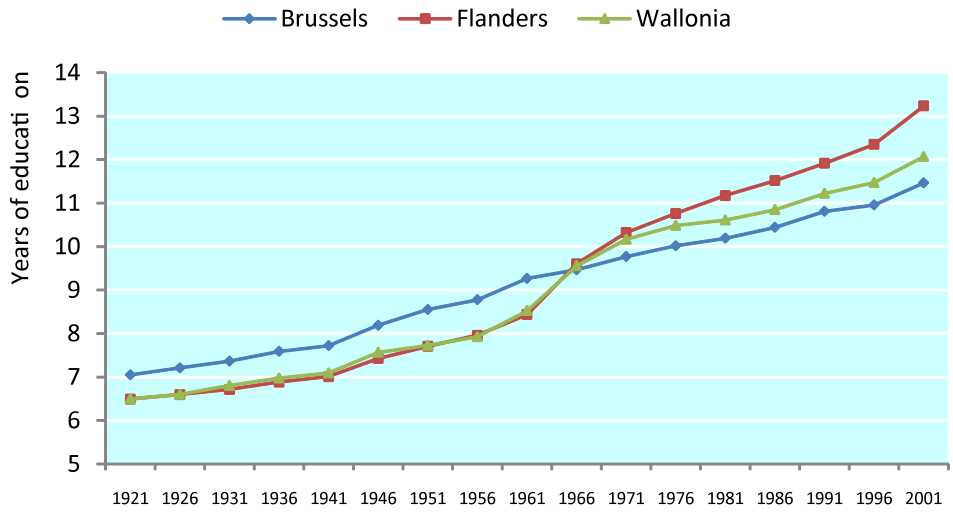
the introduction of the so-called "renové") or the1990s (with the complete devolution of educational policy to the Communities and the adoption of a block-grant[5] financing mechanism).

1.2. Average number of years of schooling as captured by the Belgian census

6. Figure 1.2, computed with Belgian census data, suggests that the gap between Flanders and the two other regions in terms of the educational attainment of young adults (25-29) became significant in the early 1970s. However, an educational attainment gap characterising those aged 25 or more reflects differences in the quality of education that probably opened up 15 to 20 years before, when these individuals had their first experience with formal education. The tentative conclusion is that the performance gap between the Belgian regions started to materialised and become statistically significant probably as early as in the mid-1950s.

Figure 1.2. **The long-run dynamics of human capital accumulation in Belgium and its regions**

Average number of years of education. Adults aged 25-29



Reported values are based on the self-reported highest education attainment of individuals concerted in a number o successfully completed years of education. Past attainment of young adults are proxied by attainment of their contemporary seniors.

Source : Belgian census 1961,1991, 2001

1.3. Relative score in maths of teenagers: the international comparison

7. Critics would argue that the above census-based data are too quantitative. They define performance with the number of years of education. It could be more relevant (and convincing) to consider how (cognitive) skills have evolved over time. Reliable evidence is limited in this respect — Belgium, unlike France or the US has never seriously invested in a proper set of attainment/score indicators that statisticians could use to build time series. The few data available come for international surveys organised by the IEA (or more recently by the OECD). They cover

[5] In a federal system of government, a *block grant* is a large sum of money granted by the national government to a regional/local government with only general provisions as to the way it is spent.

the score of secondary school pupils. Similar surveys were never developed for tertiary education and Belgium and its Communities have rarely participated to those covering primary education.

8. Table 1.1. shows the evolution of the (relative) average math score for the two linguistic groups between 1965 and 2000. Reported values are standardized data points (also called Z scores). They correspond to the difference between the Community' average score and the international mean, then divided by the international standard deviation. The results just depict how many standard deviations the Community's score is away from the international mean. A positive value of 1.463 for the French-Speaking Community in 1965 suggests that its pupils largely outperformed (by more than 1.4 standard deviation) those of the other participating countries. The Flemish-Speaking Community did not participate to the survey in 1965, — but it did participate, alongside the French-Speaking Community to the subsequent ones. And the resulting trend largely accords with the "quantitative" census-based evidence reported on Figure 1.2. Whereas the (relative) performance of the French-Speaking Community has steadily deteriorated since the mid-1960s, that of the Flemish-Speaking Community has regularly improved.

Tableau 1.1. **Long-term evolution of the relative score in maths of pupils in the Belgian Communities vis-à-vis other EU and OECD countries. Standardized data points in maths** [a]

Community	Year of international survey			
	1965	1980	1995	2000
	FIMS	SIMS	TIMSS	PISA
Flemish-Speaking	-	0,388	0.899	1.140
French-Speaking	1.463	0.157	-0.029	-0.258

FIMS: First International Mathematics Study
SIMS: Second International Mathematics Study
TIMSS: Third International Mathematics and Sciences Study
PISA: Programme for International Student Assessment

a) Reported values are standardized data points (also called Z scores). They correspond to the difference between the Community' average score and the international mean, then divide by the international standard deviation. The results just tell how many standard deviations the Community's score is away from the international mean.

Source: IAE, OCDE

2. WHAT DRIVES EDUCATIONAL UNDERACHIEVEMENT IN FRENCH-SPEAKING BELGIUM

2.1. The socio-economic crisis hitting Brussels, Liège and the Hainaut?

9. A popular view is that the real problem rests with the social context in which schools pupils operate – namely, the family, neighbourhood, and peer environments that low-income children experience, or excessive school segregation. Adopting education reforms without changing social policy more broadly will simply punish educators for factors beyond their control, and potentially drive the most able teachers toward schools serving less disadvantaged students.

10. Table 2.1., reports on a crucial indicator of educational attainment the share of 20-24-year-olds who are no longer attending school and who have not obtained an ISCED 3 qualification, who can thus be considered as "drop-outs". Table 2.1 shows the breakdown by Belgian provinces. It gives some credit to the idea that poor economic performance contributes to lower educational attainment. It is the Region of Brussels has the highest drop-out rate (28%) followed by Hainaut (25%) and Liège (23%).

11. Seriously improving at risk children's schooling outcomes would involve fixing the other social ills associated with poverty that impair children's learning outcomes. In the Belgian context, this means improving (*inter alia*) the labour market outcomes of the adults in the families in which at risk children develop, particularly in regions/provinces that have been severely hit by deindustrialisation (Hainaut, Liège) or have experienced massive influxes of (low-skilled) immigrants (Brussels, see Table 2.1).

12. But this socio-economic deterministic explanation of educational underachievement calls for some nuances. First, the calendar of the emergence of an interregional attainment gap in Belgium (Figure 1.2) does not coincide perfectly with the development of inter-regional or sub-regional economic discrepancies. It rather seems that educational discrepancies (that probably started in the early 50s) preceded the socio-economic ones (know to have emerged in the 1970s and early 1980s). If one can reasonably argue that two-digit unemployment rates (and a string of associated social ills) in Brussels, Liège or Hainaut now hamper educational performances of youth, there is some reservation as to the role these factors played in the past.

Table 2.1. **Aged 20-24 without an upper-secondary degree (ISCED3)**

Provinces	Percentage of youth without ISCED 3
Antwerpen	13.6
Limburg	15.1
Vlaams Brabant	15.2
West-Vlaanderen	11.5
Oost-Vlaanderen	12.6
Rég. Bruxelles-Cap. - Brussel	28.4
Brabant Wallon	13.9
Hainaut	25.2
Liège	23.0
Luxembourg	14.4
Namur	19.6
Women average	14.6
Men average	21.0

Source: EU-LFS, 2007

2.2. Lack of long-term financial incentives to stay on in education and succeed at school?

13. Education can be considered as a form of profitable investment. Since Adam Smith, economists tend to consider that education is similar to a physical means of production *e.g.* factories and machines (Debande and Vandenberghe, 2008; de la Croix and Vandenberghe, 2004). One can invest in human capital via education training (but also medical treatment). In that sense, education is similar to fixed capital although it is not transferable. The propensity of individuals to invest in human capital is also presumably driven by similar motives as their propensity to invest in, say, shares or bonds. The higher the return on their investment, the higher should be their willingness to spend time and other resources accumulating human capital (*i.e.* reading books, attending classes…).

