Minimum Wages and the Human Capital of the Next Generation

Daniel Araújo
UFPE

Bladimir Carrillo
UFPE

Wilman Iglesias
UNL

Breno Sampaio
UFPE

January 2022

Research Question

- **To what extent does the increase in the minimum wage affect children's human capital?**

Motivation

Consequences of MW policies? Economics literature estimates the effects of MW on employment, wages, & earnings inequality. (Belman and Wolfson, 2014)

$\mapsto$ **Whether such policies can affect children of covered workers** over the LR remains an **open question**.

$\mapsto$ **Previous studies** focus on the contemporary impacts on individuals making **high school dropouts** or **college enrollment decisions**.

$\mapsto$ **Retrospective exposure during critical periods of child development** may be equally or even **more salient**.

Background

Higher real wages would **help poor children** (this could **not be the case**):

⊗ **Parental income** may be already **above the MW floor**;

The typical MW increase **may not be sufficient**;

⊗ **Parents could not** use the real income gains to **invest in children's HC**;

⊗ **Parental behavioral responses with potential (-) externalities** on children, including consumption of "bad" goods;

⊗ **Marital stability**. Bertrand, Kamenica and Pan (2015)

Literature

∗ **Contemporary effects on wages and employment**: (+) effects on wages & small (-) effects on employment levels. (Card and Krueger,1994, 1995; Belman and Wolfson, 2014; Bailey, DiNardo and Stuart, 2020)

∗ MW expansion effects on **contemporary levels of HC dimension** (Neumark and Wascher, 2001; Acemoglu and Pischke,2003; Horn, Maclean and Strain, 2017; Wehby et al.,2020)

∗ **War on poverty programs:** Assessment of the impacts of programs such as Head Start (Johnson and Jackson, 2019), Food Stamps (Hoynes, Schanzenbach and Almond, 2016; Bailey et al., 2020), Community Health Centers (Bailey and Goodman-Bacon, 2015a), or Medicaid (Goodman-Bacon, 2016).

The Policy Change

- The US Congress approved an Amendment to the Fair Labor Standards Act (**1966 FLSA**):
- Increasing the MW to **unprecedented $1.60** (USD$12.75 in 2020).
- **Expanding coverage to 9.1 million workers**.
- Outcomes: Inter-generational **HC + economic self-sufficiency**

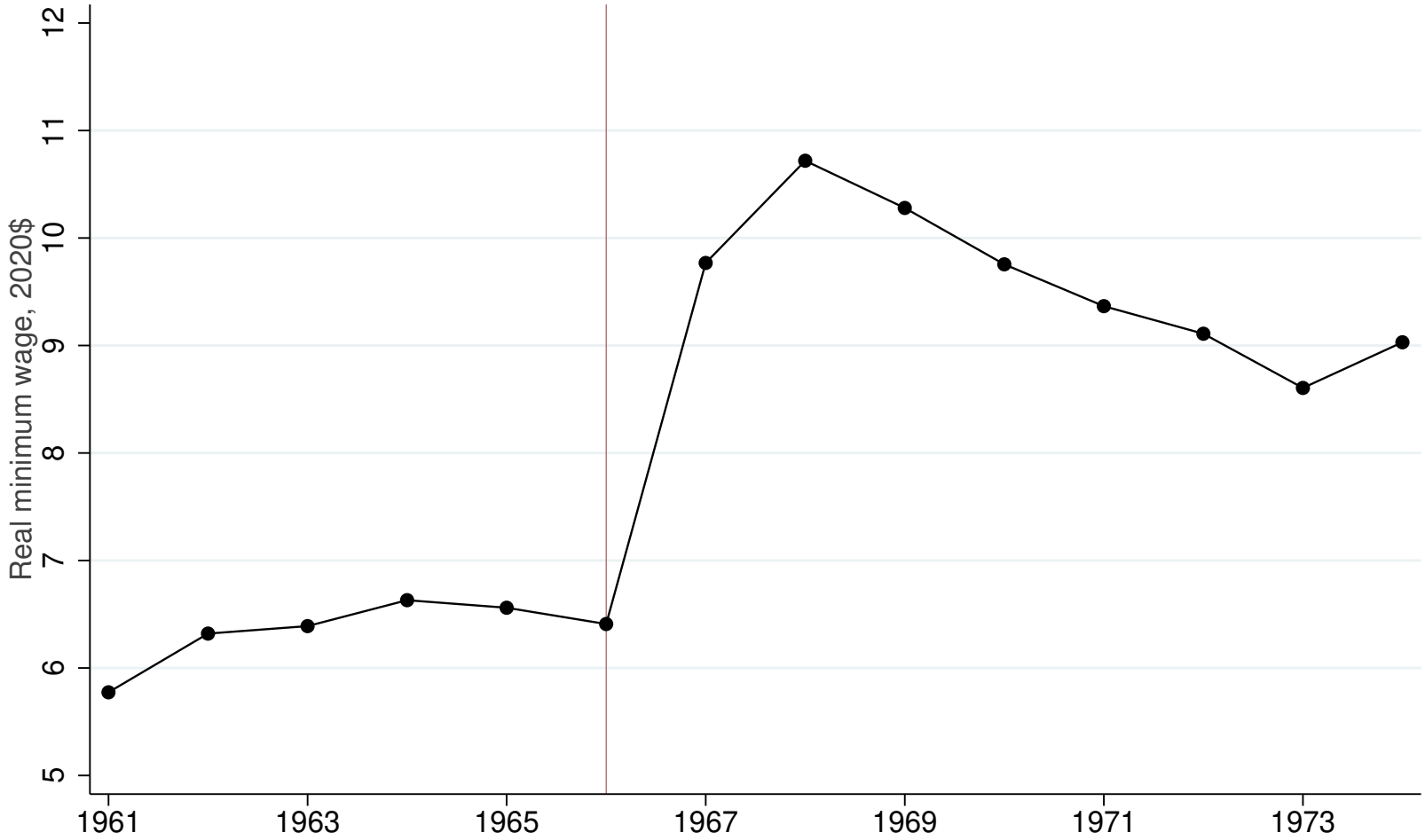
The Policy Change

- We exploit pre-existing geographic $\triangle$ in the share of workers earning $<$ the new MW:

- **Generalized DID** framework that compares: **cohorts born closer to or farther away from the introduction of the 1966 FLSA** (1D) in states with **low and high share of wages below \$1.60 in 1966** (2D)

