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Relative Private School Effectiveness in the Netherlands: A Reexamination of PISA 2006 and 2009 data

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Abstract

An ongoing question is whether private (religious) schools provide better education than public schools. This study re-addresses this issue, using PISA 2006 and 2009 data for the Netherlands and three different methodologies. Overall, there is no consistent pattern. Results based on ordinary least squares and propensity score matching suggest private school attendance is positively associated with mathematics achievement, but only for PISA 2006. Instead, the results generated by an instrumental variable approach are very unstable. A thorough understanding of selection processes in Dutch education, and better data, seem necessary for future empirical work on this matter.

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1. Introduction

There is a widespread consensus on the notion that a well-educated labor force is vital for any economy. Nations around the world thus seek other ways to improve their schools as to enhance the skills and employability of their youth and/or to reduce inequalities in outcomes. As such, all OECD countries invest a substantial proportion (close to 6%) of national resources in education (Hansson and Charbonnier, 2010). There is less agreement on how to fund and provide education in the most effective way. Literature provides mixed results on the effects of input-based policy measures. In the wake of the current global economic crisis, countries face the challenges of making public finances sustainable, while also building the foundations for continued long-run economic growth.

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This situation provides incentives for establishing greater effectiveness and efficiency in schooling. One of the questions in this ongoing debate is whether private (religious) schools provide better education than public schools. Over the past decades, several policy actions have argued for the promotion of private educational systems throughout the world. Some countries make a sharp distinction between the role of the public sector as education financier and that as education provider.

In the Netherlands, (virtually) all education is publicly financed, including the private schools that accommodate over two- thirds of all students. A solid body of empirical results on the causal effects of private- and public school attendance on student achievement is important for the policy debate on how (compulsory) education should be funded and provided. This study re-addresses this issue, using both PISA 2006 and 2009 data and by adopting three different methodologies that have been used or suggested for this data.

2. Methodology

2.1 Ordinary Least Squares: covariate control

The first empirical approach conducted is based on ordinary least squares (OLS). An attempt is being made to isolate a potential private school effect; thereby controlling for observed student- and school-level background characteristics that are considered to be beyond the control of the school. The objective is that, by controlling for observed selection bias, any unobserved selection is adequately dealt with as well. The OLS model to predict student achievement is given by:

$$Y_{ij} = \beta_0 + \sum_{k=1}^{m} \beta_k X_{kij} + \sum_{k=1}^{s} \delta_k S_{kj} + \gamma \text{Private}_{ij} + \varepsilon_{ij} \qquad (1)$$

where Y_{ij} is the achievement score for student i in school j, X_{kij} a set of m student-level background characteristics and S_{tj} a set of s school-level background characteristics, γ the treatment effect of attending a private school and an error term ε_{ij}.

2.2 Instrumental Variable design: exogenous variation in treatment

In order to get estimates based on an instrumental variable approach (IV), which bases the effect of private schooling on exogenous variation in treatment generated by the instrument, the identification strategy of Patrinos (2011) is replicated. The first stage in the 2SLS is given by:

$$D_{ij} = \alpha_0 + \sum_{k=1}^{m} \alpha_k X_{kij} + \sum_{k=1}^{s} \phi_k S_{kj} + \delta IV_{ij} + \upsilon_{ij} \qquad (2)$$

where D_{ij} is private school attendance, IV_{ij} is the student's school principal response to whether parents' endorsement of the instructional or religious philosophy of the school is taken into consideration at the time of admission (IV_{ij} = 1 if "yes" and 0 otherwise). As before, X_{kij} is a set of m student-level background characteristics and S_{tj} a set of s school-level background characteristics. The predicted values for private school attendance are then used in the second stage:

$$Y_{ij} = \beta_0 + \sum_{k=1}^{m} \beta_k X_{kij} + \sum_{k=1}^{s} \delta_k S_{kj} + \gamma \hat{D}_{ij} + \varepsilon_{ij} \tag{3}$$

where γ is the 2SLS estimate for the effect of private school attendance on student achievement.