14. Within that framework, an almost natural question is whether we have reasons to believe that "education does not pay" or at least that it does not pay so much, particularly in the regions forming the French-Speaking Community, where many youth tend to underachieve at school.

15. One simple and relatively straightforward way to assess the 'profitability' of schooling in Belgium and its Communities is to resort to Mincerian wage estimates.[6] These basically help understand how earnings are related to the educational attainment. And they have proved to be very consistent in virtually every country in every time period where they were estimated.

[6] The standard form of the Mincer wage regression is $\log W = \beta_0 + \beta_1 S + \beta_2 exp + \beta_3 exp^2 + \varepsilon$, where W is the gross wage earned by an individual, S is the number of years of formal education he/she attended, and exp and exp^2 a 2nd order function of the labour market experience (often proxied by age) that captures the propensity of individuals to *i)* acquire skills "on the job", and *ii)* undergo skill depreciation over time.

16. Results in Table 2.2. are based on EU-SILC[7] gross wage and income data. Using these, one can estimate a log-linear[8] wage equation known for delivering estimates of the rate of return associated with one additional year of (succesfully completed) schooling. These rates of return are primarily driven by the slope of the wage/education curve or the ratio of low-educated individuals' earnings to better-educated individuals' earnings.

17. Panel A of Table 2.2 reports these Mincerian coefficients — computed solely with employed individuals earning some wage (*i.e.* workers) — for Belgium and a selection of EU countries. These suggest the financial incentive associated with schooling are average in Belgium compared with other EU countries. At 6.7%, the rate of return is higher than in Norway or Denmark — two countries known for their 'compressed' wage structure — but lower than in France for instance.

18. Panel B of Table 2.2 contains, in its first column, similar estimates for each of the Belgian regions. The figures suggest that it is in Brussels that education offers the best return (8.7%), followed by Wallonia (6.7%) and Flanders (6.4%). Note already that the two regions with the highest drop-out rate (Table 2.1) are those offering the *higher* rate of return.[9]

19. The second column of the same table reports similar coefficients. But these are computed using data that also comprise unemployed and inactive people. By definition, these categories generally report very low (or no) wage/salary income. This means that the estimated coefficients aggregate two types of benefits associated with education: *i)* higher wages when in employment, *ii)* and a higher probability of being in employment and earning these higher wages. As the risk of zero (or very low) wage (*i.e.* being out of employment) is much higher among low-educated groups, the estimated returns (first column, panel B) are significantly higher than when restricting the analysis to the sole workers. Note that it is now in Wallonia that the rate of return is the highest (32.6%), followed by Brussels (28.8%) and Flanders (22.1%). Again, the two regions characterised by a higher drop-out rate (Table 2.2) are those granting the higher rate of return.

20. The last column of panel B, Table 2.2 contains the coefficients that are obtained with the full sample of individuals (employed, unemployed and inactive individuals) when state transfers are added to wages (*i.e.* unemployment and other social benefits). As transfers predominantly benefit low-educated people — that are more affected by the risk of unemployment and/or are more often inactive —, their inclusion predominantly lift their income. This translates into a flatter income/education curve. Logically, this leads to lower rates of return. The result also supports the idea that state transfers dampen the return on human capital investment. Note, however, that this does not affect our interregional comparisons. The two regions characterised by a higher drop-out rate remain those where the incentive to invest in education is *a priori* the highest.[10]

---

7 European Union Statistics on Income and Living Conditions survey.

8. The advantage of the log-linear specification of the wage W is that it generates estimates for the S explanatory variable coefficient that are easy to interpret as they correspond to points of percentage of change of the wage level. For a model $logW(S) = \beta_0 + \beta_1 S + \varepsilon$. There is indeed that $\beta_1 = dlnW/dS = (dW/W)/dS \approx [W(S + 1) – W(S)]/W(S)$ *when* $dS=1$.

9 Similar results are to be found in de la Croix and Vandenberghe (2004)

10 We abstain here from considering the so-called "general equilibrium" effects of higher educational attainment. Many economists would argue that if many individuals (say a whole cohort) increases its

21. Due to data constrains we are not able to explore the effect of income taxation. But one can reasonably speculate that, due to is progressivity, income taxation reduces rates of return. Nonetheless, we do not expect it to alter the regional ranking highlighted here.

Table 2.2. **Return on Human Capital Investment computed using gross annual earnings.**

A. Belgium and other EU countries

Country	Workers (wages)	Probt
Austria	7.79%	0.0000
Belgium	6.77%	0.0000
Denmark	4.88%	0.0000
France	9.26%	0.0000
Germany	8.15%	0.0000
Netherlands	8.39%	0.0000
Norway	6.24%	0.0000
Sweden	4.91%	0.0000
United Kingdom	8.10%	0.0000

B. Belgium and its regions

Region	Workers (wages)	All individuals (wages)	All individuals (wages and transferts)
BXL	8.7%	28.8%	14.4%
VLA	6.4%	22.1%	13.8%
WAL	6.7%	32.6%	16.2%

2.3. Lack of school resources?

i) The overall (and long-term) view

22. These is simply no correlation, or coincidence, between the emergence of an interregional attainment gap in Belgium (Figure 1.2) and the level of public spending on education in Belgium. Many observers in the French-Speaking Community wrongly believe that the devolution of education to the Communities — and the ensuing budgetary crisis with its string of austerity plans and strikes — played a crucial role in the emergence of this gap.

23. In truth, there are signs since the mid 1990s that teacher pay in the French-Speaking community has not risen as much as in other OECD countries (Table 2.3). Between 1996 and 2006 French-speaking teachers got (cumulated) pay increments equal or slightly superior to GDP growth. Whereas across the OECD on average cumulated teacher pay rises exceeded that of GDP by 10 to 19%. There is some evidence that the so-called "communautarisation" has translated into

educational attainment, part of the benefits embedded in the current wage structure will vanish. More people holding a certain degree or diploma could translate into a (relative) depreciation of its value on the labour market.

diverging patterns of teacher pay across the linguistic border (Table 2.3). In short, during that period wage increments in Flanders slightly exceeded those registered in the French-Speaking Community of Belgium. Note however that the inter-community cumulated differences over the period 1996-2006 remain small by international standards

24. An our main point, however, is that these are very recent developments. And they cannot help us understand attainment gaps that emerged in a very distant past, probably somewhere during the late 1950s and early 1960s (see Section 1, Figure 1.2).

Table 2.3. **Change in teachers' salaries (1996 and 2006)**

Index of change between 1996 and 2006 in teachers' salaries at i) starting salary, ii) after 15 years of experience and iii) at the top of the salary scale, by level of education, converted to 2006 price levels using GDP deflators (1996=100).

