Opportunity costs: The fiscal cost of (not) educating immigrant minors in the U.S.

Alma Vega & Iván Mejía-Guevara

University of California, Berkeley

Immigrant minors in the U.S.

- Education is one of the greatest costs associated with immigration (National Research Council 1997)
- Limited English Proficient (LEP) students increased 105% between 1990 and 2000 => only 12% among general school population (Kindler 2002)
- First-generation students are 1.22 as expensive as average student (National Research Council 1997)

Fiscal cost

- Most immigrants arrive at working ages (Batalova 2007) => U.S. uses their labor but doesn't pay for their education
- 42 billion spent on K-12 schooling for immigrants and their children in 1994 (Lee and Miller 1998)

Education as a social good

- Positive externalities to education = > Everyone is more productive when a labor force is more educated (T.P. Schultz, Handbook of Development Economics Volume I)
- Proven empirically by Rauch (1993), Moretti (2004)

Social Cost

"The United States may not care about the children of the barrios, but it must start to address their problems now. If it lets them fail, there will be a great price to pay."

– *Roberto Suro, Strangers Among US: Latino Lives in a Changing World*

Research questions

- How much does the U.S. pay to educate immigrant minors relative to overall education spending?
- What is the cost of not educating immigrant minors in terms of lost productivity?

Data

Current Population Survey (2009)

	Foreign-born	Second Generation	Natives
Definition	Born abroad	1+ parents born abroad	Born in U.S. AND both parents born in U.S.
N	27,897	23,079	156,945

Cost of educating immigrant minors in 2009

- Age profiles of total spending on education provided by Gretchen Donehower using NTA methodology
- For immigrants, multiply by 1.22 based on National Research Council 1997

Present value of all education spending

$$E_{t,s}(x) = E_t(x) * e^{(r-\lambda)(t-s)}$$

$E_{t,s}(x)$ = Present value of educational expenditure at time t for age x adjusted for t - s years

$E_t(x)$ = Educational expenditure at time t for age x

λ = Productivity growth = 0.02

r = real discount rate = 0.05

s = year when the individual was x - year old,

spending $E_s(x) = E_t(x)e^{-\lambda(t-s)}$ in her education in that year.

Present value of all education spending

$$E_{t,s}(x) = E_t(x) * e^{(r-\lambda)(t-s)}$$

$E_{t,s}(x)$ = Present value of educational expenditure at time t for age x adjusted for t - s years

$E_t(x)$ = Educational expenditure at time t for age x

λ = Productivity growth = 0.02

r = real discount rate = 0.05

s = year when the individual was x - year old,

spending $E_s(x) = E_t(x)e^{-\lambda(t-s)}$ in her education in that year.

Externalities I

Gain in wages – cost of educating immigrants minors

$$E_{t,s}(x) = E_t(x) * e^{(r-\lambda')(t-s)}$$

$\lambda = \text{Productivity growth of natives} = 0.02$

$\lambda' = \text{Productivity growth of immigrants} = 0.015$

$\text{Assumption: } \lambda' < \lambda$

Externalities II

$$E_{t,s}(x) = E_t(x) * e^{(r-\lambda_{t,E})(t-s)}$$

$\lambda_{t,E}$ = Productivity at year t for an individual with level E of education.