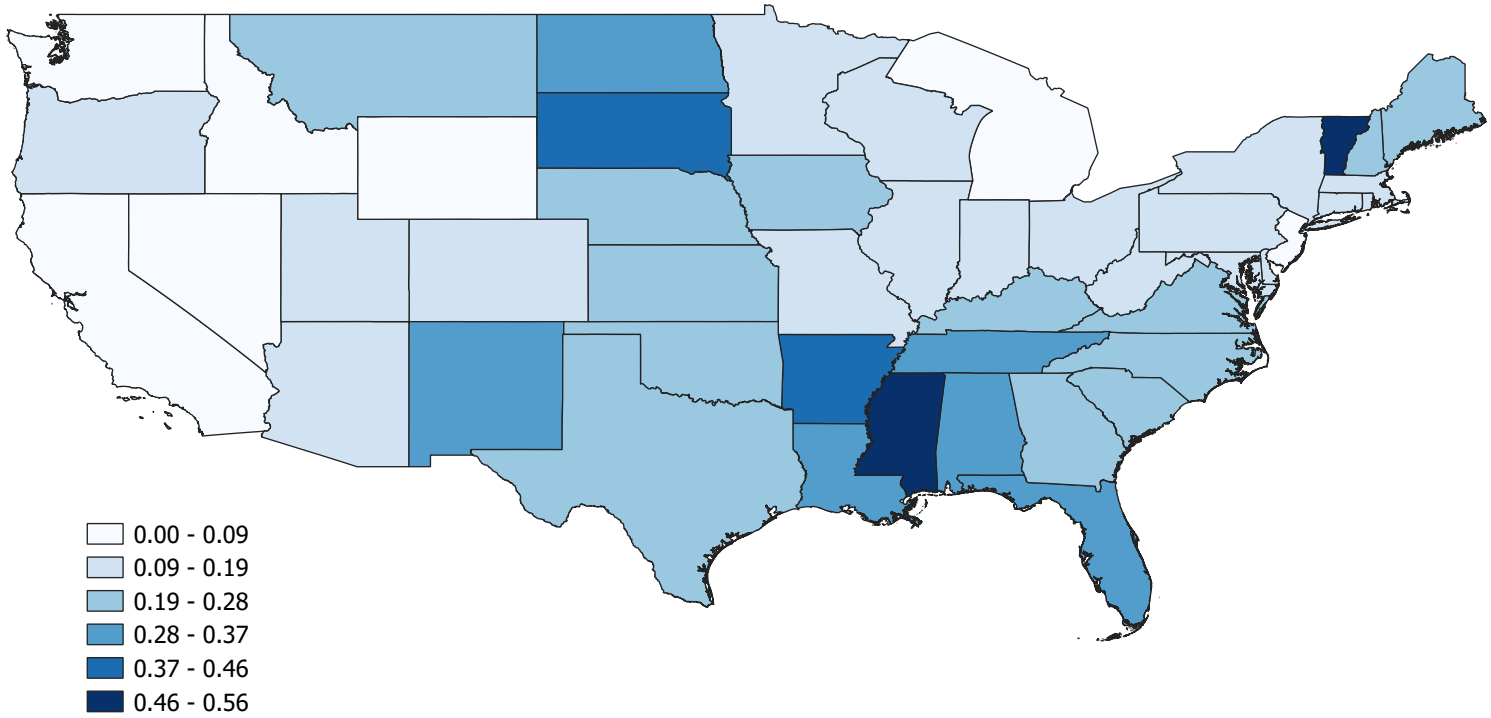
Empirical Strategy

Figura: The 1966 FLSA and the Increase in the Effective MW

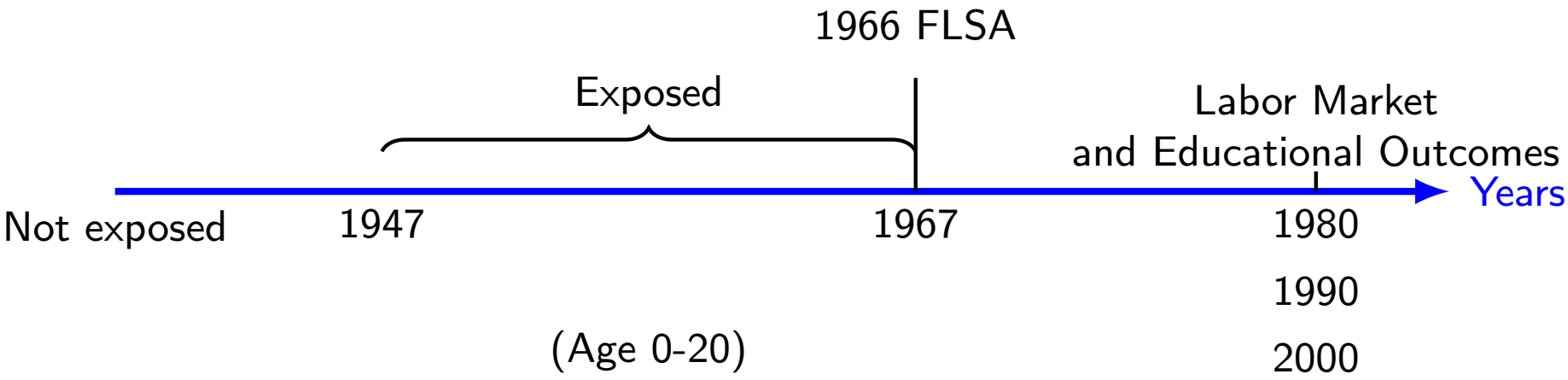


Empirical Strategy

Figura: The Share of Workers in 1966 Earning below the 1966 FLSA MW ($1.60)



Birth Cohort



Data

- **US Census** (1980, 1990, 2000): 10% randomly drawn sample available from the **(IPUMS)**.
- **1960 US Census**: The log count of population; share of population (< 5, > 65, employed, in farm); share of labor force in (agriculture & manufacture).
- **(March CPS) database** (1962-1974)
- **Data on Other Policies**: The period is known for a set of measures called War on Poverty Reforms (**Head Start, Food Stamps, Community Health Centers,** & **Medicaid**).

Empirical Strategy

- **Parametric**

$$Y_{istc} = \alpha + \beta\ \textit{Childhood Exposure}_t \times \textit{Fraction Affected}_s + \vec{\mathbb{X}}'_{istc}\Omega + \lambda_{sc} + \gamma_{tc} + \xi_{istc} \quad (1)$$

- This specification includes **birth year** $\times$ **census year and state-of-birth** $\times$ **census year fixed effects**; controls for race, gender, and 1960 state characteristics interacted with linear cohort trends. Standard errors clustered at the state level.

Empirical Strategy

- **Nonparametric**

$$Y_{istc} = \alpha + \underbrace{\sum_{T=0}^{20} (I_{t=T} \times \textit{Fraction Affected}_s) \cdot \beta_T}_{\text{exposure in childhood years}} + \underbrace{\sum_{T=-7}^{-2} (I_{t=T} \times \textit{Fraction Affected}_s) \cdot \beta_T}_{\text{no childhood exposure}} + \vec{\mathbb{X}}'_{istc}\Omega + \lambda_{sc} + \gamma_{tc} + \xi_{istc} \quad (2)$$

- This specification includes the same controls as before.

Results: Cohort-specific effects

Tabela: Long-Run Effects on Human Capital

	Dependent variable is				
	Human capital index	More than 12 years of schooling	Any college attainment	Years of schooling	Occupational scores
	(1)	(2)	(3)	(4)	(5)
Childhood Exposure	0.4787	0.3169	0.1528	1.9847	2.0557
× Fraction Affected	[0.1205]***	[0.0752]***	[0.0659]**	[0.3555]***	[0.5824]***
Baseline controls	Yes	Yes	Yes	Yes	Yes
Effect of 1 SD increase	0.045	0.03	0.015	0.188	0.194
Mean of dep. var	0.06	0.51	0.24	13.77	28.10
Number of states	51	51	51	51	51
Number of cohorts	28	28	28	28	28
Observations	10,196,775	11,253,415	11,253,415	11,253,415	10,196,775

Educational Outcomes

- 1 SD ↑ in the share of workers affected by the policy ⇒ ↑ ≈ **4.5% of a SD in a composite adult HC Index**:

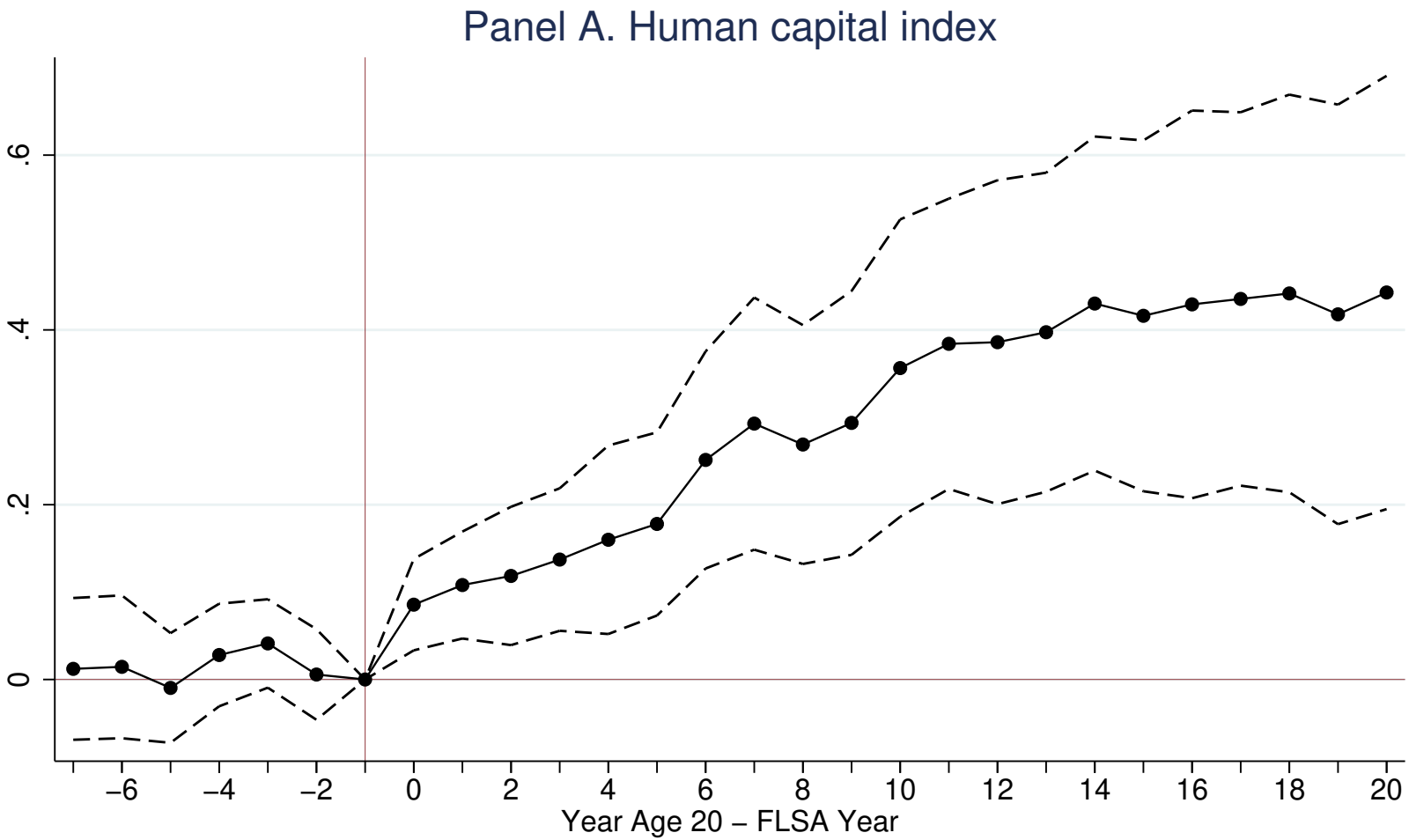
  ⇒ 5.9% ↑ in the likelihood of obtaining $>$ **12 years of schooling**,