	Primary education			Lower secondary education			Upper secondary education, general programmes		
	Starting salary/minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/minimum training	Starting salary/minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/minimum training	Starting salary/minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/minimum training
Australia	128	97	97	129	98	98	129	98	98
Belgium (Fl.)	**107**	**111**	**114**	**104**	**104**	**104**	**104**	**104**	**104**
Belgium (Fr.)	**101**	**106**	**109**	**99**	**100**	**100**	**99**	**100**	**100**
Denmark	122	113	110	122	113	110	112	110	105
England	124	107	107	124	107	107	124	107	107
Finland	132	129	158	130	116	140	127	123	148
Greece	116	118	121	112	115	118	112	115	118
Hungary	209	196	201	209	196	201	182	189	204
Ireland	111	118	113	105	112	112	105	112	112
Italy	111	111	111	110	110	110	110	110	110
Japan	107	117	104	107	117	104	107	117	104
Mexico	134	133	134	135	138	142	m	m	m
Netherlands	103	110	100	102	111	100	102	107	99
New Zealand	101	115	115	101	115	115	101	115	115
Norway	104	96	105	104	96	105	103	100	101
Portugal	103	112	102	103	112	102	103	112	102
Scotland	120	115	115	120	115	115	120	115	115
Spain	95	95	92	m	m	m	94	94	91
Unweighted avera	**118**	**116**	**117**	**119**	**116**	**117**	**114**	**113**	**114**

Source: OECD, Education at a Glance 2008

ii) Enough resources for at risk pupils?

25. A related discussion is the one about the propensity of the education system in Belgium to adequately concentrate resources on those who need them most. Do at-risk pupils receive adequate support in Belgian schools?

26. Providing a thorough and well-documented answer to this question is clearly beyond the scope of this review. However PISA 2006 contains some items that can help us shed some light

on the issue. A simple econometric exercise focusing on math score[11] at the age of 15 essentially reveals the following:

- Belgium (both Communities) is the only country[12] where the number of students per teacher is significantly smaller in schools concentrating aged 15 pupils with lower math scores. There is also, in the French-Speaking Community, that the number of computers for instruction (per student) is higher in these schools;
- But, Belgium (both Communities) is the only country with Canada where the proportion of teachers with a university qualification (ISCED 5A) is significantly *lower* in those schools.
- The French-Speaking Community of Belgium is the only entity where recruiting and stabilising teachers is reportedly more difficult in schools concentrating pupils with lower math scores.

27. In a nutshell, these results seem to suggest that French-Speaking schools serving the lower segments of the public have more resources (more teachers or computer per pupil). But they may simultaneously suffer for a lower-than-average quality of teaching staff.[13] Low-achieving pupils are taught in smaller classes but by less qualified and less experienced teachers. This raises the question of whether additional money spent on those schools is adequately allocated. What do poor and underachieving students need in priority: smaller classes equipped with computers or better and more experienced teachers?

2.4. Underperforming schools?

28. A more promising way of gaining further insight as to what drives poor educational attainment is to compare the attainment of Flemish vs. French-Speaking schools *conditional on the socio-economic status of their pupils*. The exercise is somehow similar to the one we did when we discussed long-term/historical trends. It is to split the overall variance of results into two parts. One that points at socio-economic (deterministic) factors, beyond the immediate control of policy-makers, which can be unevenly distributed across the two communities (i.e. more children with an immigration background in the French-Speaking system ….) . And the other part[14] supportive of other explanatory factors like cultural specificities[15] or diverging degree of school effectiveness — something a priori more in line with what an economist would hypothesise.

29. The exercise can be carried out using 2006 PISA data on test scores of 15-year-olds. On Figure 2. 1 below, each dot represents the average attainment within of one of the schools sampled by PISA. The horizontal axis shows the average socio-economic mix of the pupils sampled in the school (20 to 40 per school). The vertical axis measures the average score in math of the same students within the school. Figure 2.2 contains the results of a very similar exercise,

---

11 Similar results as those reported hereafter emerge when analysing science and reading scores.

12 The comparison includes Canada, Norway, Finland, Sweden and Denmark; countries that are known for their (relatively) smaller SES-related score gap (see Table 2, below).

13 That can be interpreted in terms of vertical differentiation (Debande and Vandenberghe, 2008).

14 In fact a residual.

15 A relatively greater willingness to learn/educate in one Community.

but where the horizontal axis displays the share of pupils attending a vocational track within the schools. It thus controls for the difference in terms of the curricula pupils are actually exposed to.[16]

30. What emerges is that — whatever the socio-economic profile [17] or the importance of vocational education — pupils in Flemish-Speaking schools tend to outperform those enrolled in French-Speaking ones (refer to appendixes 1 & 2 for similar results in science and reading literacy). The results on display in Figure 2.1 and 2.2 are largely confirmed by a more thorough and elaborated econometric analysis. The *gross* score gap in math between the French and the Flemish-speaking pupils is estimated to be of 9.1% (i.e. using the French-Speaking community as a benchmark, the math score are 9.1% higher in Flanders). When we condition on (potentially important) cross-Community differences in terms of : *i)* socio-economic profile (both parental profession and material wealth[18]), *ii)* immigration background[19], *iii)* attendance of a vocational track[20] , or *iv)* pupil/teacher ratio… the resulting *net* gap appears even slightly higher[21] at 10.8%.[22]

16 Although this should be questioned in theory, in Belgium it is often taken for granted that pupils who attend a vocational track are less exposed to the "core" topics (math, sciences and reading) evaluated by PISA.

17 That, in both linguistic groups, is a strong predictor of performance. Belgium (alongside Germany and the Netherlands) is characterised by a big score gap between i) schools concentrating low-SES aged 15 pupils, and ii) those serving the more privileged segments of the population. The best performer on this indicator is Finland. Sweden is the country that represents the closest match to Finland in terms of its capacity to minimise the score gap between high- and low-SES schools. Then come Norway, Spain, Denmark, Canada, the United States, Great Britain, Italy, France. The worst-performers in this respect are Belgium (both communities), Germany and the Netherlands (Vandenberghe, 2009).

18 The average material wealth index reported in PISA is higher for Flanders than the French-Speaking Community (see Appendix 2 for more details).

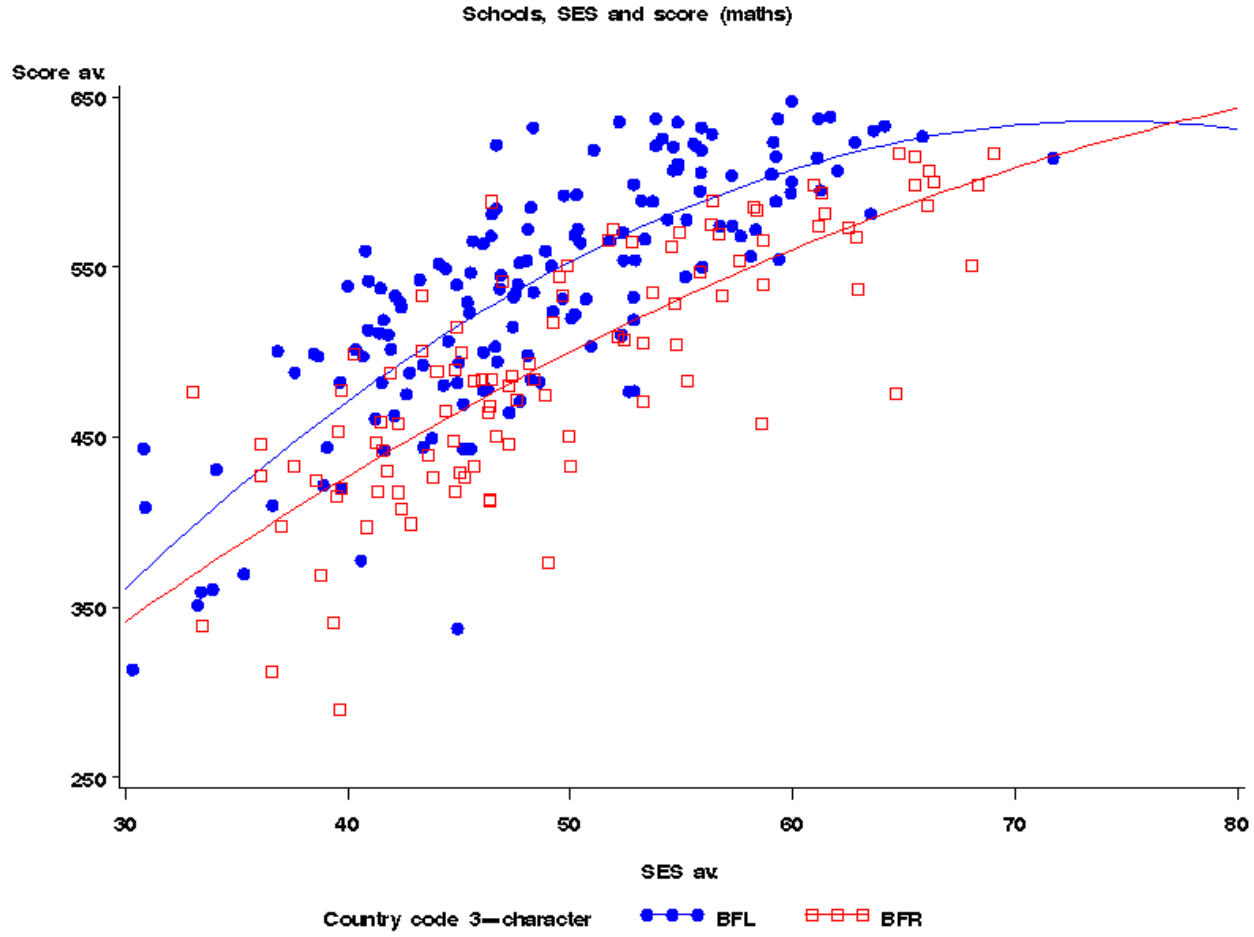
19 There are more children reportedly with an immigration background in the French-Speaking Community than in Flanders (see Appendix 2 for more details).

