Performance Gender-Gap: Does Competition Matter?

Web-only Appendix

Evren Ors, *HEC Paris and CEPR*

Frédéric Palomino, *EDHEC Business School*

Eloïc Peyrache, *HEC Paris*

Accepted to the ***Journal of Labor Economics*** on July 26, 2012

Appendix Table A1

PERFORMANCE AT THE WRITTEN EXAM (FIRST STAGE OF THE ENTRANCE EXAM) – ALTERNATIVE SPECIFICATION WITH LN(PREP_SCHOOL_RANK)

	10^{th} quantile		25^{th} quantile		50^{th} quantile		75^{th} quantile		90^{th} quantile	
Constant	8.1557	***	9.4639	***	11.3449	***	12.3676	***	13.5692	***
	(0.4089)		(0.3810)		(0.3409)		(0.4085)		(0.4986)	
D_2006	0.6415	***	0.7044	***	0.8168	***	0.7839	***	0.8326	***
	(0.1009)		(0.0888)		(0.0744)		(0.0918)		(0.0984)	
D_2007	0.7558	***	0.8671	***	1.0057	***	1.0531	***	1.0731	***
	(0.0967)		(0.0846)		(0.0797)		(0.0935)		(0.1073)	
D_Female	-0.0829		-0.2278	***	-0.3609	***	-0.5085	***	-0.5471	***
	(0.0842)		(0.0740)		(0.0637)		(0.0789)		(0.0899)	
D_Non_French	-0.3232	*	-0.3277	*	-0.1243		0.0885		0.6487	**
	(0.1657)		(0.1852)		(0.1485)		(0.1827)		(0.2872)	
D_Mathematics _sub-major	1.0958	***	0.8188	**	0.0888		0.1798		0.2303	
	(0.2983)		(0.3178)		(0.2763)		(0.3560)		(0.3100)	
D_Phys_&_Chem _sub-major	0.6494	**	0.3804		-0.5705	**	-0.4370		-0.4262	
	(0.3075)		(0.3267)		(0.2827)		(0.3691)		(0.3230)	
D_Life_Sciences _sub-major	0.6826	**	0.4142		-0.2135		-0.0408		-0.0162	
	(0.3180)		(0.3313)		(0.2896)		(0.3700)		(0.3259)	
D_Cum_Laude	0.9997	***	1.0306	***	0.9469	***	1.0890	***	0.7107	**
	(0.2341)		(0.1520)		(0.1540)		(0.1608)		(0.3556)	
D_Magna_Cum_Laude	1.5780	***	1.7459	***	1.7052	***	1.8839	***	1.4806	***
	(0.2335)		(0.1499)		(0.1455)		(0.1564)		(0.3524)	
D_Summa_Cum_Laude	2.2964	***	2.6754	***	2.6157	***	2.9787	***	2.5964	***
	(0.2462)		(0.1656)		(0.1521)		(0.1686)		(0.3586)	
Ln(Prep-School_Rank)	-0.9460	***	-0.9616	***	-0.9254	***	-0.9060	***	-0.7900	***
	(0.0420)		(0.0378)		(0.0305)		(0.0365)		(0.0464)	
Prep-school fixed effects	no									
Number of observations	5635									
Pseudo-R^2	0.2066		0.2165		0.2216		0.2003		0.1887	

NOTE. – This table presents simultaneous quantile regression models that are jointly estimated, where the dependent variable is the weighted-average of written exam grades, with subject matter weights as detailed in Table 1. Indicator variables are preceded by the prefix "D_". Bootstrap standard errors (presented within parentheses below the coefficient estimates) are obtained with 5,000 replications.

* $p < .10$

** $p < .05$

*** $p < .01$

Appendix Table A2

PERFORMANCE AT THE WRITTEN MATHEMATICS EXAMS –
ALTERNATIVE SPECIFICATION WITH LN(PREP_SCHOOL_RANK)

	10th quantile		25th quantile		50th quantile		75th quantile		90th quantile	
Constant	7.1405	***	9.7681	***	11.6155	***	15.0183	***	16.4892	***
	(0.5503)		(0.5092)		(0.7492)		(1.0321)		(0.8126)	
D_2006	0.9927	***	1.0803	***	1.1192	***	1.1579	***	0.6079	**
	(0.1756)		(0.1397)		(0.1583)		(0.1914)		(0.2422)	
D_2007	1.1656	***	1.3445	***	1.6109	***	1.6427	***	1.2358	***
	(0.1889)		(0.1458)		(0.1583)		(0.1941)		(0.2220)	
D_Female	-0.2642	*	-0.5297	***	-0.8214	***	-0.8320	***	-1.3888	***
	(0.1501)		(0.1178)		(0.1302)		(0.1534)		(0.1716)	
D_Non_French	-0.6367	***	-0.2448		0.0537		0.1394		0.4118	
	(0.2408)		(0.2579)		(0.3087)		(0.2664)		(0.3536)	
D_Mathematics _sub-major	1.0591	***	0.6443		1.1468	*	0.2788		-0.3358	
	(0.3972)		(0.3955)		(0.6142)		(0.9654)		(0.6491)	
D_Phys_&_Chem _sub-major	0.2625		-0.4769		-0.3239		-1.2529		-2.0970	***
	(0.4301)		(0.4132)		(0.6276)		(0.9686)		(0.6765)	
D_Life_Sciences _sub-major	0.0345		-0.3641		0.2028		-0.5337		-1.3515	**
	(0.4339)		(0.4280)		(0.6338)		(0.9749)		(0.6748)	
D_Cum_Laude	1.1402	***	1.3559	***	1.5611	***	1.5548	***	2.3776	***
	(0.2518)		(0.2522)		(0.3085)		(0.2984)		(0.3733)	
D_Magna_Cum_Laude	2.1171	***	2.5110	***	2.6876	***	2.6442	***	3.7584	***
	(0.2680)		(0.2473)		(0.3025)		(0.2998)		(0.3787)	
D_Summa_Cum_Laude	3.0641	***	3.5318	***	3.9043	***	4.0484	***	5.2265	***
	(0.2997)		(0.2655)		(0.3420)		(0.3290)		(0.3978)	
Ln(Prep-School_Rank)	-1.4231	***	-1.5920	***	-1.6214	***	-1.6221	***	-1.2408	***
	(0.0884)		(0.0670)		(0.0704)		(0.0752)		(0.0857)	
Prep-school fixed effects	no									
Number of observations	5635									
Pseudo-R^2	0.1516		0.1669		0.1719		0.1746		0.1574	

