The Determinants of Mismatch
Between Students and Colleges

Eleanor Wiske Dillon
Arizona State University
ewdillon@asu.edu

Jeffrey Andrew Smith
University of Michigan
NBER and IZA
econjeff@umich.edu

July 22, 2013

Online Appendix

Selection into the 2-year and 4-year College Starters Sample

When combining 2-year and 4-year college starters in our multivariate analysis we restrict our sample to students who entered college intending to achieve a 4-year college degree. We include all 4-year starters in this sample. We filter 2-year college starters based on their answers to a set of survey questions on college and degree expectations.

Our preferred question is "Now think ahead to when you turn 30 years old. What is the percent chance that you will have a four-year college degree by the time you turn 30?" This question was asked in the first wave of the survey to all respondents born in 1981 or earlier and again in 2001 to a subset of the remaining respondents. We include 2-year college starters who gave at least a 50% probability of having a four-year college degree by age 30 in our analysis.

For the remaining respondents we use questions asked in the 2000 survey on their self-reported probability of being a student in regular school in 1 year and in 5 years. For students who were still in high school in 2000 the 5-year question is a good measure of intent to complete a 4-year college degree. We include 2-year college starters from the high school class of 2001 or later in our regression sample if they give a 10% probability or higher to being enrolled in regular school 5 years. 56% of the class of 2000 answered our preferred question. We include the remaining class of 2000 respondents if they give at least a 35% probability of being enrolled in regular in school in 1 year (this question was asked in the fall of 2000 when they would have just started college). For both the 5-year and 1-year enrollment questions the probability cutoffs were chosen to maximize consistency with our preferred question for respondents who answered both.

Appendix Table OA-1: Determinants of mismatch, 6-factor CQ index and ASVAB ability

	4-year starters only		All, pctiles over 4-year starters	
	Overmatched	Undermatched	Overmatched	Undermatched
Male	0.010 (0.010)	**-0.029 (0.008)**	0.002 (0.007)	**-0.025 (0.008)**
Black	**0.051 (0.014)**	-0.020 (0.012)	**0.061 (0.010)**	**-0.127 (0.010)**
Hispanic	0.003 (0.015)	-0.023 (0.014)	-0.005 (0.010)	**-0.050 (0.011)**
Other (not white)	**0.089 (0.025)**	**-0.109 (0.016)**	**0.055 (0.016)**	**-0.095 (0.016)**
Household members 18 or under	-0.005 (0.004)	0.002 (0.004)	-0.006 (0.003)	0.006 (0.003)
ASVAB1 percentile	**-0.853 (0.087)**	**0.757 (0.020)**	**-0.403 (0.022)**	**0.846 (0.041)**
ASVAB2 percentile	**0.100 (0.021)**	**-0.072 (0.015)**	**0.095 (0.012)**	**-0.106 (0.016)**
High school GPA percentile	**0.153 (0.026)**	**-0.102 (0.018)**	**0.168 (0.017)**	**-0.184 (0.019)**
SAT percentile	**0.115 (0.030)**	**-0.126 (0.023)**	0.028 (0.019)	**-0.223 (0.025)**
Wealth quartile 2	-0.013 (0.018)	-0.008 (0.016)	-0.008 (0.011)	0.014 (0.014)
Wealth quartile 3	-0.023 (0.017)	-0.017 (0.015)	0.007 (0.011)	0.007 (0.013)
Wealth quartile 4	-0.003 (0.018)	-0.024 (0.015)	0.012 (0.012)	-0.018 (0.013)
Started college late	**-0.110 (0.017)**	**0.076 (0.013)**	**-0.084 (0.007)**	**0.085 (0.011)**
No parent completed high school	0.016 (0.022)	**-0.092 (0.022)**	-0.005 (0.013)	**-0.086 (0.017)**
At least one parent has some col.	**0.069 (0.016)**	**-0.030 (0.010)**	**0.032 (0.010)**	-0.003 (0.010)
At least one par. completed col.	**0.068 (0.016)**	**-0.052 (0.010)**	**0.045 (0.010)**	**-0.063 (0.010)**
Took classes outside of school	-0.006 (0.012)	-0.008 (0.010)	0.003 (0.008)	-0.017 (0.010)
Had computer at home	**0.043 (0.015)**	-0.014 (0.012)	0.017 (0.010)	-0.005 (0.011)
Northeast region	**0.170 (0.026)**	**-0.123 (0.012)**	**0.122 (0.015)**	**-0.116 (0.011)**
South region	**0.050 (0.014)**	**-0.056 (0.010)**	**0.025 (0.010)**	**-0.021 (0.010)**
West region	0.010 (0.018)	**-0.031 (0.012)**	-0.020 (0.011)	-0.014 (0.013)
Rural	-0.012 (0.015)	-0.000 (0.011)	0.003 (0.011)	-0.017 (0.011)
Median income in census tract	**0.149 (0.020)**	**-0.142 (0.029)**	**0.049 (0.020)**	**-0.096 (0.023)**
% Adults w/college deg. in tract	0.172 (0.089)	**-0.166 (0.067)**	**0.253 (0.060)**	**-0.259 (0.073)**
% of HS teachers with adv degree	0.031 (0.026)	-0.014 (0.020)	**0.038 (0.017)**	0.039 (0.020)
% of HS class to 2-year	**0.277 (0.058)**	-0.038 (0.040)	-0.034 (0.031)	**0.199 (0.034)**
% of HS class to 4-year	**0.101 (0.031)**	**-0.085 (0.025)**	**0.066 (0.020)**	**-0.107 (0.024)**
Log avg. 4-year in-state tuition	**-0.082 (0.026)**	0.028 (0.019)	**-0.041 (0.015)**	-0.026 (0.018)
Matched public 4-year in 50 mi	0.008 (0.010)	**-0.018 (0.008)**	**0.034 (0.010)**	**-0.059 (0.009)**
Matched private 4-year in 50 mi	**0.046 (0.016)**	**-0.026 (0.009)**	**0.059 (0.012)**	-0.016 (0.010)
N	2,436	2,436	3,839	3,839
Pseudo R2	0.291	0.345	0.203	0.305