20 But there are significantly more children attending a vocational programme in the Flemish-Speaking Community (see Appendix 2 for more details)..

21 A possible interpretation of this increment is that the *net* gap « corrects » for the (clearly higher) incidence of vocational education in Flanders (see appendix 3).

22 For an analysis of this gap based on frontier-estimation methods see Perelman, Pestieau & Santin (2010).

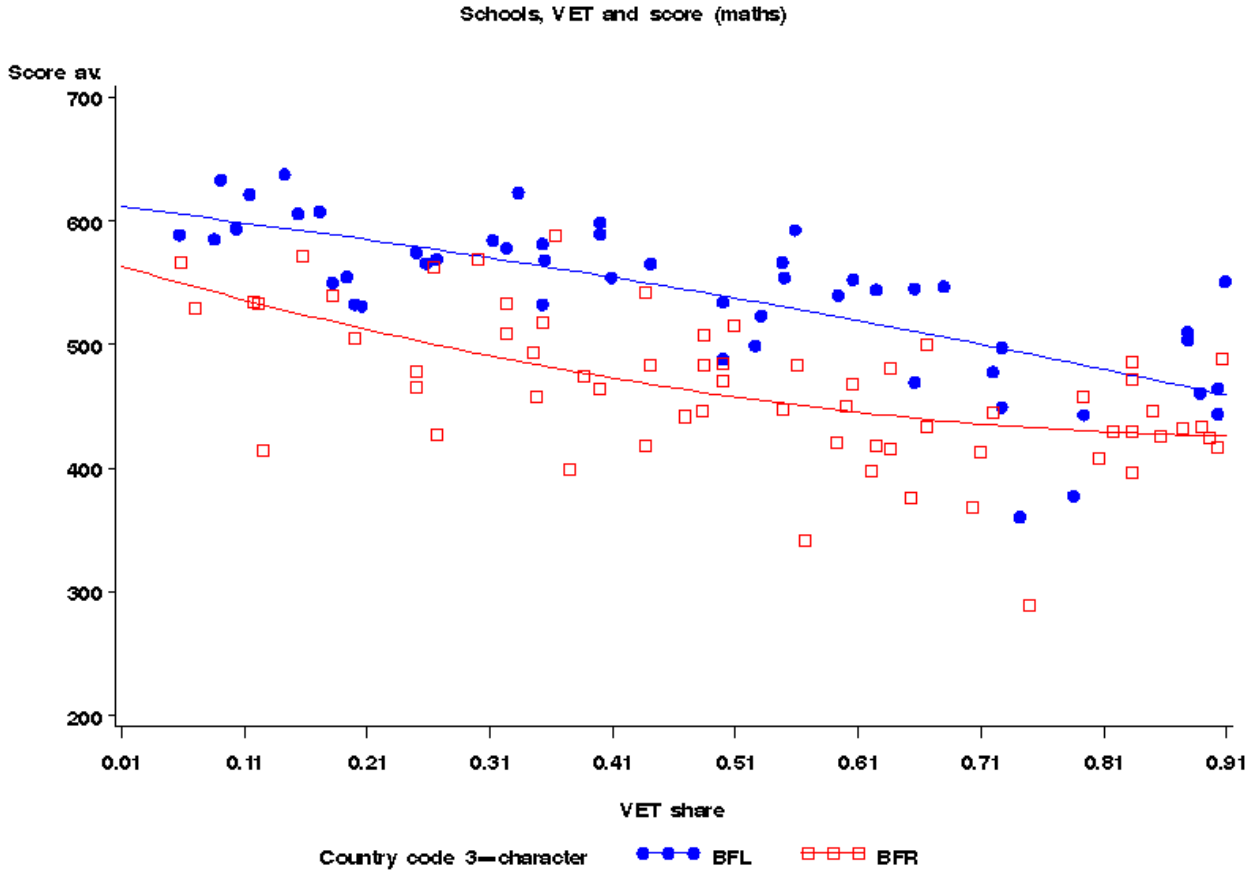
Figure 2.1 .**Distribution of educational attainment in Math[23] across schools (conditional on the socio-economic profile of pupils). Flemish vs. French-Speaking Belgium.**



Source: PISA, OECD, 2006

[23] Appendixes 1 and 2 display the results for science and reading.

Figure 2.2 . **Distribution of educational attainment in Math[24] across schools (conditional on the importance of vocational education[25]). Flemish vs. French-Speaking Belgium.**



Source:PISA 2006

Source: PISA, OECD, 2006

[24] Appendix I displays the results for science and reading.

[25] The share of pupils attending a vocational programme/track.

3 WHAT POLICY VIS-À-VIS UNDERPERFORMING SCHOOLS

3.1. Rapid overview of what is said in the international literature

31. Disagreements about how to improve these schools' outcomes loom large. They stem in part from different beliefs about what problems underlie their unsatisfactory outcomes. Broadly speaking, critics tend to invoke, at least implicitly, one of the following reasons (Jacob and Ludwig, 2008):

32. First, schools matter only so much. The real problem rests with the social context in which schools operate – namely, the family, neighbourhood, and peer environments that low-income children experience, or excessive school segregation. Adopting accountability education reforms without changing social policy more broadly will simply punish educators for factors beyond their control, and potentially drive the most able teachers toward schools serving less disadvantaged students. In this case, a necessary condition for making serious improvements in at risk children's schooling outcomes would involve fixing the other social ills associated with poverty that impair children's learning outcomes. In the Belgian context, this means improving (*inter alia*) the labour market outcomes of the adults in the families in which at-risk children live, particularly in regions/provinces that have been severely hit by deindustrialisation (ie. Hainaut, Liège) or have experienced massive influxes of (low-skilled) immigrants (ie. Brussels) (see Table 2.1).