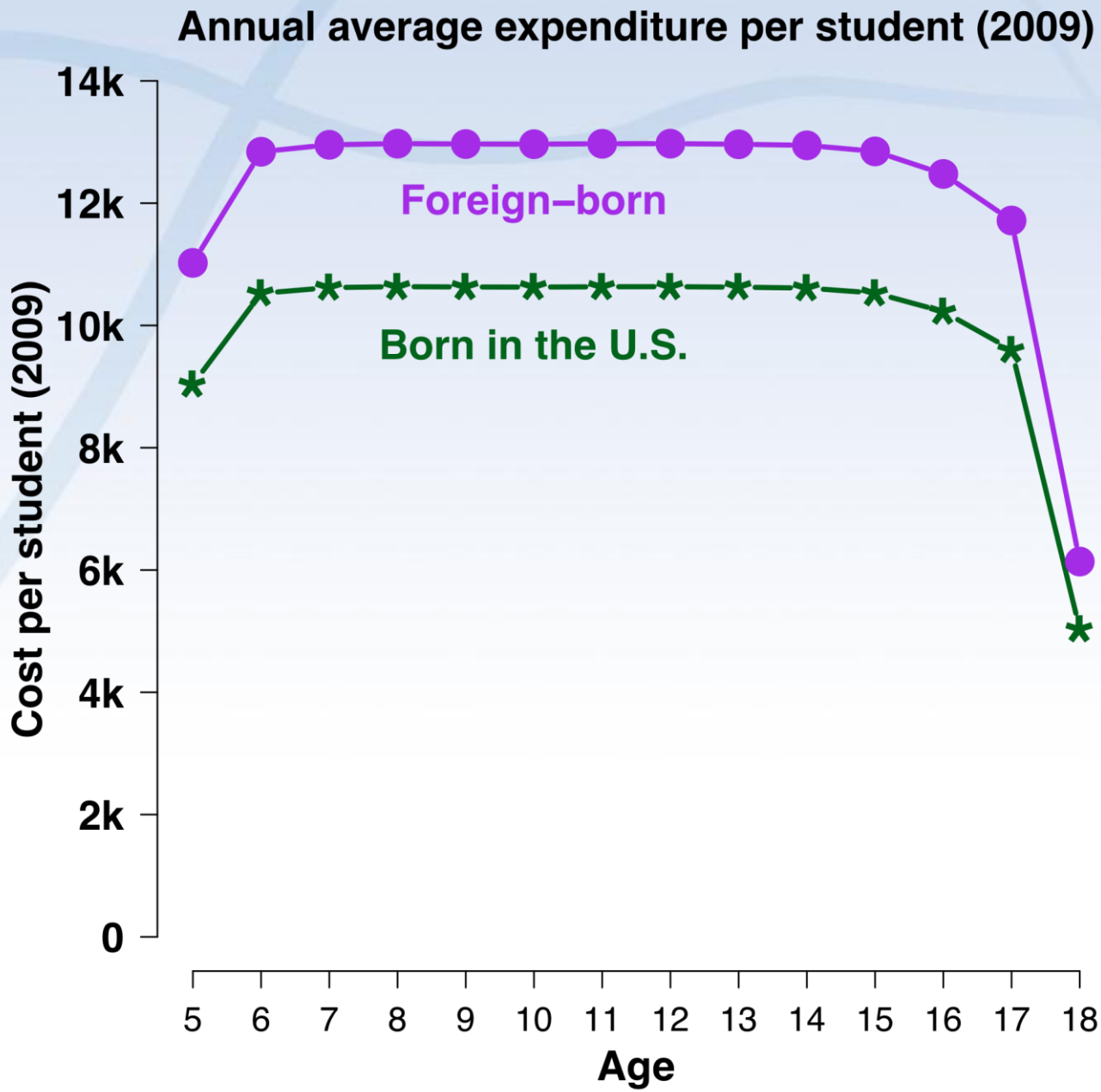
$\lambda_{t,E}$ is defined as follows

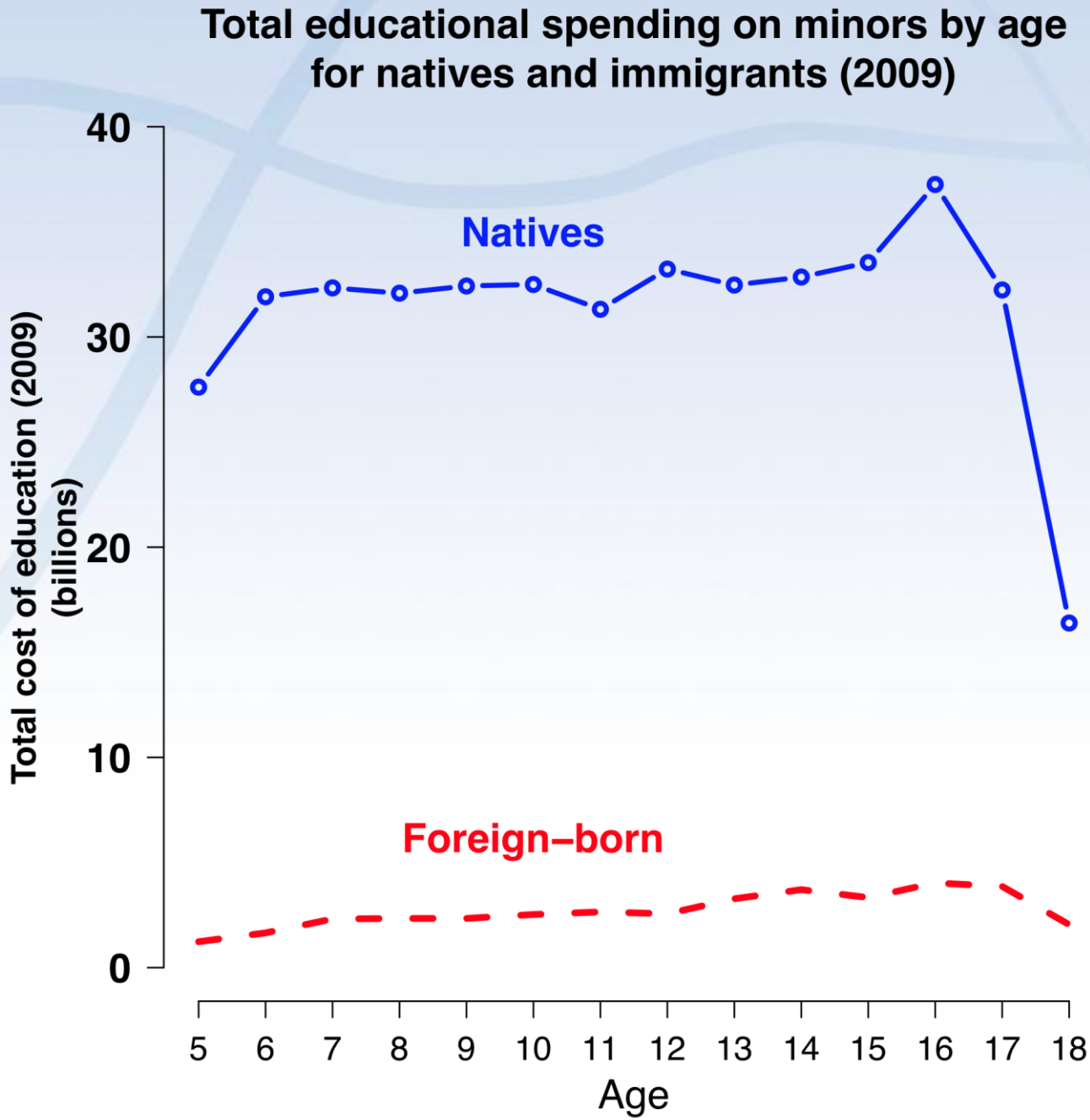
At year *t*, we estimate the share by level of education.
For every 1% increase in the share of collage educated individuals, we increase the productivity $(\lambda_{t,E})$ by (Moretti, 2004):
-1.9% for high-school drop-outs,
-1.6% for high-school graduates,
-1.2% people with some college, and
-0.4% for college graduates.

