

Supplemental Appendix

University as a Melting Pot: Long-term Effects of Internationalization

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Online Appendix A: Variable Construction

In this section, I describe how I construct the variables.

Cohabitation. Each year, I check whether a person is registered as living with someone at the same address. I then filter for non-native individuals at the same address. The variable equals 1 if the person has ever been registered as living with a non-native person, and 0 otherwise.

Marriage. Each year, I check whether a person is married or in a registered partnership. I then select only non-native spouses. If a person has more than one marriage or registered partnership in a year, I retain the latest record. The variable equals 1 if the person has ever been married or in a registered partnership with a non-native person, and 0 otherwise.

Emigration. This variable equals 1 if a person is no longer registered as living in the Netherlands and has not been reported as deceased, and 0 otherwise.

% of foreign-born co-workers. This variable measures the share of employees within a firm in the Netherlands who were born abroad.

Employed. This variable equals 1 if a person is employed and 0 otherwise.

Income percentile. For each individual, I calculate their income percentile within their same-age group for a given year, separately for men and women. This variable ranges between 0 and 1.

Entrepreneur. This variable equals 1 if a person is an entrepreneur and 0 otherwise.

LISS survey questions. Since LISS is a panel survey, I calculate the average response for each individual to a given question over years.

NSS survey questions. For the NSS survey, which provides only aggregated responses, I assign each student the average response to a given question.

Online Appendix B: Tables

Table A1: Balancing table of characteristics of first-year students, their siblings, and parents

	No fixed effects		With fixed effects		
	Coefficient	s.e.	Coefficient	s.e.	Mean
Panel A: First-year students					
Female	−0.006	(0.009)	0.000	(0.002)	0.50
Age at enrollment	−0.109	(0.022)	−0.018	(0.036)	19.78
Gap year	−0.011	(0.005)	−0.001	(0.007)	0.33
Second generation immigrant	0.006	(0.003)	−0.002	(0.001)	0.14
Family size	−0.028	(0.003)	−0.008	(0.002)	2.53
Secondary school exam grade	0.011	(0.013)	0.005	(0.005)	0.14
Has a vocational degree	−0.005	(0.003)	−0.004	(0.005)	0.09
Panel B: Siblings					
Female	0.001	(0.001)	0.001	(0.001)	0.49
Age at enrollment of the sibling	−0.133	(0.028)	−0.020	(0.040)	18.54
Has a university degree	0.002	(0.001)	−0.003	(0.002)	0.08
Panel C: Parents					
Father’s age at enrollment of the child	0.281	(0.046)	0.025	(0.024)	50.12
Mother’s age at enrollment of the child	0.274	(0.043)	0.028	(0.024)	47.83
Father is married or cohabiting	−0.004	(0.001)	0.000	(0.001)	0.90
Mother is married or cohabiting	−0.003	(0.001)	−0.001	(0.001)	0.87
Father has a university degree	0.031	(0.004)	0.002	(0.002)	0.18
Mother has a university degree	0.030	(0.004)	0.002	(0.002)	0.17
Father is employed	0.001	(0.001)	0.001	(0.001)	0.93
Mother is employed	0.004	(0.001)	−0.001	(0.001)	0.83
Father is an entrepreneur	0.003	(0.001)	0.001	(0.001)	0.11
Mother is an entrepreneur	0.005	(0.001)	0.000	(0.001)	0.08
Father receives unemployment benefits	0.000	(0.000)	0.000	(0.000)	0.01
Mother receives unemployment benefits	0.001	(0.000)	0.000	(0.000)	0.01
Father receives social benefits	0.000	(0.001)	−0.001	(0.001)	0.07
Mother receives social benefits	0.000	(0.001)	0.001	(0.001)	0.07
Father’s income percentile	0.002	(0.002)	0.000	(0.001)	0.67
Mother’s income percentile	0.001	(0.001)	−0.001	(0.001)	0.57
At least one parent has a university degree	0.042	(0.006)	0.004	(0.003)	0.26
At least one parent is employed	0.001	(0.001)	0.000	(0.001)	0.97
At least one parent is self-employed	0.008	(0.002)	0.001	(0.001)	0.18
At least one parent receives unemployment benefits	0.001	(0.000)	0.000	(0.001)	0.02
At least one parent receives social benefits	0.000	(0.001)	0.000	(0.001)	0.12
Average parents’ income percentile	0.001	(0.001)	−0.001	(0.001)	0.62
<i>F</i> -test and its <i>p</i> -value	4.44 (< 0.001)		1.11 (0.31)		
N	1,037,347		1,037,347		

Notes: Regressions with fixed effects include program and cohort fixed effects. For siblings, all outcomes are measured one year before their first sibling enrolls in a university. For parents, all outcomes are measured one year before their first child enrolls in a university. N represents the number of first-year students. Standard errors (s.e.), which are clustered at the program level, are reported in parentheses.

Table A2: Balancing table of characteristics of first-year students and the lagged share of international students

	No fixed effects		With fixed effects		
	Coefficient	s.e.	Coefficient	s.e.	Mean
Panel A: First-year students					
Female	−0.007	(0.009)	−0.001	(0.002)	0.50
Age at enrollment	−0.105	(0.023)	−0.007	(0.035)	19.78
Gap year	−0.010	(0.005)	0.000	(0.007)	0.33
Second generation immigrant	0.005	(0.003)	−0.003	(0.002)	0.14
Family size	−0.026	(0.003)	−0.005	(0.003)	2.53
Secondary school exam grade	0.011	(0.013)	0.009	(0.005)	0.14
Has a vocational degree	−0.006	(0.003)	−0.002	(0.005)	0.09
Panel B: Siblings					
Female	0.002	(0.001)	0.002	(0.001)	0.49
Age at enrollment of the sibling	−0.125	(0.030)	−0.002	(0.037)	18.54
Has a university degree	0.002	(0.002)	−0.002	(0.002)	0.08
Panel C: Parents					
Father’s age at enrollment of the child	0.280	(0.048)	0.032	(0.023)	50.12
Mother’s age at enrollment of the child	0.274	(0.045)	0.033	(0.023)	47.83
Father is married or cohabiting	−0.004	(0.001)	−0.001	(0.001)	0.90
Mother is married or cohabiting	−0.003	(0.002)	0.000	(0.001)	0.87
Father has a university degree	0.030	(0.004)	0.003	(0.002)	0.18
Mother has a university degree	0.029	(0.005)	0.003	(0.002)	0.17
Father is employed	0.001	(0.001)	0.001	(0.001)	0.93
Mother is employed	0.004	(0.001)	0.000	(0.001)	0.83
Father is an entrepreneur	0.003	(0.001)	0.000	(0.001)	0.11
Mother is an entrepreneur	0.005	(0.001)	0.001	(0.001)	0.08
Father receives unemployment benefits	0.000	(0.000)	0.000	(0.000)	0.01
Mother receives unemployment benefits	0.000	(0.000)	0.000	(0.000)	0.01
Father receives social benefits	0.000	(0.001)	−0.001	(0.001)	0.07
Mother receives social benefits	0.000	(0.001)	−0.001	(0.001)	0.07
Father’s income percentile	0.002	(0.002)	0.001	(0.001)	0.67
Mother’s income percentile	0.001	(0.001)	−0.001	(0.001)	0.57
At least one parent has a university degree	0.041	(0.006)	0.004	(0.003)	0.26
At least one parent is employed	0.001	(0.001)	0.000	(0.001)	0.97
At least one parent is self-employed	0.008	(0.002)	0.002	(0.001)	0.18
At least one parent receives unemployment benefits	0.001	(0.000)	0.000	(0.001)	0.02
At least one parent receives social benefits	0.000	(0.001)	−0.001	(0.001)	0.12
Average parents’ income percentile	0.002	(0.001)	0.000	(0.001)	0.62
<i>F</i> -test and its <i>p</i> -value	3.90 (< 0.001)		1.30 (0.12)		
N	997,173		997,173		

Notes: Regressions with fixed effects include program and cohort fixed effects. For siblings, all outcomes are measured one year before their first sibling enrolls in a university. For parents, all outcomes are measured one year before their first child enrolls in a university. N represents the number of first-year students for whom information on the share of international students in the previous year is available. Standard errors (s.e.), which are clustered at the program level, are reported in parentheses.