33. Second, schools matter but those serving at-risk students need more resources (*e.g.,* teachers, textbooks, support services) than the other schools to educate the disadvantaged students. In this case, a potential solution would be to provide more money to disadvantaged schools.[26] There is evidence that, to a certain extent, this is already done in the French-Speaking Community. There are also plenty of indications that its decision-makers are willing to further "differentiate" school funding according to the socio-economic profile of students. But more research is needed to identify how these resources should be spent. Should, as seems to be the case now, these extra resources predominantly finance smaller class sizes ? Or should they be used to attract (or simply retain) better and more experienced teachers? (see Section 2.3)

34. Third, schools concentrating low-achieving children lack the capacity to improve students' learning, independent of financial resources. Under this perspective, the teachers and the heads of school serving highly disadvantaged pupils are thought to lack the (managerial) skills or *knowledge* necessary to improve the quality of instruction on their own. Potential solutions to this problem would involve helping schools improve the quality of their standard operating practices, for example by helping implement specific new instructional or organizational practices (*i.e*. curriculum, instruction, school organization) and/or increasing the instructional capacity of staff in these schools through professional development, and perhaps also more selective hiring.

35. Fourth, these schools do not have sufficient *incentives and/or flexibility* to make the best possible use of their resources. They are under-performing because teachers and heads of school are not working hard enough, they are not working toward the right goal. Or they have good local

[26] More on how this can be implemented in Waltenberg and Vandenberghe (2007).

knowledge about what would work best but they are not able to implement these ideas because of centralized authority (bureaucratic rigidities, red-tape…). Proponents of this perspective often claim that without clarifying the key objectives of school, holding key actors accountable while granting them more autonomy, additional spending will simply be squandered. Under this view, the solution would be to enhance incentives through policies such as school choice or accountability and provide professionals more autonomy.

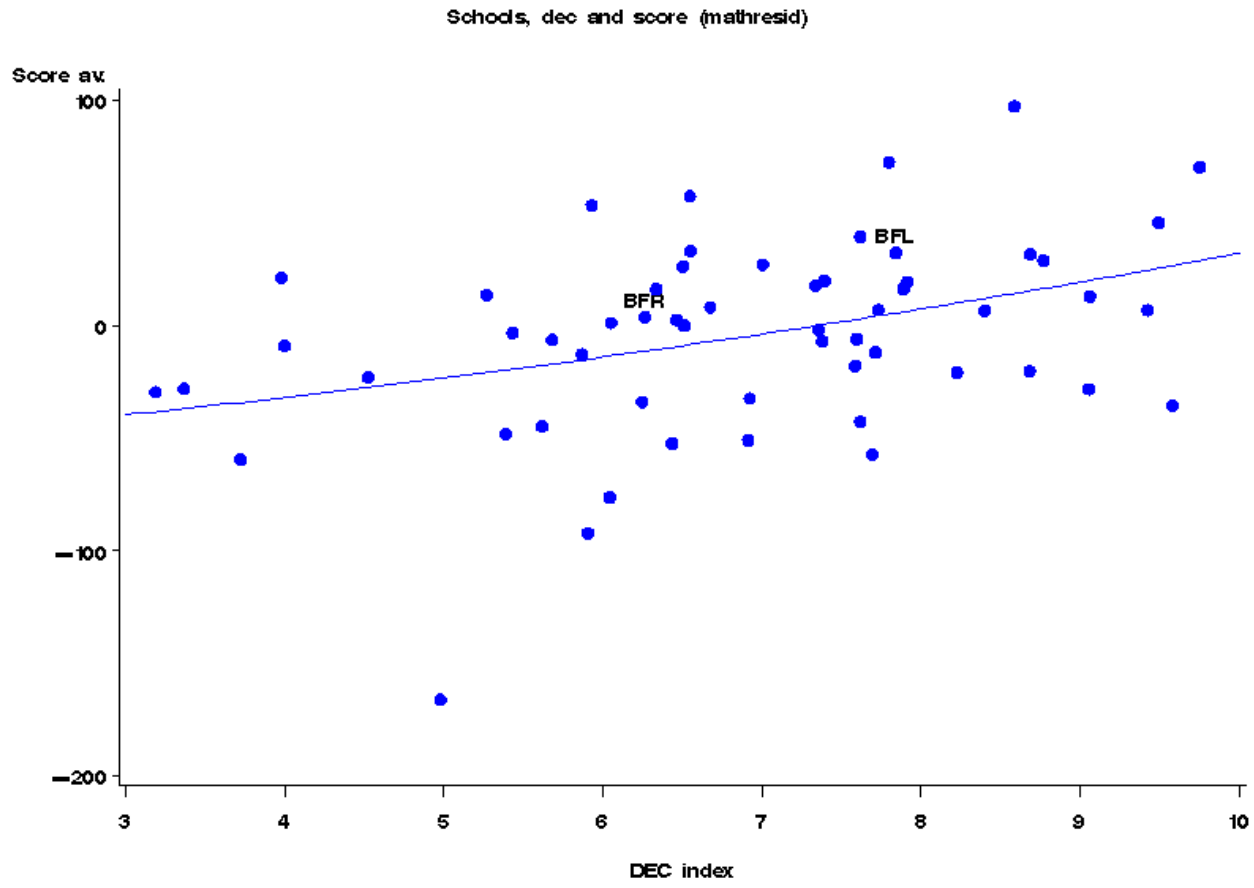
3.2. PISA score and school autonomy/flexibility

36. It is possible to find some empirical support regarding the benefits of school autonomy/flexibility in PISA 2006. Figure 3.1. displays the positive relationship[27] between net average score and the school autonomy index. It is important to stress that the scores (on the vertical axis) are "net" of the mechanical contribution of a range of socio-economic (parental socio-professional status, household material wealth, immigration background), curricular (vocational track attendance) or spending factors (number of pupils per teacher in the sampled schools). The index displayed on the horizontal axis proxies the degree of autonomy characterizing key aspects of the functioning of schools. It is equal to (country/community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs. that of and intermediate (i.e. municipalities or provinces in the case of Belgium) or central school authority (the Ministry of Education). Dimensions examined by the PISA survey comprise (1) teacher hire, (2) teacher fire, (3) establishing starting salaries (4) determining salary increase (5) establishing the school's overall budget; (6) allocating this budget; (7) student discipline rules; (8) student assessment (exams and grades); (9) student admission; (10) choice of textbooks.

37. One point worth stressing is that, like Hindriks & Verschelde (2010),we find that there is more school autonomy on average in the Flemish-Community than in the French-Speaking Community (see Appendix 4 and Vandenberghe and Robin (2004) for a discussion of how decentralisation/autonomy is related to the private vs. public provision of schooling).

[27] In true, a simple positive correlation

Figure 3.1. School autonomy[a] and math score[b] across countries that participated to PISA 2006



Source:PISA 2006

a) The decentralisation/autonomy index is simply the community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs. that of and intermediate or central school authority. Dimensions examined comprise (1) teacher hire, (2) teacher fire, (3) starting salary (4) determining salary increase (5) writing the school's overall budget; (6) allocating the budget (7) writing the student discipline rules (8) student assessment (9) student admission (10) choice of textbooks.

b) The raw sore are first regressed on several variables that are likely to capture socio-economic, ability or spending differences across countries. They include the highest parental socio-professional index, the family material wealth index, the immigration background, the average pupil to teacher ratio. The residuals (i.e. the part of the raw score that cannot be ascribed to these factors) are then used to compute the values plotted on this figure.

3.3. Some thoughts about the state of school governance in the French-Speaking Community

38. School autonomy/flexibility matters, but, in truth, probably only as part of a broader set of key ingredients that need to be properly aligned in order to maximize effectiveness. We will argue hereafter that one of the French-Speaking Community of Belgium's hurdles is to overcome it recurrent inability to align meaningfully key policy ingredients forming a proper school governance regime.