  ⇒ 6.3% ↑ in the chances of **completing a college degree**,

  ⇒ 1.4% ↑ in **years of education**,

  ⇒ 0.7% ↑ of the **occupational income score** over the baseline.

Effects on Educational Outcomes



Results: Cohort-specific effects

Tabela: Long-Run Effects on Economic Self-Sufficiency

	Dependent variable is					
	Economic self-sufficiency index	Total income in levels (include 0s)	Hours worked per week	Weeks worked last year	Employment	Total income in logs
	(1)	(2)	(3)	(4)	(5)	(6)
Childhood Exposure × Fraction Affected	0.2099	6171.8651	4.8999	3.4393	0.0540	0.1958
	[0.0593]***	[1641.7089]***	[1.1503]***	[1.3578]**	[0.0231]**	[0.0860]**
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Effect of 1 SD increase	0.0199	586.04	0.4652	0.3266	0.0051	0.0185
Mean of dep. var	0.0074	18017.58	34.62	38.95	0.77	9.76
Number of states	51	51	51	51	51	51
Number of cohorts	28	28	28	28	28	28
Observations	11,226,330	11,226,330	11,253,415	11,253,415	11,253,415	10,135,220

Economic Self-Sufficiency

- 1 SD ↑ in the share of workers affected by the policy ⇒ ↑ **Economic Self-Sufficiency Index** in adulthood by **2% of a SD**:

  ⇒ ↑ in **total income by 3.25% percent,**

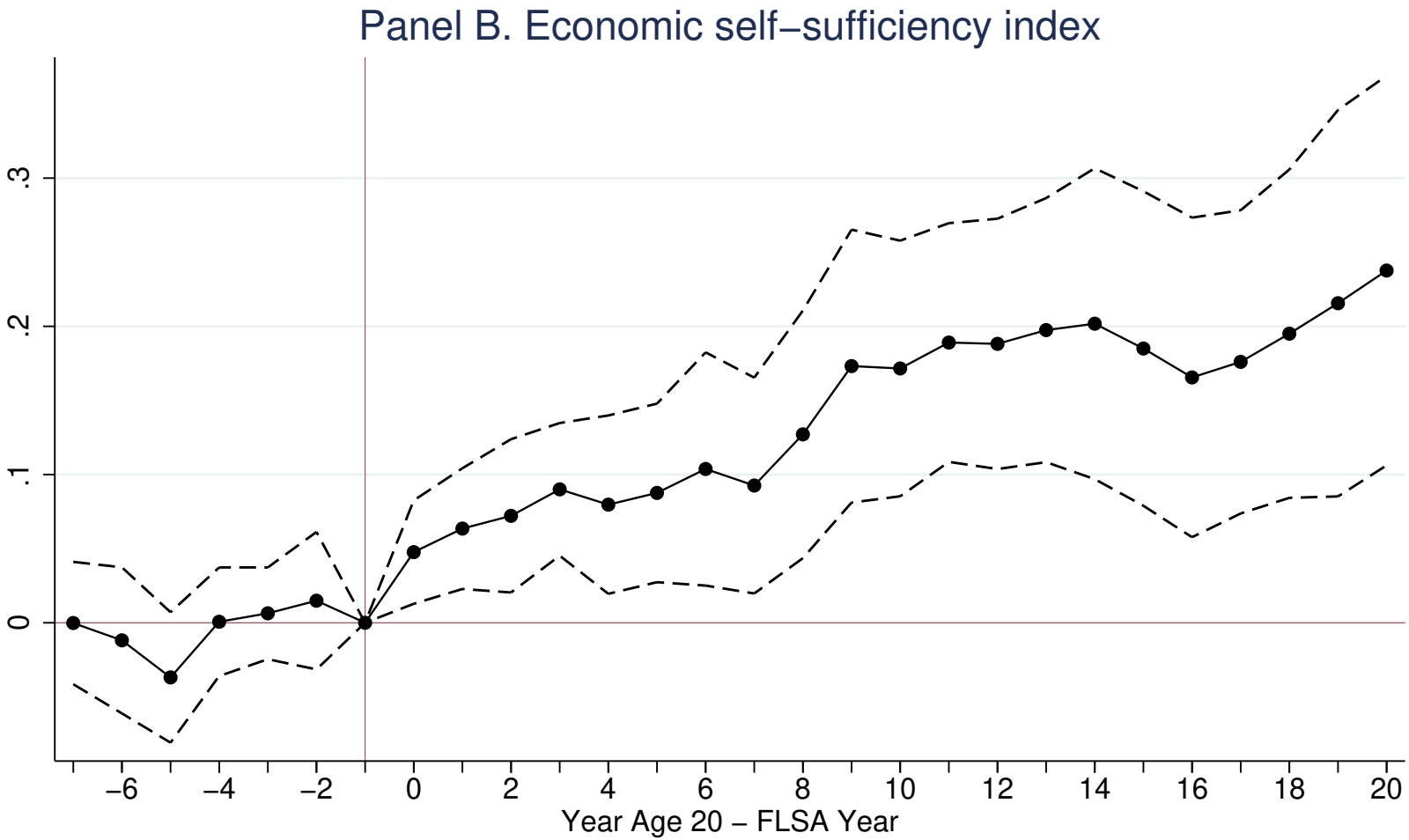
  ⇒ ↑ in the **hours worked per week by 1.34%**

  ⇒ ↑ in the **weeks worked last year by 0.84%.**

  ⇒ ↑ in **employment by 0.7%**,

  ⇒ ↑ in **income by 1.85%.**

Effects on Occupational Income Scores



Results: Cohort-specific effects, gender, and race

Tabela: Long-Run Effects on Adult Outcomes
(Heterogeneity by gender and race)

	Sample				
	Baseline (1)	Men (2)	Women (3)	White (4)	Non-White (5)
	Panel A: human capital index				
Childhood Exposure	0.4787	0.4594	0.4755	0.4981	0.4789
× Fraction Affected	[0.1205]***	[0.1095]***	[0.1366]***	[0.1431]***	[0.0982]***
Effect of 1 SD increase	0.0451	0.0431	0.0451	0.0443	0.0538
Observations	10,196,775	5,275,973	4,920,802	8,830,302	1,366,473
	Panel B: economic self-sufficiency index				
Childhood Exposure	0.2099	0.1937	0.2215	0.2454	0.0184
× Fraction Affected	[0.0593]***	[0.0585]***	[0.0705]***	[0.0630]***	[0.0804]
Effect of 1 SD increase	0.0199	0.0183	0.0212	0.0219	0.0021
Observations	11,226,330	5,505,205	5,721,125	9,646,494	1,579,836