Table A3: Balancing table of peer characteristics of first-year students

	No fixed effects		With fixed effects		
	Coefficient	s.e.	Coefficient	s.e.	Mean
Panel A: Peers					
Share of females	0.007	(0.006)	0.002	(0.003)	0.52
Average age at enrollment	-0.081	(0.024)	0.045	(0.036)	20.04
Share with a gap year	-0.007	(0.005)	0.010	(0.006)	0.38
Share of second generation immigrants	0.007	(0.003)	0.002	(0.003)	0.14
Average family size	-0.038	(0.007)	-0.009	(0.006)	2.54
Average secondary school exam grade	0.010	(0.009)	0.011	(0.007)	0.20
Share with a vocational degree	-0.007	(0.002)	0.001	(0.004)	0.08
Panel B: Siblings of peers					
Share of female siblings	0.001	(0.001)	0.000	(0.002)	0.49
Average age at enrollment of the sibling	-0.111	(0.024)	0.042	(0.046)	18.77
Share of siblings with a university degree	0.001	(0.001)	-0.001	(0.002)	0.08
Panel C: Parents of peers					
Average father's age at enrollment of the child	0.214	(0.031)	0.061	(0.040)	50.32
Average mother's age at enrollment of the child	0.198	(0.024)	0.049	(0.034)	48.00
Share of married or cohabiting fathers	-0.004	(0.001)	0.000	(0.002)	0.90
Share of married or cohabiting mothers	-0.003	(0.001)	-0.002	(0.002)	0.87
Share of fathers with a university degree	0.026	(0.002)	0.001	(0.002)	0.16
Share of mothers with a university degree	0.025	(0.003)	-0.001	(0.002)	0.15
Share of employed fathers	0.000	(0.001)	0.000	(0.002)	0.93
Share of employed mothers	0.005	(0.001)	0.000	(0.002)	0.82
Share of fathers who are entrepreneurs	0.004	(0.001)	0.003	(0.003)	0.11
Share of mothers who are entrepreneurs	0.005	(0.001)	0.001	(0.002)	0.08
Share of fathers who receive unemployment benefits	0.000	(0.000)	0.000	(0.001)	0.01
Share of mothers who receive unemployment benefits	0.000	(0.000)	0.001	(0.001)	0.01
Share of fathers who receive social benefits	0.001	(0.001)	0.000	(0.002)	0.07
Share of mothers who receive social benefits	0.001	(0.001)	0.003	(0.002)	0.07
Average father's income percentile	0.001	(0.001)	0.000	(0.002)	0.65
Average mother's income percentile	0.003	(0.001)	0.000	(0.002)	0.56
Share of parents with a university degree	0.035	(0.003)	0.000	(0.002)	0.23
Share of employed parents	0.000	(0.001)	-0.001	(0.001)	0.96
Share of parents who are self-employed	0.007	(0.001)	0.003	(0.003)	0.17
Share of parents who receive unemployment benefits	0.001	(0.000)	0.002	(0.001)	0.02
Share of parents who receive social benefits	0.002	(0.001)	0.002	(0.002)	0.12
Average parents' income percentile	0.002	(0.001)	0.000	(0.001)	0.60
<i>F</i> -test and its <i>p</i> -value	4.35 (< 0.001)		1.03 (0.42)		
N	11,449		11,449		

Notes: Regressions with fixed effects include program and cohort fixed effects. For siblings, all outcomes are measured one year before their first sibling enrolls in a university. For parents, all outcomes are measured one year before their first child enrolls in a university. N represents the number of programs in which first-year students are enrolled. Standard errors (s.e.), which are clustered at the program level, are reported in parentheses.

Table A4: Balancing table of indicators of program quality

	No fixed effects		With fixed effects		
	Coefficient	s.e.	Coefficient	s.e.	Mean
Panel A: Educational outcomes					
Program size	17.755	(4.712)	5.624	(4.037)	136.76
Share of ever dropped out	0.006	(0.003)	0.002	(0.004)	0.24
Average time to graduate	−0.075	(0.018)	0.017	(0.020)	4.65
Share who completed a master’s degree	0.044	(0.004)	−0.001	(0.004)	0.41
Panel B: Social outcomes					
Share who cohabited with a non-native 5 year post-graduation	0.012	(0.002)	0.000	(0.002)	0.08
Share who cohabited with a non-native 10 years post-graduation	0.012	(0.002)	0.000	(0.003)	0.11
Share who married to a non-native 5 years post-graduation	0.000	(0.000)	0.000	(0.001)	0.02
Share who married to a non-native 10 years post-graduation	0.003	(0.001)	−0.002	(0.002)	0.04
Emigrated 5 years post-graduation	0.007	(0.001)	0.000	(0.001)	0.05
Emigrated 10 years post-graduation	0.012	(0.002)	0.002	(0.003)	0.07
Panel C: Labor market outcomes					
Share of employed 5 year post-graduation	−0.001	(0.001)	0.000	(0.002)	0.95
Share of employed 10 years post-graduation	−0.001	(0.001)	−0.001	(0.002)	0.95
Average income percentile 5 year post-graduation	0.003	(0.002)	−0.001	(0.002)	0.67
Average income percentile 10 years post-graduation	0.001	(0.003)	−0.002	(0.002)	0.71
Share of entrepreneurs 5 year post-graduation	−0.003	(0.001)	−0.001	(0.001)	0.04
Share of entrepreneurs 10 years post-graduation	−0.004	(0.001)	−0.001	(0.002)	0.07
% of foreign-born co-workers 5 year post-graduation	0.004	(0.001)	−0.001	(0.001)	0.13
% of foreign-born co-workers 10 years post-graduation	0.003	(0.001)	0.001	(0.002)	0.13
<i>F</i> -test and its <i>p</i> -value	2.04 (0.006)		0.52 (0.95)		
N	10,329		10,329		

Notes: Regressions with fixed effects include program and cohort fixed effects. All outcomes, except for program size, are measured among graduates of the programs in the same year the share of international students among first-year students is measured. A non-native is defined as a person without Dutch nationality. N represents the number of programs from which students have graduated. Standard errors (s.e.), which are clustered at the program level, are reported in parentheses.

Table A5: The effect of exposure to international students on attitudes towards internationalization

	Coefficient	s.e.	Mean	N
Panel A: Selection into the NSS panel				
1. Is a program observed in the NSS panel? (0 - no, 1 - yes)	-0.007	(0.011)	0.911	381,671
2. How satisfied are you with the level of internationalization? (0 - not answered, 1 - answered)	0.000	(0.000)	0.354	347,615
3. How satisfied are you with the level of encouragement to learn about other cultures? (0 - not answered, 1 - answered)	0.000	(0.000)	0.354	347,615
Panel B: Linear regression with weights				
1. How satisfied are you with the level of internationalization? (1 - very dissatisfied, 5 - very satisfied)	0.060	(0.019)	3.524	123,038
2. How satisfied are you with the level of encouragement to learn about other cultures? (1 - very dissatisfied, 5 - very satisfied)	0.046	(0.017)	3.197	123,038
Panel C: Ordered probit regression				
1. How satisfied are you with the level of internationalization? (1 - very dissatisfied, 5 - very satisfied)	0.156	(0.011)	3.524	123,038
2. How satisfied are you with the level of encouragement to learn about other cultures? (1 - very dissatisfied, 5 - very satisfied)	0.068	(0.010)	3.197	123,038