39. There is a growing consensus among education economists (Levin, 1997; Wössmann & Fuchs, 2007; Hindriks & Verschelde, 2010) that educational output, apart from each individual's

propensity to invest in himself[28], is conditioned by the educational system's governance (i.e. large-scale mechanisms or general rules on which teachers and schools have no direct control, because they are the result of political aggregation or historical trends, but nonetheless significantly influence their daily practice). The so-called 'supply side' of the educational process can no longer be represented as a simple black box (Vandenberghe, 1999a).

i). Benchmarks : bureaucracies, incentive contracts or quasi-markets

40. Belfied (2000) reviews the range of governance mechanisms that are to be found in education. He first explains that very few educational systems[29] operate like proper markets, where 'providers' (schools, teachers…) are financed directly by their 'clients' through (variable) fees, and where the 'clients' enjoy extended freedom of choice as to the provider they pick.[30]

41. In the educational sector, the most common and prevalent regulation *modus operandi* is still the hierarchical or *bureaucratic model*. The latter generally grants no freedom of choice to pupils and their families. Zoning regulations, as in the US, France, Norway or Sweden (until the early 1990s), force pupils to attend the nearest local school. Public administrators supervise local decision-makers (teachers, school heads). Administrators evaluate the educational needs of the population, plan the construction of schools and other facilities, appoint teachers, fix wages and pension schemes for educational staff, determine both the curricula or the certification criteria. In brief, the (central) Minister of education personifies the external co-ordination principle, the governance structure of the system.[31]

42. But the bureaucratic model is no longer the only possible governance regime. During the 1970's and 1980's one first witnessed a renewed interest in the regulation of public monopolies and oligopolies through *incentive contracts*. This led to greater decentralisation of decision-making (i.e. more autonomy/flexibility for schools and teachers) and, simultaneously, a greater use of contractual arrangements to ensure compliance with public priorities. The latter would still act as (local) monopolists but the amount of financial resources they received from the government would depend on their ability to meet centrally-defined (and assessed) objectives. This new approach led to the development of output- based (public) financing schemes, a greater use of standardized test to gauge pupils' results.

43. The other source of innovation was the introduction of market-like mechanisms. The main idea was that it must be possible to preserve free (i.e. publicly funded) education and to mobilise the expertise of final users in order to (advantageously) replace the central authority as a

---

28 Extensively analysed by the human capital model (Schultz, 1961; Becker, 1964) and possibly driven by wage premia documented in Section 2.2

29 Delivering elementary/basic (primary or secondary) education.

30 Exceptions exist, particularly in Third-World countries like Kenya, Sri Lanka or India where private education is still the rule for thousands of pupils at elementary and secondary level. But many 'private' schools are non-profit organisations, ruled by religious communities that manage to limit costs (and fees) essentially by relying on volunteers.

31 This does not mean that the educational system is necessarily always totally centralised. Like all complex institutions, hierarchic educational systems are characterised by a certain balance between decentralisation and centralisation. Invariably, educational systems throughout the world delegate some responsibilities to schools and – inside those organisations – to the individual teacher

source of control. This led to the introduction of so-called *quasi-markets*. It was argued that by allowing – properly informed – parents (or youth) to choose their school, governments would force schools to be more accountable to their clients and make a better use of their resources. In quasi-markets, successful decision-making at the school level is rewarded financially by an automatic mechanism, a school's budget is directly index on the number of pupils attracted via a voucher system.[32] Be it in Chile, New Zealand or Sweden, quasi-market reforms were aimed at solving 'bureaucratic failure' problems: lack of efficiency, low accountability of teachers, excessive red tape (Vandenberghe, 1999b).

ii) The situation in French-Speaking Belgium

44. In the literature, researchers debate on the relative merits of hierarchies, incentive contracts and education quasi-markets. We argue that such a discussion is not (yet) the most relevant one for the French-Speaking Community of Belgium. What pundits should rather consider (and combat) is the excessively hybrid nature of its school governance regime (Vandenberghe, 2007).

45. Hybrid governance exists to a certain extent in Flanders and in many other places in the world. But, in comparison, it has probably loomed larger in the French-Speaking Community. The current governance regime consists of a relatively unarticulated and chaotic addition of the three models exposed above . Over the past decades, French-Speaking decision-makers have been unable to agree on the amount of power to be granted to (1) the central Ministry, (2) the local professionals (heads of schools) and (3) parents or pupils. Sempiternal divergences of view, echoing deeply rooted philosophical and political schisms, have ultimately led to a situation where the top-down/bureaucratic control (the obligation to implement instructions coming from Brussels) systematically cohabits with school-based autonomy and market-driven school management (the necessity to attract pupils to secure resources and jobs).

School choice and quasi-markets

46. For several decades the system — including primary, secondary and tertiary education — has espoused the quasi-market principle as it has combined extended freedom of school choice and public (per-pupil) financing. Schools with dwindling enrollment are fully aware that they are bound to lose resources (i.e. teaching jobs). It is also common practice to spend some of the school resources to put ads in the local papers in order to inform/lure prospective pupils. Anecdotal evidence suggests that some schools require their teachers to hit the street at the end of August to reach out to their potential clientele.

Subsidised schools and the contractual approach to education provision

47. School choice is accompanied by an old tradition of entrepreneurial freedom as to schooling delivery (on the supply-side thus). Belgium indeed comprises a larger number of so-called subsided « pouvoir organisateurs/ inrichtende machten » syndicated in three networks (« les réseaux/ netwerkers ») delivering schooling services alongside the central authority. Incidentally, it is worth stressing that a very significant part of educational services in Belgium are delivered by

[32] An explicit (where each child receives a voucher) or an implicit one (whereby school are predominantly funded on a per-pupil basis).

schools that are (legally) independent (or 'free') from the central ministerial authority. Quite logically, in such a context, the contractual approach to education provision has gained importance. Although central authority funds schools, the advocates of such a model claim that those who run schools on a daily base are best placed to decide on how to spend these funds, starting with the recruitment of teachers. And the external control by the central authority should primarily focus on the schools' contribution to pupils' attainment (i.e. final outcomes). However, one must immediately stress that output-based control of autonomous school has been long absent from the landscape.

Superimposed hierarchical and bureaucratic control

48. There is also a (now deeply entrenched) tradition of bureaucratic control of schools, that encompasses 'free' subsidised ones. It is based of the precepts of central planning and orchestrated by the Minister of Education and its administration in Brussels. The range of regulatory requirements applicable to (all) schools have loomed larger over the past decades, particularly in the French-Speaking Community. They primarily consist of controlling the way schools use their inputs.[33] Many of the rules applicable to 'free' schools aim at aligning the status of their teachers on that of civil servants. Schools do not control salary levels. Teachers are not paid at school level, but directly by the Ministry of education. Heads of schools cannot decide upon the relative importance of compensation and benefits (by opting for more/less capital-intensive technologies for example). But, at the same time, heads of school are strongly enticed to respond to market pressures stemming from the school choice + per capita funding ingredient.

49. The Ministry of Education defines teaching credentials which schools must respect when hiring or awarding tenure. Relatively stringent seniority rules limit the capacity of school heads to decide on the teachers they keep on board when enrollment plunges. Weekly schedules and other conditions of work are centrally determined too. Over the past two decades, the central authority in French-Speaking Belgium has also been very active in prescribing the pedagogy to be used by teachers, but without properly considering the other constraints schools have to cope with. Consider, for instance, the uncomfortable situation of a primary school teacher who has been firmly instructed to organise the learning cycle over periods of 2 to 3 years[34] but — due to extensive freedom of choice — experiences a 50 to 60% turnover in her class every year.

