

# Intergenerational Spillovers of Integration Policies

Evidence from Finland's Integration Plans

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- Immigrants' children struggle at school

e.g. Algan et al. (2010), Belzil and Poinas (2010), Dustmann and Theodoropoulos (2010), Dustmann et al. (2012), Bratsberg et al. (2012), Ansala et al. (2020)

- Many possible explanations
  - discrimination, preferences/beliefs
  - parental income, neighborhoods

- Immigrants' children struggle at school

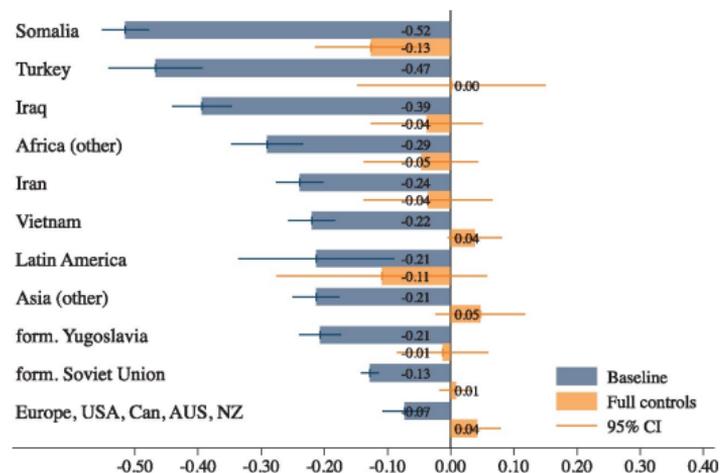
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- Many possible explanations

- discrimination, preferences/beliefs
- parental income, neighborhoods

- Hypothesis: helping parents may also help their children

## Immigrant-native gaps in completing secondary education, Finland



Source: Ansala, Hämäläinen, Sarvimäki (2020): Age at arrival, parents and neighborhoods: Understanding the educational attainment of immigrants' children. *Journal of Economic Geography* 20(2): 459–480

- Treatment: Finland's integration plans
  - refining how immigrants were allocated to ALMP
  - increased language training → increased earnings by 47%  
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- Take-aways
  - parents' integration plans pushed an average complier child
    - ▶ from the 28th to the 38th percentile of the 9th grade GPA distribution
    - ▶ from the 30th to the 50th percentile of highest degrees' average earnings
    - ▶ from the 87th to the 82th percentile of idleness distribution
  - effects larger for girls, no detectable difference by parent's origin country
  - hypothesized mechanism: better language skills, information, peers

- Descriptive work on the education of immigrants' children

e.g. Algan et al. (2010), Belzil and Poinas (2010), Dustmann and Theodoropoulos (2010), Dustmann et al. (2012), Bratsberg et al. (2012), [Ansala et al. \(2020\)](#)

- Impact of integration programs for adult immigrants

e.g. Åslund and Johansson (2011), Jooa and Nekby (2012), [Sarvimäki and Hämäläinen \(2016\)](#), Battisti et al. (2019), Lochmann et al. (2019), Dahlberg et al. (2020), [Foged, Hasager, Peri, Arendt, Bolvig \(2022a, 2022b\)](#), Heller and Slungaard Mumma (2020); see Hangartner, Sarvimäki and Spirig (2021) for a review

- Impact of school-based interventions on immigrants' children

e.g. Avvisati et al. (2014), Goux et al. (2015), Silliman (2017), Alesina et al. (2018), Alan et al. (2021), Carlana et al. (forthcoming)

- Impact of parents' income and employment on children's education

e.g. Akee et al. (2010), Aizer et al. (2016), Dahl and Lochner (2012), Hilger (2016), Rege et al. (2011)

- Closest to us: [Foged, Hasager, Peri, Arendt, Bolvig \(2022a,b\)](#)
  - Danish reform changing the approach for integrating refugees
  - research design, data and results similar to ours
    - ▶ higher completion rates from lower secondary school and lower juvenile crime rates for boys who were below school-starting age when their parents were treated
- Our contribution
  - digging deeper in educational outcomes and potential mechanisms
  - another country and reform → increases the credibility of both projects

Treatment and research design

- 1999 Act on the Integration of Immigrants and Reception of Asylum Seekers
  - main component “integration plans”: individualized sequence of training, subsidized work etc. based on the existing ALMP framework
  - obligatory for recently arrived immigrants who are unemployed or collect welfare benefits (non-compliance sanctioned)
  - no new resources allocated to integration of immigrants