2.3 Propensity Score Matching: matching students on observed characteristics

In an attempt to strictly control for observed selection bias, a propensity score matching (PSM) identification strategy is conducted. In the first stage of this estimation strategy, the propensity score of attending a private school is predicted for all students along the lines of the matching algorithm suggested by Deheja and Wahba (2002). This is done through estimating a logistic regression model. A nearest-neighbor strategy, with replacement, is then used to estimate the treatment effect of attending a private school. The balance improvements after matching are summarized in Appendix B. As a regression can improve the precision of the estimates, a weighted regression using the treatment and matched comparison units is estimated, with the comparison units weighted by the number of times they are matched to a treated unit. This model can then be presented as:

$$Y_{ij} = \beta_0 + \sum_{k=1}^{m} \beta_k X_{kij} + \sum_{k=1}^{s} \delta_k S_{kj} + \gamma Treated_{ij} + \varepsilon_{ij} \tag{4}$$

where Y_{ij} is the achievement score for student i in school j, X_{kij} a set of m student-level background characteristics and S_{tj} a set of s school-level background characteristics, γ the treatment effect of attending a private school for the subset of treated students after the matching process has been performed, and an error term ε_{ij}.

3. Results

The raw achievement differences between public- and private school students for PISA 2006 and 2009 are displayed in Appendix A. For PISA 2006, private school students perform relatively better for mathematics (0.09σ**)**, and slightly above public school students for science and reading. However, in PISA 2009, private school students appear to perform worse on all three subjects; ranging from approximately 6 points lower (approximately 0.06σ**)** in science to almost 11 points (close to 0.13σ) in reading. It would be naive to attribute such differences in achievement to private school attendance, since students across both school types are different in some observed characteristics. For example, from the descriptive statistics it also becomes clear that private school students, on average, are relatively more often to be found in vocational tracks, in slightly lower level program types and in lower grades. Also, household characteristics, as measured by an index for economic, social and cultural status (ESCS), are relatively disadvantageous for private school students in PISA 2006 and 2009. On the other hand, home educational resources tend to be relatively better for these students. In line with existing literature for the Netherlands, private school students are somewhat less likely to come from an immigrant background.

Each of the proposed methodologies aims to account for such important differences across school type, as to get insight in a potentially causal relationship between school type and academic achievement. Enabling comparisons across methodologies, estimates for the full model specifications as outlined in equations 1-4, but for mathematics only, are presented in Table 1.

Table 1. Estimates for relative private school effectiveness, using OLS, IV and PSM

	PISA 2006			PISA 2009		
	OLS	**IV**	**PSM**	**OLS**	**IV**	**PSM**
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics
private	9.26*	18.96	10.26**	-0.08	-28.02	2.14
	(4.736)	(11.528)	(4.421)	(4.533)	(28.655)	(4.229)
individual background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
school background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	4,487	3,838	4,125	4,173	3,086	3,723
R-squared	0.61	0.67	0.60	0.61	0.67	0.62
Adj. R-squared	0.605	0.669	0.595	0.613	0.666	0.616

Robust clustered standard errors (at school level) in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

In general the OLS and PSM results are similar and relatively precise, suggesting a positive effect for mathematics in PISA 2006, but no effect for PISA 2009. In contrast, the effect based on the IV approach is relatively imprecise, switches sign across both waves of data, and does not give a clear stable indication for a private school attendance effect on mathematics achievement. To be precise, it suggests a positive effect for PISA 2006, but the opposite for PISA 2009.

One way to compare the IV results quantitatively to the OLS and PSM results is to calculate Rosenbaum bounds for the weighted differences in means (across treated and control students) obtained after the matching procedure for all three subjects. These Rosenbaum bounds estimates are displayed in Table 2.