---

33 As stated earlier there is no tradition of output-based control of schools in the French-Speaking Community of Belgium.

34 The so-called « apprentissage par cycles ».

Hybrid governance and poor performance

50. Our main concern is that hybrid governance contribute to the poor performance of the most deprived segments of the population (see Figure 2.1). These are a priori more 'dependent' on the quality of education to succeed academically and professionally. Ideally, education should be *jointly produced* with a contribution from both the demand side (pupils/students and their families) and the supply side (teachers, schools and the public authorities that finance education). But at-risk pupils, coming from broken/ dysfunctional families, are obviously more affected by the way the supply side is structured and operates. They are much less able to compensate or protect themselves from the consequences of ill-conceived or poorly implemented educational policy (Levin, 1997).

iii) Why so much hybridisation ?

51. Our thesis is that the hybrid governance regime that characterises French-Speaking schools largely echoes the diverging political and philosophical "preferences" of the three main "réseaux/netwerken". The educational landscape is split in two big groups (those who defend the public provision of schooling and those who prefer the provision by 'free' subsidised schools), each representing about 50% of the total number of pupils. In addition, the advocates of public provision are split between those who defend local provision (by municipalities or provinces) and those who favour a centralised model where public schools are under the sole jurisdiction of the central ministry.

52. Contrary to most observers, we do not believe that the main problem associated with the presence of "réseaux/netwerken" is cost-inefficiency. The total cost of the system is primarily the result of a product : the number of enrolled pupils X what is spent per pupil on average. The presence of "réseaux/netwerken" [or hundreds of pouvoirs organisateurs/ inrichtende machten] has clearly no impact on the total number of pupils. Some would argue that multiple "réseaux/netwerken" has lead to a higher incidence of small schools (known for their higher cost per pupil *ceteris paribus*). But successive reforms since the early 1980s have resulted in the introduction of mandatory enrollment thresholds limiting the magnitude of this problem. A secondary school for example cannot exist (receive public funding) if it enrols less than 430 pupils. Similar (but logically lower) thresholds exists for primary schools. Exploiting economies of scale has proved feasible within a system where individual schools are syndicated into so-called networks.

53. The true "cost" of the "réseaux/netwerken" rather corresponds to their contribution to the emergence of a very hybrid governance regime. The systematic involvement of their representatives in the policy-making process has prevented (and keeps preventing) the emergence of a coherent governance framework. This is because the models of governance they explicitly or implicitly refer to when they bargain *are a priori* contradictory and difficult to reconcile. What is more, the Minister of education in the French-Speaking Community is suffering from a lack of pre-eminence and independence vis-à-vis the « réseaux », as one of its mandates it to run and defend the interests of its own « réseau » of schools.

54. Sceptics would rightly argue that networks (and the underlying antagonist conceptions as to what "good" school governance means) also exist in Flanders. True. But in Flanders, the network syndicating 'free' catholic-affiliated schools is (and has always been) very dominant;

with a market share exceeding 70% of the total. This has perhaps contributed to limit the ravages of the hybrid governance disease French-Speaking pupils suffer from.

REFERENCES

Becker, G. S. (1964), *Human Capital*, New York, Columbia University Press.

Belfield, C. (2000), *Economic Principles for Education: Theory and Evidence*, Edward Elgar, Cheltenham, UK.

de la Croix, D. & Vandenberghe, V. (2004) *Human capital as a factor of growth and employment at the regional level. The case of Belgium*, Report for the European Commission, DG for Employment and Social Affairs, Brussels.

Debande, O. & V. Vandenberghe (2008), *Investir dans le Capital Humain. Comprendre les ressorts d'une décision individuelle et sociétale*, Academia-Bruylant, Louvain-la-Neuve.

Hindriks, J. & M. Verschelde (2010), L'école de la chance, *Regards Economiques*, No 77, Economic School of Louvain, Louvain-la-Neuve.

Jacob, B. and J. Ludwig (2008), "Improving Educational Outcomes For Poor Children", *NBER Working paper*, No 15550, NBER, Ma.

Levin, H (1997), Raising school productivity: An X-efficiency approach, *Economics of Education Review*, No 16(3), pp. 303-311.

Perelman, S, P. Pestieau & D. Santin (2010), Pourquoi les performances des élèves flamands et francophones sont-elles si différentes ? Une analyse par la méthode des frontières stochastiques, *CREPP Working Paper* 2009-06, Ulg, Liège.

Schultz, T.W. (1961) Investment in Human Capital, *American Economic Review*, No 51, pp. 1-17.

Vandenberghe, V. (1999a), Economics of Education. The Need to go Beyond Human Capital Theory and Production Function Analysis, *Educational Studies*, Vol. 25, No 2, pp. 129-144.

Vandenberghe, V. (1999b) Combining Market and Bureaucratic Control in Education. An Answer to Market and Government Failure?, *Comparative Education*, Vol. 35, No 3, pp. 272-282.

Vandenberghe, V. & Robin, S. (2004), Evaluating the effectiveness of private education across countries: a comparison of methods, *Labour Economics*, No 11, pp. 487-506.

Vandenberghe, V. (2007), Décrochage francophone en termes de capital humain. La question de la gouvernance, *Actes du XVII Congrès des Economistes de Langue Française de Belgique*, Charleroi.

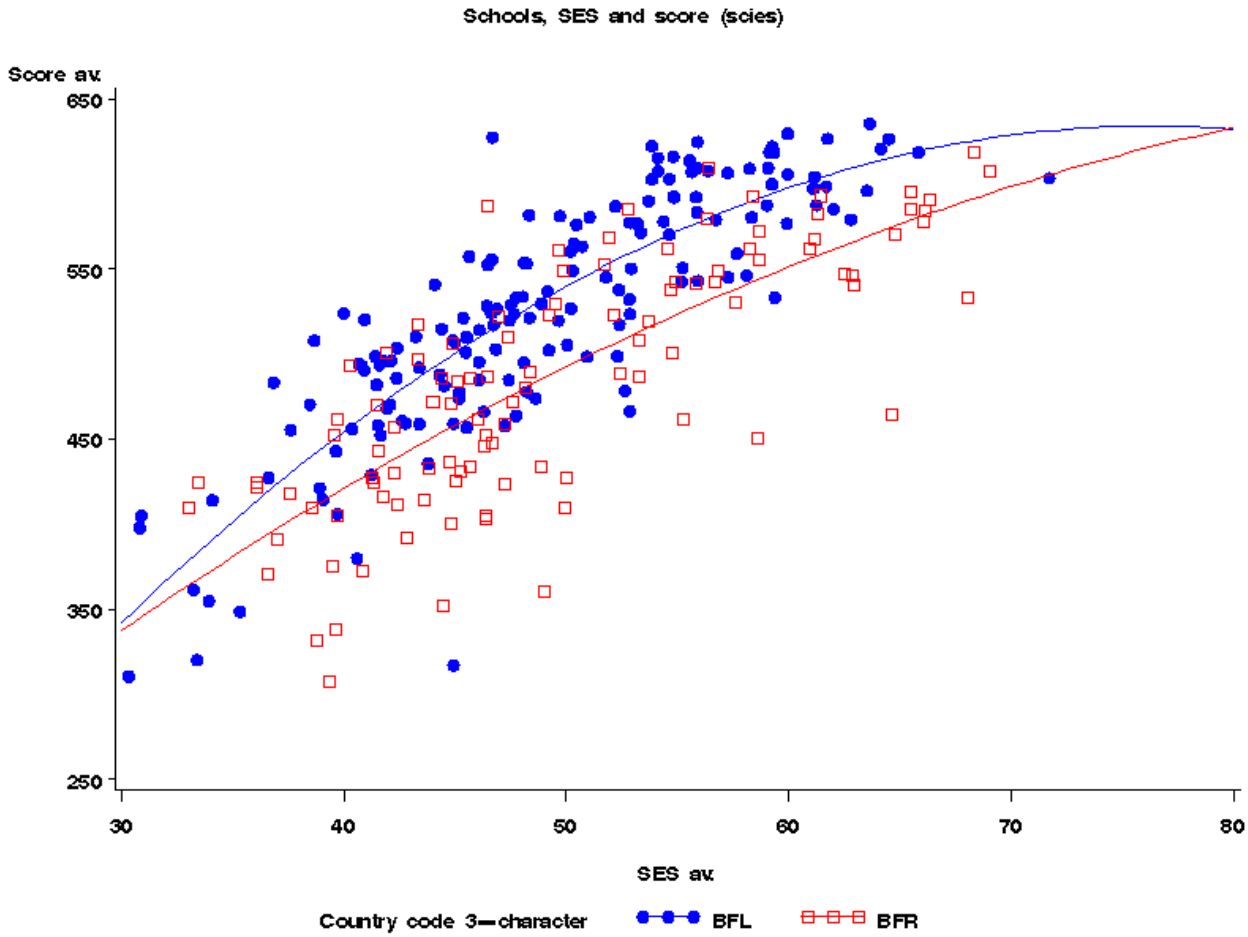
Vandenberghe, V. (2009), *How to Combat Low Educational Attainment in Belgium?*, Report to the Bank Degroof Foundation, Brussels.