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-2: Determinants of mismatch, 4-year starters, 6-factor quality index, restricting sample to those who also have 4-factor quality index measure of mismatch

	Overmatched	Undermatched
Male	0.012 (0.011)	**-0.032 (0.008)**
Black	**0.033 (0.015)**	-0.025 (0.012)
Hispanic	0.016 (0.017)	**-0.048 (0.014)**
Other (not white)	**0.115 (0.030)**	**-0.097 (0.019)**
Household members 18 or under	-0.005 (0.004)	-0.000 (0.004)
ASVAB 1 percentile	**-1.008 (0.167)**	**0.686 (0.052)**
ASVAB 2 percentile	**0.078 (0.024)**	**-0.064 (0.014)**
High school GPA percentile	**0.139 (0.031)**	**-0.061 (0.018)**
SAT percentile	**0.214 (0.045)**	**-0.120 (0.023)**
Wealth quartile 2	-0.028 (0.020)	0.011 (0.017)
Wealth quartile 3	**-0.047 (0.020)**	-0.009 (0.016)
Wealth quartile 4	-0.028 (0.020)	-0.014 (0.015)
Started college late	**-0.050 (0.019)**	0.022 (0.013)
No parent completed high school	**0.054 (0.027)**	**-0.058 (0.028)**
At least one parent has some college	**0.050 (0.016)**	**-0.027 (0.010)**
At least one parent completed college	**0.039 (0.015)**	**-0.046 (0.010)**
Took classes outside of school	-0.014 (0.013)	-0.009 (0.009)
Had computer at home	-0.016 (0.015)	0.014 (0.012)
Northeast region	**0.167 (0.030)**	**-0.102 (0.015)**
South region	**0.062 (0.015)**	**-0.056 (0.011)**
West region	-0.002 (0.019)	**-0.031 (0.012)**
Rural	-0.020 (0.017)	-0.002 (0.010)
Median income in census tract	**0.167 (0.018)**	**-0.138 (0.035)**
% Adults w/college deg. in tract	0.077 (0.091)	-0.106 (0.061)
% of HS teachers with adv degree	0.033 (0.027)	0.002 (0.019)
% of HS class to 2-year	**0.329 (0.077)**	-0.042 (0.038)
% of HS class to 4-year	**0.090 (0.035)**	**-0.063 (0.024)**
Log avg. 4-year in-state tuition	**-0.092 (0.032)**	0.026 (0.018)
Matched public 4-year in 50 mi	0.008 (0.011)	**-0.024 (0.007)**
Matched private 4-year in 50 mi	**0.080 (0.021)**	**-0.036 (0.008)**
N	2,125	2,125
Pseudo R2	0.372	0.366

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match. Estimates are weighted as described in the text.