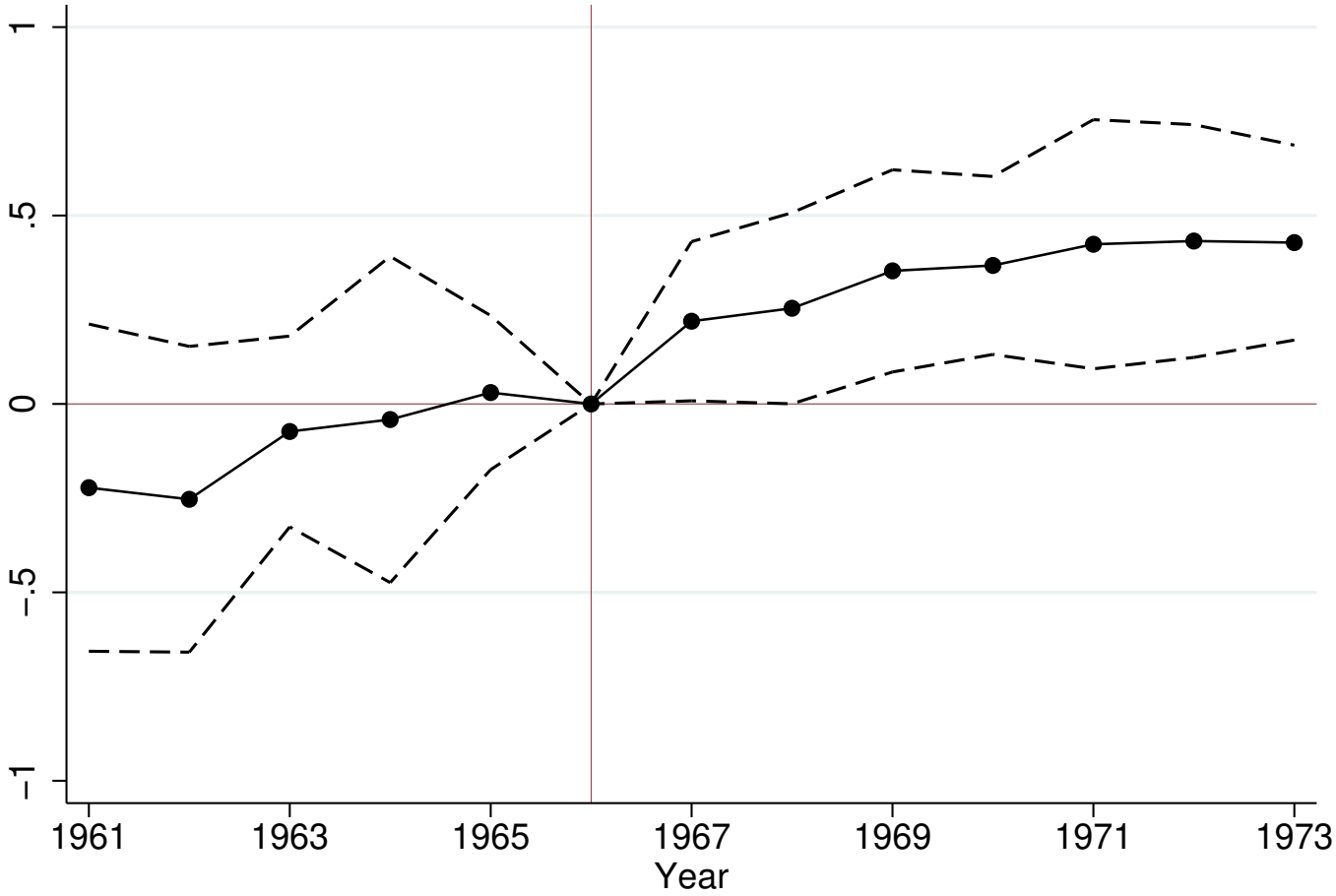
Results: Cohort-specific effects

Tabela: Contemporary Effects on Parental Outcomes

	Dependent variable is			
	Log total income	Employed during year	Employed in reference week	Hours worked in reference week
	(1)	(2)	(3)	(4)
	Panel A: Total			
Post-1966 × Fraction Affected	0.3906	-0.0012	-0.0053	-2.1862
	[0.0591]***	[0.0153]	[0.0230]	[2.1186]
Effect of 1 SD increase	0.0318	-0.0001	-0.0004	-0.1780
Mean of dep. var	9.06	0.98	0.96	50.56
Observations	173,550	173,627	173,627	173,627
Basic controls	Yes	Yes	Yes	Yes
Number of state groups	21	21	21	21
Number of years	13	13	13	13