NOTE. – This table presents simultaneous quantile regression models that are jointly estimated, where the dependent variable is the weighted-average of written exam grades, with subject matter weights as detailed in Table 1. Indicator variables are preceded by the prefix "D_". Bootstrap standard errors (presented within parentheses below the coefficient estimates) are obtained with 5,000 replications.

* $p < .10$

** $p < .05$

*** $p < .01$

Appendix Table A3

PERFORMANCE AT THE WRITTEN NON-MATHEMATICS EXAMS –
ALTERNATIVE SPECIFICATION WITH LN(PREP_SCHOOL_RANK)

	10^{th} quantile		25^{th} quantile		50^{th} quantile		75^{th} quantile		90^{th} quantile	
Constant	8.0734	***	8.8402	***	10.1729	***	11.6685	***	13.4972	***
	(0.3573)		(0.3108)		(0.3097)		(0.3682)		(0.4827)	
D_2006	0.3913	***	0.5240	***	0.6267	***	0.6242	***	0.6591	***
	(0.0948)		(0.0840)		(0.0799)		(0.0940)		(0.1097)	
D_2007	0.6017	***	0.6522	***	0.6983	***	0.6749	***	0.5642	***
	(0.0922)		(0.0839)		(0.0804)		(0.0894)		(0.1065)	
D_Female	-0.0298		-0.0790		-0.2193	***	-0.2246	***	-0.3028	***
	(0.0830)		(0.0651)		(0.0631)		(0.0718)		(0.0897)	
D_Non_French	-0.3303	**	-0.2764	**	-0.1294		-0.0950		0.2527	
	(0.1569)		(0.1279)		(0.1039)		(0.1440)		(0.2667)	
D_Mathematics _sub-major	0.3515		0.5100	**	0.2749		0.2173		-0.2532	
	(0.3061)		(0.2439)		(0.2524)		(0.2882)		(0.3837)	
D_Phys_&_Chem _sub-major	0.1791		0.3840		0.1485		0.0595		-0.3482	
	(0.3150)		(0.2568)		(0.2655)		(0.2967)		(0.4008)	
D_Life_Sciences _sub-major	0.2646		0.5263	**	0.3817		0.2635		-0.1097	
	(0.3357)		(0.2578)		(0.2661)		(0.3095)		(0.3971)	
D_Cum_Laude	0.8642	***	0.9223	***	0.9068	***	0.5751	***	0.2240	
	(0.1707)		(0.1400)		(0.1334)		(0.1937)		(0.2399)	
D_Magna_Cum_Laude	1.3478	***	1.3363	***	1.4429	***	1.2000	***	0.8630	***
	(0.1769)		(0.1354)		(0.1319)		(0.1922)		(0.2325)	
D_Summa_Cum_Laude	2.0052	***	2.1420	***	2.3692	***	2.0578	***	1.6949	***
	(0.1983)		(0.1588)		(0.1475)		(0.2036)		(0.2445)	
Ln(Prep-School_Rank)	-0.5847	***	-0.5630	***	-0.5678	***	-0.5156	***	-0.4890	***
	(0.0405)		(0.0365)		(0.0340)		(0.0390)		(0.0429)	
Prep-school fixed effects	no									
Number of observations	5635									
Pseudo-R^2	0.1391		0.1286		0.1282		0.1171		0.0963	

NOTE. – This table presents simultaneous quantile regression models that are jointly estimated, where the dependent variable is the weighted-average of written exam grades, with subject matter weights as detailed in Table 1. Indicator variables are preceded by the prefix "D_". Bootstrap standard errors (presented within parentheses below the coefficient estimates) are obtained with 5,000 replications.

* $p < .10$
** $p < .05$
*** $p < .01$

Appendix Table A4

PERFORMANCE AT THE WRITTEN EXAM (FIRST STAGE OF THE ENTRANCE EXAM) – MATHEMATICS SUB-MAJORS IN HIGH SCHOOL

	10^{th} quantile		25^{th} quantile		50^{th} quantile		75^{th} quantile		90^{th} quantile	
Constant	4.0147	***	4.5948	***	5.5927	***	6.9612	***	8.5717	***
	(0.4739)		(0.3226)		(0.4145)		(0.4260)		(1.0118)	
D_2006	0.7190	***	0.7720	***	0.7673	***	0.7471	***	0.7883	***
	(0.1256)		(0.1011)		(0.0972)		(0.1206)		(0.1413)	
D_2007	0.8010	***	0.8950	***	0.9373	***	0.9911	***	0.8653	***
	(0.1271)		(0.1114)		(0.0966)		(0.1119)		(0.1426)	
D_Female	-0.0260		-0.2488	***	-0.3427	***	-0.4936	***	-0.6887	***
	(0.1051)		(0.0927)		(0.0762)		(0.0968)		(0.1120)	
D_Non_French	-0.3983	*	-0.3743	*	-0.5107	***	-0.1957		-0.1073	
	(0.2370)		(0.1994)		(0.1888)		(0.2746)		(0.3365)	
D_Cum_Laude	0.5763	***	0.6933	***	0.6253	***	0.6669	***	0.7737	***
	(0.2212)		(0.1972)		(0.2174)		(0.2210)		(0.2832)	
D_Magna_Cum_Laude	1.1130	***	1.2465	***	1.2667	***	1.2360	***	1.5647	***
	(0.2210)		(0.1953)		(0.2171)		(0.2252)		(0.2934)	
D_Summa_Cum_Laude	1.9997	***	2.3265	***	2.2733	***	2.1453	***	2.5833	***
	(0.2470)		(0.2222)		(0.2274)		(0.2416)		(0.3202)	
Prep-school fixed effects	yes									
Number of observations	3966									
Pseudo-R^2	0.2552		0.2526		0.2576		0.2431		0.2378	