Table 2. Rosenbaum bounds estimates for PSM results to be compatible with <u>*OLS*</u> and **IV** results

	mathematics	**PISA 2006**	**mathematics**	**PISA 2009**
Unobserved Bias	**lower bound**	**upper bound**	**lower bound**	**upper bound**
1	<u>*5.375*</u>	<u>*12.424*</u>	<u>*-6.192*</u>	<u>*2.570*</u>
1.1	1.246	16.514	-10.905	7.247
1.2	-2.532	20.252	-15.189	11.607
1.3	**-6.037**	**23.680**	-19.161	15.618
1.4	-9.269	26.873	-22.785	19.280
1.5	-12.268	29.833	-26.172	22.707
1.6	-15.111	32.599	**-29.328**	**25.901**
1.7	-17.760	35.169	-32.285	28.900
1.8	-20.252	37.623	-35.052	31.704
1.9	-22.628	39.921	-37.697	34.388
2	-24.887	42.102	-40.154	36.883

Note: Alpha is 0.95 for lower- and upper bounds

For PISA 2006, the hidden bias factors Γ, necessary to make these weighted differences in means compatible with the IV point estimates is 1.3, for mathematics. For PISA 2009, this hidden bias factor Γ, is 1.6, so somewhat larger. The confidence interval for the effect found by comparing the weighted differences in means after propensity score matching would only include the IV estimate if some unobserved variable caused the odds ratio of treatment assignment to differ between the treatment and comparison groups by those factors. A factor of 1.3 would imply matching students with actual treatment probabilities of 0.64 and 0.58, for example. Similarly, a hidden bias factor Γ of 1.7 roughly translates to matching two students with similar propensity scores whose actual treatment probabilities are 0.66 and 0.55 instead. Tables 2 also shows that no hidden bias is "required" for making the OLS results compatible with the weighted differences in means estimated using the PSM procedure (i.e. Γ=1.0), suggesting these two methods give similar results across all subjects and both waves of data.

Given that attending either a vocational or academic school in secondary education will largely be determined by the primary school advice (i.e. prior to treatment), this indicator has been included as a background control. However, it could be that student mobility patterns for the first years of secondary education prior to the PISA survey (i.e. transferring from a vocational to an academic track and vice-versa) are structurally different across school types. Therefore, the same analyses, using all three methodologies, are performed on both the subset of students attending a vocational school (around 60%) and on the subset of students attending an academic school (around 40%). Again, for ease of comparison, the results are presented for the effect of private school attendance on mathematics only, although results across subjects are largely similar. The OLS and PSM results for the vocational schools are comparable to the results presented earlier, whereas the positive effect found for PISA 2006 based on the IV approach seems to be completely driven by this subset of schools Table 3. Similarly, the OLS and PSM results for the academic subsample do not differ from the overall results, as can be inferred from Table 4. However, the very imprecise, and negative, effect found for the overall PISA 2009 data set with the IV approach seems to be accounted for by the academic subset of schools (Table 4). Instead, an imprecisely estimated "zero effect" is suggested for the subset of vocational schools in PISA 2009 (Table 3).

Table 3. Esitmates for relative private school effectiveness, PISA vocational subsamples

	PISA 2006 vocational subsample			PISA 2009 vocational subsample		
	OLS	IV	PSM	OLS	IV	PSM
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics
private	6.17	33.25*	10.51	0.48	-1.53	4.22
	(6.769)	(17.826)	(6.491)	(7.434)	(25.974)	(6.591)
individual background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
school background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	2,410	1,817	2,260	2,069	1,492	1,908
R-squared	0.29	0.37	0.26	0.20	0.36	0.21
Adj. R-squared	0.287	0.365	0.258	0.193	0.349	0.202

Robust clustered standard errors (at school level) in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 4. Esitmates for relative private school effectiveness, PISA academic subsamples