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  - obligatory for recently arrived immigrants who are unemployed or collect welfare benefits (non-compliance sanctioned)
  - no new resources allocated to integration of immigrants
- Sarvimäki and Hämäläinen (2016)
  - increased earnings by 47%, reduced benefits by 13%
  - had no impact on the total amount of training or sanctions ... but did affect the content of training



- Administrative data on the entire Finnish population
  - enrollment in education and educational outcomes
  - employment and annual earnings
  - background characteristics
- Sample: children of immigrants arriving with their parents
  - include only those arriving before age 15
  - on average, 11 years old at arrival
  - second-generation excluded
  - follow until age 27
- 3,261 children born between 1980 and 1988
  - 1,141 arrived within two years of May 1st, 1997

- Average earnings at age 35 based on highest degree / enrollement at age 27
  - average earnings from population-level data for 1996 to 2015
- Grade point average at grade 9
  - end of mandatory education
  - non-standardized, but used in allocation for further education
- Idleness between ages 15–27
  - share of (end of) years NEET

# Outcomes and background characteristics

- Average earnings at age 35 based on highest degree / enrollement at age 27
  - average earnings from population-level data for 1996 to 2015
- Grade point average at grade 9
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Table 1: Background characteristics by time of arrival

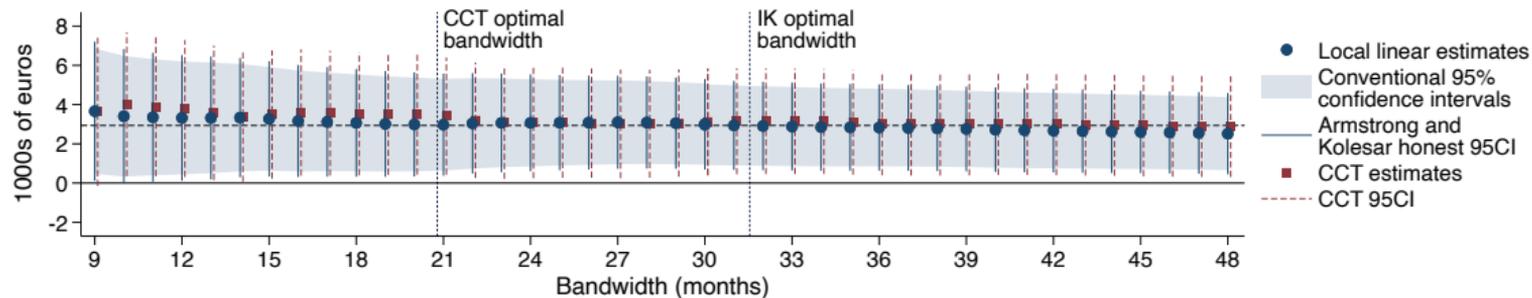
	Time of arrival				Jump in 5/97	
	5/95- 4/96 (1)	5/96- 4/97 (2)	5/97- 4/98 (3)	5/98- 4/99 (4)	RD estimate (5)	Standard error (6)
<i>A: Children</i>						
Age	10.99	11.20	11.85	12.26	0.20	(0.21)
Female	0.46	0.50	0.49	0.50	-0.03	(0.06)
<i>B: Parents</i>						
Age	37.64	37.63	38.91	39.12	0.83	(0.62)
Female	0.48	0.48	0.49	0.50	0.01	(0.01)
Single parent	0.10	0.13	0.11	0.06	0.02	(0.03)
Children under 18	0.85	0.84	0.85	0.87	-0.05	(0.04)
Regional unemployment rate	14.31	12.99	11.41	11.11	0.07	(0.38)
Urban municipality	0.80	0.83	0.85	0.82	0.06	(0.04)
Legal status:						
Refugee	0.23	0.18	0.15	0.17	-0.09	(0.05)
Ingrian Finn	0.27	0.28	0.31	0.16	0.14	(0.05)
Family member	0.03	0.06	0.09	0.12	-0.05	(0.02)
Other/Unknown	0.47	0.48	0.45	0.55	0.00	(0.05)
Region of birth						
Asia	0.16	0.21	0.22	0.21	-0.14	(0.05)
Africa	0.05	0.04	0.04	0.07	0.04	(0.03)
New EU members	0.09	0.13	0.06	0.08	0.01	(0.02)
form. Soviet Union	0.49	0.51	0.63	0.56	0.20	(0.06)
form. Yugoslavia	0.17	0.09	0.02	0.07	-0.03	(0.02)
Other	0.05	0.03	0.03	0.01	0.01	(0.02)
Number of children	362	255	298	226	0.41	0.27
Number of parents	474	338	398	337	0.32	0.13