Notes: A coefficient represents a 10 percentage point increase in the share of international students. In Panels A and B, all regressions include program and cohort fixed effects. In Panel C, all regressions include the share of international students after residualizing it for program and cohort fixed effects. In Panel B, I weigh observations by the ratio of students who answered the survey to the total number of students enrolled in the program. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A6: The effect of exposure to international students on attitudes towards migration

	Coefficient	s.e.	Mean	N
Panel A: Selection into the LISS panel and answering a question				
1. Is a person observed in the LISS panel? (0 - no, 1 - yes)	0.000	(0.000)	0.001	1,037,347
2. Do you agree that people of foreign origin who legally reside in the Netherlands should be entitled to the same social security as Dutch citizens? (0 - not answered, 1 - answered)	-0.047	(0.036)	0.821	1,437
3. Do you agree that it does not help a neighborhood if many people of foreign origin or descent move in? (0 - not answered, 1 - answered)	-0.047	(0.036)	0.821	1,437
4. Where would you place yourself on a scale from 1 to 5, where 1 means that European unification has already gone too far and 5 means that it should go further? (0 - not answered, 1 - answered)	-0.045	(0.036)	0.811	1,437
Panel B: Linear regression with weights				
1. Do you agree that people of foreign origin who legally reside in the Netherlands should be entitled to the same social security as Dutch citizens? (1 - fully disagree, 5 - fully agree)	0.282	(0.128)	3.790	1,180
2. Do you agree that it does not help a neighborhood if many people of foreign origin or descent move in? (1 - fully disagree, 5 - fully agree)	-0.157	(0.062)	3.258	1,180
3. Where would you place yourself on a scale from 1 to 5, where 1 means that European unification has already gone too far and 5 means that it should go further?	0.162	(0.082)	2.148	1,166
Panel C: Ordered probit regression				
1. Do you agree that people of foreign origin who legally reside in the Netherlands should be entitled to the same social security as Dutch citizens? (1 - fully disagree, 5 - fully agree)	0.296	(0.104)	3.790	1,180
2. Do you agree that it does not help a neighborhood if many people of foreign origin or descent move in? (1 - fully disagree, 5 - fully agree)	-0.187	(0.102)	3.258	1,180
3. Where would you place yourself on a scale from 1 to 5, where 1 means that European unification has already gone too far and 5 means that it should go further?	0.253	(0.102)	2.148	1,166

Notes: A coefficient represents a 10 percentage point increase in the share of international students. In Panels A and B, all regressions include program and cohort fixed effects. In Panel C, all regressions include the share of international students after residualizing it for program and cohort fixed effects. In Panel B, I weigh observations by the number of students from the program. The scale of question 4 in Panel A, and question 3 in Panels B and C is reversed compared to the original. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A7: Pre-emigration labor market outcomes of Dutch students

	Employed	Income percentile	Entrepreneur	% of foreign-born co-workers
Emigrated	-0.151 (0.003)	-0.110 (0.004)	-0.007 (0.001)	0.037 (0.001)
Mean	0.933	0.614	0.032	0.118
N	2,496,650	2,496,650	2,496,650	1,767,597

Notes: All regressions include program and cohort fixed effects. This table reports coefficients from regressions of pre-emigration labor market outcomes on an indicator for whether the student subsequently emigrated 15 years after enrollment. Outcomes are measured in the year before the student's last observed year in the Netherlands. Mean refers to the sample mean of the dependent variable among non-emigrants. The sample contains outcomes for emigrants at the individual level measured once and for non-emigrants at the individual level measured annually. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A8: Bounding analyses for labor market outcomes of Dutch students

Panel A: Lower bound	Employed	Income percentile	Entrepreneur	% of foreign-born co-workers
International share in 10%-points	-0.003 (0.001)	0.000 (0.002)	0.000 (0.001)	0.000 (0.001)
Mean	0.882	0.688	0.067	0.114
N	617,094	617,094	617,094	458,709
Panel B: Upper bound				
International share in 10%-points	-0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)
Mean	0.947	0.733	0.133	0.132
N	617,094	617,094	617,094	458,709
Panel C: Pre-emigration				
International share in 10%-points	-0.002 (0.001)	-0.001 (0.002)	0.000 (0.001)	0.001 (0.001)
Mean	0.935	0.706	0.070	0.123
N	606,230	606,230	606,230	441,006

Notes: All regressions include program and cohort fixed effects. This table reports estimates of the effect of exposure to international students on natives' labor market outcomes, addressing missing outcomes for emigrants. Panel A presents lower bounds, imputing zeros for binary outcomes (employment and entrepreneurship) and values from the bottom 10% of peers in emigrants' programs for continuous outcomes (income percentile and the share of foreign-born co-workers). Panel B presents upper bounds, imputing ones for binary outcomes and values from the top 10% of peers for continuous outcomes. Panel C presents estimates imputing emigrants' outcomes from the year before their last observed year in the Netherlands. Outcomes are measured 15 years after enrollment. Mean refers to the sample mean of the dependent variable among non-emigrants. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A9: The effect of exposure to international students on the educational outcomes of native students

	Time to graduate	Bachelor's degree completion	Master's degree completion
International share in 10%-points	-0.017 (0.026)	0.012 (0.007)	0.001 (0.004)
Mean	4.613	0.786	0.366
N	782,590	1,037,347	1,037,347

Notes: All regressions include program and cohort fixed effects. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A10: The effect of exposure to international students on “native flight”

Panel A	Dropped out during 1st year	Switched program at the same university	Switched university to the same program
International share in 10%-points	-0.003 (0.006)	0.002 (0.001)	0.000 (0.000)
Mean	0.264	0.045	0.016
N	1,037,347	1,037,347	1,037,347
Panel B	Dropped out during 1st year	Switched program at the same university	Switched university to the same program
International share in 10%-points	-0.007 (0.007)	0.002 (0.001)	0.000 (0.000)
x 1 [STEM = 1]	0.026 (0.009)	0.001 (0.003)	0.000 (0.002)
N	1,037,347	1,037,347	1,037,347

Notes: All regressions include program and cohort fixed effects. Switched program at the same university refers to whether a student changed program but remained at the same university during the first year. Switched university to the same program refers to whether a student transferred to a different university but stayed in the same program during the first year. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A11: Heterogeneous effects of exposure to international students on the outcomes of native students 15 years post-enrollment