NOTE. – This table presents simultaneous quantile regression models that are jointly estimated, where the dependent variable is the weighted-average of written exam grades, with subject matter weights as detailed in Table 1. Indicator variables are preceded by the prefix "D_". Bootstrap standard errors (presented within parentheses below the coefficient estimates) are obtained with 5,000 replications.

* $p < .10$

** $p < .05$

*** $p < .01$

Appendix Table A5

PERFORMANCE AT THE WRITTEN EXAM (FIRST STAGE OF THE ENTRANCE EXAM) – PHYSICS & CHEMISTRY AND LIFE SCIENCES SUB-MAJORS IN HIGH SCHOOL

	10^{th} quantile		25^{th} quantile		50^{th} quantile		75^{th} quantile		90^{th} quantile	
Constant	3.8323	***	4.7778	***	5.1272	***	6.0130	***	9.0003	***
	(0.6370)		(0.6192)		(0.6577)		(1.1163)		(1.1257)	
D_2006	0.5644	***	0.7065	***	0.7855	***	0.6653	***	0.4340	*
	(0.2151)		(0.1713)		(0.1723)		(0.2105)		(0.2493)	
D_2007	0.7982	***	0.8398	***	0.8739	***	0.9353	***	0.9143	***
	(0.2100)		(0.1662)		(0.1616)		(0.2033)		(0.2509)	
D_Female	-0.3818	**	-0.3367	**	-0.3793	***	-0.4153	***	-0.6950	***
	(0.1816)		(0.1359)		(0.1344)		(0.1522)		(0.1865)	
D_Non_French	-0.7172		-0.5033		-0.4393	*	-0.5487	*	-0.0677	
	(0.4512)		(0.3205)		(0.2529)		(0.3201)		(0.4483)	
D_Life_Sciences _sub-major	-0.0335		-0.0267		0.1939		0.3443	**	0.3223	*
	(0.1639)		(0.1386)		(0.1273)		(0.1464)		(0.1889)	
D_Cum_Laude	0.9620	***	1.0775	***	1.5000	***	1.0680	**	0.9063	*
	(0.3512)		(0.2748)		(0.3282)		(0.4190)		(0.4678)	
D_Magna_Cum_Laude	1.8100	***	1.9290	***	2.1909	***	1.8203	***	1.5890	***
	(0.3634)		(0.2957)		(0.3397)		(0.4306)		(0.4500)	
D_Summa_Cum_Laude	2.5292	***	2.7523	***	3.0975	***	2.9647	***	2.8263	***
	(0.4128)		(0.3292)		(0.3787)		(0.4522)		(0.4743)	
Prep-school fixed effects	yes									
Number of observations	1563									
Pseudo-R^2	0.2982		0.2944		0.2996		0.2897		0.2887	

NOTE. – This table presents simultaneous quantile regression models that are jointly estimated, where the dependent variable is the weighted-average of written exam grades, with subject matter weights as detailed in Table 1. Indicator variables are preceded by the prefix "D_". Bootstrap standard errors (presented within parentheses below the coefficient estimates) are obtained with 5,000 replications.