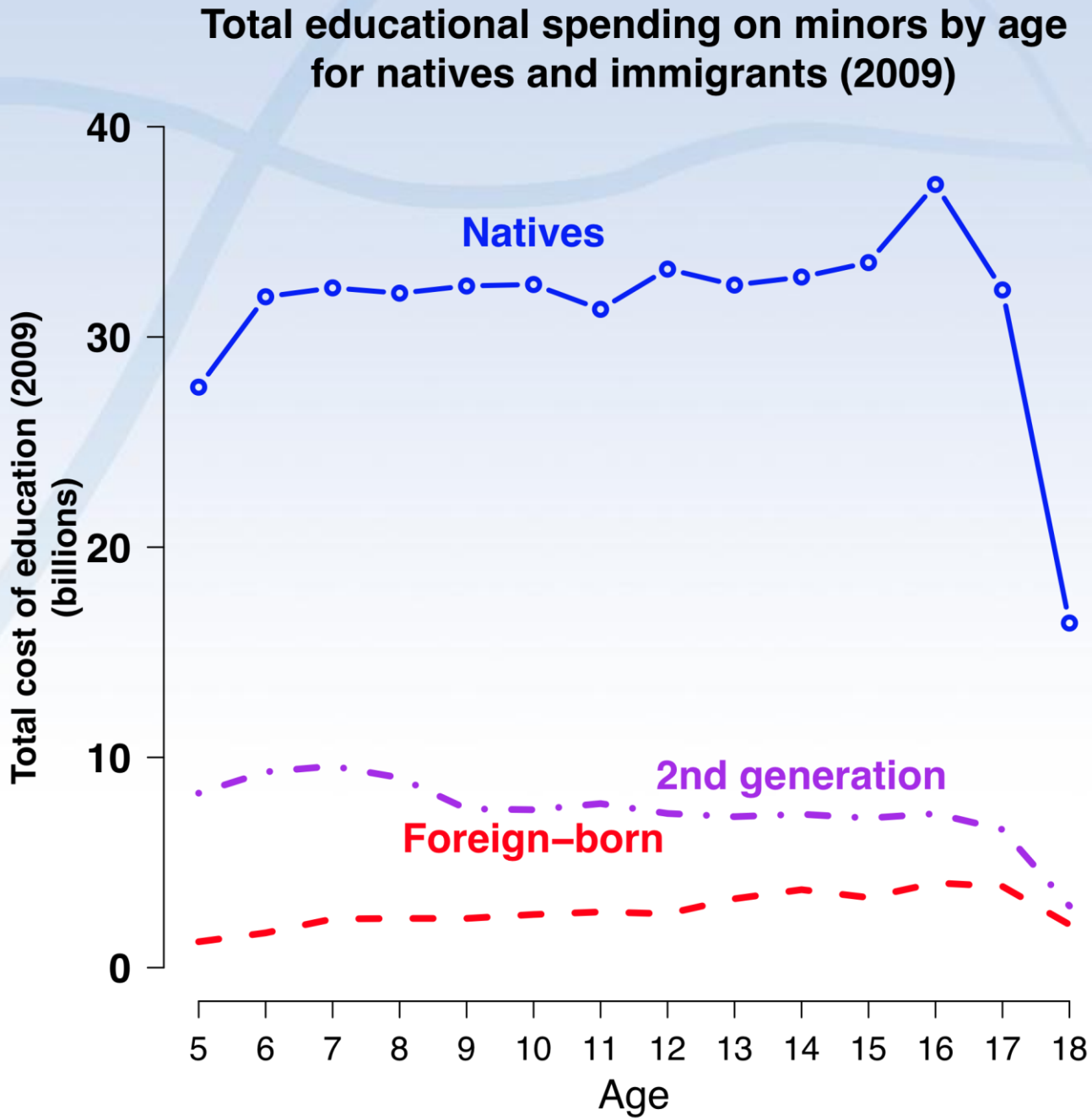
Assumptions

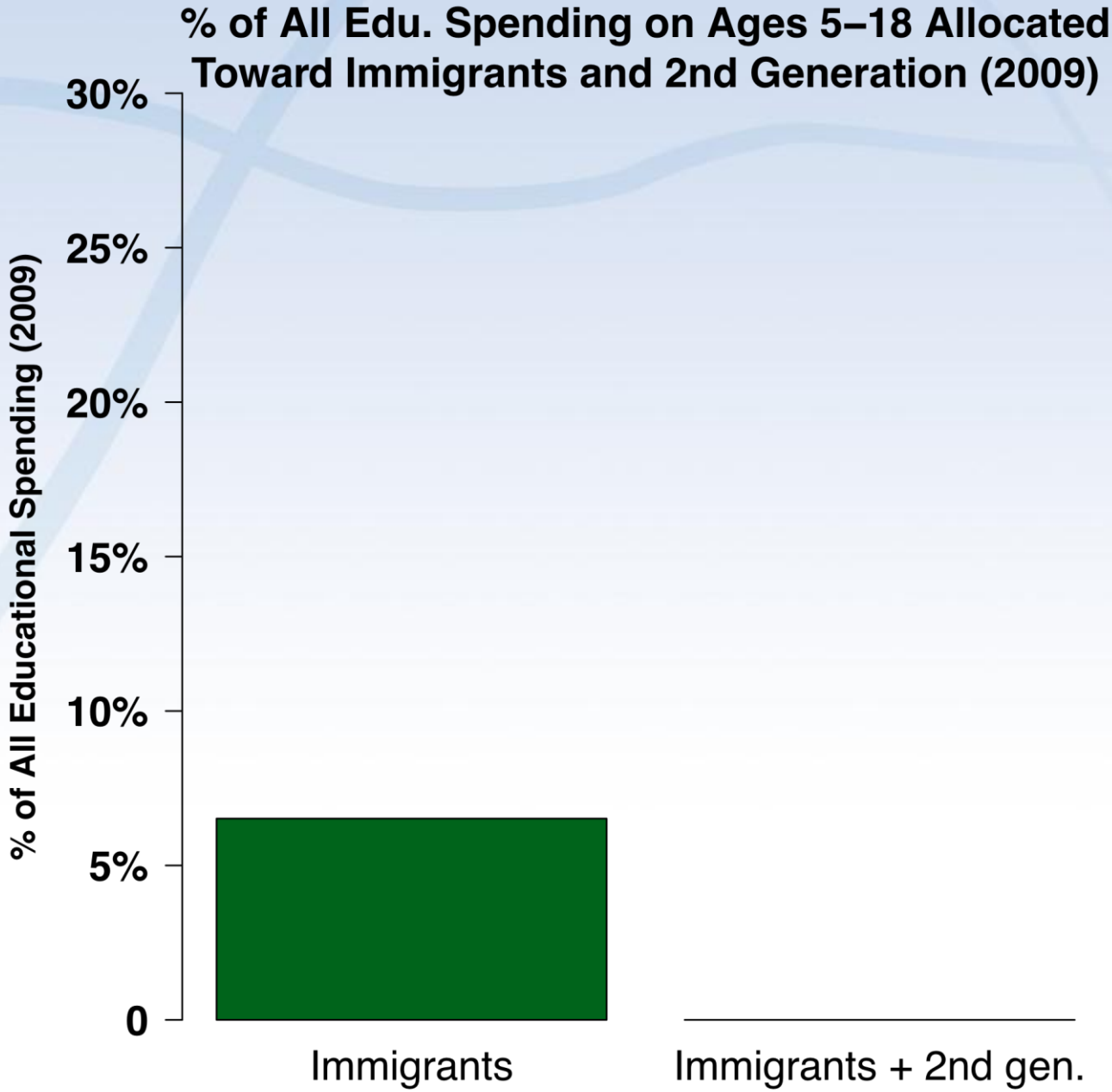
- Education starts at age 5
- Education is continuous, i.e. if started schooling at age 5 and ended at age 15, received 10 years of education