Panel A: Sex	Cohabited with a non-native	Married to a non-native	Emigrated	Employed	Income percentile	Entrepreneur	% of foreign-born co-workers
International share in 10%-points x 1 [Female = 1]	0.006 (0.001) -0.001 (0.002)	0.002 (0.001) -0.001 (0.001)	0.002 (0.001) 0.001 (0.002)	-0.002 (0.001) 0.001 (0.001)	0.001 (0.002) 0.000 (0.002)	0.000 (0.001) 0.000 (0.002)	0.000 (0.001) 0.001 (0.001)
Mean for males	0.115	0.044	0.072	0.953	0.698	0.070	0.130
Mean for females	0.089	0.026	0.058	0.933	0.737	0.075	0.114
N	605,367	587,676	617,094	576,961	576,961	576,961	427,687
Panel B: Field of study							
International share in 10%-points x 1 [STEM = 1]	0.007 (0.001) -0.010 (0.004)	0.002 (0.001) -0.001 (0.003)	0.003 (0.001) -0.005 (0.004)	-0.001 (0.001) 0.000 (0.002)	0.000 (0.002) 0.005 (0.004)	0.000 (0.001) 0.002 (0.003)	0.001 (0.001) -0.004 (0.002)
Mean for non-STEM	0.098	0.033	0.060	0.941	0.717	0.077	0.117
Mean for STEM	0.115	0.043	0.084	0.951	0.717	0.055	0.139
N	605,367	587,676	617,094	576,961	576,961	576,961	427,687
Panel C: Share of females							
International share in 10%-points x 1 [Share is below 20% = 1]	0.006 (0.001) -0.011 (0.006)	0.002 (0.001) -0.002 (0.004)	0.003 (0.001) -0.005 (0.005)	-0.001 (0.001) -0.006 (0.003)	0.001 (0.002) 0.001 (0.004)	0.000 (0.001) 0.000 (0.003)	0.001 (0.001) -0.002 (0.004)
Mean for above 20%	0.100	0.033	0.063	0.942	0.714	0.077	0.119
Mean for below 20%	0.116	0.047	0.084	0.955	0.740	0.042	0.142
N	605,367	587,676	617,094	576,961	576,961	576,961	427,687
Panel D: Program size							
International share in 10%-points x 1 [Size is below average = 1]	0.008 (0.001) -0.007 (0.003)	0.001 (0.001) 0.001 (0.002)	0.004 (0.001) -0.006 (0.002)	-0.001 (0.001) 0.001 (0.002)	0.000 (0.002) -0.001 (0.003)	0.000 (0.001) 0.001 (0.002)	0.002 (0.001) -0.003 (0.001)
Mean for above average	0.098	0.033	0.061	0.947	0.732	0.072	0.119
Mean for below average	0.111	0.040	0.075	0.935	0.683	0.072	0.129
N	605,367	587,676	617,094	576,961	576,961	576,961	427,687

Notes: All regressions include program and cohort fixed effects as well as their interactions with an indicator variable. A non-native is defined as a person without Dutch nationality. In Panel D, the indicator equals 1 if the program size is smaller than the average, which is 137. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A12: Sensitivity to alternative definitions of international students

Panel A: Cohabited with a non-native	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
International share in 10%-points	0.006 (0.001)	0.006 (0.001)	0.005 (0.001)	0.006 (0.001)	0.005 (0.001)	0.005 (0.001)	0.008 (0.002)	0.002 (0.006)
N	605,367	605,367	605,367	605,357	605,367	605,367	605,367	605,367
Panel B: Married to a non-native								
International share in 10%-points	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.003 (0.003)
N	587,676	587,676	587,676	587,666	587,676	587,676	587,676	587,676
Panel C: Emigrated								
International share in 10%-points	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.002 (0.001)	0.004 (0.001)	-0.001 (0.005)
N	617,094	617,094	617,094	617,084	617,094	617,094	617,094	617,094
Panel D: Employed								
International share in 10%-points	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)	0.000 (0.004)
N	576,961	576,961	576,961	576,951	576,961	576,961	576,961	576,961
Panel E: Income percentile								
International share in 10%-points	0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)	0.000 (0.002)	-0.001 (0.001)	-0.003 (0.001)	0.000 (0.002)	0.005 (0.006)
N	576,961	576,961	576,961	576,951	576,961	576,961	576,961	576,961
Panel F: Entrepreneur								
International share in 10%-points	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.000 (0.001)	0.003 (0.004)
N	576,961	576,961	576,961	576,951	576,961	576,961	576,961	576,961
Panel G: % of foreign-born co-workers								
International share in 10%-points	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	-0.004 (0.003)
N	427,687	427,687	427,687	427,687	427,687	427,687	427,687	427,687
<i>Definition of international students is based on</i>								
Nationality and high school completion	✓							
Nationality		✓						
High school completion			✓					
Residency before enrollment				✓				
Country of birth					✓			
Parent's country of birth						✓		
EEA+ nationality							✓	
Non-EEA+ nationality								✓

Notes: All regressions include program and cohort fixed effects. A non-native is defined as a person without Dutch nationality. EEA+ nationality refers to individuals from the European Economic Area (the EU, Iceland, Liechtenstein, and Norway) plus Switzerland. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A13: Sensitivity to alternative definitions of international students

Panel A: Satisfaction with the level of internationalization	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
International share in 10%-points	0.053 (0.019)	0.056 (0.019)	0.052 (0.018)	0.054 (0.021)	0.051 (0.019)	0.046 (0.020)	0.061 (0.021)	0.101 (0.071)
N	123,038	123,038	123,038	123,038	123,038	123,038	123,038	123,038
Panel B: Satisfaction with the level of encouragement to learn about other cultures								
International share in 10%-points	0.038 (0.019)	0.042 (0.019)	0.028 (0.019)	0.030 (0.021)	0.038 (0.019)	0.047 (0.020)	0.033 (0.022)	0.140 (0.065)
N	123,038	123,038	123,038	123,038	123,038	123,038	123,038	123,038
Panel C: Social security rights for foreigners								
International share in 10%-points	0.238 (0.095)	0.230 (0.095)	0.204 (0.094)	0.222 (0.093)	0.235 (0.095)	0.218 (0.082)	0.202 (0.097)	0.768 (0.553)
N	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180
Panel D: Foreigners in neighborhoods								
International share in 10%-points	-0.138 (0.062)	-0.137 (0.061)	-0.125 (0.059)	-0.128 (0.064)	-0.140 (0.066)	-0.137 (0.068)	-0.121 (0.054)	-0.592 (0.415)
N	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180
Panel E: European unification								
International share in 10%-points	0.239 (0.068)	0.237 (0.066)	0.216 (0.067)	0.229 (0.066)	0.244 (0.066)	0.232 (0.073)	0.245 (0.059)	0.597 (0.366)
N	1,166	1,166	1,166	1,166	1,166	1,166	1,166	1,166
<i>Definition of international students is based on</i>								
Nationality and high school completion	✓							
Nationality		✓						
High school completion			✓					
Residency before enrollment				✓				
Country of birth					✓			
Parent's country of birth						✓		
EEA+ nationality							✓	
Non-EEA+ nationality								✓

Notes: All regressions include program and cohort fixed effects. EEA+ nationality refers to individuals from the European Economic Area (the EU, Iceland, Liechtenstein, and Norway) plus Switzerland. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A14: The effect of exposure to international students on the outcomes of native students 10 and 25 years post-enrollment

Panel A: 10 years post-enrollment	Cohabited with a non-native	Married to a non-native	Emigrated	Employed	Income percentile	Entrepreneur	% of foreign-born co-workers
International share in 10%-points	0.007 (0.002)	0.001 (0.000)	0.004 (0.001)	0.001 (0.001)	0.003 (0.002)	-0.001 (0.001)	0.001 (0.001)
Mean	0.077	0.015	0.041	0.948	0.679	0.039	0.129
Cohorts	1988-2013	1988-2013	1988-2013	1993-2013	1993-2013	1993-2013	1996-2013
N	787,329	773,073	801,346	614,337	614,337	614,337	491,117
Panel B: 25 years post-enrollment							
International share in 10%-points	0.004 (0.002)	0.003 (0.001)	0.000 (0.002)	0.001 (0.001)	0.000 (0.002)	-0.001 (0.002)	0.000 (0.001)
Mean	0.118	0.053	0.082	0.932	0.720	0.129	0.121
Cohorts	1988-1998	1988-1998	1988-1998	1988-1998	1988-1998	1988-1998	1988-1998
N	311,271	300,021	315,779	289,898	289,898	289,898	236,121

Notes: All regressions include program and cohort fixed effects. A non-native is defined as a person without Dutch nationality. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A15: Robustness to alternative models and samples