*Notes:* The table reports sample means of background characteristics by time of arrival. Parents' characteristics denote the mean of mother's and father's characteristics. All characteristics are measured at the year of arrival. The share of female parents includes parents arriving in separate years.

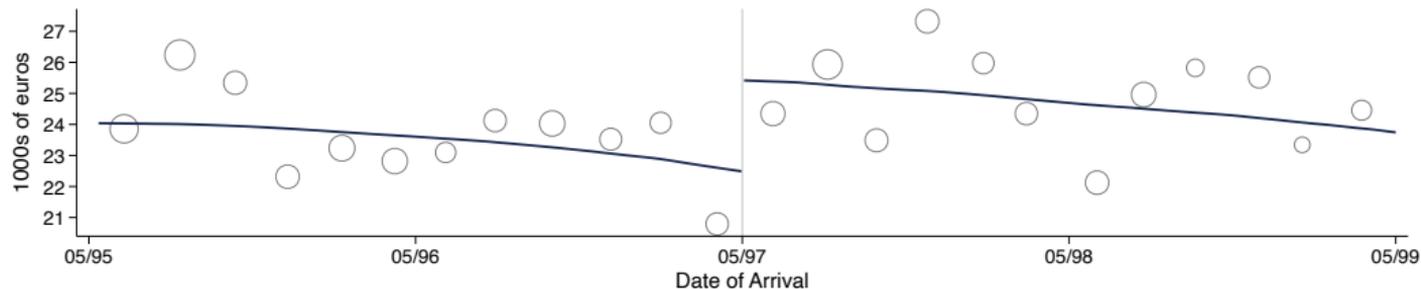
# Results



# Main result: effect on educational attainment



(b) Children's educational attainment (degree's average earnings) at age 27



	Degree's average earnings	
	(1)	(2)
<i>A: Estimates</i>		
Reduced form	2,935	(1,041)
First-stage	0.59	(0.05)
Local average treatment effect (LATE)	4,964	(1,828)
<hr/>		
Additional covariates	No	
Bandwidth (months)	31.8	
Observations	1,345	

*Notes.* This table reports local linear estimates for the jump at the May 1, 1997 cutoff of father's arrival time for educational attainment as measured by average earnings of earlier graduates with the same degree (columns 1–2), standardized 9th grade GPA (columns 3–4) and the share of years the person is not in employment, education or training at ages 15–27. Reduced form refers to the jump in the outcome at the May 1997 threshold and first-stage to the jump in the likelihood for either parent getting an integration plan. Additional covariates are child's sex and age at arrival and parents' age, marital status, number of children under 18, regional unemployment rate, type of residence municipality (urban, semi-rurban, rural), legal status (refugee, Ingrian Finn, family member, other/unknown) and region of birth. All background characteristics are measured at the year of arrival. The bandwidths are chosen using the optimal bandwidth selection algorithm of [Imbens and Kalyanaraman \(2012\)](#).