Results: Contemporary Parental Outcomes

Figura: Contemporary Effects on Parental Income and Employment

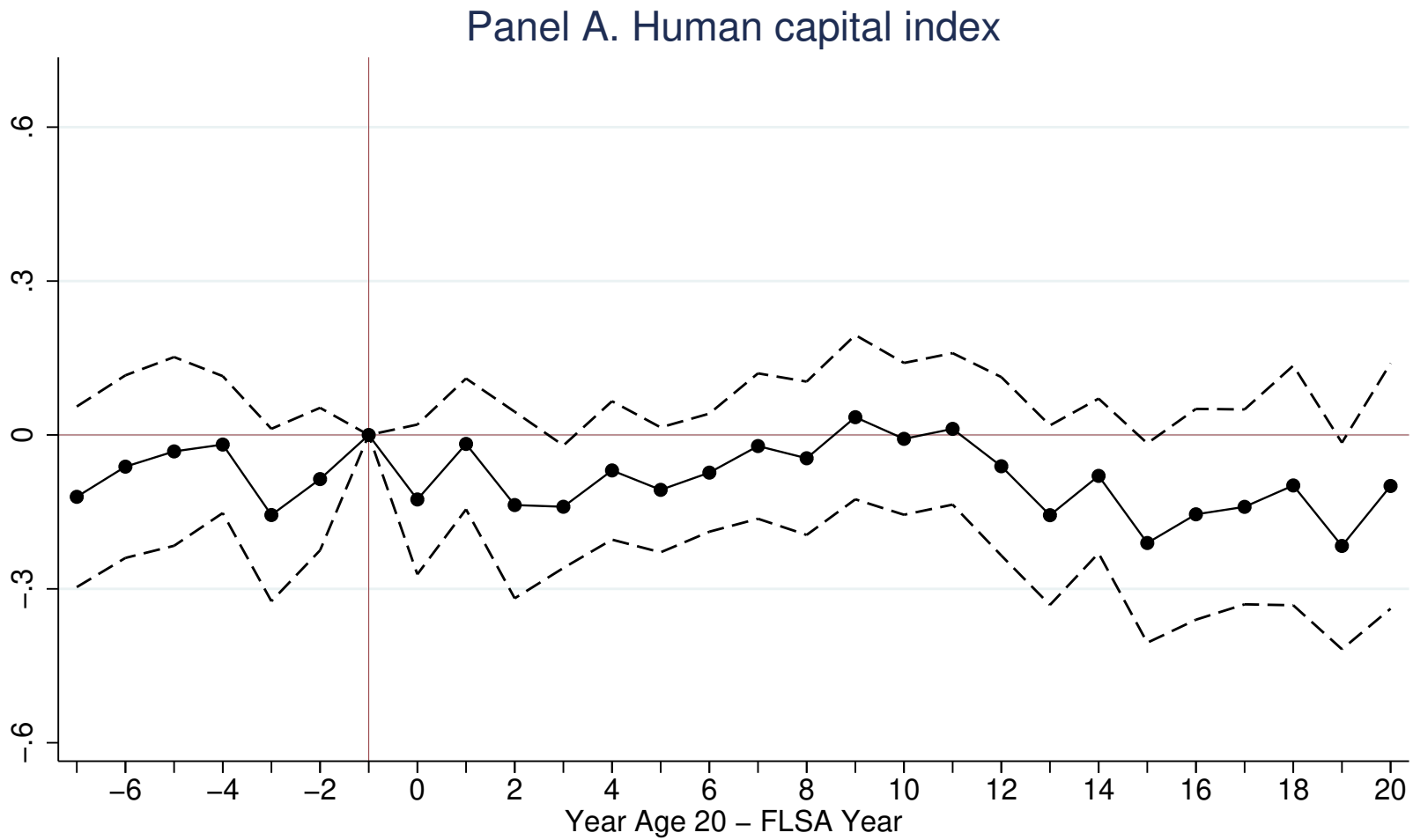


Robustness

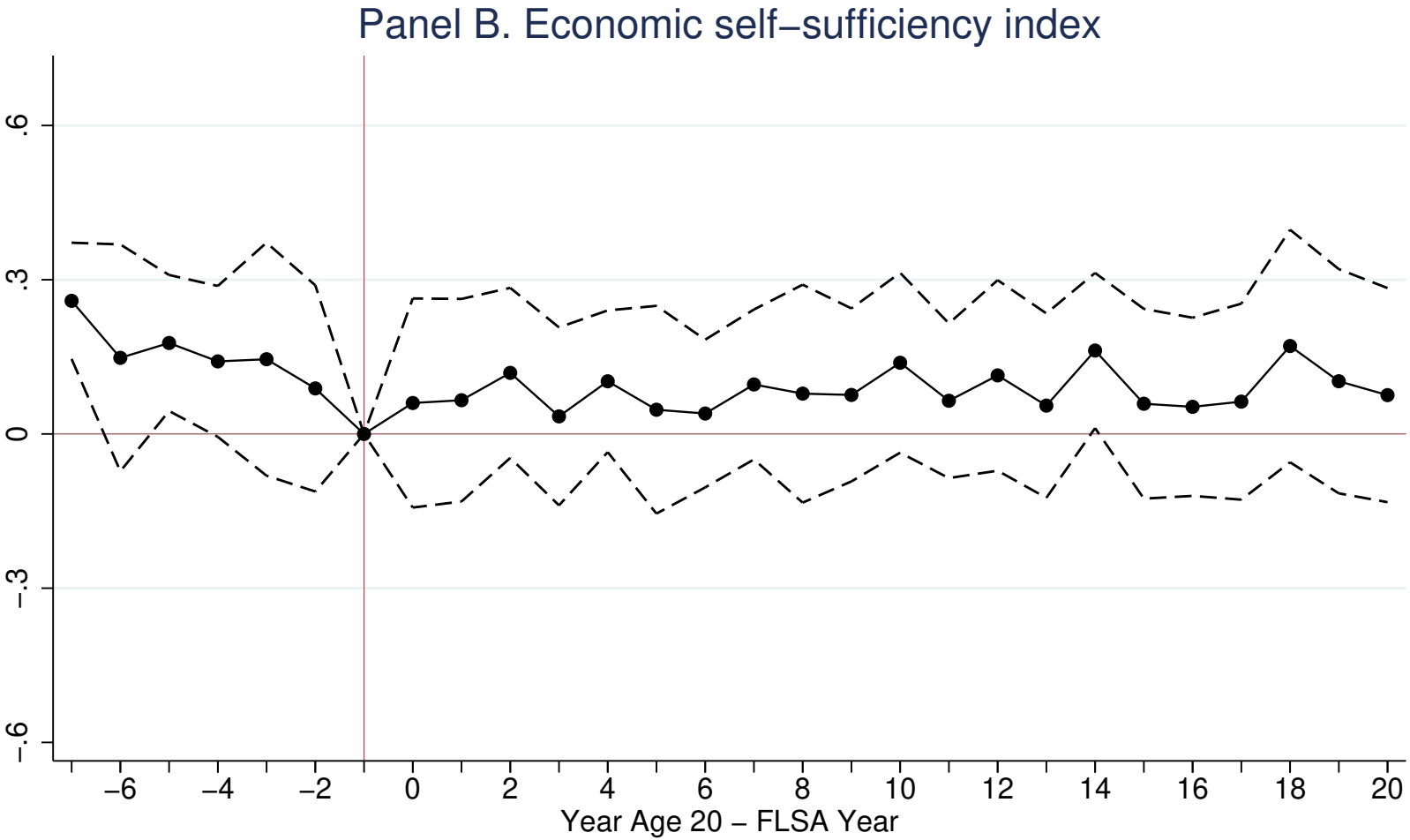
Tabela: Falsification Tests: 1940-60 Censuses, Placebo Reform in 1927

	Dependent variable is			
	Human capital index		Economic self-sufficiency	
	Baseline	Falsification test	Baseline	Falsification test
	(1)	(2)	(3)	(4)
Childhood Exposure	0.4787	-0.0683	0.2238	0.0367
× Fraction Affected	[0.1205]***	[0.0930]	[0.0571]***	[0.0825]
Basic controls	Yes	Yes	Yes	Yes
Number of states	51	51	51	51
Number of cohorts	28	28	28	28
Observations	10,196,775	1,002,979	11,044,714	704,283

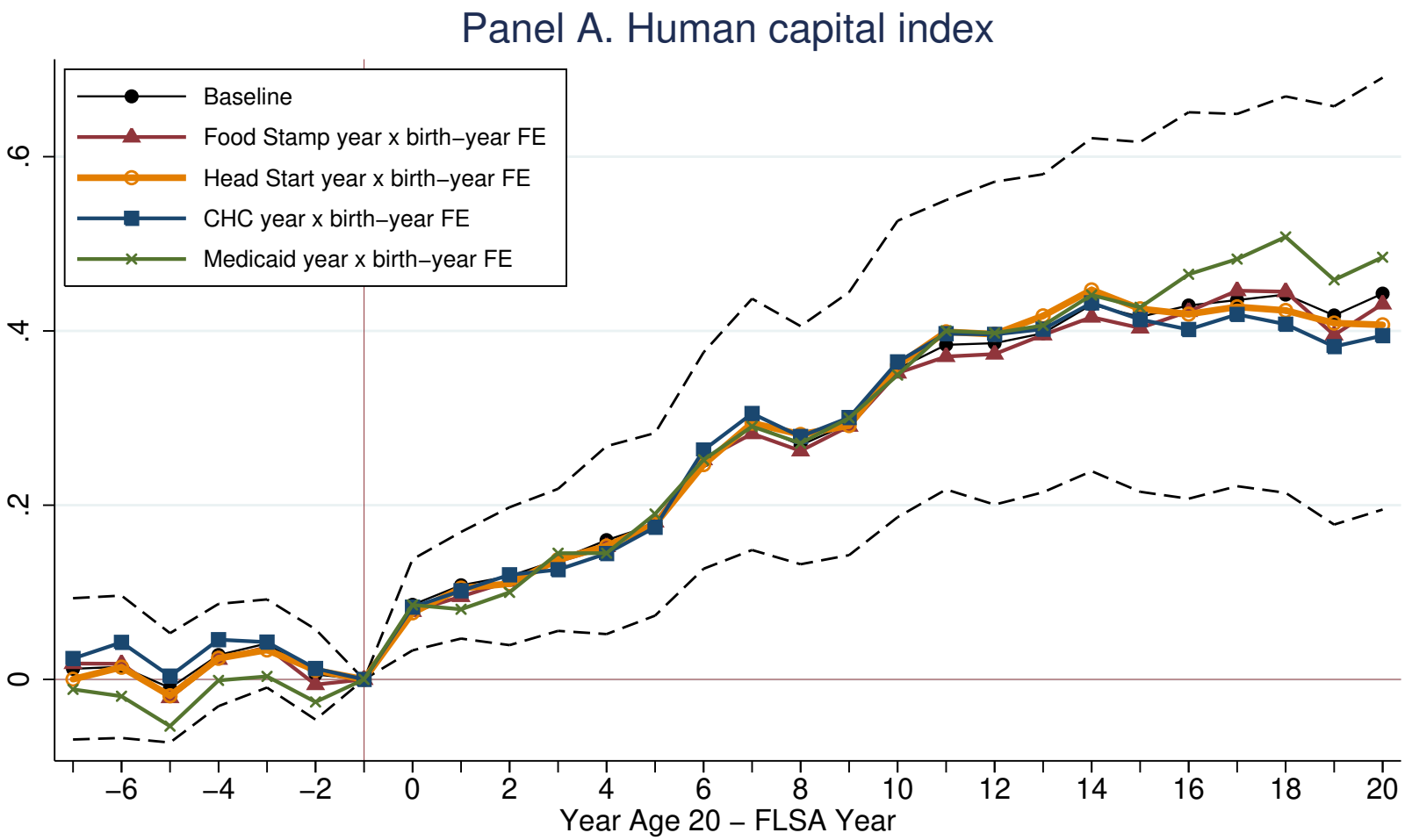
Falsification: 1940-60 Censuses, Placebo Reform in 1927