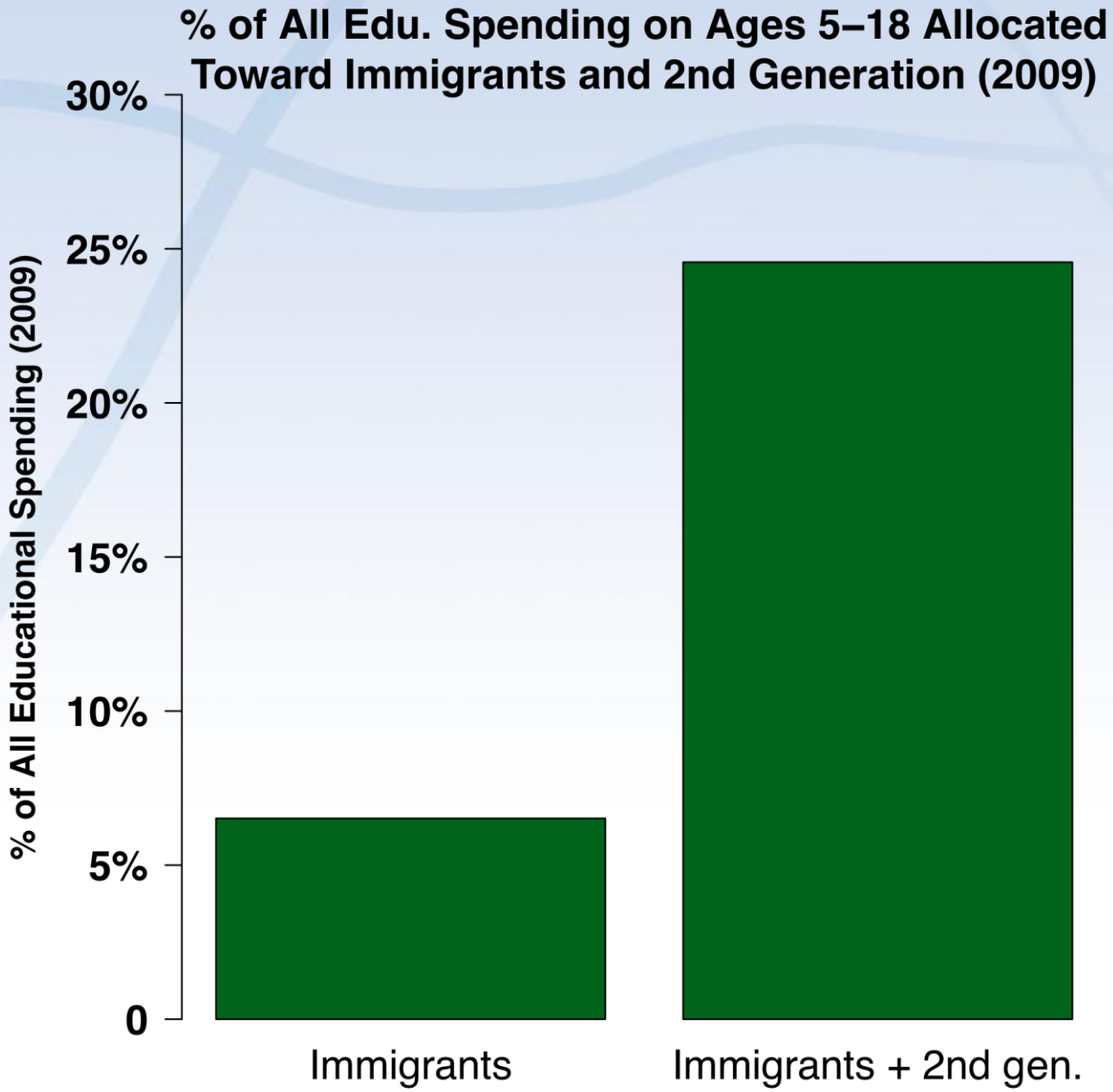
Results

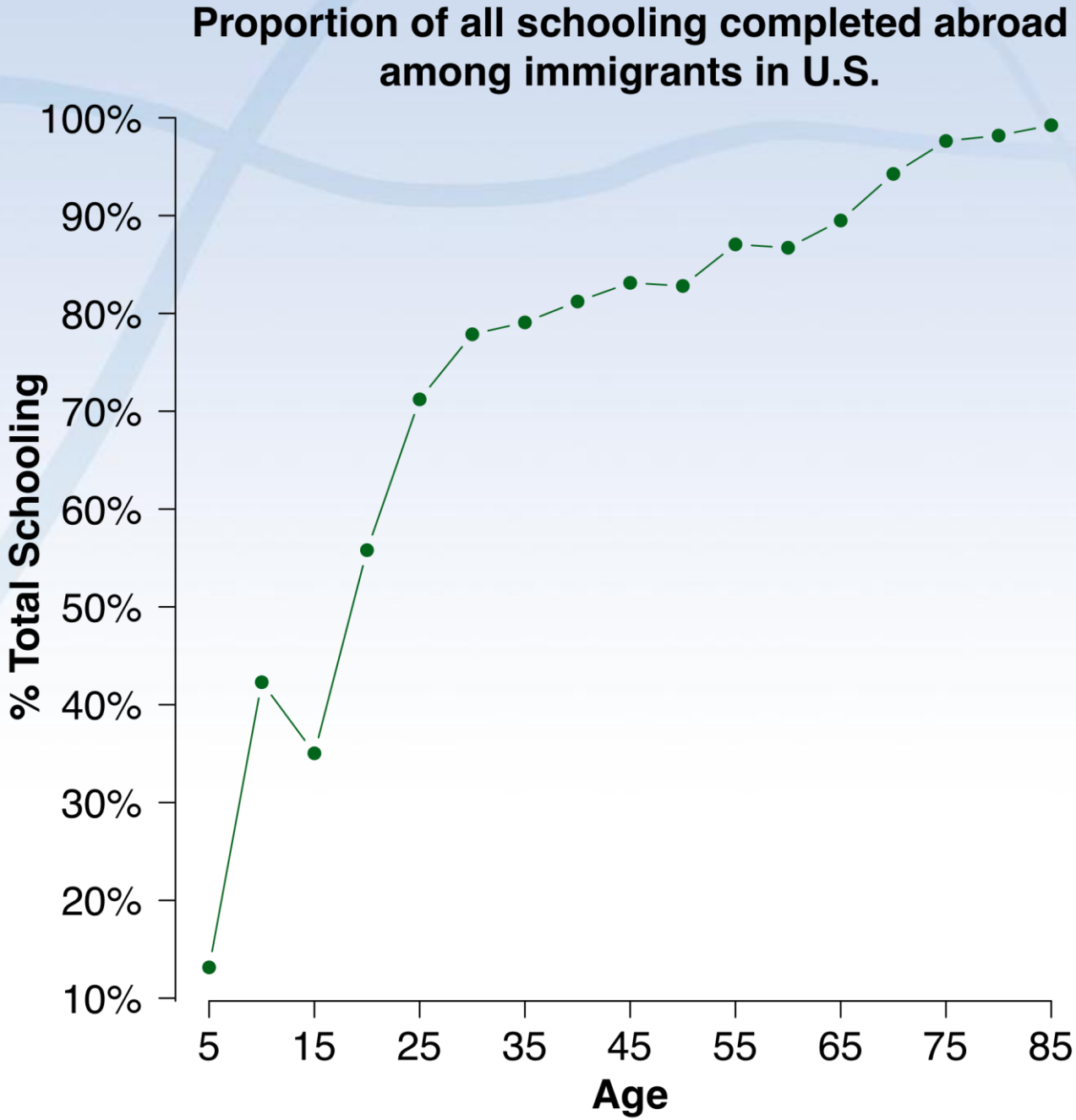

Annual average expenditure per student (2009)
Cost per student (2009)
14k
12k
10k
8k
6k
4k
2k
0
Foreign–born
Born in the U.S.
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Age