	Degree's average earnings	
	(1)	(2)
<i>A: Estimates</i>		
Reduced form	2,935 (1,041)	2,514 (1,037)
First-stage	0.59 (0.05)	0.62 (0.04)
Local average treatment effect (LATE)	4,964 (1,828)	4,078 (1,695)
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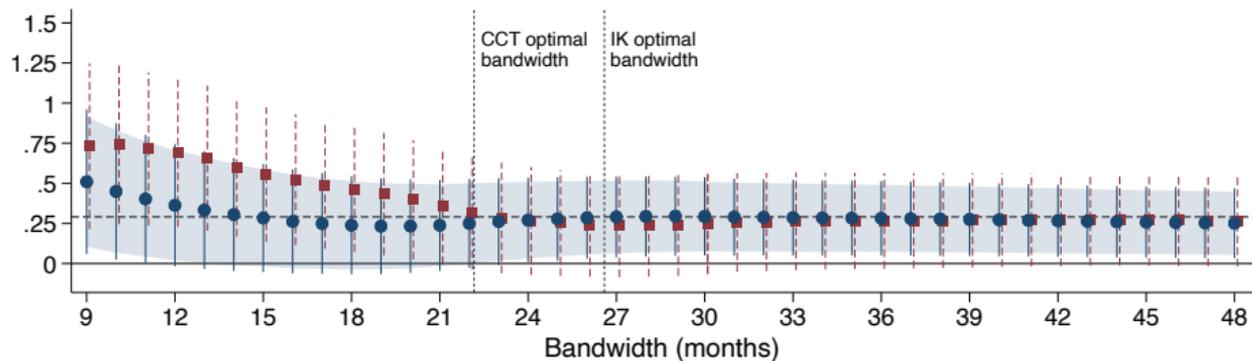
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Local average treatment effect (LATE)	4,964 (1,828)	4,078 (1,695)
<i>B: Benchmarks</i>		
Compliers' expectation in the absence of the treatment	20,559 (1,210)	21,301 (1,166)
Never-takers' average	26,231	
Native's average	27,433	
Additional covariates	No	Yes
Bandwidth (months)	31.8	
Observations	1,345	

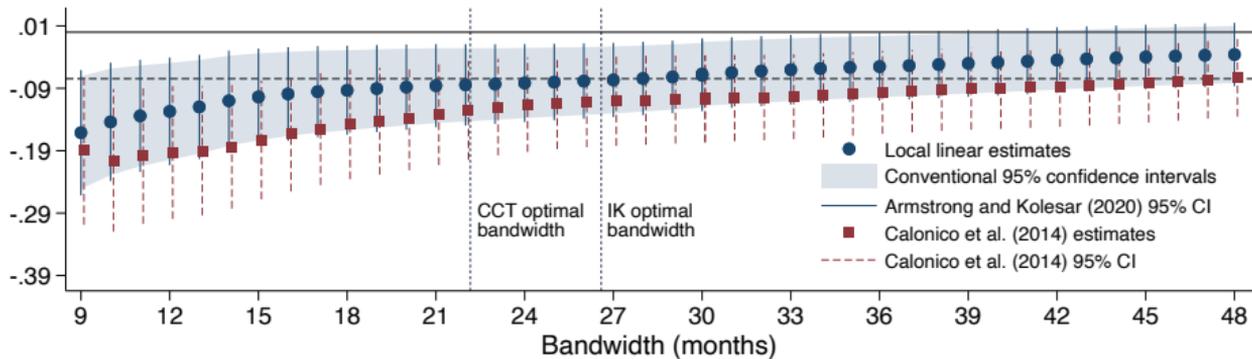
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(b) Grade point average at 9th grade



(c) Not in employment, education or training



	Degree's average earnings		Standardized GPA		Not in employment, education or training	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: Estimates</i>						
Reduced form	2,935 (1,041)	2,514 (1,037)	0.29 (0.12)	0.23 (0.11)	-0.07 (0.03)	-0.05 (0.03)
First-stage	0.59 (0.05)	0.62 (0.04)	0.57 (0.05)	0.60 (0.04)	0.57 (0.05)	0.60 (0.04)
Local average treatment effect (LATE)	4,964 (1,828)	4,078 (1,695)	0.51 (0.22)	0.39 (0.19)	-0.13 (0.05)	-0.08 (0.04)
<i>B: Benchmarks</i>						
Compliers' expectation in the absence of the treatment	20,559 (1,210)	21,301 (1,166)	-0.83 (0.14)	-0.74 (0.13)	0.36 (0.04)	0.33 (0.03)
Never-takers' average	26,231		-0.28		0.20	
Native's average	27,433		0.01		0.12	
Additional covariates	No	Yes	No	Yes	No	Yes
Bandwidth (months)	31.8		26.8		27.6	
Observations	1,345		1,201		1,237	

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- McCrary test 
- Placebo thresholds 
- Alternative parent definitions 
- "Donut hole" specifications 