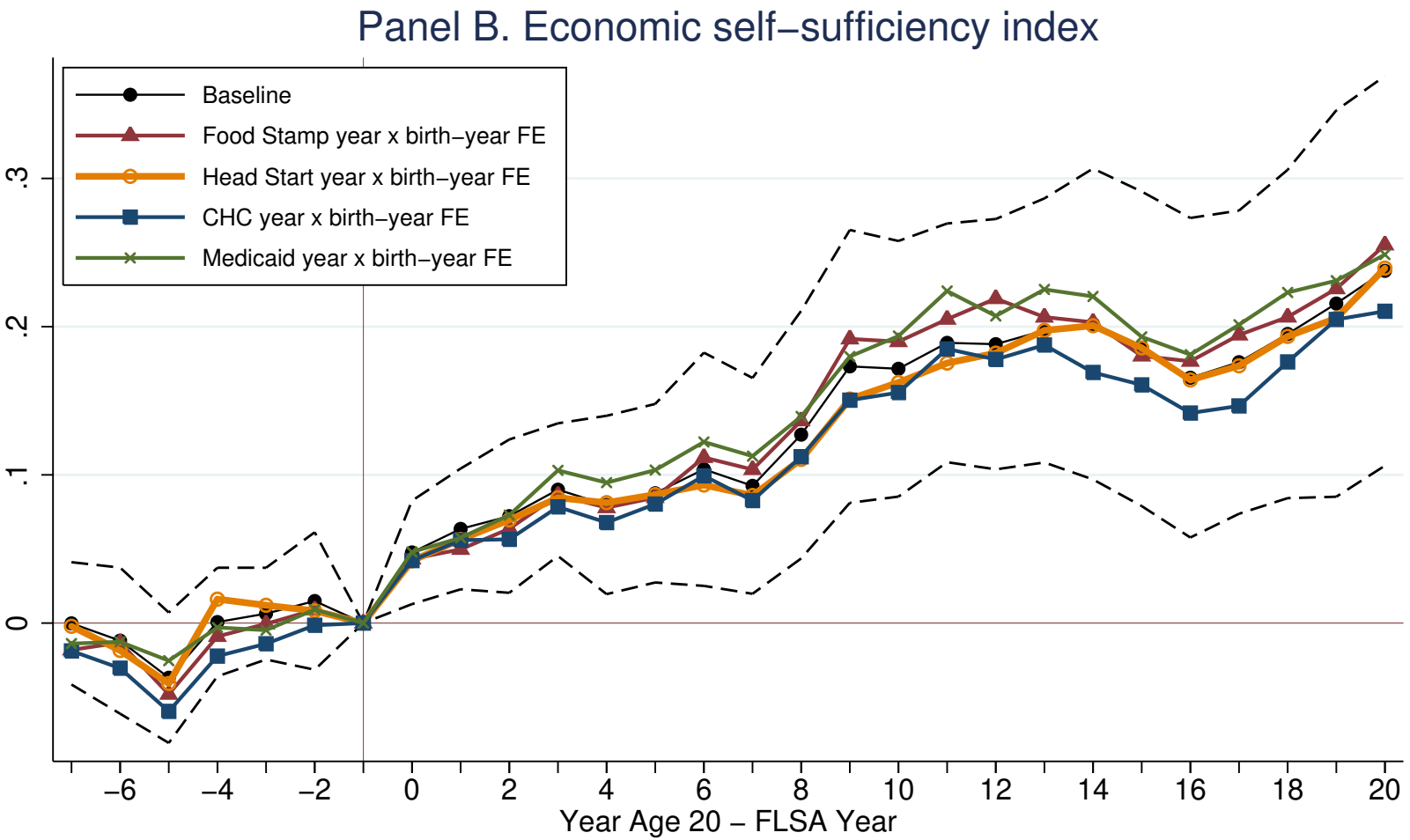
Falsification: 1940-60 Censuses, Placebo Reform in 1927



Long-Run Effects on Adult Outcomes (controlling for other programs)



Long-Run Effects on Adult Outcomes (Controlling for other programs)



Aditional Robustness Checks

- Alternative Definitions of Exposure Intensity here.
- Contemporary Effects on Parental Outcomes: Father and Mother here.
- Permutation tests here.
- Sample Restrictions (Years and Districts) here.
- Migration- Stayers Sample here.
- Marital Stability here.

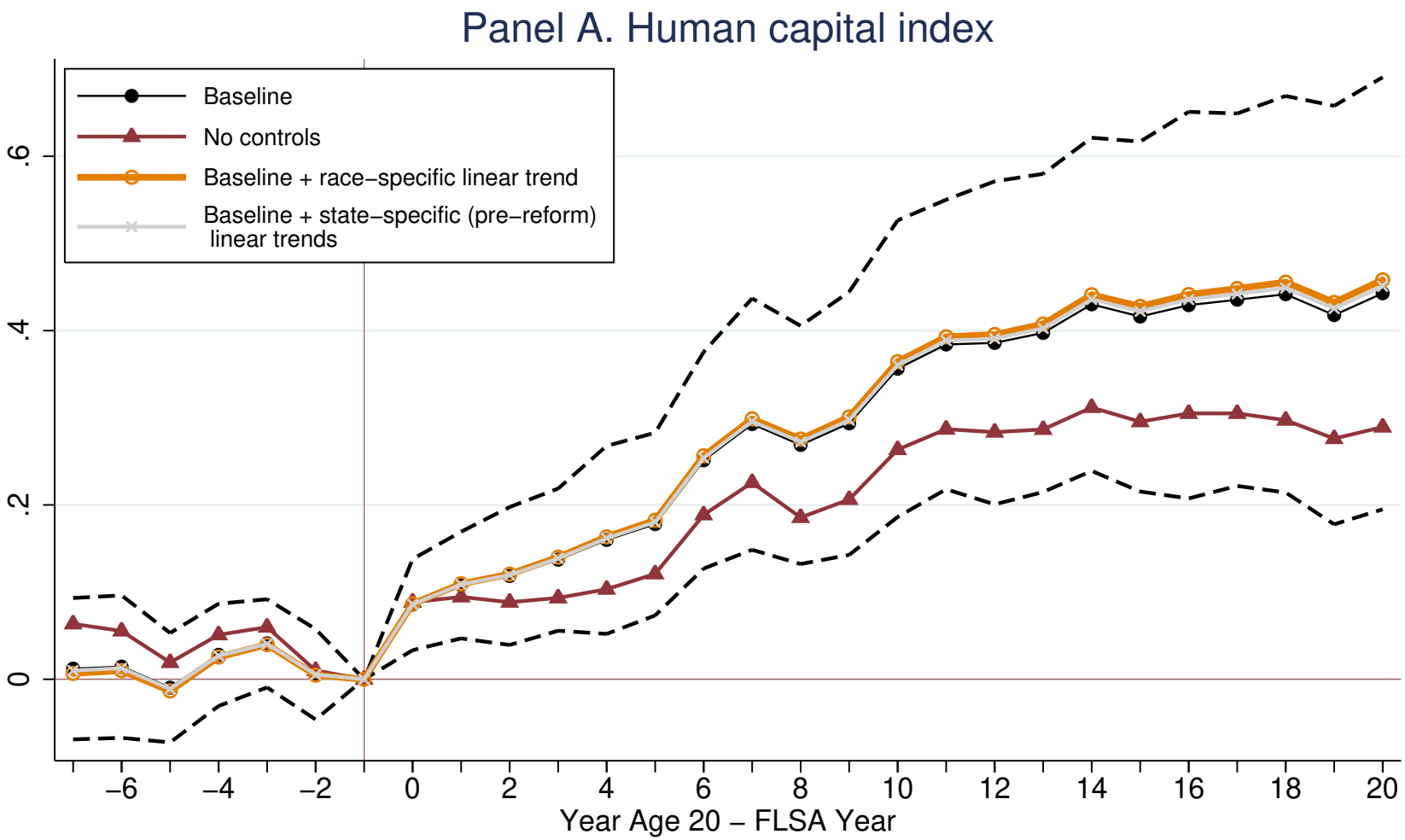
Conclusion

- A higher exposition to the new minimum wage law affected the human capital of individuals exposed at early ages and their economic self-sufficiency in adulthood.

- These effects are associated with the policy impact on the parental income that affected the potential parental investment in their children's human capital.