* $p < .10$

** $p < .05$

*** $p < .01$

Appendix Table A6

PERFORMANCE AT THE ORAL EXAM STAGE – MATHEMATICS SUB-MAJORS IN HIGH SCHOOL

	Oral Exams' Weighted Average			Oral Math Exam Score			Oral Non-Math Exams Wghtd Ave.		
	25th	50th	75th	25th	50th	75th	25th	50th	75th
Constant	6.1837	4.6389	2.0883	5.3696	9.3582	5.1952	4.5533	4.5387	3.0182
	(4.3005)	(3.6259)	(3.8395)	(8.4416)	(5.47e+13)	(9.0075)	(5.2807)	(6.58e+13)	(5.1087)
D_2006	-0.4052 **	-0.5143 **	-0.6295 ***	-0.7119 *	-0.8575 *	-0.9565 **	-0.4468 *	-0.5065	-0.6401 **
	(0.2027)	(0.2099)	(0.2282)	(0.4273)	(0.4707)	(0.4598)	(0.2316)	(0.9654)	(0.2651)
D_2007	-0.7024 ***	-0.8677 ***	-0.8386 ***	-2.1761 ***	-1.5071 ***	-1.8895 ***	-0.4971 *	-0.5982	-0.6932 **
	(0.2276)	(0.2184)	(0.2454)	(0.4665)	(0.5001)	(0.4876)	(0.2689)	(3.0739)	(0.2821)
D_Female	-0.2596	-0.3507 **	-0.4058 **	-0.6415 *	-0.3067	-0.3973	-0.2319	-0.3867 *	-0.6322 ***
	(0.1613)	(0.1568)	(0.2006)	(0.3697)	(0.3820)	(0.3499)	(0.2008)	(0.2303)	(0.2149)
D_Non_French	0.1548	0.1670	0.1627	0.7109	0.0686	1.2351	0.1838	-0.2579	0.1334
	(0.3985)	(0.3786)	(0.4845)	(0.7621)	(1.0103)	(0.9306)	(0.4199)	(1.1596)	(0.4975)
D_Cum_Laude	-0.5836	-0.6977	-1.0907	-0.5103	-2.7341	-2.8305	0.0998	-0.6678	-0.2505
	(0.7936)	(0.6001)	(0.8159)	(2.1627)	(5.47e+13)	(1.9184)	(1.1378)	(6.58e+13)	(0.9486)
D_Magna_Cum_Laude	-0.5600	-0.1133	-0.6437	0.0500	-2.0628	-2.1157	0.1138	-0.6232	0.3155
	(0.7988)	(0.6036)	(0.8133)	(2.1812)	(5.47e+13)	(1.9015)	(1.1147)	(6.58e+13)	(0.9367)
D_Summa_Cum_Laude	-0.4321	0.2183	-0.3800	0.5353	-1.7112	-1.7515	0.3687	-0.2172	0.4359
	(0.8098)	(0.6239)	(0.8359)	(2.2013)	(5.47e+13)	(1.9187)	(1.1370)	(6.58e+13)	(0.9410)
1st_Foreign_Language	0.3813	0.3363	0.3738	0.0421	-0.2021	-0.3124	0.7251 **	0.6639	0.7676 **
	(0.2894)	(0.2486)	(0.3285)	(0.6086)	(0.6030)	(0.5853)	(0.3036)	(0.6395)	(0.3691)
1st_Foreign_Language^2	-0.0096	-0.0082	-0.0104	-0.0016	0.0060	0.0105	-0.0211 *	-0.0181	-0.0240 *
	(0.0114)	(0.0096)	(0.0124)	(0.0234)	(0.0228)	(0.0231)	(0.0119)	(0.0295)	(0.0138)
2nd_Foreign_Language	-0.2081	-0.2413	0.0310	0.0685	0.3136	-0.1658	-0.4342	-0.2289	-0.3976
	(0.3133)	(0.2119)	(0.2820)	(0.5967)	(0.6808)	(0.7403)	(0.3427)	(0.3984)	(0.2969)
2nd_Foreign_Language^2	0.0113	0.0131	0.0023	-0.0062	-0.0119	0.0095	0.0240 *	0.0146	0.0221 *
	(0.0122)	(0.0085)	(0.0112)	(0.0241)	(0.0275)	(0.0297)	(0.0136)	(0.0137)	(0.0120)

French	-0.4753 **	-0.1671	-0.1682	-0.5362	-0.1127	0.2457	-0.4295 **	-0.4063	-0.1548
	(0.1844)	(0.1553)	(0.1722)	(0.3263)	(0.3443)	(0.3675)	(0.2067)	(0.2954)	(0.1865)
$French^2$	0.0204 ***	0.0086	0.0097	0.0228 *	0.0056	-0.0075	0.0189 **	0.0175	0.0088
	(0.0074)	(0.0065)	(0.0070)	(0.0137)	(0.0142)	(0.0147)	(0.0083)	(0.0126)	(0.0079)
General_Culture	-0.1235	-0.0497	0.0726	0.2332	-0.2146	0.0843	-0.1109	-0.1216	-0.0155
	(0.1486)	(0.1321)	(0.1400)	(0.3502)	(0.2644)	(0.2957)	(0.1774)	(0.2408)	(0.1646)
$General\_Culture^2$	0.0062	0.0029	-0.0018	-0.0100	0.0047	-0.0043	0.0070	0.0057	0.0023
	(0.0062)	(0.0052)	(0.0056)	(0.0140)	(0.0106)	(0.0123)	(0.0073)	(0.0101)	(0.0067)
History_&_Geography	0.0977	0.2670 *	0.2747	-0.0645	0.0372	-0.0705	0.0975	0.2107	0.2898
	(0.1702)	(0.1447)	(0.1675)	(0.3141)	(0.3255)	(0.2992)	(0.2010)	(1.7560)	(0.2106)
$History\_\&\_Geography^2$	-0.0012	-0.0071	-0.0075	0.0065	-0.0007	0.0055	-0.0005	-0.0046	-0.0084
	(0.0067)	(0.0059)	(0.0066)	(0.0120)	(0.0124)	(0.0119)	(0.0080)	(0.0499)	(0.0082)
Mathematics_1	-0.3184	-0.1253	-0.0847	-0.3503	-0.3757	-0.2729	-0.3358	-0.3275	-0.1278
	(0.2155)	(0.2071)	(0.1946)	(0.4563)	(0.3996)	(0.4494)	(0.2387)	(0.3334)	(0.2667)
$Mathematics\_1^2$	0.0144 **	0.0073	0.0069	0.0207	0.0229 *	0.0193	0.0120	0.0124	0.0072
	(0.0073)	(0.0070)	(0.0067)	(0.0156)	(0.0135)	(0.0148)	(0.0081)	(0.0126)	(0.0090)
Mathematics_2	0.1507	-0.0935	0.1242	-0.1567	-0.0517	0.8893	0.1247	0.0386	0.3813
	(0.2231)	(0.2580)	(0.2691)	(0.4639)	(0.4396)	(0.5507)	(0.2807)	(1.8030)	(0.3355)
$Mathematics\_2^2$	-0.0012	0.0074	-0.0007	0.0133	0.0130	-0.0187	-0.0026	0.0005	-0.0125
	(0.0073)	(0.0082)	(0.0087)	(0.0154)	(0.0142)	(0.0177)	(0.0093)	(0.0591)	(0.0108)
Prep-school Fixed Effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Number of observations	1069			1069			1069		
Pseudo-R^2	0.2044	0.2087	0.2241	0.1632	0.1747	0.1730	0.1881	0.1919	0.1983

NOTE. – This table replicates Table 9 of the paper using the subsample of candidates who majored in mathematics majors at high school. The simultaneous quantile regression models are jointly estimated with bootstrap standard errors (presented within parentheses below the coefficient estimates) using 5,000 replications. Indicator variables are preceded by the prefix "D_".