(a) Effect heterogeneity

**A. Degree**

*i. By gender*

- 1. Sons
- 2. Daughters

*ii. By parent's origin country HDI*

- 3. 10th percentile
- 4. Median
- 5. 90th percentile

**B. GPA**

*i. By gender*

- 1. Sons
- 2. Daughters

*ii. By parent's origin country HDI*

- 3. 10th percentile
- 4. Median
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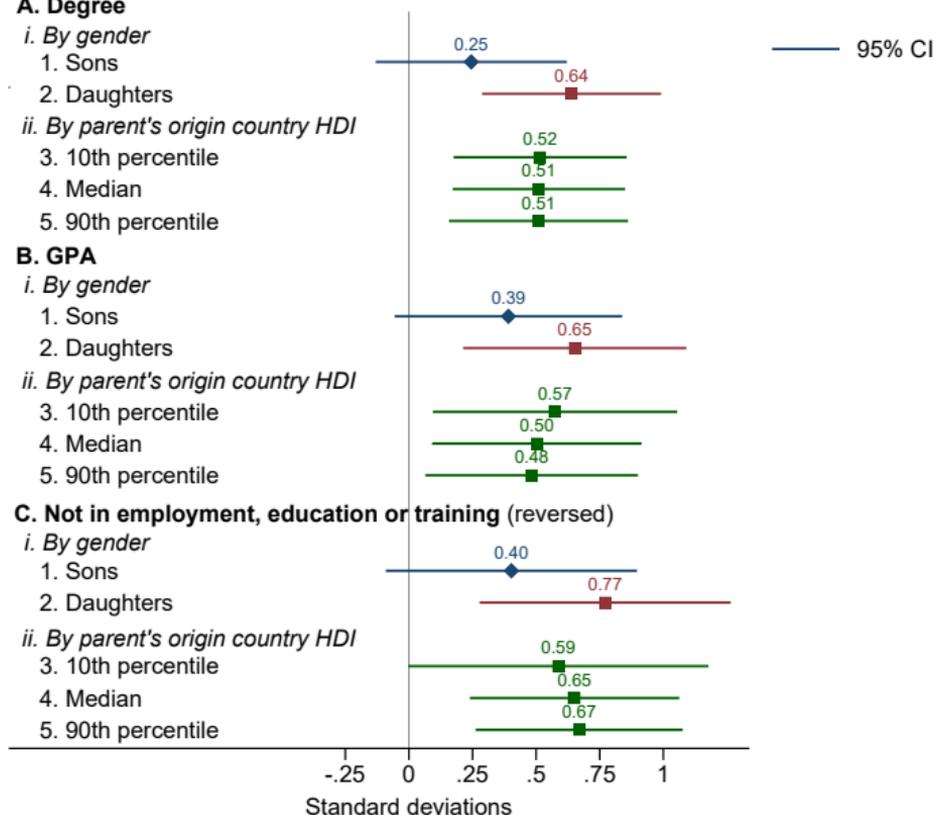
**C. Not in employment, education or training (reversed)**

*i. By gender*

- 1. Sons
- 2. Daughters

*ii. By parent's origin country HDI*

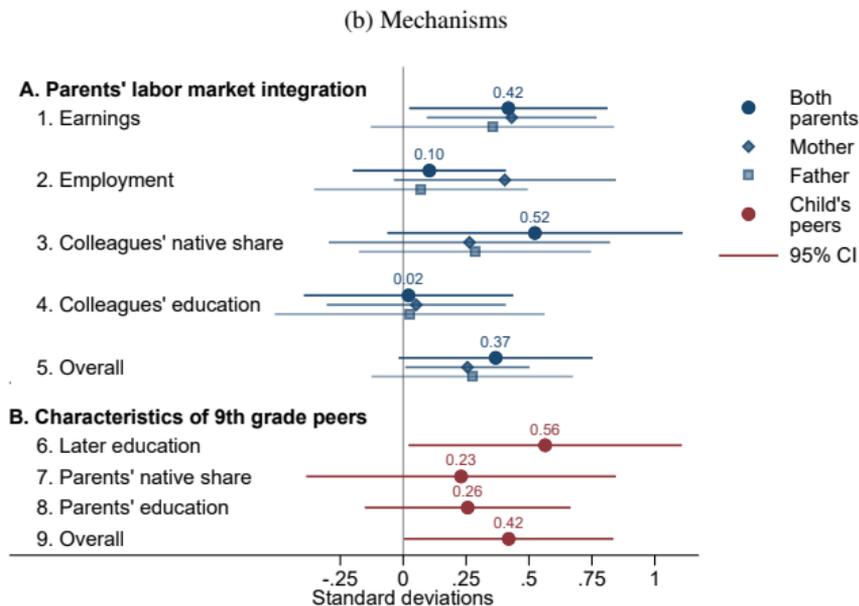
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  - unlikely to be the entire story:  
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  - language and civic courses
  - parent's colleagues
  - children's school mates