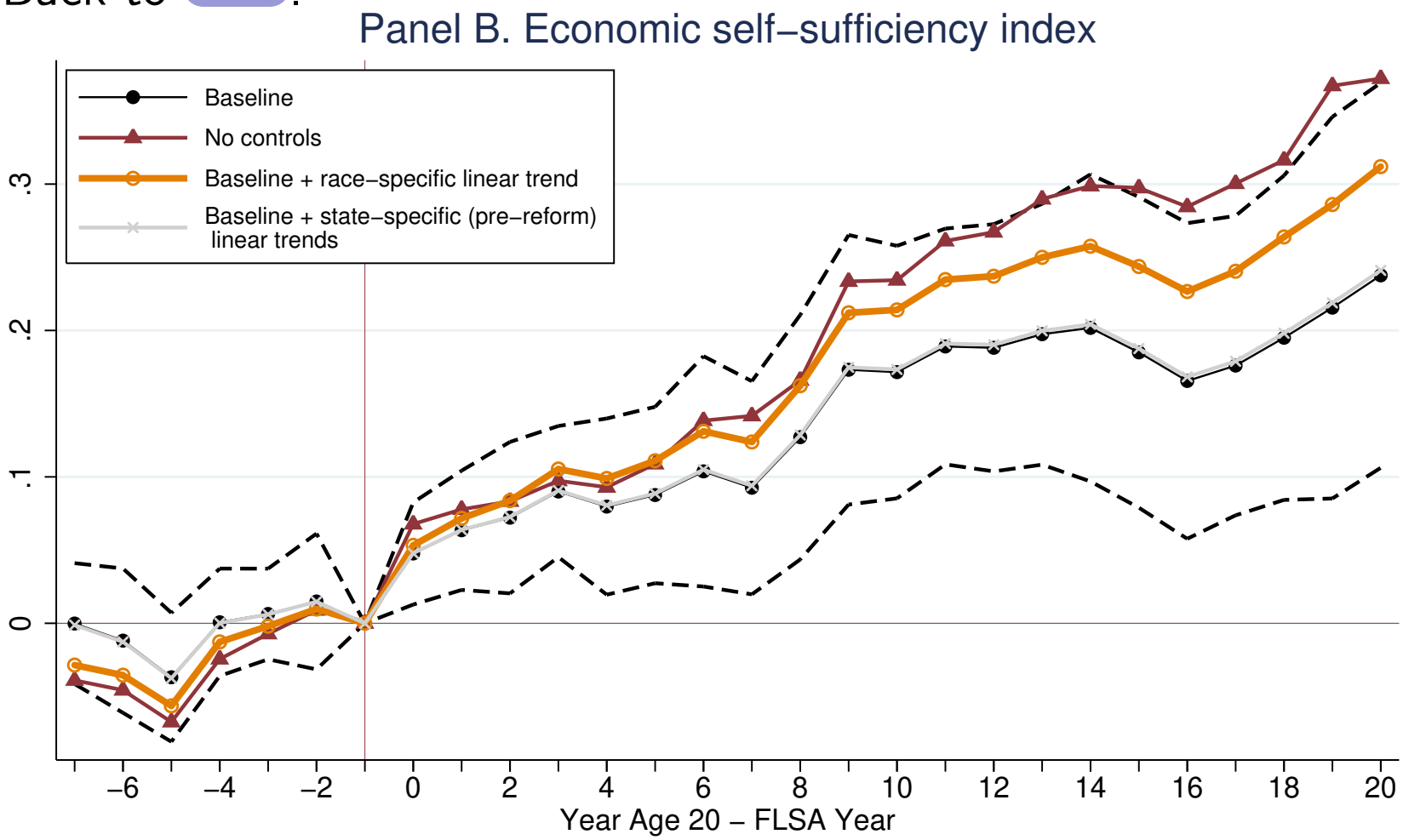
Thank you!

Alternative Definitions of Exposure Intensity.



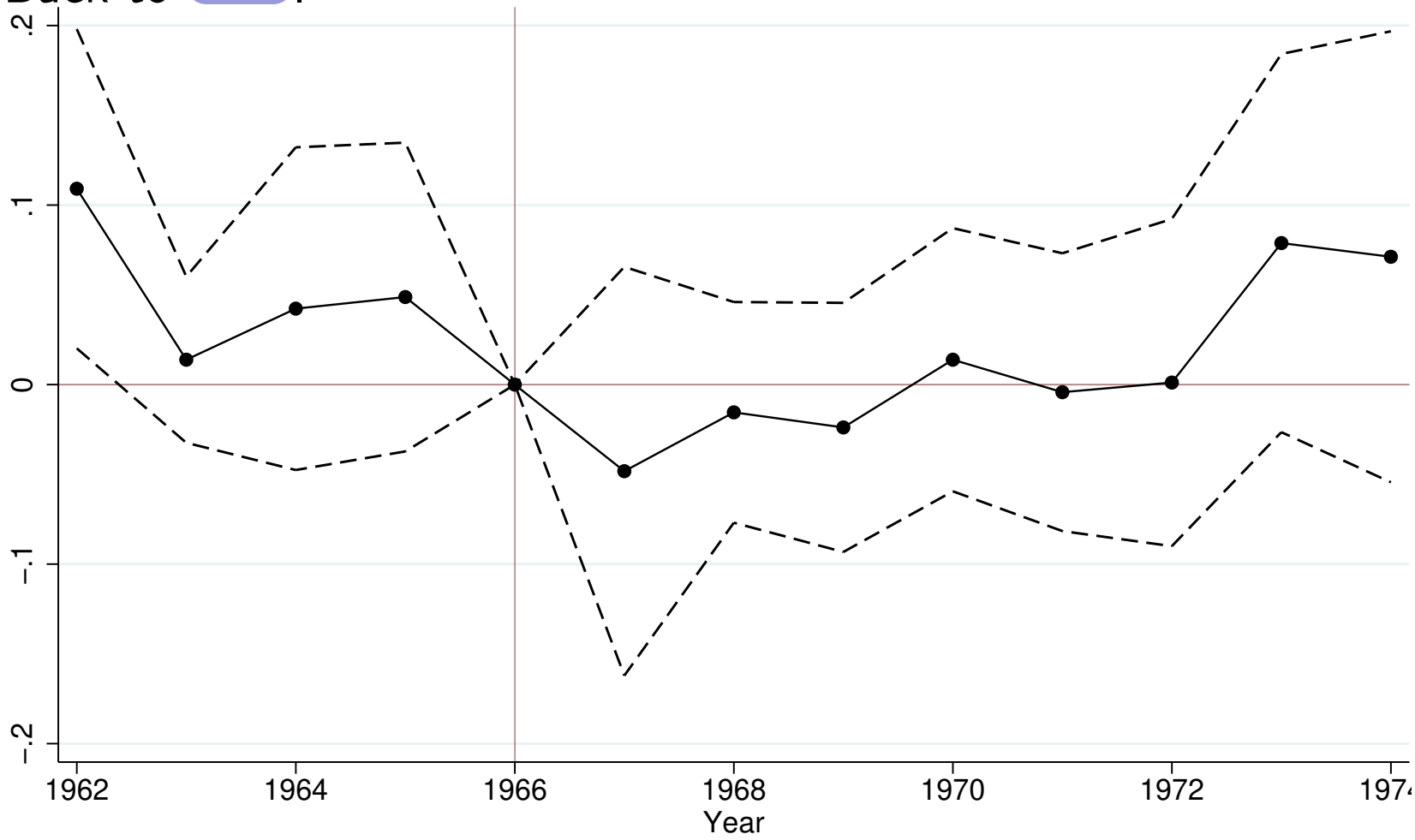
Alternative Definitions of Exposure Intensity.

Back to main.



Marital Stability.

Back to main.