	PISA 2006 academic subsample			PISA 2009, academic subsample		
	OLS	**IV**	**PSM**	**OLS**	**IV**	**PSM**
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics
private	7.26	-5.67	7.81*	1.52	-182.51	-0.43
	(6.306)	(14.349)	(4.662)	(4.711)	(415.347)	(4.832)
individual background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
school background controls	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	2,077	2,021	1,865	2,104	1,594	1,815
R-squared	0.13	0.26	0.13	0.21		0.21
Adj. R-squared	0.124	0.255	0.118	0.201	.	0.201

Robust clustered standard errors (at school level) in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

4. Conclusion and discussion

This paper set out to apply three different non-experimental methodologies (i.e. OLS, IV and PSM) to Dutch PISA 2006 and 2009 data in an attempt to find a clear effect of private school attendance on student achievement in three subjects (i.e. mathematics, reading and science). Overall, the results do not point to a consistent effect across both waves of data. OLS and PSM results suggest private school attendance is positively associated with mathematics achievement, but only in PISA 2006. Instead, the results generated by an instrumental variable approach (IV) are very unstable. Relatively large, but imprecise, positive estimates are found for all subjects in PISA 2006, whereas the exact opposite (i.e. a large imprecise, but negative result) is found for students in the PISA 2009 data set.

A sensitivity analysis based on Rosenbaum bounds points out that the OLS and PSM results are comparable to each other, but hard to reconcile with the results generated by the IV approach. Performing the same analyses on a subset of students in vocational schools and again on the other group of students attending an academic school gives OLS and PSM results similar to those obtained from the data set as a whole. Instead, the positive association found for PISA 2006 with the IV approach seems to be completely driven by the subset of students in vocational schools, whereas the opposite holds for the IV results for PISA 2009.

The policy implications of these findings are particularly relevant for the current debate on public-private partnerships (PPPs) in education. One of the main arguments in a recent WorldBank report on this topic is that private management of public schools tends to be efficient and yields higher test scores than public institutions when students reach the end of basic education (Patrinos et al., 2009). The Dutch education sector is one of the examples used in that report. However, this conclusion does not seem not be supported by the Dutch PISA 2006 and 2009 data.

While relatively stable and precise PSM estimates are obtained, this approach is not free of threats to validity either. The validity of the PSM approach hinges on the assumption that no (non-random) selection on unobserved characteristics is present across school types. The Dutch system of universal school choice is particularly subject to risks of unobserved self-selection on behalf of the households. To what extent such self-selection (e.g. parental motivation) jeopardizes these results is an issue for further inquiry. Unfortunately, parental school choice is largely unobserved in the Dutch PISA data set.

Another important limitation is that the PISA data set does not allow distinguishing between different types of private schools (e.g. Catholic, Protestant or non-religious). This could explain the discrepancy of the results shown here with those found in Levin (2004). Alternatively, it could be that private school effects are only to be found in primary education. Another hypothesis is that private school effects have disappeared over the last couple of years with the ongoing decentralization of public schools and school consolidation processes disproportionately affecting private religious schools (cf. Dronkers, 2004)

The school (type) effects estimates are based on 2-3 years of attendance only. Students in the Netherlands have generally been exposed to 8 years of primary schooling. However, this remains unobserved, and its academic results are not taken account of, in the PISA data. In addition, the findings in this report relate to academic achievement only. There are many other relevant school type effects (e.g. graduation rates, non-cognitive skills, labor market outcomes, parental satisfaction, segregation and social cohesion). In this context, the results presented here should be interpreted alongside research on other dimensions of the Dutch education system, such as student segregation (e.g. Ladd et al., 2009).

There are several potential explanations for an overall absence of school type effects in the Netherlands. The Dutch education system, despite being largely decentralized in terms of management and pedagogy, is centrally controlled and monitored. In particular, many of the potential mechanisms for increased student achievement (i.e. funding, teacher input, instruction hours and curriculum) are not allowed to significantly differ across school types. For example, Zoontjens (2003) describes a converging trend in the Dutch education sector over the last few decades by pointing to an ongoing decentralization of public schools, to a decrease in religious orientation in private schools, and to the increase in cross-school type mergers; making it more difficult to actually distinguish between private- and public schools in the Netherlands.