* $p < .10$

** $p < .05$

*** $p < .01$

Appendix Table A7

PERFORMANCE AT THE ORAL EXAM STAGE – PHYSICS & CHEMISTRY AND LIFE SCIENCES SUB-MAJORS IN HIGH SCHOOL

	Oral Exams' Weighted Average			Oral Math Exam Score			Oral Non-Math Exams' Weighted Ave.		
	25th	50th	75th	25th	50th	75th	25th	50th	75th
Constant	8.1027	9.0354	12.4328	-1.4435	6.1957	25.0495	14.2224	3.7842	6.1049
	(8.7662)	(6.52e+12)	(9.0967)	(16.6436)	(16.8537)	(19.5091)	(10.3664)	(10.2924)	(10.6928)
D_2006	-0.7104	-0.6774	0.0024	-1.4204	-0.6539	0.3585	-1.0205	-0.6410	-0.2201
	(0.4814)	(0.4733)	(0.5495)	(0.9008)	(0.9710)	(1.0420)	(0.7104)	(0.6878)	(0.6562)
D_2007	-0.6060	-0.7373	0.2616	-2.5244 ***	-2.6687 ***	-1.6019	0.2847	-0.2967	0.2068
	(0.5186)	(0.5025)	(0.5910)	(0.9192)	(0.8976)	(1.0393)	(0.6633)	(0.6777)	(0.6631)
D_Female	0.6497 *	0.4440	0.1110	0.1223	0.0169	0.3350	1.1183 **	0.7950 *	0.4127
	(0.3892)	(0.3623)	(0.3977)	(0.6888)	(0.6593)	(0.7739)	(0.5027)	(0.4664)	(0.4505)
D_Non_French	-0.5988	0.0408	-0.1736	2.9797 *	1.5818	0.9624	-0.7368	-0.1367	-0.0147
	(0.8326)	(0.8121)	(0.8841)	(1.7382)	(1.3653)	(1.3549)	(1.0977)	(1.1273)	(1.0760)
D_Life_Sciences _sub-major	0.3404	0.1881	-0.0796	-0.0726	0.5588	0.1793	0.2198	-0.2255	-0.4864
	(0.3470)	(0.3378)	(0.3944)	(0.6236)	(0.6300)	(0.6905)	(0.4739)	(0.4942)	(0.4811)
D_Cum_Laude	1.5037	-0.9706	-1.7256	0.0284	2.2222	0.3431	-0.2389	-0.8908	-1.1097
	(2.4017)	(6.52e+12)	(2.1997)	(5.0946)	(4.8578)	(5.5334)	(2.0077)	(1.8492)	(1.7848)
D_Magna_Cum_Laude	1.6518	-0.9947	-1.0298	-0.1419	1.5380	-0.5353	0.2224	-0.0674	0.3091
	(2.3591)	(6.52e+12)	(2.2086)	(5.0351)	(4.8020)	(5.4818)	(1.8999)	(1.7602)	(1.7070)
D_Summa_Cum_Laude	2.4510	-0.4755	-0.3241	-0.0361	2.7705	1.1155	0.8095	0.0359	0.3131
	(2.3530)	(6.52e+12)	(2.2165)	(5.0375)	(4.8287)	(5.5316)	(1.9114)	(1.8024)	(1.7097)
1st_Foreign_Language	-0.8450	-0.3363	-0.1480	-0.7982	-1.4250	-0.9747	-0.2253	0.9174	1.1846
	(0.8243)	(0.6484)	(0.6219)	(1.2074)	(1.3126)	(1.4700)	(0.8762)	(0.8105)	(0.8558)
1st_Foreign_Language^2	0.0346	0.0153	0.0120	0.0298	0.0487	0.0321	0.0145	-0.0268	-0.0362
	(0.0312)	(0.0242)	(0.0231)	(0.0465)	(0.0495)	(0.0542)	(0.0334)	(0.0300)	(0.0318)
2nd_Foreign_Language	0.6321	0.4049	0.1946	-0.1089	0.5359	0.1952	0.8330	0.2857	0.1116
	(0.6282)	(0.5821)	(0.6314)	(0.8800)	(0.8380)	(0.9878)	(0.8409)	(0.8188)	(0.7813)
2nd_Foreign_Language^2	-0.0183	-0.0082	-0.0048	0.0168	-0.0156	-0.0108	-0.0243	-0.0007	0.0004
	(0.0252)	(0.0233)	(0.0255)	(0.0352)	(0.0332)	(0.0387)	(0.0331)	(0.0321)	(0.0312)