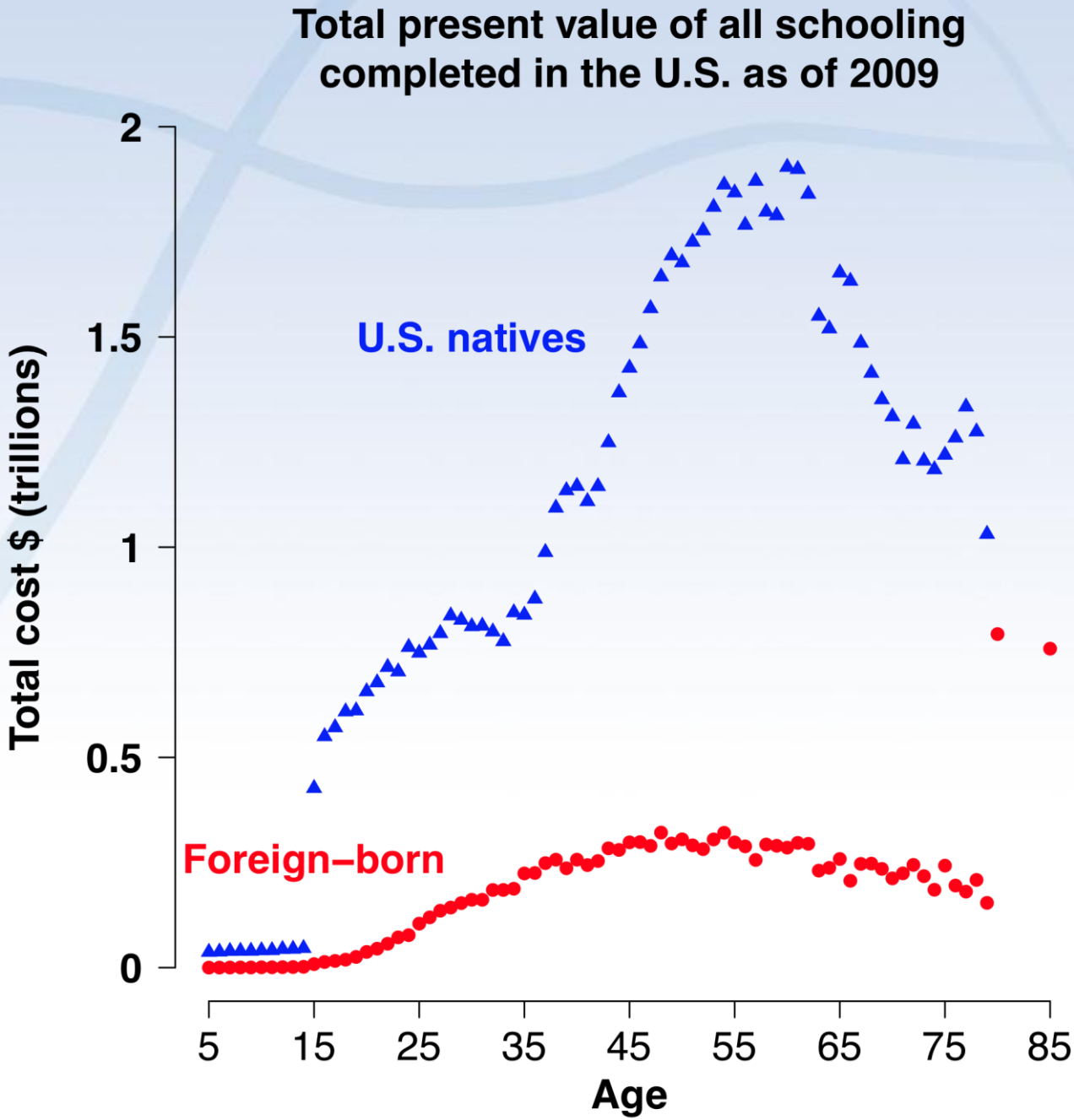

Total educational spending on minors by age
for natives and immigrants (2009)
Total cost of education (2009)
(billions)
40
30
20
10
0
Natives
Foreign–born
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Age