Waltenberg, F. & Vandenberghe, V. (2007), What does it take to achieve Equality of Opportunity? An Empirical Evaluation Based on Brazilian Data, *Economics of Education Review*, No 26, pp. 710-724 .

Wössmann, L. & Fuchs, T. (2007), "What Accounts for International Differences in Student Performance? A Re-Examination Using PISA Data", *Empirical Economics,* No 32 (2-3), pp. 433-464.

APPENDIX

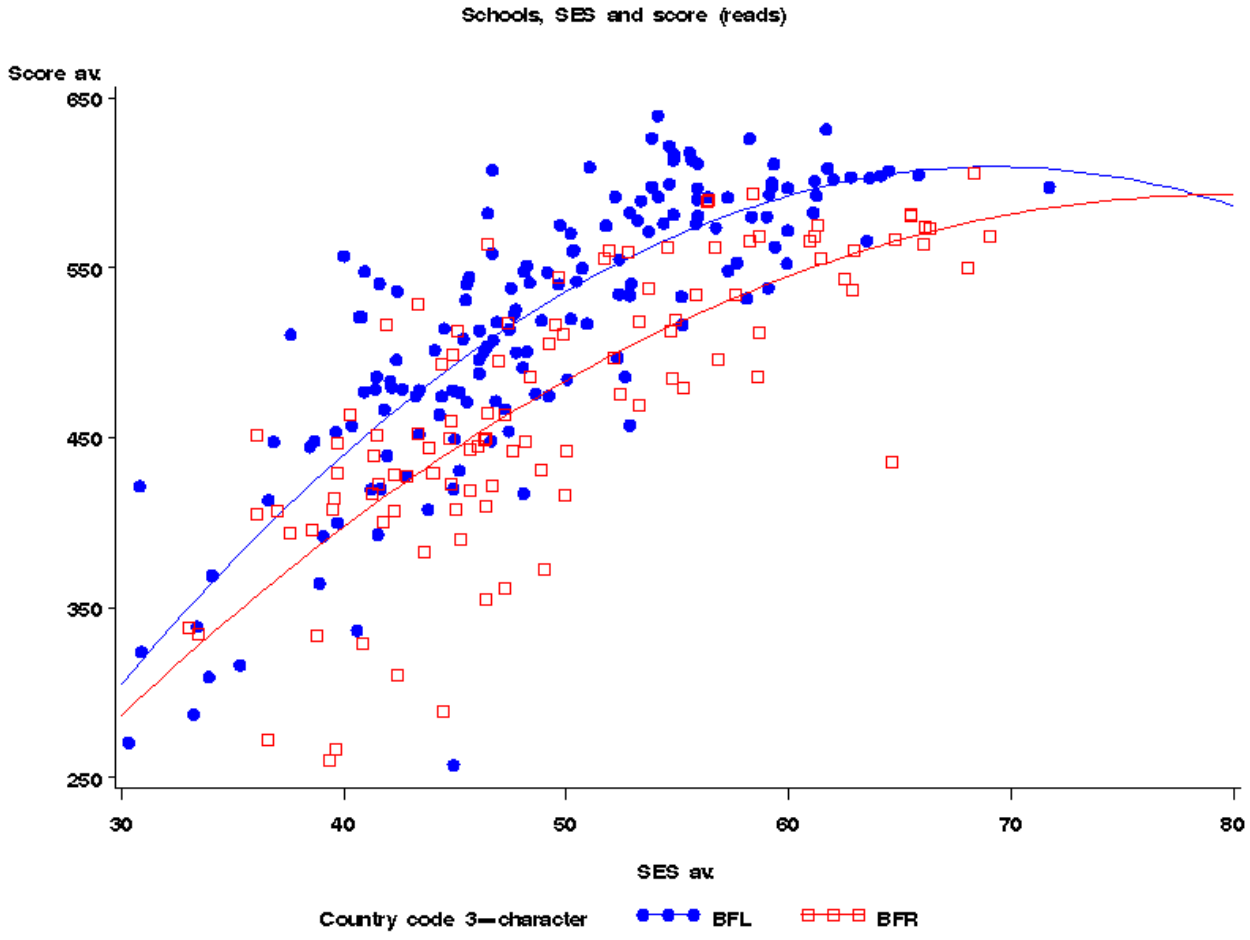
Appendix 1 **Distribution of educational attainment in Science across schools (conditional on the socio-economic profile of pupils). Flemish vs. French-Speaking Belgium.**



Source: PISA, OECD, 2006

c) Plotted trends correspond to OLS-estimated quadratic relationship between scores and SES

Appendix 2 **Distribution of educational attainment in Reading across schools (conditional on the socio-economic profile of pupils). Flemish vs. French-Speaking Belgium.**



Source: PISA, OECD, 2006

Appendix 3: Pisa 2006 – Descriptive statistics

	Communtiy	
Variable	BFL	BFR
Math score	545.82	500.99
Science score	531.35	495.68
Reading score	524.34	483.55
Higher parental socio–professional index	49.80	50.62
Family material wealth index	0.38	–0.07
Number of students per teacher (reported average at the school level	8.70	9.90
Vocational track attendance	0.54	0.36
Pupils with immigration background	0.07	0.20
Private government–dependent school attencance	0.73	0.56
Nobs	5124	3733

Source: OECD, PISA 2006

Appendix 4: Pisa 2006 – School autonomy index in Belgium. Breakdown by linguistic community and school ownership/legal regime.

Community	Public School	Private Government-Dependent[b] School
Flemish-Speaking	7.85	7.86
French-Speaking	4.94	7.07

a) The decentralisation/autonomy index is simply the (country/community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs that of and intermediate or central school authority. Dimensions examined comprise (1) teacher hire, (2) teacher fire, (3) estibishng. starting sal (4) determining sal. Increase (5) writing the school's overall budg; (6) allocating the budget (7) writing the student discipline rules (8) student assessment (9) student admission (10) choice of textbooks.

b) Government-dependent schools are those that receive the greatest part of their financial resources from the public authorities (typically the "écoles libres catholiques/ **vrije katholieke scholen" in Belgium)**