French	-0.8072	*	-0.6564	-0.4752	0.0722	0.3991	0.0502	-1.4512	**	-0.9305	-0.8201
	(0.4711)		(0.4199)	(0.4899)	(0.8339)	(0.8976)	(1.2192)	(0.6200)		(0.5812)	(0.5823)
French^2	0.0335	*	0.0265	0.0195	-0.0011	-0.0120	0.0063	0.0571	**	0.0355	0.0336
	(0.0197)		(0.0174)	(0.0200)	(0.0339)	(0.0369)	(0.0488)	(0.0254)		(0.0239)	(0.0238)
General_Culture	0.2061		-0.0425	0.3519	1.0985	0.2963	-0.5259	-0.1019		0.0849	-0.0103
	(0.4340)		(0.4326)	(0.4597)	(0.8736)	(0.8245)	(0.8455)	(0.5159)		(0.5420)	(0.5557)
General_Culture^2	-0.0092		0.0040	-0.0098	-0.0483	-0.0088	0.0215	0.0027		0.0037	0.0090
	(0.0179)		(0.0183)	(0.0196)	(0.0362)	(0.0343)	(0.0350)	(0.0211)		(0.0223)	(0.0232)
History_&_Geography	0.0663		-0.0419	-0.3814	0.7812	0.7203	-0.0627	-0.0787		0.1590	-0.1435
	(0.4656)		(0.4315)	(0.4358)	(0.9211)	(0.8952)	(0.8922)	(0.5336)		(0.5660)	(0.5343)
History_&_Geography^2	0.0019		0.0030	0.0147	-0.0256	-0.0238	0.0017	0.0087		-0.0061	0.0056
	(0.0179)		(0.0164)	(0.0165)	(0.0349)	(0.0335)	(0.0345)	(0.0208)		(0.0218)	(0.0207)
Mathematics_1	0.5480		0.6710	0.2051	1.6914	* 1.0231	0.5003	0.1517		0.2535	0.4947
	(0.4698)		(0.4344)	(0.5029)	(0.9264)	(0.8917)	(1.0016)	(0.6073)		(0.5654)	(0.5556)
Mathematics_1^2	-0.0160		-0.0195	-0.0040	-0.0442	-0.0211	-0.0074	-0.0039		-0.0081	-0.0184
	(0.0158)		(0.0148)	(0.0172)	(0.0319)	(0.0303)	(0.0337)	(0.0205)		(0.0194)	(0.0195)
Mathematics_2	0.2211		0.3307	0.1659	-0.7136	-0.8646	-0.7688	-0.0060		0.2474	-0.0617
	(0.4902)		(0.4130)	(0.4518)	(1.1980)	(1.0007)	(1.0437)	(0.6237)		(0.5834)	(0.5853)
Mathematics_2^2	-0.0065		-0.0113	-0.0042	0.0313	0.0344	0.0284	-0.0018		-0.0096	0.0045
	(0.0167)		(0.0141)	(0.0154)	(0.0396)	(0.0331)	(0.0343)	(0.0207)		(0.0195)	(0.0196)
Prep-school Fixed Effects	yes		yes	yes	yes	yes	yes	yes		yes	yes
Number of observations	275				275			275			
Pseudo-R^2	0.3733		0.3675	0.3737	0.3581	0.3322	0.3672	0.3459		0.3300	0.3617

NOTE. – This table replicates Table 9 of the paper using the subsample of candidates who majored either in physics and chemistry or life science at high school. The simultaneous quantile regression models are jointly estimated with bootstrap standard errors (presented within parentheses below the coefficient estimates) using 5,000 replications. Indicator variables are preceded by the prefix "D_".

Appendix Table A8

PERFORMANCE IN THE BACCALAURÉAT – LINEAR PROBABILITY MODELS –
MATHEMATICS SUB-MAJORS IN HIGH SCHOOL

	At Least Cum Laude		At Least Magna Cum Laude		At Least Summa Cum Laude		At Least Cum Laude		At Least Magna Cum Laude		At Least Summa Cum Laude	
Constant	0.9037	***	0.8626	***	0.6294	***	0.9746	***	0.9630	***	0.9248	***
	(0.0089)		(0.0122)		(0.0277)		(0.0064)		(0.0082)		(0.0184)	
D_2006	0.0223	**	0.0321	**	0.0960	***	0.0215	**	0.0294	***	0.0554	***
	(0.0094)		(0.0126)		(0.0293)		(0.0087)		(0.0104)		(0.0195)	
D_2007	0.0178	*	0.0259	**	0.0727	**	0.0235	***	0.0262	**	0.0294	
	(0.0097)		(0.0130)		(0.0301)		(0.0089)		(0.0109)		(0.0224)	
D_Female	0.0442	***	0.0691	***	0.1960	***	0.0288	***	0.0453	***	0.0978	***
	(0.0076)		(0.0103)		(0.0240)		(0.0070)		(0.0086)		(0.0168)	
D_Non_French	-0.0063		-0.0171		-0.0882		0.0225		0.0084		0.0268	
	(0.0155)		(0.0218)		(0.0542)		(0.0160)		(0.0181)		(0.0329)	
Prep School fixed effects	no		no		no		yes		yes		yes	
Number of obs.	3966		2944		1159		3966		2944		1159	
Adjusted-R^2	0.0089		0.0167		0.0646		0.1887		0.3589		0.6275	
F-statistic	9.88	***	13.48	***	21.01	***	9.46	***	16.40	***	22.20	***

NOTE. – This table presents linear probability models that replicate Table 10 regressions with the subsample of mathematics sub-majors in high school. In columns 1 and 4 the dependent variable is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *cum laude*

(i.e., with *cum laude* or *magna cum laude* or *summa cum laude*), or 0 if the student obtained the high school diploma with a simple pass (no honors). In columns 2 and 5 the dependent variable is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *magna cum laude* (i.e., with *magna cum laude* or *summa cum laude*), or 0 if the student obtained the high school diploma with a simple pass (no honors), while those who obtained *cum laude* are excluded. In columns 3 and 6 the dependent variable ("at least *summa cum laude*") is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *summa cum laude*, or 0 if the student obtained the high school diploma with a simple pass (no honors), while those who have obtained cum laude or magna cum laude are excluded. Linear probability models in the last three columns include prep school fixed effects. Heteroskedasticity-consistent (i.e., "robust") standard errors are reported within parentheses below the coefficient estimates.

* $p < .10$
** $p < .05$
*** $p < .01$

Appendix Table A9

PERFORMANCE IN THE BACCALAURÉAT – LINEAR PROBABILITY MODELS –
PHYSICS & CHEMISTRY AND LIFE SCIENCES SUB-MAJORS IN HIGH SCHOOL