Appendix Table OA-3: Determinants of mismatch, alternate cutoffs for mismatch, 4-year starters

| | More than 10 percentile points gap | | More than 30 percentile points gap | |
	Overmatched	Undermatched	Overmatched	Undermatched
Male	0.005 (0.011)	**-0.035 (0.011)**	**-0.030 (0.009)**	**-0.033 (0.008)**
Black	0.021 (0.016)	**-0.047 (0.016)**	-0.005 (0.012)	-0.003 (0.013)
Hispanic	0.020 (0.020)	**-0.084 (0.018)**	**0.047 (0.017)**	-0.020 (0.015)
Other (not white)	**0.131 (0.029)**	**-0.134 (0.021)**	**0.123 (0.027)**	**-0.080 (0.018)**
Household members 18 or under	-0.006 (0.005)	**-0.010 (0.005)**	**-0.010 (0.004)**	**0.008 (0.004)**
ASVAB 1 percentile	**-0.906 (0.110)**	**0.832 (0.068)**	**-0.716 (0.058)**	**0.637 (0.048)**
ASVAB 2 percentile	**0.089 (0.023)**	**-0.136 (0.023)**	**0.042 (0.018)**	**-0.081 (0.015)**
High school GPA percentile	**0.158 (0.031)**	**-0.119 (0.025)**	**0.125 (0.023)**	**-0.091 (0.020)**
SAT percentile	**0.300 (0.047)**	**-0.248 (0.035)**	**0.197 (0.031)**	**-0.118 (0.023)**
Wealth quartile 2	-0.024 (0.022)	0.044 (0.024)	**-0.072 (0.015)**	0.007 (0.018)
Wealth quartile 3	-0.021 (0.022)	0.008 (0.022)	**-0.067 (0.014)**	0.006 (0.017)
Wealth quartile 4	0.006 (0.022)	-0.010 (0.022)	**-0.046 (0.015)**	-0.018 (0.016)
Started college late	**-0.077 (0.020)**	**0.060 (0.020)**	**-0.045 (0.014)**	**0.047 (0.015)**
No parent completed high school	0.055 (0.031)	-0.046 (0.031)	0.036 (0.024)	-0.017 (0.026)
At least one parent has some college	0.019 (0.016)	-0.011 (0.015)	**0.070 (0.016)**	**-0.031 (0.010)**
At least one parent completed college	0.030 (0.016)	**-0.064 (0.014)**	**0.076 (0.016)**	**-0.059 (0.010)**
Took classes outside of school	0.022 (0.014)	0.022 (0.013)	0.012 (0.012)	**-0.026 (0.010)**
Had computer at home	0.013 (0.016)	-0.023 (0.016)	-0.006 (0.013)	-0.004 (0.012)
Northeast region	**0.136 (0.024)**	**-0.112 (0.015)**	**0.148 (0.026)**	**-0.065 (0.011)**
South region	**0.045 (0.015)**	**-0.079 (0.012)**	**0.032 (0.014)**	**-0.025 (0.011)**
West region	-0.021 (0.020)	-0.022 (0.018)	0.008 (0.017)	-0.011 (0.013)
Rural	**0.034 (0.016)**	-0.014 (0.014)	0.008 (0.014)	0.014 (0.011)
Median income in census tract	**0.113 (0.026)**	**-0.104 (0.029)**	0.042 (0.026)	**-0.073 (0.033)**
% Adults w/college deg. in tract	**0.484 (0.129)**	**-0.341 (0.102)**	**0.259 (0.085)**	**-0.248 (0.064)**
% of HS teachers with adv degree	-0.028 (0.029)	**-0.086 (0.028)**	**-0.048 (0.024)**	-0.014 (0.020)
% of HS class to 2-year	**0.294 (0.068)**	-0.062 (0.053)	0.075 (0.049)	-0.032 (0.039)
% of HS class to 4-year	**0.152 (0.040)**	-0.052 (0.033)	**0.089 (0.030)**	-0.012 (0.024)
Log avg. 4-year in-state tuition	-0.049 (0.028)	-0.015 (0.024)	-0.009 (0.021)	-0.029 (0.020)
Matched public 4-year in 50 mi	-0.007 (0.011)	**-0.033 (0.011)**	-0.005 (0.009)	**-0.023 (0.008)**
Matched private 4-year in 50 mi	**0.085 (0.021)**	**-0.058 (0.014)**	**0.043 (0.015)**	**-0.039 (0.008)**
N	2,125	2,125	2,125	2,125
Pseudo R2	0.252	0.254	0.297	0.295

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-4: Determinants of mismatch, students in the 20th to 80th percentile of ability only