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- Parents' integration plans improved their children's education
  - 24% increase in degree's earnings
  - 0.5 SD increase in 9th grade GPA, 36% decline in idleness
  - effects larger for girls, no heterogeneity along HDI
  - possible mechanisms: financial resources, language skills, information, peers

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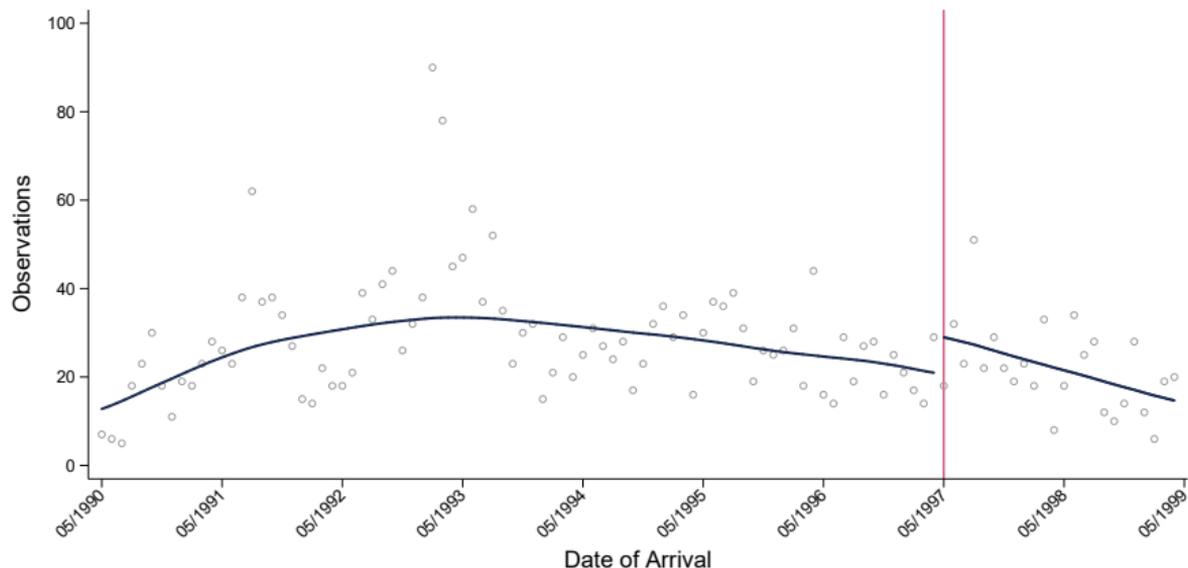
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- *Take-away 1*: Integration programs have positive unintended consequences
  - cost-benefits ratio even better than currently understood
  - but: we know little about the relative effectiveness of alternative components

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---
- *Take-away 1*: Integration programs have positive unintended consequences
  - cost-benefits ratio even better than currently understood
  - but: we know little about the relative effectiveness of alternative components
- *Take-away 2*: Designing and testing interventions specifically aimed to improve educational investments probably a good idea, too
  - feel free to propose such interventions to your funders / friends!

# Appendix

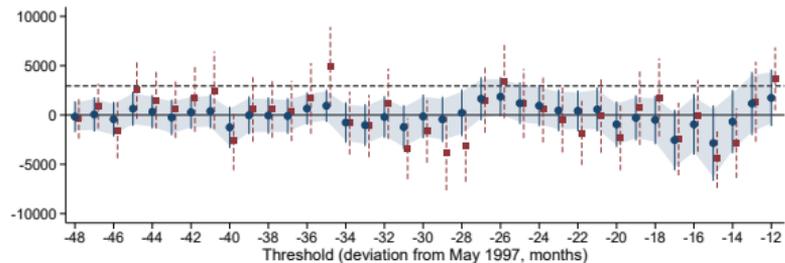
Figure A1: Observations by month of arrival