	At Least Cum Laude		At Least Magna Cum Laude		At Least Summa Cum Laude		At Least Cum Laude		At Least Magna Cum Laude		At Least Summa Cum Laude	
Constant	0.8975	***	0.8436	***	0.5580	***	0.9191	***	0.9153	***	0.7764	***
	(0.0172)		(0.0251)		(0.0566)		(0.0650)		(0.0709)		(0.1171)	
D_2006	0.0114		0.0210		0.1104	**	0.0082		0.0064		0.0929	**
	(0.0160)		(0.0224)		(0.0516)		(0.0152)		(0.0182)		(0.0391)	
D_2007	-0.0045		0.0031		0.0471		-0.0044		0.0114		0.0811	**
	(0.0162)		(0.0226)		(0.0529)		(0.0156)		(0.0193)		(0.0386)	
D_Female	0.0660	***	0.1016	***	0.2494	***	0.0430	***	0.0609	***	0.1188	***
	(0.0126)		(0.0178)		(0.0397)		(0.0117)		(0.0144)		(0.0308)	
D_Non_French	-0.0298		-0.0444		-0.1904	*	-0.0042		0.0006		-0.0108	
	(0.0264)		(0.0374)		(0.1005)		(0.0295)		(0.0316)		(0.0512)	
D_Life_Sciences _sub-major	0.0051		0.0089		0.0494		-0.0048		-0.0174		0.0156	
	(0.0125)		(0.0170)		(0.0387)		(0.0118)		(0.0134)		(0.0249)	
Prep School fixed effects	no		no		no		yes		yes		yes	
Number of obs.	1563		1125		436		1563		1125		436	
Adjusted-R^2	0.0159		0.0288		0.0978		0.1709		0.3809		0.6513	
F-statistic	6.05	***	7.66	***	10.43	***	4.04	***	7.91	***	10.03	***

NOTE. – This table presents linear probability models that replicate Table 10 regressions with the subsample of physics-and-chemistry and life sciences sub-majors in high school. In columns 1 and 4 the dependent variable is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *cum laude* (i.e., with *cum laude* or *magna cum laude* or *summa cum laude*), or 0 if the student obtained the high school diploma with a simple pass (no honors). In columns 2 and 5 the dependent variable is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *magna cum laude* (i.e., with *magna cum laude* or *summa cum laude*), or 0 if the student obtained the high school diploma with a simple pass (no honors), while those who obtained *cum laude* are excluded. In columns 3 and 6 the dependent variable ("at least *summa cum laude*") is equal to 1 if the student has obtained the *baccalauréat* diploma with at least *summa cum laude*, or 0 if the student obtained the high school diploma with a simple pass (no honors), while those who have obtained cum laude or magna cum laude are excluded. Linear probability models in the last three columns include prep school fixed effects. Heteroskedasticity-consistent (i.e., "robust") standard errors are reported within parentheses below the coefficient estimates.

* $p < .10$
** $p < .05$
*** $p < .01$

Appendix Table A10

PERFORMANCE IN THE FIRST-YEAR HEC CORE COURSES BY SUB-MAJORS IN HIGH SCHOOL

	Grade Point Average (out of 4.00) 1st-Year Core Courses at HEC			Letter Grades (out of 4.00) of Eleven 1st-Year Core Courses at HEC		
	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample	Math Sub-majors	Phys. & Chem. Life Sciences Sub-majors	Whole Sample	Math Sub-majors	Phys. & Chem. Life Sciences Sub-majors
Constant	-1.0150	0.5904	-1.5026	0.2580	1.7976	-0.4869
	(1.6890)	(1.7542)	(6.8274)	(1.4516)	(1.6435)	(3.8555)
D_2006	-0.1564 **	-0.2507 ***	-0.2853	-0.8172 ***	-0.8932 ***	-1.8628 ***
	(0.0635)	(0.0694)	(0.2647)	(0.2659)	(0.3029)	(0.6960)
D_Female	0.0342	0.0242	-0.1381	0.0420	0.0293	-0.2452 *
	(0.0601)	(0.0666)	(0.2319)	(0.0498)	(0.0572)	(0.1387)
D_Non-French	-0.0669	-0.1089	0.1521	-0.0441	-0.0870	0.1991
	(0.1315)	(0.1515)	(0.4281)	(0.1168)	(0.1203)	(0.2620)
D_Mathematics _sub-major	-0.1805			-0.2612		
	(0.2261)			(0.2185)		
D_Phys_&_Chem _sub-major	-0.2424			-0.2976		
	(0.2434)			(0.2352)		
D_Life_Sciences _sub-major	-0.1602		-0.1288	-0.2506		-0.1985 *
	(0.2454)		(0.2346)	(0.2393)		(0.1161)
D_Cum_Laude	0.1111	0.1284		0.0823	0.1343	
	(0.2481)	(0.2466)		(0.2002)	(0.2021)	

D_Magna_Cum_Laude	0.2242		0.2314		0.6896	0.2259		0.2467		1.1638	***
	(0.2336)		(0.2284)		(0.7357)	(0.1912)		(0.1880)		(0.3448)	
D_Summa_Cum_Laude	0.4645	*	0.4948	**	0.9713	0.4344	**	0.4802	**	1.2466	***
	(0.2403)		(0.2366)		(0.7073)	(0.2010)		(0.1997)		(0.3257)	
1st_Foreign_Language (written)	-0.2635	**	-0.4119	***	-0.3297	-0.2365	**	-0.3558	***	-0.4203	
	(0.1176)		(0.1271)		(0.5525)	(0.0994)		(0.1079)		(0.3210)	
1st_Foreign_Language^2 (written)	0.0098	**	0.0156	***	0.0111	0.0088	**	0.0135	***	0.0152	
	(0.0043)		(0.0047)		(0.0198)	(0.0037)		(0.0041)		(0.0115)	
2nd_Foreign_Language (written)	0.0292		0.0287		0.5014	0.0554		0.0602		0.3011	
	(0.1103)		(0.1166)		(0.4919)	(0.1052)		(0.1200)		(0.3273)	
2nd_Foreign_Language^2 (written)	0.0003		0.0008		-0.0173	-0.0007		-0.0005		-0.0095	
	(0.0044)		(0.0046)		(0.0194)	(0.0041)		(0.0047)		(0.0127)	
French (written)	0.0167		0.0235		0.2258	0.0070		0.0130		0.2594	
	(0.0541)		(0.0563)		(0.3146)	(0.0454)		(0.0491)		(0.2005)	
French^2 (written)	-0.0006		-0.0005		-0.0108	-0.0003		-0.0001		-0.0138	*
	(0.0022)		(0.0023)		(0.0123)	(0.0019)		(0.0021)		(0.0078)	
General_Culture (written)	0.0404		0.0398		-0.2213	0.0270		0.0289		-0.1310	
	(0.0518)		(0.0558)		(0.2510)	(0.0497)		(0.0554)		(0.1429)	
General_Culture^2 (written)	-0.0010		-0.0011		0.0135	-0.0004		-0.0007		0.0105	*
	(0.0021)		(0.0023)		(0.0101)	(0.0021)		(0.0023)		(0.0059)	
History_&_Geography (written)	0.0898		0.1312	**	0.1831	0.0921	*	0.1241	**	0.2374	*
	(0.0564)		(0.0593)		(0.2591)	(0.0541)		(0.0553)		(0.1286)	
History_&_Geography^2 (written)	-0.0029		-0.0046	**	-0.0059	-0.0030		-0.0043	**	-0.0095	*
	(0.0022)		(0.0023)		(0.0102)	(0.0021)		(0.0021)		(0.0050)	