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Appendix A. Descriptive statistics for PISA 2006 and PISA 2009 variables used in the analyses

A.1. PISA 2006

PISA 2006 VARIABLES		Public mean	(sd)	Private mean	(sd)	All mean	(sd)
mathematics		525.59	(86.68)	533.11	(85.45)	530.68	(85.91)
reading		504.92	(90.88)	507.67	(94.54)	506.78	(93.37)
science		523.79	(95.33)	525.42	(91.77)	524.90	(92.93)
private		0.00	(0.00)	1.00	(0.00)	0.68	(0.47)
age		15.72	(0.29)	15.72	(0.28)	15.72	(0.28)
female (yes=1)		0.48	(0.50)	0.50	(0.50)	0.49	(0.50)
students' ESCS-index		0.28	(0.92)	0.24	(0.88)	0.25	(0.89)
books at home:	11-100	0.45	(0.50)	0.44	(0.50)	0.44	(0.50)
	101-500	0.41	(0.49)	0.42	(0.49)	0.42	(0.49)
one or more computer(s) at home (yes=1)		0.99	(0.09)	0.99	(0.09)	0.99	(0.09)
home educational resources		0.08	(0.88)	0.14	(0.85)	0.12	(0.86)
home possessions		0.23	(0.89)	0.23	(0.84)	0.23	(0.86)
Mother's education:	primary	0.06	(0.23)	0.05	(0.22)	0.05	(0.22)
	lower-secondary	0.13	(0.34)	0.13	(0.33)	0.13	(0.33)
	upper-secondary	0.39	(0.49)	0.46	(0.50)	0.44	(0.50)
	university	0.39	(0.49)	0.34	(0.47)	0.35	(0.48)
immigrant status (yes=1)		0.14	(0.35)	0.10	(0.30)	0.11	(0.32)
non-western language at home (yes=1)		0.06	(0.24)	0.04	(0.20)	0.05	(0.22)
academic track (yes=1)		0.45	(0.50)	0.41	(0.49)	0.42	(0.49)
Students' grade:	9th	0.44	(0.50)	0.46	(0.50)	0.45	(0.50)
	10th	0.50	(0.50)	0.51	(0.50)	0.51	(0.50)
	11th	0.01	(0.08)	0.00	(0.06)	0.00	(0.07)
program type		6.98	(2.97)	6.95	(2.85)	6.96	(2.89)
ESCS-index of school		0.28	(0.53)	0.24	(0.43)	0.25	(0.47)
proportion immigrants at school		0.15	(0.20)	0.10	(0.14)	0.11	(0.16)
rural		0.02	(0.13)	0.03	(0.16)	0.02	(0.15)
school can fire teachers		0.98	(0.13)	1.00	(0.00)	0.99	(0.07)
achievement data used		0.76	(0.43)	0.71	(0.45)	0.73	(0.45)
school sets teacher increase		0.65	(0.48)	0.71	(0.45)	0.69	(0.46)
parents involved in budget		0.15	(0.36)	0.10	(0.30)	0.11	(0.32)
student-teacher ratio		16.25	(3.52)	15.84	(4.67)	15.96	(4.36)
proportion certified teachers		0.91	(0.21)	0.88	(0.18)	0.89	(0.19)
weekly mathematics hours (categorical)		2.88	(1.51)	2.87	(1.51)	2.87	(1.51)
weekly reading hours (categorical)		2.93	(1.29)	2.91	(1.29)	2.92	(1.29)
weekly science hours (categorical)		2.17	(1.92)	2.17	(1.98)	2.17	(1.96)
N		1553		3306		4859	