Panel A: Cohabited with a non-native	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
International share in 10%-points	0.006 (0.001)	0.006 (0.001)	0.006 (0.001)	0.006 (0.001)	0.006 (0.001)	0.006 (0.001)	0.006 (0.001)	0.008 (0.001)	0.006 (0.001)	0.007 (0.001)
N	605,367	605,367	605,367	605,367	605,367	605,367	605,367	637,725	615,410	650,182
Panel B: Married to a non-native										
International share in 10%-points	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)	0.002 (0.001)
N	587,676	587,676	587,676	587,676	587,676	587,676	587,676	617,035	597,498	629,126
Panel C: Emigrated										
International share in 10%-points	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.003 (0.001)	0.002 (0.001)	0.002 (0.001)	0.005 (0.001)	0.002 (0.001)	0.004 (0.001)
N	617,094	617,094	617,094	617,094	617,094	617,094	617,094	651,650	627,143	664,272
Panel D: Employed										
International share in 10%-points	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
N	576,961	576,961	576,961	576,961	576,961	576,961	576,961	605,238	586,693	617,177
Panel E: Income percentile										
International share in 10%-points	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.000 (0.002)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)
N	576,961	576,961	576,961	576,961	576,961	576,961	576,961	605,238	586,693	617,177
Panel F: Entrepreneur										
International share in 10%-points	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)
N	576,961	576,961	576,961	576,961	576,961	576,961	576,961	605,238	586,693	617,177
Panel G: % of foreign-born co-workers										
International share in 10%-points	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
N	427,687	427,687	427,687	427,687	427,687	427,687	427,687	447,157	432,395	453,029
<i>Controls</i>										
Field specific linear time trend		✓						✓		
Field specific quadratic time trend			✓					✓		
Program size				✓				✓		
Individual characteristics					✓			✓		
Peer characteristics						✓		✓		
<i>Sample</i>										
First-generation immigrants								✓		✓
Students older than 30 at enrollment									✓	✓

Notes: All regressions include program and cohort fixed effects. A non-native is defined as a person without Dutch nationality. Individual characteristics include sex, age at enrollment, migration status, family size, pre-vocational diploma, gap year indicator. Peer characteristics include the share of females, average age at enrollment, the share of second generation migrants, average family size, the share with a pre-vocational diploma, the share with a gap year. Standard errors, which are clustered at the program level, are reported in parentheses.

Table A16: Robustness to alternative models and samples

Panel A: Satisfaction with the level of internationalization	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
International share in 10%-points	0.053 (0.019)	0.053 (0.019)	0.053 (0.019)	0.053 (0.020)	0.053 (0.019)	0.052 (0.019)	0.052 (0.019)	0.053 (0.019)	0.054 (0.019)	0.053 (0.019)
N	123,038	123,038	123,038	123,038	123,038	123,038	123,038	129,064	123,918	130,256
Panel B: Satisfaction with the level of encouragement to learn about other cultures										
International share in 10%-points	0.038 (0.019)	0.038 (0.019)	0.038 (0.019)	0.037 (0.019)	0.038 (0.019)	0.043 (0.020)	0.042 (0.020)	0.038 (0.019)	0.037 (0.019)	0.037 (0.019)
N	123,038	123,038	123,038	123,038	123,038	123,038	123,038	129,064	123,918	130,256
Panel C: Social security rights for foreigners										
International share in 10%-points	0.238 (0.095)	0.238 (0.095)	0.238 (0.097)	0.256 (0.106)	0.226 (0.093)	0.260 (0.081)	0.262 (0.098)	0.230 (0.091)	0.238 (0.095)	0.230 (0.091)
N	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,251	1,193	1,267
Panel D: Foreigners in neighborhoods										
International share in 10%-points	-0.138 (0.062)	-0.138 (0.062)	-0.138 (0.063)	-0.153 (0.066)	-0.112 (0.060)	-0.126 (0.063)	-0.123 (0.069)	-0.118 (0.062)	-0.138 (0.062)	-0.117 (0.062)
N	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,251	1,193	1,267
Panel E: European unification										
International share in 10%-points	0.239 (0.068)	0.239 (0.068)	0.239 (0.069)	0.234 (0.065)	0.248 (0.069)	0.197 (0.079)	0.185 (0.085)	0.206 (0.068)	0.239 (0.068)	0.206 (0.068)
N	1,166	1,166	1,166	1,166	1,166	1,166	1,166	1,235	1,179	1,250
<i>Controls</i>										
Field specific linear time trend		✓					✓			
Field specific quadratic time trend			✓				✓			
Program size				✓			✓			
Individual characteristics					✓		✓			
Peer characteristics						✓	✓			
<i>Sample</i>										
First-generation immigrants								✓		✓
Students older than 30 at enrollment									✓	✓

Notes: All regressions include program and cohort fixed effects. Individual characteristics include sex, age at enrollment, migration status, family size, pre-vocational diploma, gap year indicator. Peer characteristics include the share of females, average age at enrollment, the share of second generation migrants, average family size, the share with a pre-vocational diploma, the share with a gap year. Standard errors, which are clustered at the program level, are reported in parentheses.

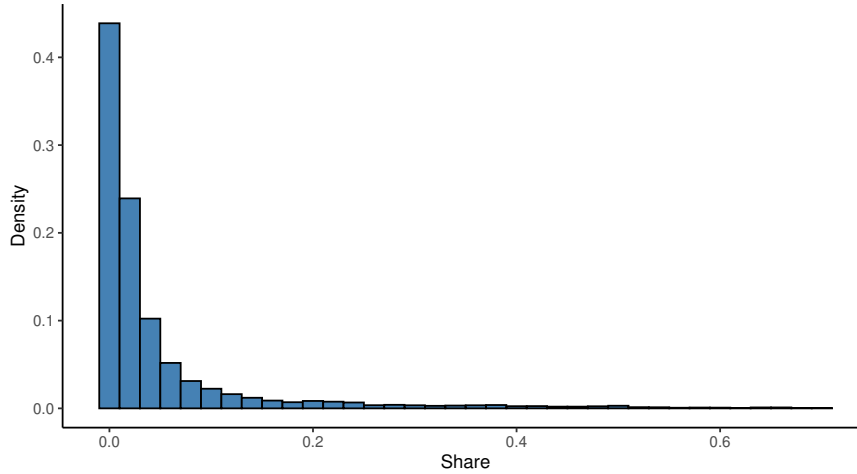
Table A17: Overview of estimates on the impact of international students in higher education

Paper	Country	Data	Sample	Measure	Relevant outcomes	Results
Chevalier et al. (2020)	UK	Administrative data from one university and a survey of graduates	4,032 1,581	9%-points (SD)	Failed a course Abroad 6 months post-graduation	0.029 (0.058) 0.015 (0.032)
Costas-Fernández et al. (2023)	UK	Administrative data and a survey of graduates	509,870 315,215 124,305	18.5%-points (SD)	Graduated from a university Employed 6 months post-graduation Log yearly earnings 6 months post-graduation	0.001 (0.006) 0.001 (0.009) 0.033 (0.015)
Anelli et al. (2023)	US	Administrative data from one university	16,828	4.4%-points (SD)	Time to final major declaration Expected earnings 11-15 years post-graduation	0.100 (0.120) 0.031 (0.086)
Rakesh (2023)	US	Administrative data from one university	29,246	10%-points	Graduated from a university	-0.011 (0.006)

Notes: Measure denotes the unit used to quantify the share of international students. “SD” signifies that a paper quantified this measure in terms of standard deviations, while the term “%-points” indicates the magnitude of these standard deviations. Relevant outcomes are those findings from the literature that can be directly compared to the outcomes of this study.