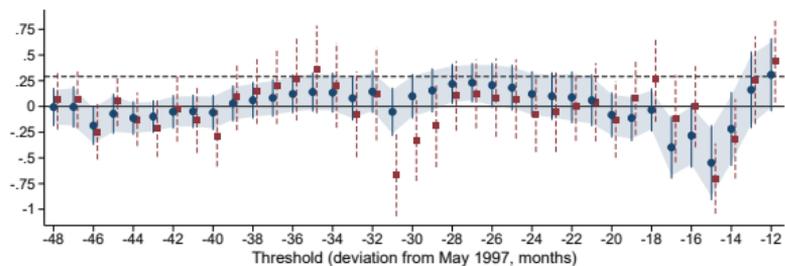
*Notes:* The figure shows observations by month of arrival of the father. The lines represent local linear estimates using the edge kernel and the optimal bandwidth selection algorithm of [Imbens and Kalyanaraman \(2012\)](#). The dots correspond to the number of observations entering the population register by month.

Figure A4: Alternative thresholds

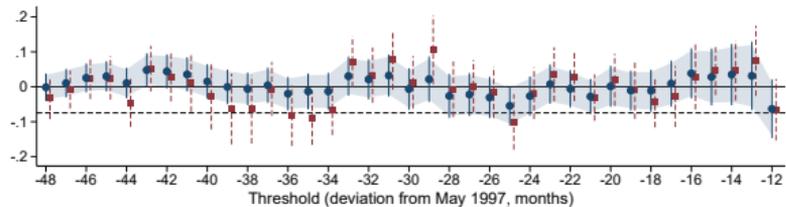
(a) Average earnings of the highest degree



(b) Grade point average at 9th grade



(c) Not in employment, education or training



● Local linear estimates    ■ Conventional 95% confidence intervals    — Armstrong and Kolesar (2020) 95% CI  
■ Calorico et al. (2014) estimates    - - - Calorico et al. (2014) 95% CI



Table A1: Impact of parent's integration plan on GPA and educational attainment using first parent's arrival time

	Degree's average earnings		Standardized GPA		Not in employment, education or training	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: Estimates</i>						
Reduced form	2,246 (987)	3,186 (1,088)	0.20 (0.12)	0.29 (0.12)	-0.07 (0.03)	-0.06 (0.03)
First-stage	0.47 (0.05)	0.61 (0.04)	0.44 (0.05)	0.58 (0.05)	0.42 (0.05)	0.57 (0.05)
Local average treatment effect (LATE)	4,796 (2,168)	5,261 (1,824)	0.47 (0.28)	0.49 (0.22)	-0.17 (0.07)	-0.10 (0.05)
<i>B: Benchmarks</i>						
Compliers' expectation in the absence of the treatment	21,238 (1,607)	20,526 (1,280)	-0.30 (0.19)	-0.31 (0.15)	0.38 (0.05)	0.37 (0.04)
Never-takers' average	26,231		-0.28		0.20	
Native's average	27,433		0.01		0.12	
Additional covariates	No	Yes	No	Yes	No	Yes
Bandwidth (months)	28		24		22	
Observations	1,603		1,429		1,332	

*Notes.* This table is identical to Table 2 except that we now use the date of arrival of the parent who first arrives in Finland as the running variable, while our main analysis is based on the date of arrival of the father.

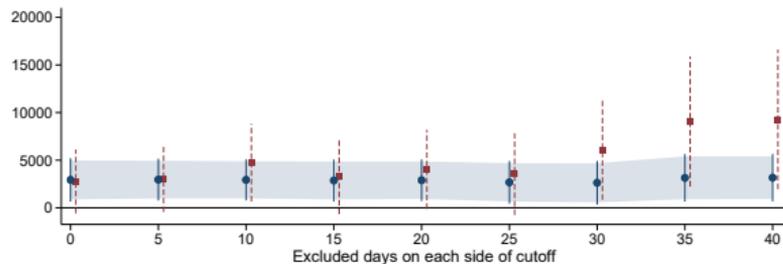
Table A2: Impact of parent's integration plan on GPA and educational attainment with parents defined at age 15