A.2. PISA 2009

PISA 2009 VARIABLES		Public mean	(sd)	Private mean	(sd)	All mean	(sd)
mathematics		531.36	(88.22)	522.75	(83.75)	525.68	(85.39)
reading		515.23	(86.99)	504.50	(85.28)	508.14	(86.01)
science		525.74	(101.37)	519.66	(88.48)	521.72	(93.09)
private		0.00	(0.00)	1.00	(0.00)	0.66	(0.47)
age		15.73	(0.28)	15.72	(0.29)	15.72	(0.29)
female (yes=1)		0.50	(0.50)	0.50	(0.50)	0.50	(0.50)
students' ESCS-index		0.32	(0.86)	0.24	(0.85)	0.27	(0.86)
books at home:	11-100	0.45	(0.50)	0.49	(0.50)	0.48	(0.50)
	101-500	0.39	(0.49)	0.35	(0.48)	0.37	(0.48)
one or more computer(s) at home (yes=1)		0.98	(0.12)	0.99	(0.08)	0.99	(0.09)
home educational resources		-0.03	(0.89)	0.08	(0.81)	0.04	(0.84)
home possessions		0.32	(0.81)	0.32	(0.75)	0.32	(0.77)
Mother's education:	primary	0.04	(0.19)	0.04	(0.19)	0.04	(0.19)
	lower-secondary	0.09	(0.28)	0.08	(0.27)	0.08	(0.27)
	upper-secondary	0.41	(0.49)	0.49	(0.50)	0.46	(0.50)
	university	0.33	(0.47)	0.29	(0.45)	0.30	(0.46)
immigrant status (yes=1)		0.14	(0.35)	0.11	(0.32)	0.12	(0.33)
non-western language at home (yes=1)		0.06	(0.23)	0.04	(0.20)	0.05	(0.21)
single-parent household (yes=1)		0.17	(0.37)	0.14	(0.34)	0.15	(0.35)
academic track (yes=1)		0.47	(0.50)	0.38	(0.49)	0.41	(0.49)
Students' grade:	9th	0.45	(0.50)	0.47	(0.50)	0.46	(0.50)
	10th	0.52	(0.50)	0.49	(0.50)	0.50	(0.50)
	11th	0.01	(0.08)	0.00	(0.07)	0.01	(0.07)
program type		4.59	(2.34)	4.47	(1.97)	4.51	(2.10)
ESCS-index of school		0.31	(0.48)	0.24	(0.44)	0.27	(0.45)
proportion immigrants at school		0.14	(0.18)	0.12	(0.19)	0.13	(0.19)
rural		0.11	(0.32)	0.22	(0.41)	0.18	(0.39)
school can fire teachers		1.00	(0.00)	1.00	(0.00)	1.00	(0.00)
achievement data used		0.69	(0.46)	0.72	(0.45)	0.71	(0.45)
school sets teacher increase		0.75	(0.43)	0.74	(0.44)	0.75	(0.44)
parents involved in budget		0.14	(0.34)	0.06	(0.24)	0.09	(0.28)
student-teacher ratio		15.56	(3.95)	15.67	(5.28)	15.63	(4.90)
proportion certified teachers		0.87	(0.20)	0.80	(0.24)	0.82	(0.23)
weekly mathematics hours (minutes)		166.30	(41.02)	165.93	(41.65)	166.05	(41.44)
weekly reading hours (minutes)		161.51	(38.43)	162.10	(40.43)	161.91	(39.79)
weekly science hours (minutes)		223.09	(124.83)	213.98	(122.47)	216.91	(123.29)
N		1795		2872		4760	