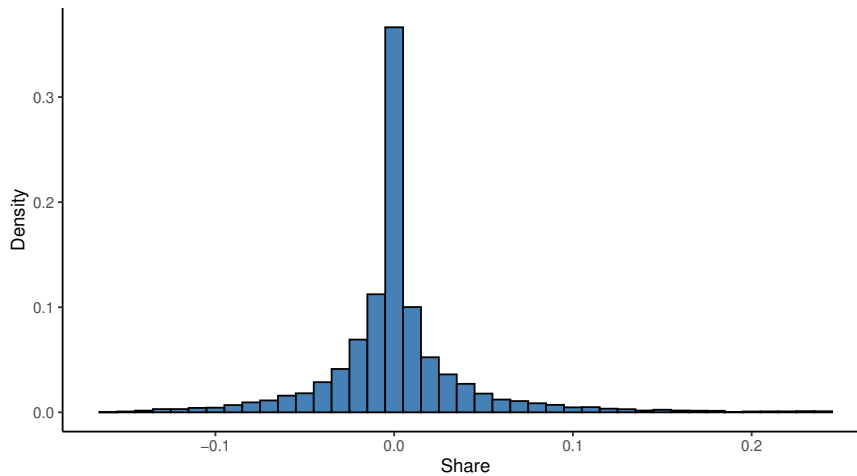
Online Appendix C: Figures

Figure A1: Histogram of the share of international students by program $\times$ year of enrollment



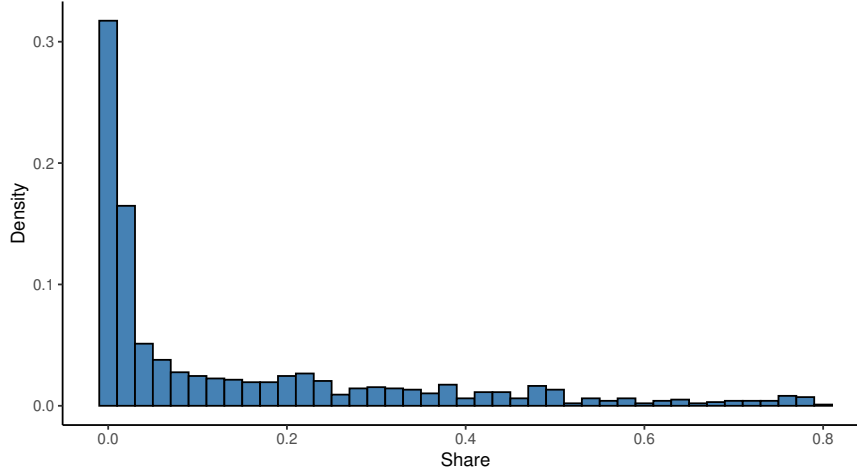
Notes: This histogram shows the plot of the share of international students calculated by program $\times$ year of enrollment. For display clarity, the top 1% of the data is winsorized.

Figure A2: Histogram of the residualized share of international students by program $\times$ year of enrollment



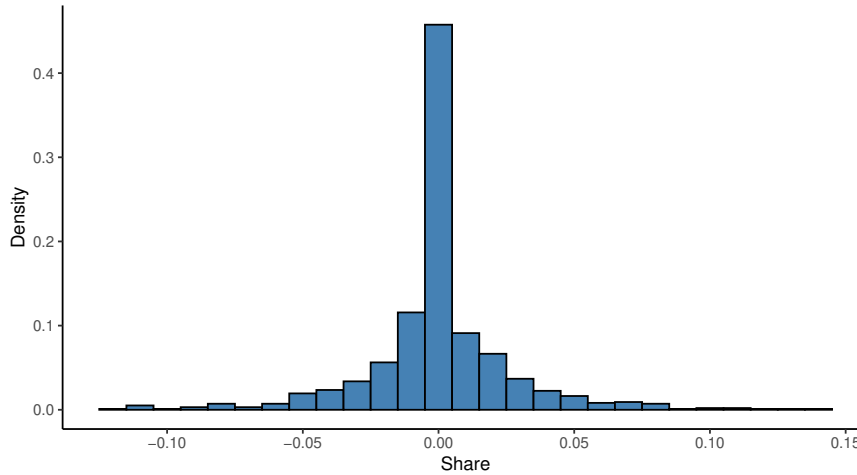
Notes: This histogram shows the plot of residuals of the share of international students calculated by program $\times$ year of enrollment after partialing out for program and cohort fixed effects. For display clarity, the top and bottom 1% of the data are winsorized.

Figure A3: Histogram of the share of international students by program $\times$ year of enrollment using the NSS sample



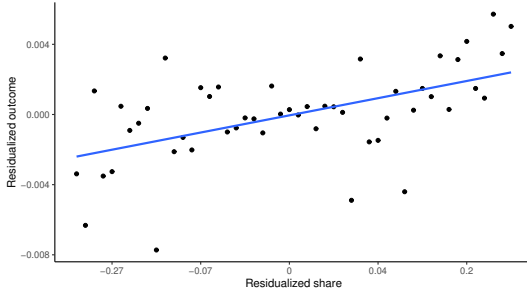
Notes: This histogram shows the plot of the share of international students calculated by program $\times$ year of enrollment. For display clarity, the top 1% of the data is winsorized.

Figure A4: Histogram of the residualized share of international students by program $\times$ year of enrollment using the NSS sample

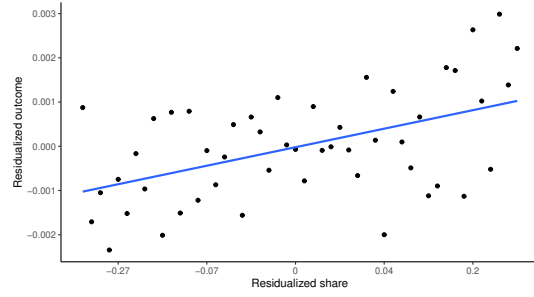


Notes: This histogram shows the plot of residuals of the share of international students calculated by program $\times$ year of enrollment after partialing out for program and cohort fixed effects. For display clarity, the top and bottom 1% of the data are winsorized.

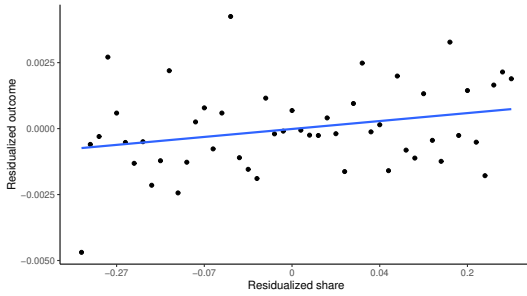
Figure A5: Scatter plots



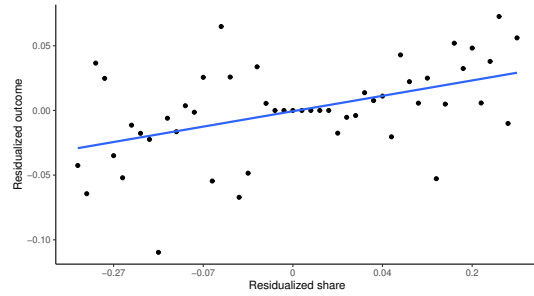
(a) Cohabitation with a non-native



(b) Marriage to a non-native



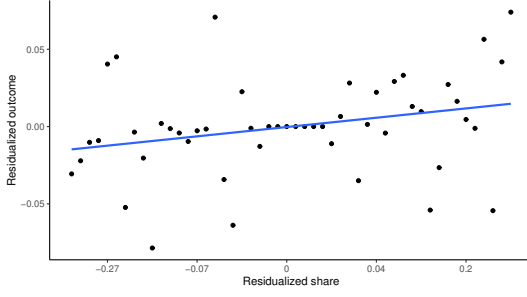
(c) Emigration



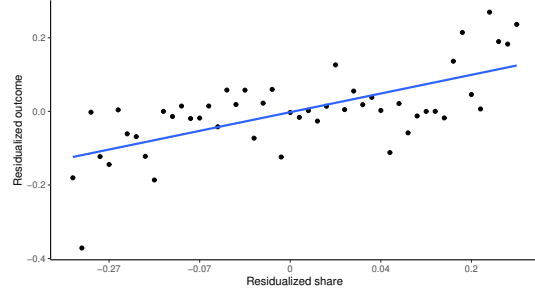
(d) Satisfaction with internationalization

Notes: The plots show the residualized outcome against the residualized share of international students after partialling out program and cohort fixed effects. The residualized share is divided into 50 equally sized bins. For each bin the average residualized outcome is shown against the average residualized share.