	4-year starters	
	Overmatched	Undermatched
Male	0.012 (0.014)	-0.005 (0.012)
Black	-0.013 (0.020)	**0.049 (0.019)**
Hispanic	0.027 (0.022)	-0.024 (0.021)
Other (not white)	**0.090 (0.030)**	**-0.118 (0.024)**
Household members 18 or under	-0.002 (0.006)	-0.001 (0.005)
ASVAB 1 percentile	**-0.890 (0.135)**	**0.777 (0.048)**
ASVAB 2 percentile	**0.076 (0.027)**	**-0.072 (0.022)**
High school GPA percentile	**0.129 (0.036)**	**-0.119 (0.028)**
SAT percentile	**0.352 (0.063)**	**-0.120 (0.036)**
Wealth quartile 2	-0.026 (0.027)	-0.034 (0.023)
Wealth quartile 3	-0.049 (0.027)	-0.037 (0.022)
Wealth quartile 4	0.025 (0.028)	-0.036 (0.022)
Started college late	**-0.065 (0.025)**	**0.064 (0.021)**
No parent completed high school	0.018 (0.041)	-0.008 (0.036)
At least one parent has some college	**0.046 (0.021)**	**-0.035 (0.015)**
At least one parent completed college	**0.054 (0.021)**	**-0.075 (0.014)**
Took classes outside of school	-0.022 (0.016)	-0.014 (0.014)
Had computer at home	-0.036 (0.020)	0.026 (0.019)
Northeast region	**0.195 (0.038)**	**-0.100 (0.015)**
South region	**0.086 (0.020)**	**-0.056 (0.014)**
West region	-0.005 (0.023)	-0.019 (0.018)
Rural	0.008 (0.020)	-0.005 (0.016)
Median income in census tract	0.033 (0.040)	0.025 (0.042)
% Adults w/college deg. in tract	0.139 (0.122)	**-0.589 (0.122)**
% of HS teachers with adv degree	**0.072 (0.036)**	-0.056 (0.031)
% of HS class to 2-year	0.043 (0.076)	-0.095 (0.062)
% of HS class to 4-year	0.010 (0.043)	-0.019 (0.036)
Log avg. 4-year in-state tuition	**-0.077 (0.035)**	0.006 (0.028)
Matched public 4-year in 50 mi	-0.014 (0.014)	**-0.084 (0.011)**
Matched private 4-year in 50 mi	**0.141 (0.033)**	**-0.051 (0.014)**
N	1,274	1,274
Pseudo R2	0.199	0.222

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-5: Determinants of mismatch, public college attendees only

	4-year starters		All starters	
	Overmatched	Undermatched	Overmatched	Undermatched
Male	-0.015 (0.013)	**-0.029 (0.011)**	0.002 (0.008)	**-0.038 (0.009)**
Black	-0.020 (0.017)	0.029 (0.017)	**0.070 (0.012)**	**-0.124 (0.011)**
Hispanic	-0.018 (0.021)	0.017 (0.020)	**0.031 (0.012)**	**-0.042 (0.012)**
Other (not white)	**0.058 (0.027)**	**-0.117 (0.021)**	**0.057 (0.018)**	**-0.067 (0.017)**
Household members 18 or under	-0.002 (0.005)	-0.000 (0.005)	-0.003 (0.003)	**0.011 (0.004)**
ASVAB 1 percentile	**-0.903 (0.119)**	**0.746 (0.027)**	**-0.733 (0.072)**	**0.841 (0.020)**
ASVAB 2 percentile	0.039 (0.024)	**-0.060 (0.019)**	**0.076 (0.016)**	**-0.115 (0.016)**
High school GPA percentile	**0.152 (0.034)**	**-0.139 (0.024)**	**0.191 (0.025)**	**-0.232 (0.019)**
SAT percentile	**0.244 (0.047)**	**-0.062 (0.030)**	**0.098 (0.026)**	**-0.220 (0.025)**
Wealth quartile 2	-0.022 (0.022)	0.010 (0.023)	-0.011 (0.013)	**0.048 (0.017)**
Wealth quartile 3	-0.041 (0.021)	0.006 (0.022)	**0.035 (0.014)**	**0.042 (0.015)**
Wealth quartile 4	-0.017 (0.022)	-0.026 (0.020)	0.025 (0.015)	-0.011 (0.015)
Started college late	-0.025 (0.020)	**0.052 (0.018)**	**-0.096 (0.012)**	**0.113 (0.012)**
No parent completed high school	0.035 (0.032)	-0.040 (0.029)	0.001 (0.014)	**-0.043 (0.020)**
At least one parent has some college	**0.038 (0.018)**	**-0.028 (0.014)**	0.007 (0.010)	**0.029 (0.011)**
At least one parent completed college	**0.058 (0.018)**	**-0.070 (0.013)**	**0.024 (0.011)**	**-0.030 (0.011)**
Took classes outside of school	**0.036 (0.016)**	**-0.037 (0.012)**	-0.007 (0.010)	**-0.031 (0.011)**
Had computer at home	-0.008 (0.018)	**0.047 (0.018)**	**0.035 (0.012)**	-0.022 (0.012)
Northeast region	**0.166 (0.032)**	**-0.112 (0.013)**	**0.147 (0.025)**	**-0.051 (0.013)**
South region	**0.081 (0.018)**	**-0.111 (0.011)**	**0.025 (0.011)**	**0.043 (0.013)**
West region	-0.002 (0.022)	**-0.043 (0.015)**	-0.001 (0.015)	0.023 (0.015)
Rural	-0.016 (0.019)	-0.009 (0.014)	0.003 (0.012)	**-0.026 (0.012)**
Median income in census tract	**0.098 (0.030)**	-0.043 (0.035)	-0.000 (0.026)	**-0.193 (0.028)**
% Adults w/college deg. in tract	0.046 (0.102)	**-0.467 (0.096)**	**0.249 (0.083)**	-0.086 (0.073)
% of HS teachers with adv degree	-0.019 (0.032)	-0.009 (0.028)	**0.055 (0.021)**	0.036 (0.022)
% of HS class to 2-year	**0.265 (0.074)**	**-0.200 (0.054)**	**-0.214 (0.042)**	**0.237 (0.038)**
% of HS class to 4-year	**0.112 (0.043)**	-0.035 (0.033)	0.025 (0.024)	**-0.087 (0.026)**
Log avg. 4-year in-state tuition	-0.041 (0.030)	**-0.082 (0.024)**	0.029 (0.022)	**-0.076 (0.025)**
Log avg. 2-year in-state tuition			**-0.052 (0.013)**	**0.041 (0.012)**
Matched public 4-year in 50 mi	**-0.045 (0.012)**	**-0.076 (0.009)**	-0.008 (0.010)	**-0.076 (0.008)**
Matched private 4-year in 50 mi	**0.111 (0.026)**	**-0.029 (0.012)**	**0.084 (0.017)**	**0.056 (0.011)**
N	1,550	1,550	3,033	3,033
Pseudo R2	0.28	0.335	0.270	0.309