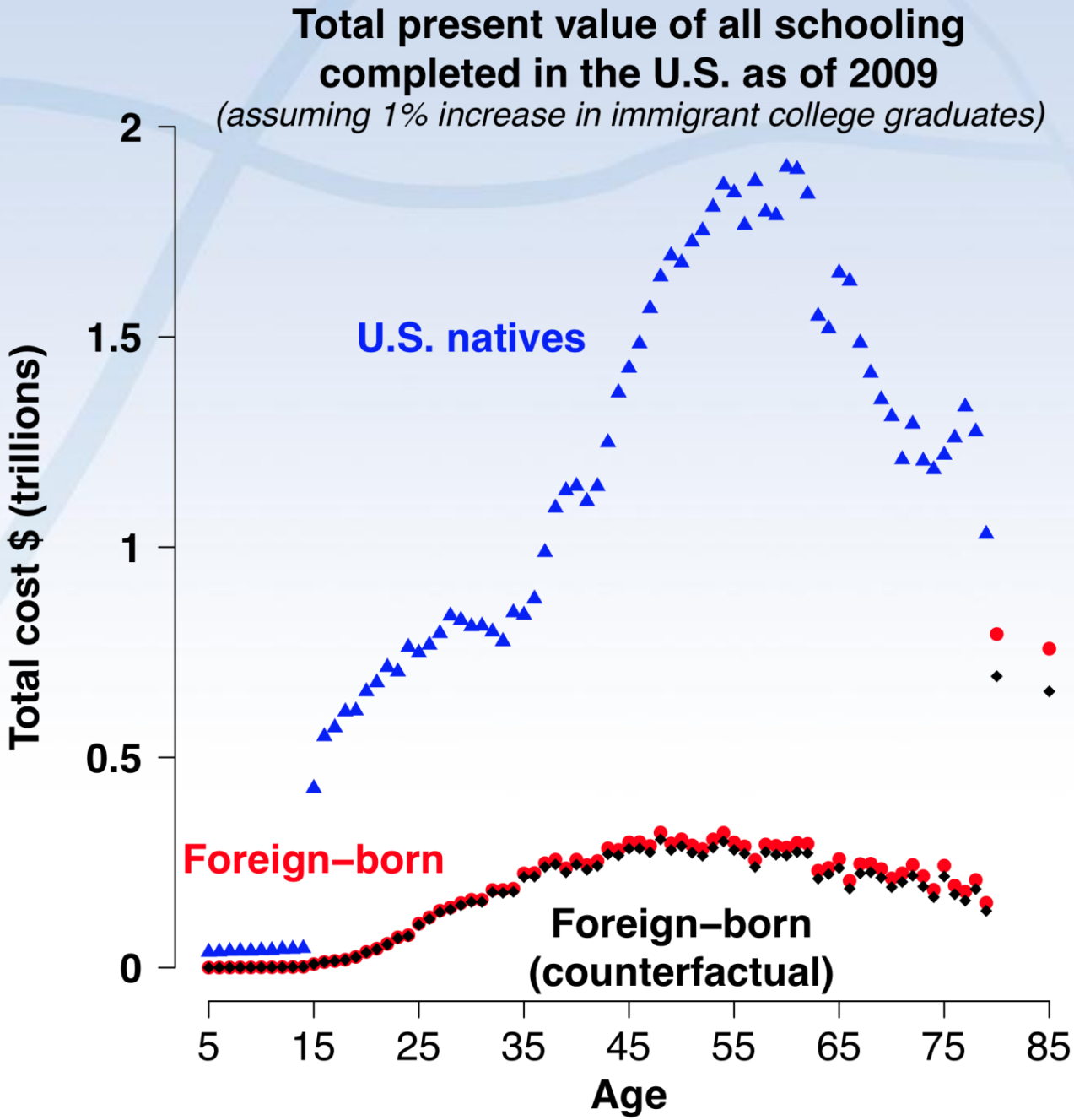

Total educational spending on minors by age
for natives and immigrants (2009)
Total cost of education (2009)
(billions)
40
30
20
10
0
Natives
2nd generation
Foreign–born
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Age