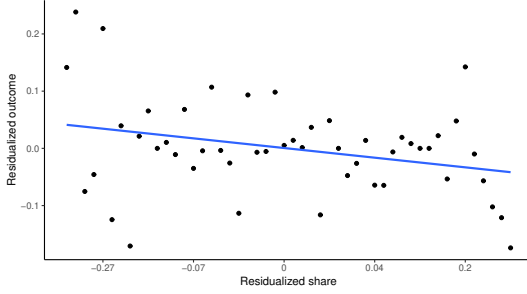
Figure A6: Scatter plots



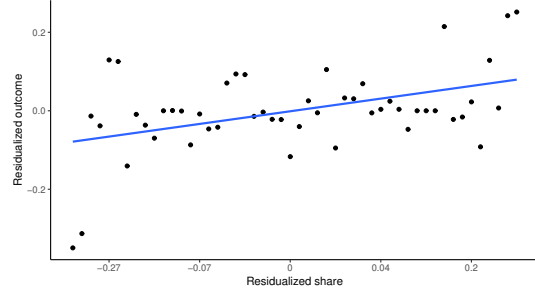
(a) Satisfaction with encouragement to learn about other cultures



(b) Same social security rights for foreigners



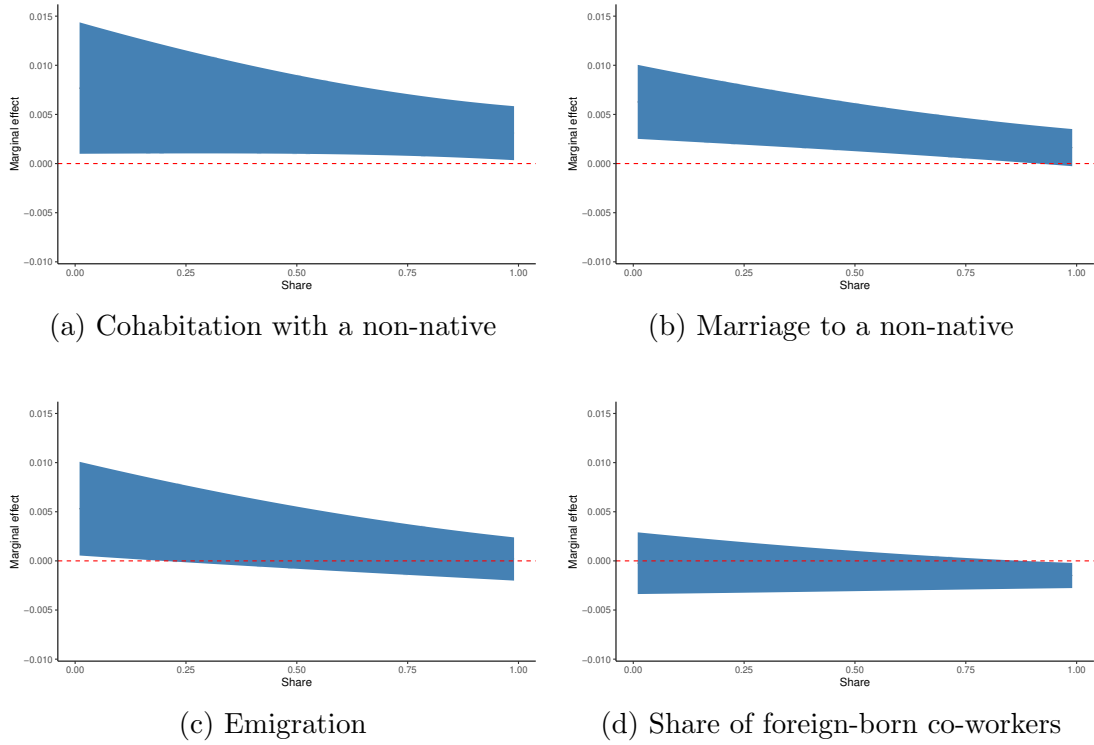
(c) Foreigners in neighborhoods



(d) European unification

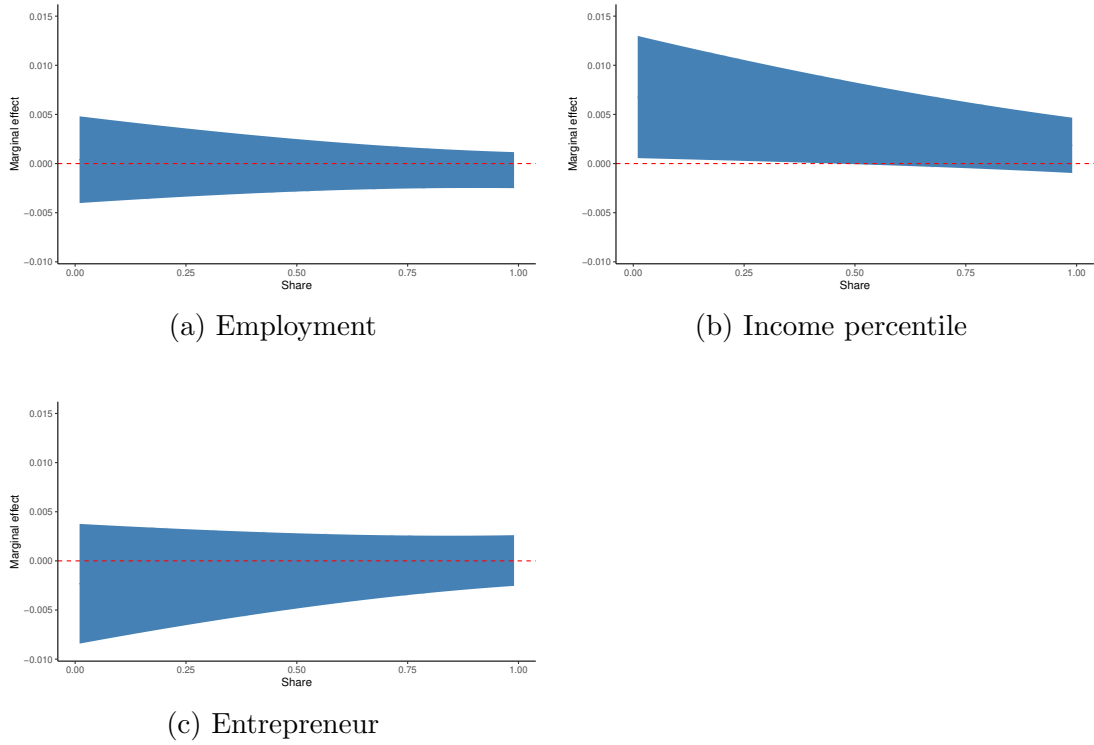
Notes: The plots show the residualized outcome against the residualized share of international students after partialling out program and cohort fixed effects. The residualized share is divided into 50 equally sized bins. For each bin the average residualized outcome is shown against the average residualized share.

Figure A7: Marginal effects of the share of international students



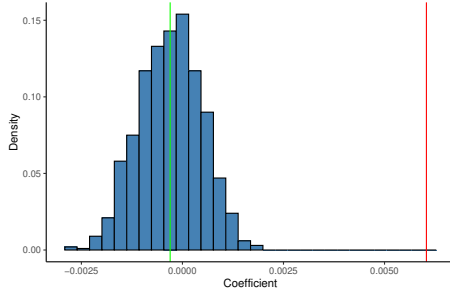
Notes: The plots display marginal effects based on estimates from a cubic specification that includes program and cohort fixed effects in Model 4. Marginal effects are computed as the derivative of the fitted outcome with respect to the share of international students, and standard errors are obtained via the delta method. Shaded areas represent 95% confidence intervals.