	Degree's average earnings		Standardized GPA		Not in employment, education or training	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: Estimates</i>						
Reduced form	2,502 (1,032)	1,784 (1,030)	0.34 (0.11)	0.25 (0.11)	-0.02 (0.02)	0.00 (0.02)
First-stage	0.56 (0.05)	0.59 (0.04)	0.55 (0.05)	0.58 (0.04)	0.63 (0.04)	0.64 (0.04)
Local average treatment effect (LATE)	4,497 (1,924)	3,044 (1,764)	0.63 (0.23)	0.43 (0.19)	-0.04 (0.03)	-0.00 (0.03)
<i>B: Benchmarks</i>						
Compliers' expectation in the absence of the treatment	21,100 (1,329)	22,213 (1,250)	-0.48 (0.15)	-0.34 (0.13)	0.28 (0.02)	0.25 (0.02)
Never-takers' average	26,231		-0.28		0.20	
Native's average	27,433		0.01		0.12	
Additional covariates	No	Yes	No	Yes	No	Yes
Bandwidth (months)	34		31		65	
Observations	1,376		1,306		2,387	

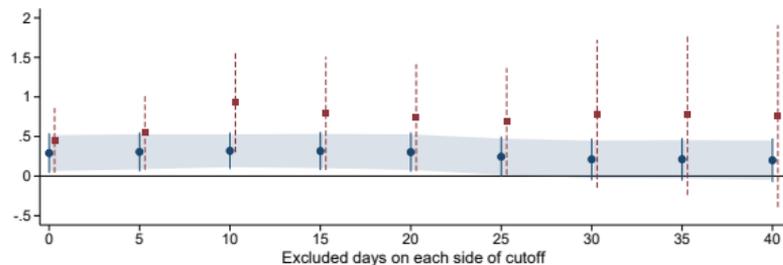
*Notes.* This table is identical to Table 2 except that we now define parents as the adult living in the same dwelling and belonging to the same family as the child when the child is 15 years old.

Figure A5: Excluding observations around the cutoff

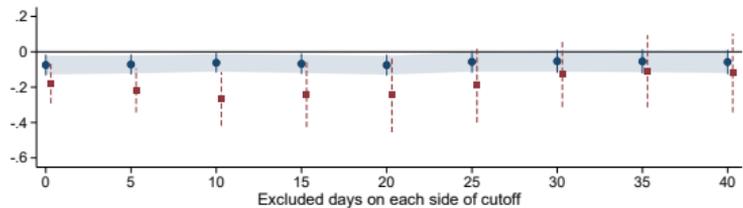
(a) Average earnings of the highest degree



(b) Grade point average at 9th grade



(c) Not in employment, education or training



● Local linear estimates    
  Conventional 95% confidence intervals    
 — Armstrong and Kolesar (2020) 95% CI  
■ Calonicio et al. (2014) estimates    
 - - - Calonicio et al. (2014) 95% CI



Table A3: Impact of parent's integration plan by gender and parents' origin country

	Degree		GPA		NEET	
<i>A: By gender</i>						
Local average treatment effect (LATE)	2,608 (2,039)	1,985 (1,912)	0.39 (0.23)	0.28 (0.21)	-0.09 (0.05)	-0.05 (0.05)
× female	4,197 (1,517)	4,037 (1,487)	0.26 (0.17)	0.20 (0.16)	-0.08 (0.04)	-0.05 (0.04)
Compliers' expected outcomes in the absence of the treatment	22,949 (1,334)	23,397 (1,289)	-0.98 (0.15)	-0.90 (0.14)	0.33 (0.04)	0.32 (0.04)
× female	-4,293 (995)	-4,043 (997)	0.29 (0.11)	0.01 (0.05)	0.03 (0.03)	0.00 (0.01)
<i>B: By parent's origin country HDI</i>						
Local average treatment effect (LATE)	5,449 (1,803)	4,420 (1,725)	0.52 (0.21)	0.40 (0.19)	-0.14 (0.05)	-0.09 (0.04)
× HDI	-36 (573)	179 (589)	-0.05 (0.08)	-0.02 (0.08)	-0.01 (0.03)	-0.02 (0.02)
Compliers' expected outcomes in the absence of the treatment	20,330 (1,202)	21,252 (1,181)	-0.84 (0.14)	-0.75 (0.13)	0.36 (0.04)	0.34 (0.03)
× HDI	1,308 (379)	1,328 (392)	0.16 (0.05)	-0.11 (0.07)	-0.06 (0.02)	0.02 (0.01)
Additional covariates	No	Yes	No	Yes	No	Yes