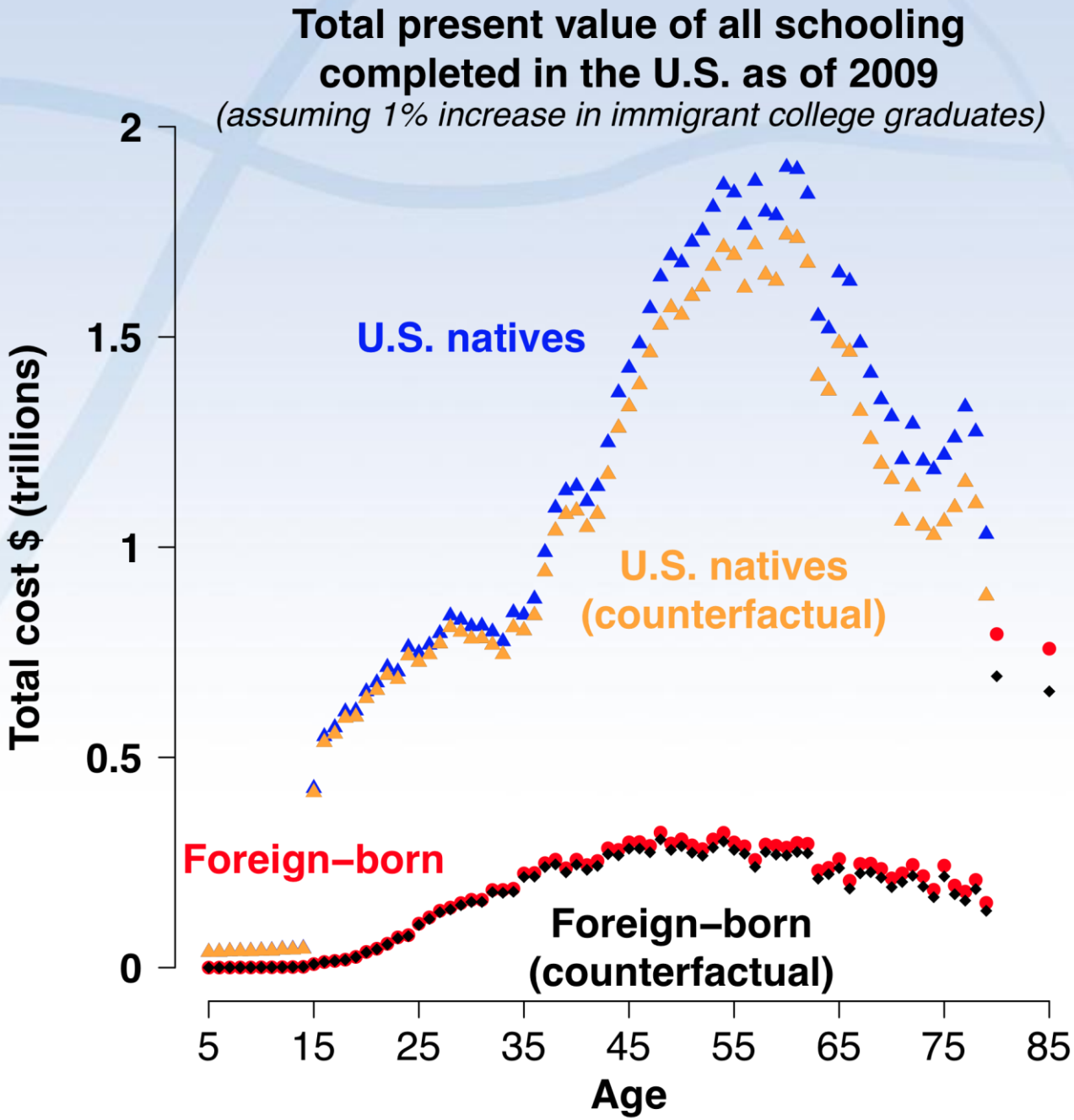

% of All Edu. Spending on Ages 5–18 Allocated Toward Immigrants and 2nd Generation (2009)
% of All Educational Spending (2009)
30%
25%
20%
15%
10%
5%
0
Immigrants
Immigrants + 2nd gen.


% of All Edu. Spending on Ages 5–18 Allocated Toward Immigrants and 2nd Generation (2009)
% of All Educational Spending (2009)
30%
25%
20%
15%
10%
5%
0
Immigrants
Immigrants + 2nd gen.


Proportion of all schooling completed abroad among immigrants in U.S.
% Total Schooling
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
5
15
25
35
45
55
65
75
85
Age


Total present value of all schooling completed in the U.S. as of 2009
Total cost $ (trillions)
2
1.5
1
0.5
0
U.S. natives
Foreign–born
5
15
25
35
45
55
65
75
85
Age


Total present value of all schooling completed in the U.S. as of 2009
(assuming 1% increase in immigrant college graduates)
Total cost $ (trillions)
2
1.5
1
0.5
0
U.S. natives
Foreign–born
Foreign–born (counterfactual)
5
15
25
35
45
55
65
75
85
Age


Total present value of all schooling completed in the U.S. as of 2009
(assuming 1% increase in immigrant college graduates)
Total cost $ (trillions)
2
1.5
1
0.5
0
U.S. natives
U.S. natives (counterfactual)
Foreign–born
Foreign–born (counterfactual)
5
15
25
35
45
55
65
75
85
Age

Conclusions

- Immigrants represent about 7% of all educational spending in one year
- The 2nd generation adds substantial costs to educational spending
- Immigrants in the U.S. complete most of their schooling abroad
- A small increase in education of immigrants increases total population productivity quite a bit