Appendix B. Balance improvements due to propensity score matching procedure

		PISA 2006					PISA 2009				
		Mean			SD		Mean			SD	
Variable	Sample	Treated	Control	p>t	Treated	Control	Treated	Control	p>t	Treated	Control
age	Unmatched	15.72	15.72	0.74	0.30	0.30	15.70	15.72	0.06	0.30	0.30
	Matched	15.72	15.72	0.73	0.30	0.30	15.70	15.70	0.55	0.30	0.30
female (yes=1)	Unmatched	0.49	0.48	0.39	0.50	0.50	0.51	0.51	0.91	0.50	0.50
	Matched	0.49	0.50	0.66	0.50	0.50	0.51	0.49	0.24	0.50	0.50
students' ESCS-index	Unmatched	0.28	0.38	0.00	0.90	0.90	0.31	0.39	0.00	0.80	0.80
	Matched	0.28	0.29	0.96	0.90	0.80	0.31	0.32	0.49	0.80	0.80
books at home	Unmatched	1.30	1.35	0.02	0.70	0.70	1.25	1.27	0.26	0.70	0.70
	Matched	1.30	1.29	0.58	0.70	0.70	1.25	1.22	0.20	0.70	0.70
one or more computer(s) at home (yes=1)	Unmatched	0.99	0.99	0.90	0.10	0.10	1.00	1.00	0.28	0.00	0.10
	Matched	0.99	1.00	0.37	0.10	0.10	1.00	1.00	0.56	0.00	0.10
home educational resources	Unmatched	0.18	0.15	0.33	0.80	0.80	0.13	0.04	0.00	0.80	0.80
	Matched	0.18	0.16	0.40	0.80	0.80	0.13	0.14	0.64	0.80	0.80
home possessions	Unmatched	0.28	0.32	0.11	0.80	0.90	0.36	0.37	0.50	0.70	0.80
	Matched	0.28	0.26	0.56	0.80	0.80	0.36	0.38	0.32	0.70	0.80
mother's education	Unmatched	4.19	4.29	0.08	1.60	1.70	4.12	4.22	0.01	1.30	1.30
	Matched	4.19	4.21	0.75	1.60	1.70	4.12	4.15	0.43	1.30	1.30
immigrant status (yes=1)	Unmatched	0.09	0.13	0.00	0.30	0.30	0.10	0.12	0.06	0.30	0.30
	Matched	0.09	0.08	0.46	0.30	0.30	0.10	0.08	0.07	0.30	0.30
non-western language at home (yes=1)	Unmatched	0.04	0.05	0.03	0.20	0.20	0.04	0.05	0.04	0.20	0.20
	Matched	0.04	0.03	0.06	0.20	0.20	0.04	0.03	0.16	0.20	0.20
academic track (yes=1)	Unmatched	0.44	0.51	0.00	0.50	0.50	0.48	0.51	0.06	0.50	0.50
	Matched	0.44	0.45	0.59	0.50	0.50	0.48	0.49	0.80	0.50	0.50
student's grade	Unmatched	9.50	9.50	0.83	0.60	0.60	-0.52	-0.46	0.00	0.60	0.60
	Matched	9.50	9.48	0.12	0.60	0.60	-0.52	-0.48	0.02	0.60	0.60
program type	Unmatched	7.22	7.47	0.01	2.70	2.80	4.86	4.89	0.63	1.90	2.10
	Matched	7.22	7.13	0.19	2.70	2.80	4.86	4.81	0.39	1.90	2.10
ESCS-index of school	Unmatched	0.28	0.37	0.00	0.40	0.50	0.30	0.38	0.00	0.40	0.40
	Matched	0.28	0.32	0.00	0.40	0.50	0.30	0.37	0.00	0.40	0.40
proportion immigrants at school	Unmatched	0.09	0.14	0.00	0.10	0.20	0.11	0.12	0.00	0.20	0.10
	Matched	0.09	0.13	0.00	0.10	0.20	0.11	0.11	0.30	0.20	0.10
rural	Unmatched	0.03	0.02	0.07	0.20	0.10	0.20	0.12	0.00	0.40	0.30
	Matched	0.03	0.03	0.81	0.20	0.20	0.20	0.20	0.56	0.40	0.40