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-6: Determinants of mismatch, separately by sex, 4-year starters

	Men only		Women only	
	Overmatched	Undermatched	Overmatched	Undermatched
Black	0.001 (0.023)	-0.008 (0.022)	-0.010 (0.017)	0.007 (0.018)
Hispanic	-0.040 (0.030)	-0.021 (0.023)	0.042 (0.022)	-0.003 (0.023)
Other (not white)	0.056 (0.034)	**-0.059 (0.025)**	**0.123 (0.037)**	**-0.153 (0.025)**
Household members 18 or under	0.001 (0.008)	-0.004 (0.007)	-0.004 (0.005)	-0.008 (0.006)
ASVAB 1 percentile	**-0.848 (0.135)**	**0.701 (0.024)**	**-0.852 (0.130)**	**0.707 (0.029)**
ASVAB 2 percentile	0.043 (0.029)	**-0.122 (0.023)**	**0.091 (0.029)**	**-0.078 (0.023)**
High school GPA percentile	**0.153 (0.045)**	**-0.199 (0.029)**	**0.137 (0.035)**	-0.025 (0.028)
SAT percentile	**0.326 (0.062)**	**-0.112 (0.035)**	**0.164 (0.047)**	**-0.122 (0.036)**
Wealth quartile 2	**0.071 (0.035)**	0.010 (0.030)	**-0.065 (0.024)**	-0.001 (0.024)
Wealth quartile 3	0.034 (0.033)	-0.041 (0.026)	**-0.073 (0.023)**	0.010 (0.023)
Wealth quartile 4	0.029 (0.034)	**-0.054 (0.025)**	-0.020 (0.023)	-0.024 (0.022)
Started college late	-0.004 (0.026)	**0.061 (0.024)**	**-0.066 (0.023)**	**0.049 (0.022)**
No parent completed high school	**-0.093 (0.039)**	**-0.106 (0.034)**	**0.126 (0.039)**	-0.025 (0.031)
At least one parent has some college	-0.001 (0.024)	**-0.061 (0.018)**	**0.043 (0.019)**	-0.028 (0.015)
At least one parent completed college	0.008 (0.023)	**-0.058 (0.017)**	**0.070 (0.021)**	**-0.103 (0.013)**
Took classes outside of school	0.005 (0.020)	**-0.065 (0.014)**	0.006 (0.016)	0.019 (0.016)
Had computer at home	**-0.084 (0.025)**	0.006 (0.021)	0.038 (0.020)	0.023 (0.019)
Northeast region	**0.219 (0.048)**	**-0.094 (0.015)**	**0.137 (0.033)**	**-0.128 (0.014)**
South region	**0.080 (0.025)**	**-0.077 (0.016)**	0.035 (0.018)	**-0.078 (0.013)**
West region	0.011 (0.030)	**-0.067 (0.019)**	-0.022 (0.024)	-0.013 (0.019)
Rural	-0.040 (0.026)	-0.026 (0.017)	0.022 (0.020)	**0.039 (0.017)**
Median income in census tract	-0.025 (0.059)	-0.015 (0.047)	**0.081 (0.032)**	-0.032 (0.041)
% Adults w/college deg. in tract	-0.087 (0.133)	**-0.458 (0.107)**	**0.375 (0.141)**	**-0.222 (0.109)**
% of HS teachers with adv degree	0.023 (0.038)	0.031 (0.034)	-0.013 (0.032)	**-0.068 (0.031)**
% of HS class to 2-year	**0.329 (0.105)**	-0.072 (0.067)	0.041 (0.066)	-0.071 (0.060)
% of HS class to 4-year	**0.368 (0.082)**	**-0.121 (0.041)**	0.012 (0.039)	0.008 (0.036)
Log avg. 4-year in-state tuition	-0.025 (0.037)	**-0.086 (0.032)**	**-0.078 (0.035)**	0.021 (0.028)
Matched public 4-year in 50 mi	-0.030 (0.016)	**-0.049 (0.012)**	-0.005 (0.013)	**-0.047 (0.011)**
Matched private 4-year in 50 mi	**0.127 (0.034)**	**-0.047 (0.014)**	**0.101 (0.029)**	**-0.039 (0.014)**
N	941	941	1,184	1,184
Pseudo R2	0.333	0.297	0.272	0.305