Figure A8: Marginal effects of the share of international students

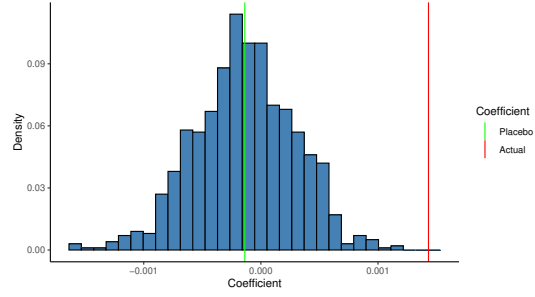


Notes: The plots display marginal effects based on estimates from a cubic specification that includes program and cohort fixed effects in Model 4. Marginal effects are computed as the derivative of the fitted outcome with respect to the share of international students, and standard errors are obtained via the delta method. Shaded areas represent 95% confidence intervals.

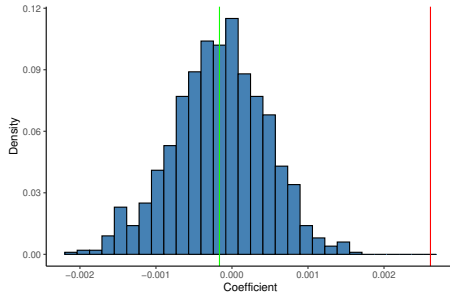
Figure A9: Counterfactual treatment effects



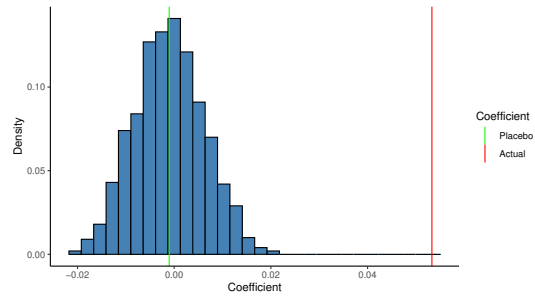
(a) Cohabitation with a non-native



(b) Marriage to a non-native



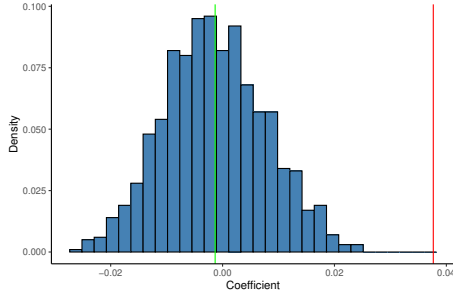
(c) Emigration



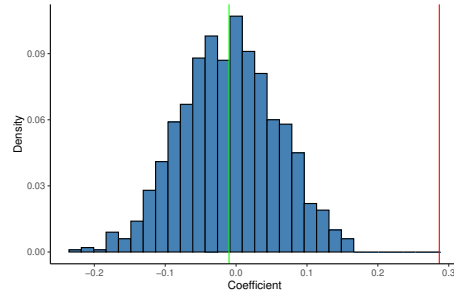
(d) Satisfaction with internationalization

Notes: The plots display estimates from 1,000 simulated datasets where instead of using the actual share of international students that native students are exposed to, I assign them a share of international students from the same program and year but a different university. They also show the mean estimated coefficients of the randomly assigned shares (green), and the actual estimated coefficient (red). All regressions include program and cohort fixed effects.

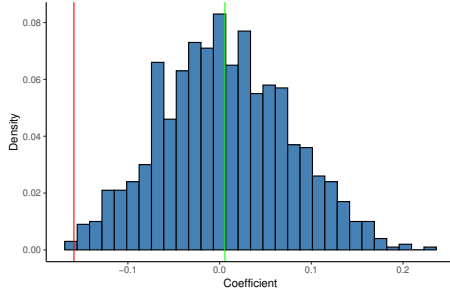
Figure A10: Counterfactual treatment effects



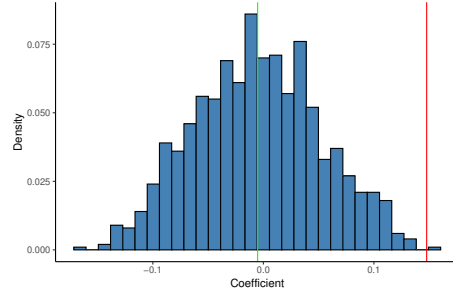
(a) Satisfaction with encouragement to learn about other cultures



(b) Same social security rights for foreigners



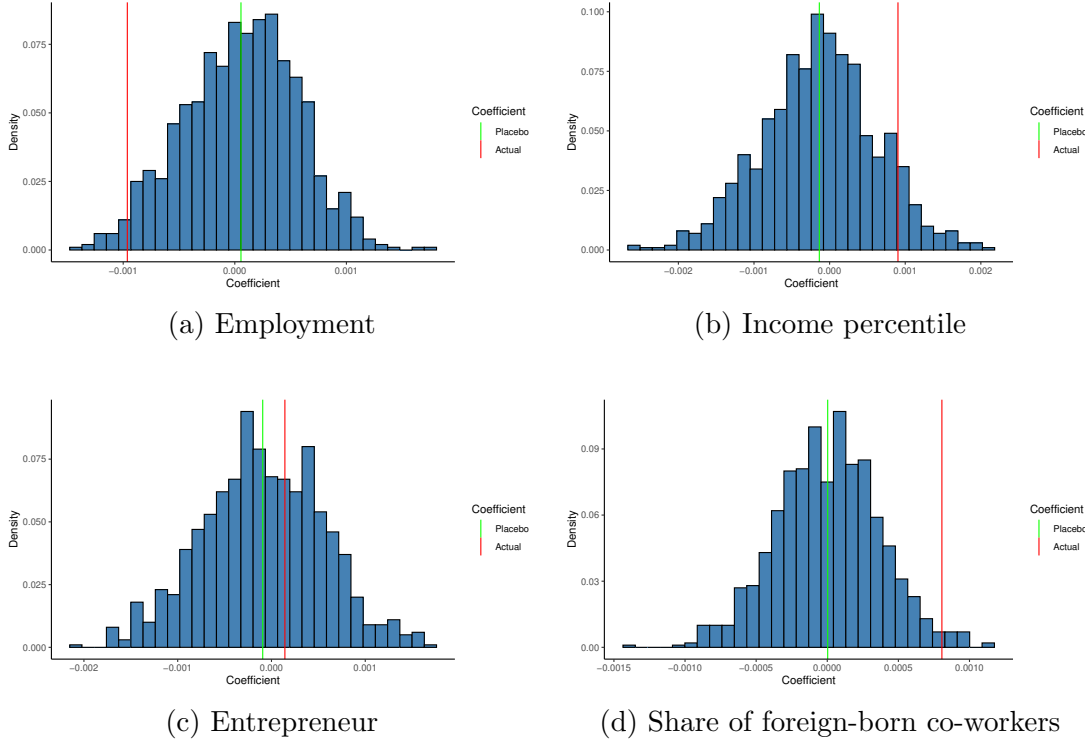
(c) Foreigners in neighborhoods



(d) European unification

Notes: The plots display estimates from 1,000 simulated datasets where instead of using the actual share of international students that native students are exposed to, I assign them a share of international students from the same program and year but a different university. They also show the mean estimated coefficients of the randomly assigned shares (green), and the actual estimated coefficient (red). All regressions include program and cohort fixed effects.

Figure A11: Counterfactual treatment effects



Notes: The plots display estimates from 1,000 simulated datasets where instead of using the actual share of international students that native students are exposed to, I assign them a share of international students from the same program and year but a different university. They also show the mean estimated coefficients of the randomly assigned shares (green), and the actual estimated coefficient (red). All regressions include program and cohort fixed effects.