Mathematics_1	-0.0043	-0.0034		0.1727	0.0088	0.0098		0.3155	
(written)	(0.0769)	(0.0825)		(0.3579)	(0.0743)	(0.0720)		(0.1969)	
Mathematics_1^2	0.0007	0.0004		-0.0043	0.0004	-0.0000		-0.0090	
(written)	(0.0025)	(0.0027)		(0.0124)	(0.0024)	(0.0024)		(0.0066)	
Mathematics_2	0.1645	0.2419	**	-0.5924	0.1359	0.2187	**	-0.6573	***
(written)	(0.1026)	(0.1118)		(0.4083)	(0.0859)	(0.0930)		(0.2186)	
Mathematics_2^2	-0.0044	-0.0067	*	0.0185	-0.0035	-0.0060	**	0.0217	***
(written)	(0.0032)	(0.0035)		(0.0134)	(0.0027)	(0.0029)		(0.0072)	
1st_Foreign_Language	-0.0013	0.0037		0.1550	0.0047	0.0033		0.3941	***
(oral)	(0.0574)	(0.0642)		(0.2815)	(0.0493)	(0.0508)		(0.1419)	
1st_Foreign_Language^2	0.0005	-0.0000		-0.0056	-0.0000	-0.0003		-0.0146	***
(oral)	(0.0021)	(0.0024)		(0.0102)	(0.0018)	(0.0019)		(0.0052)	
2nd_Foreign_Language	0.0197	0.0362		-0.0907	0.0042	0.0170		-0.1585	
(oral)	(0.0701)	(0.0746)		(0.3154)	(0.0652)	(0.0734)		(0.1613)	
2nd_Foreign_Language^2	-0.0007	-0.0015		0.0026	-0.0003	-0.0009		0.0047	
(oral)	(0.0025)	(0.0027)		(0.0113)	(0.0024)	(0.0027)		(0.0059)	
Debate	0.0158	-0.0190		0.2298	-0.0211	-0.0277		0.2020	**
(oral)	(0.0780)	(0.0923)		(0.2077)	(0.0601)	(0.0777)		(0.0807)	
Debate^2	-0.0011	0.0004		-0.0117	0.0007	0.0010		-0.0105	**
(oral)	(0.0033)	(0.0039)		(0.0094)	(0.0026)	(0.0033)		(0.0040)	
General_Culture	0.0256	-0.0108		0.0445	0.0271	-0.0245		0.1417	*
(oral)	(0.0413)	(0.0459)		(0.1651)	(0.0371)	(0.0385)		(0.0735)	
General_Culture^2	-0.0012	0.0002		-0.0006	-0.0014	0.0009		-0.0055	

(oral)	(0.0021)		(0.0023)		(0.0078)		(0.0019)		(0.0020)		(0.0036)	
History_&_Geography	0.0444		0.0038		0.1998	*	0.0420		0.0107		0.1252	*
(oral)	(0.0296)		(0.0336)		(0.1023)		(0.0279)		(0.0313)		(0.0649)	
History_&_Geography^2	-0.0014		0.0003		-0.0078	*	-0.0015		-0.0002		-0.0050	*
(oral)	(0.0012)		(0.0014)		(0.0043)		(0.0012)		(0.0013)		(0.0027)	
Mathematics	0.0422		0.0518		0.3159		0.0249		0.0289		0.3494	***
(oral)	(0.0460)		(0.0485)		(0.1920)		(0.0400)		(0.0420)		(0.0986)	
Mathematics^2	-0.0005		-0.0011		-0.0125		0.0002		-0.0000		-0.0145	***
(oral)	(0.0019)		(0.0020)		(0.0085)		(0.0017)		(0.0017)		(0.0046)	
Fixed-effects:												
Prep School	yes		yes		yes		yes		yes		yes	
Professor × D_2006	no		no		no		yes		yes		yes	
Course × D_2006	no		no		no		yes		yes		yes	
Number of observations	457		373		76		5024		4106		832	
Adjusted-R^2	0.2624		0.3202		0.2221		0.2945		0.3057		0.4020	
Regression F-statistic	3.13	***	3.50	***	1.38							

NOTE. – This table presents the estimates for the pooled-OLS regressions of table 11 for different science sub-majors. The dependent variable is either (i) HEC first-year GPA in core courses (first 3 columns), or (ii) the individual letter grades in core-courses (last 3 columns). All regressions are with prep school fixed-effects (for which the coefficient estimates are not reported). Letter grade regression specifications (last 3 columns) also include time-varying professor and time-varying course fixed-effects (for which the coefficient estimates are not reported). Standard errors are reported within parentheses below coefficient estimates. In columns 4 through 6, heteroskedasticity-consistent standard errors are clustered at the student level.

* $p < .10$
** $p < .05$
*** $p < .01$