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-7: Determinants of mismatch, including only a single measure of ability

	4-year starters		All starters	
	Overmatched	Undermatched	Overmatched	Undermatched
Male	**-0.034 (0.010)**	0.017 (0.009)	**-0.033 (0.007)**	**0.024 (0.007)**
Black	-0.020 (0.014)	-0.000 (0.014)	**0.093 (0.012)**	**-0.116 (0.010)**
Hispanic	0.004 (0.018)	-0.021 (0.017)	**0.025 (0.011)**	**-0.053 (0.011)**
Other (not white)	**0.103 (0.026)**	**-0.120 (0.017)**	**0.070 (0.018)**	**-0.098 (0.014)**
Household members 18 or under	-0.002 (0.005)	-0.007 (0.004)	-0.005 (0.003)	**0.009 (0.003)**
ASVAB 1 percentile	**-0.714 (0.072)**	**0.614 (0.017)**	**-0.616 (0.064)**	**0.652 (0.015)**
Wealth quartile 2	-0.020 (0.020)	0.008 (0.020)	-0.010 (0.012)	0.018 (0.014)
Wealth quartile 3	**-0.047 (0.019)**	-0.009 (0.019)	**0.031 (0.013)**	0.003 (0.013)
Wealth quartile 4	-0.004 (0.020)	**-0.037 (0.017)**	**0.035 (0.014)**	**-0.056 (0.013)**
Started college late	**-0.060 (0.018)**	**0.070 (0.016)**	**-0.123 (0.014)**	**0.151 (0.011)**
No parent completed high school	**0.069 (0.028)**	**-0.065 (0.026)**	0.025 (0.014)	**-0.054 (0.017)**
At least one parent has some college	**0.047 (0.017)**	**-0.047 (0.012)**	0.015 (0.010)	0.001 (0.010)
At least one parent completed college	**0.070 (0.017)**	**-0.091 (0.011)**	**0.041 (0.011)**	**-0.074 (0.009)**
Took classes outside of school	0.010 (0.013)	**-0.029 (0.011)**	-0.009 (0.009)	**-0.036 (0.010)**
Had computer at home	-0.009 (0.016)	0.016 (0.015)	**0.039 (0.012)**	-0.020 (0.011)
Northeast region	**0.169 (0.028)**	**-0.109 (0.010)**	**0.154 (0.024)**	**-0.066 (0.011)**
South region	**0.050 (0.015)**	**-0.094 (0.011)**	**0.028 (0.010)**	0.021 (0.011)
West region	-0.004 (0.020)	**-0.041 (0.014)**	-0.027 (0.014)	0.020 (0.014)
Rural	-0.015 (0.017)	0.009 (0.013)	-0.000 (0.011)	-0.000 (0.011)
Median income in census tract	0.029 (0.032)	-0.032 (0.032)	-0.000 (0.024)	**-0.129 (0.026)**
% Adults w/college deg. in tract	**0.254 (0.102)**	**-0.349 (0.081)**	**0.265 (0.079)**	-0.090 (0.065)
% of HS teachers with adv degree	-0.007 (0.027)	-0.024 (0.024)	**0.050 (0.019)**	**0.047 (0.019)**
% of HS class to 2-year	**0.182 (0.059)**	-0.085 (0.046)	**-0.201 (0.039)**	**0.278 (0.034)**
% of HS class to 4-year	**0.129 (0.037)**	-0.051 (0.029)	**0.051 (0.022)**	**-0.098 (0.024)**
Log avg. 4-year in-state tuition	**-0.063 (0.028)**	-0.040 (0.023)	-0.004 (0.020)	**-0.078 (0.022)**
Log avg. 2-year in-state tuition			**-0.053 (0.012)**	**0.045 (0.011)**
Matched public 4-year in 50 mi	-0.013 (0.011)	**-0.053 (0.008)**	-0.006 (0.009)	**-0.050 (0.008)**
Matched private 4-year in 50 mi	**0.107 (0.022)**	**-0.043 (0.010)**	**0.072 (0.015)**	**0.022 (0.010)**
N	2,125	2,125	3,805	3,805
Pseudo R2	0.257	0.269	0.247	0.249

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-8: Determinants of mismatch, alternate household wealth and income measures, 4-year starters

	Overmatched	Undermatched	Overmatched	Undermatched
Male	-0.004 (0.011)	**-0.021 (0.009)**	-0.005 (0.011)	**-0.020 (0.009)**
Black	-0.020 (0.014)	0.002 (0.015)	-0.012 (0.014)	-0.001 (0.014)
Hispanic	0.006 (0.017)	-0.020 (0.017)	0.010 (0.017)	-0.016 (0.017)
Other (not white)	**0.084 (0.025)**	**-0.111 (0.017)**	**0.088 (0.025)**	**-0.111 (0.017)**
Household members 18 or under	-0.003 (0.004)	-0.006 (0.004)	-0.002 (0.004)	-0.005 (0.004)
ASVAB 1 percentile	**-0.876 (0.096)**	**0.715 (0.019)**	**-0.877 (0.095)**	**0.715 (0.020)**
ASVAB 2 percentile	**0.065 (0.021)**	**-0.091 (0.017)**	**0.063 (0.021)**	**-0.088 (0.017)**
High school GPA percentile	**0.142 (0.028)**	**-0.109 (0.021)**	**0.144 (0.028)**	**-0.114 (0.021)**
SAT percentile	**0.237 (0.039)**	**-0.123 (0.025)**	**0.238 (0.039)**	**-0.118 (0.026)**
Log household wealth	-0.002 (0.002)	**-0.006 (0.002)**		
Log household income			0.014 (0.005)	**-0.018 (0.006)**
Started college late	**-0.047 (0.017)**	**0.053 (0.017)**	**-0.044 (0.017)**	**0.058 (0.017)**
No parent completed high school	**0.058 (0.028)**	**-0.064 (0.024)**	**0.059 (0.028)**	**-0.062 (0.024)**
At least one parent has some college	**0.035 (0.016)**	**-0.043 (0.012)**	**0.036 (0.016)**	**-0.041 (0.012)**
At least one parent completed college	**0.054 (0.016)**	**-0.084 (0.011)**	**0.052 (0.016)**	**-0.081 (0.011)**
Took classes outside of school	0.005 (0.013)	**-0.024 (0.011)**	0.005 (0.013)	**-0.025 (0.011)**
Had computer at home	-0.013 (0.015)	0.017 (0.015)	-0.018 (0.015)	0.021 (0.015)
Northeast region	**0.161 (0.027)**	**-0.109 (0.010)**	**0.163 (0.027)**	**-0.111 (0.011)**
South region	**0.041 (0.015)**	**-0.081 (0.011)**	**0.040 (0.015)**	**-0.080 (0.011)**
West region	-0.010 (0.019)	**-0.037 (0.014)**	-0.008 (0.019)	**-0.038 (0.014)**
Rural	-0.004 (0.016)	0.003 (0.013)	-0.005 (0.016)	0.004 (0.013)
Median income in census tract	**0.058 (0.028)**	-0.036 (0.032)	0.046 (0.030)	-0.029 (0.032)
% Adults w/college deg. in tract	**0.220 (0.100)**	**-0.357 (0.081)**	**0.235 (0.100)**	**-0.374 (0.082)**
% of HS teachers with adv degree	0.004 (0.026)	-0.027 (0.024)	0.007 (0.026)	-0.026 (0.024)
% of HS class to 2-year	**0.150 (0.058)**	-0.061 (0.046)	**0.145 (0.057)**	-0.067 (0.046)
% of HS class to 4-year	**0.122 (0.036)**	-0.045 (0.028)	**0.111 (0.035)**	-0.051 (0.028)
Log avg. 4-year in-state tuition	**-0.063 (0.027)**	-0.034 (0.022)	**-0.060 (0.027)**	-0.035 (0.022)
Matched public 4-year in 50 mi	-0.014 (0.010)	**-0.051 (0.008)**	-0.015 (0.010)	**-0.052 (0.008)**
Matched private 4-year in 50 mi	**0.105 (0.022)**	**-0.047 (0.010)**	**0.104 (0.022)**	**-0.045 (0.010)**
N	2,125	2,125	2,125	2,125
Pseudo R2	0.278	0.284	0.278	0.285

Notes: Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. Having a well-matched public and private school nearby is determined based on the dependent variable's definition of match for each pair of regressions. Estimates are weighted as described in the text.

Appendix Table OA-9: Testing Effect on Overmatched = -Effect on Undermatched

	Overmatched	Undermatched	Sum
Male	-0.005 (0.011)	**-0.021 (0.009)**	-0.028 (0.024)
Black	-0.016 (0.014)	0.003 (0.015)	-0.011 (0.036)
Hispanic	0.009 (0.017)	-0.019 (0.017)	-0.013 (0.040)
Other (not white)	**0.084 (0.025)**	**-0.110 (0.017)**	-0.050 (0.050)
Household members 18 or under	-0.003 (0.004)	-0.005 (0.004)	-0.009 (0.011)
ASVAB 1 percentile	**-0.874 (0.097)**	**0.715 (0.020)**	0.025 (0.056)
ASVAB 2 percentile	**0.065 (0.021)**	**-0.091 (0.017)**	-0.045 (0.042)
High school GPA percentile	**0.141 (0.028)**	**-0.110 (0.021)**	0.002 (0.053)
SAT percentile	**0.234 (0.039)**	**-0.121 (0.026)**	0.072 (0.071)
Wealth quartile 2	-0.009 (0.020)	0.010 (0.020)	0.003 (0.048)
Wealth quartile 3	-0.032 (0.019)	-0.012 (0.018)	-0.042 (0.046)
Wealth quartile 4	0.004 (0.020)	**-0.034 (0.017)**	-0.034 (0.046)
Started college late	**-0.045 (0.017)**	**0.053 (0.017)**	0.021 (0.038)
No parent completed high school	**0.056 (0.028)**	**-0.060 (0.026)**	-0.018 (0.069)
At least one parent has some college	**0.037 (0.016)**	**-0.041 (0.012)**	-0.044 (0.03)
At least one parent completed college	**0.054 (0.016)**	**-0.080 (0.011)**	-0.013 (0.032)
Took classes outside of school	0.006 (0.013)	**-0.024 (0.011)**	-0.021 (0.028)
Had computer at home	-0.013 (0.015)	0.018 (0.015)	0.009 (0.035)
Northeast region	**0.164 (0.028)**	**-0.110 (0.010)**	0.011 (0.037)
South region	**0.041 (0.015)**	**-0.082 (0.011)**	**-0.063 (0.031)**
West region	-0.009 (0.019)	**-0.037 (0.014)**	-0.050 (0.040)
Rural	-0.002 (0.016)	0.003 (0.013)	0.002 (0.034)
Median income in census tract	0.050 (0.029)	-0.027 (0.032)	0.014 (0.081)
% Adults w/college deg. in tract	**0.225 (0.100)**	**-0.374 (0.082)**	-0.219 (0.194)
% of HS teachers with adv degree	-0.000 (0.026)	-0.027 (0.024)	-0.031 (0.061)
% of HS class to 2-year	**0.155 (0.058)**	-0.066 (0.046)	0.063 (0.117)
% of HS class to 4-year	**0.121 (0.036)**	-0.047 (0.028)	0.056 (0.078)
Log avg. 4-year in-state tuition	**-0.064 (0.027)**	-0.034 (0.022)	-0.095 (0.053)
Matched public 4-year in 50 mi	-0.015 (0.010)	**-0.052 (0.008)**	**-0.077 (0.024)**
Matched private 4-year in 50 mi	**0.106 (0.022)**	**-0.047 (0.010)**	0.028 (0.030)
N	2,125	2,125	2,125
Pseudo R2	0.279	0.284	--

Mean marginal effects (a.k.a. average derivatives) reported. Estimates statistically different from zero at the five percent level appear in bold. The third column reports mean marginal effect on overmatched + mean marginal effect on undermatched, with bootstrapped standard errors in parentheses based on 497 replications. Estimates are weighted as described in the text.