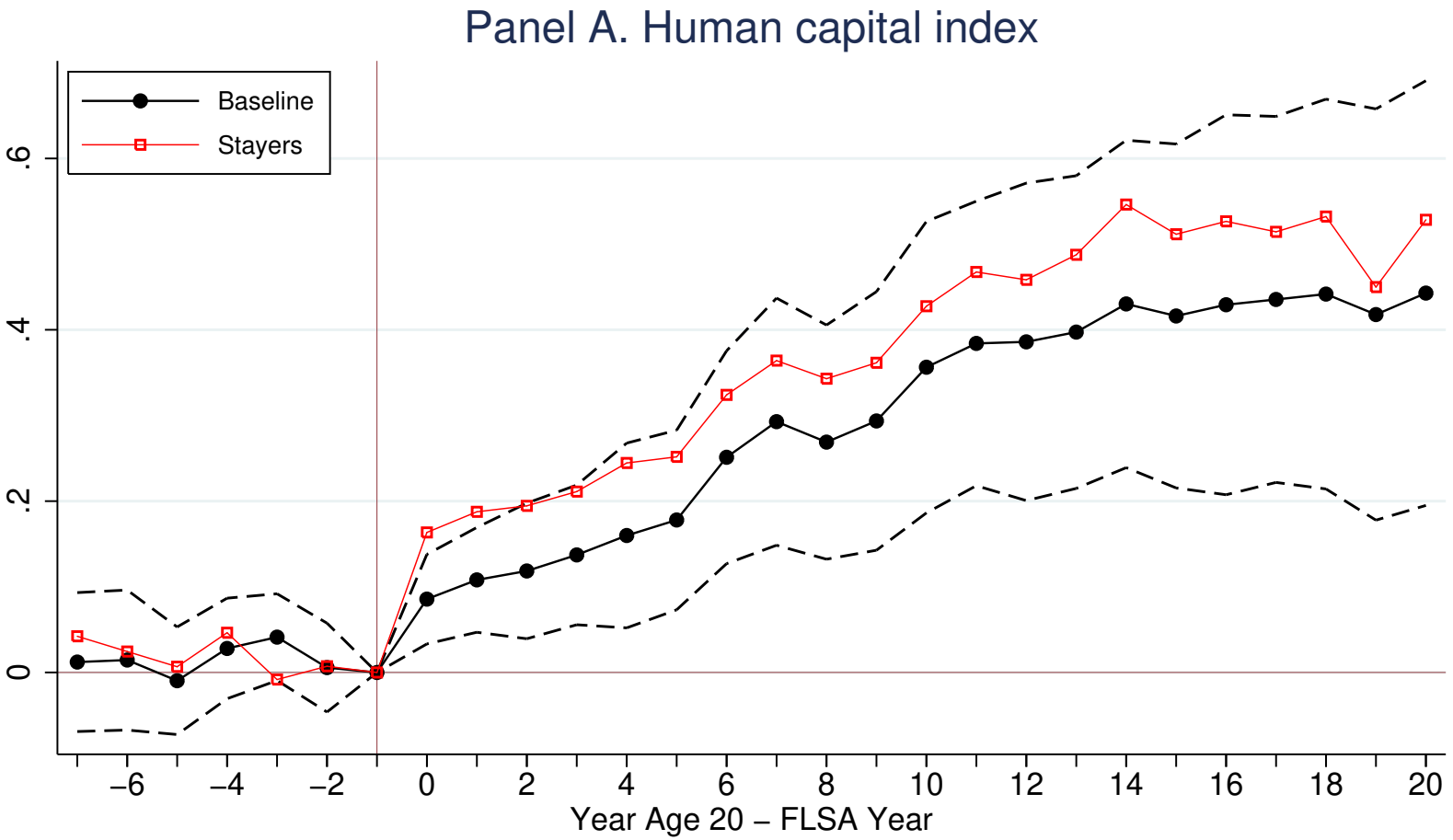


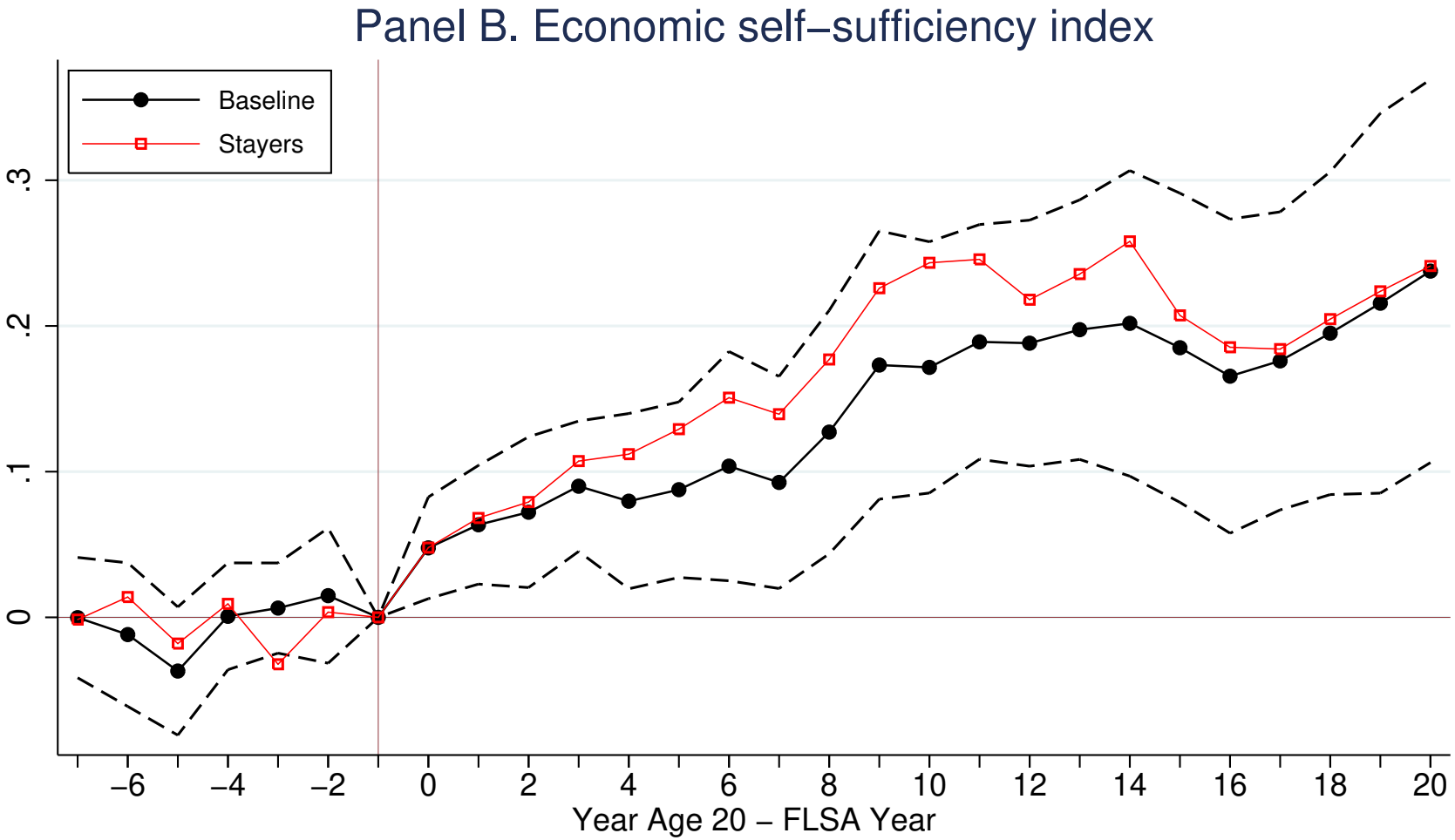
Contemporary Effects on Parental Outcomes: Father and Mother.

Tabela: Contemporary Effects on Parental Outcomes

	Dependent variable is			
	Log total income	Employed during year	Employed in reference week	Hours worked in reference week
	(1)	(2)	(3)	(4)
	Panel B: Father			
Post-1966 × Fraction Affected	0.3487	0.0041	-0.0135	-3.4993
	[0.0588]***	[0.0196]	[0.0213]	[1.6072]**
Effect of 1 SD increase	0.0282	0.0003	-0.0011	-0.2829
Mean of dep. var	9.00	0.97	0.95	42.77
Observations	156,006	156,167	156,167	148,348
	Panel C: Mother			
Post-1966 × Fraction Affected	0.6658	-0.0124	0.0194	-0.0850
	[0.1430]***	[0.0565]	[0.0500]	[1.5535]
Effect of 1 SD increase	0.0548	-0.0010	0.0016	-0.0069
Mean of dep. var	7.48	0.56	0.44	14.61
Observations	100,094	172,119	172,119	168,989
Basic controls	Yes	Yes	Yes	Yes
Number of state groups	21	21	21	21
Number of years	13	13	13	13

Childhood Exposure and Migration

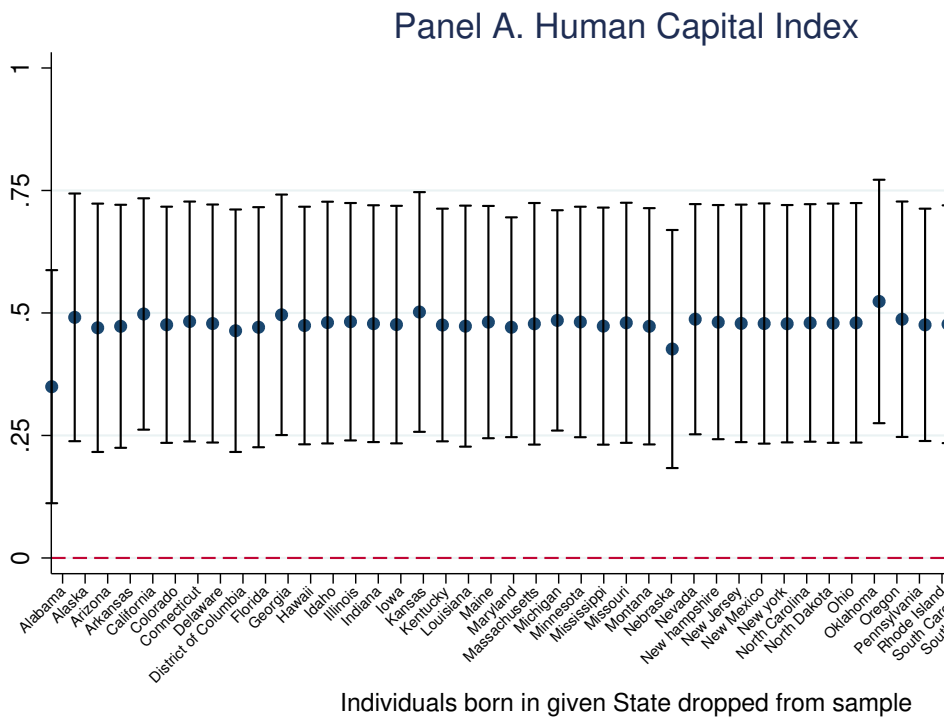



Panel B. Economic self–sufficiency index
Baseline
Stayers
.3
.2
.1
0
–6
–4
–2
0
2
4
6
8
10
12
14
16
18
20
Year Age 20 – FLSA Year

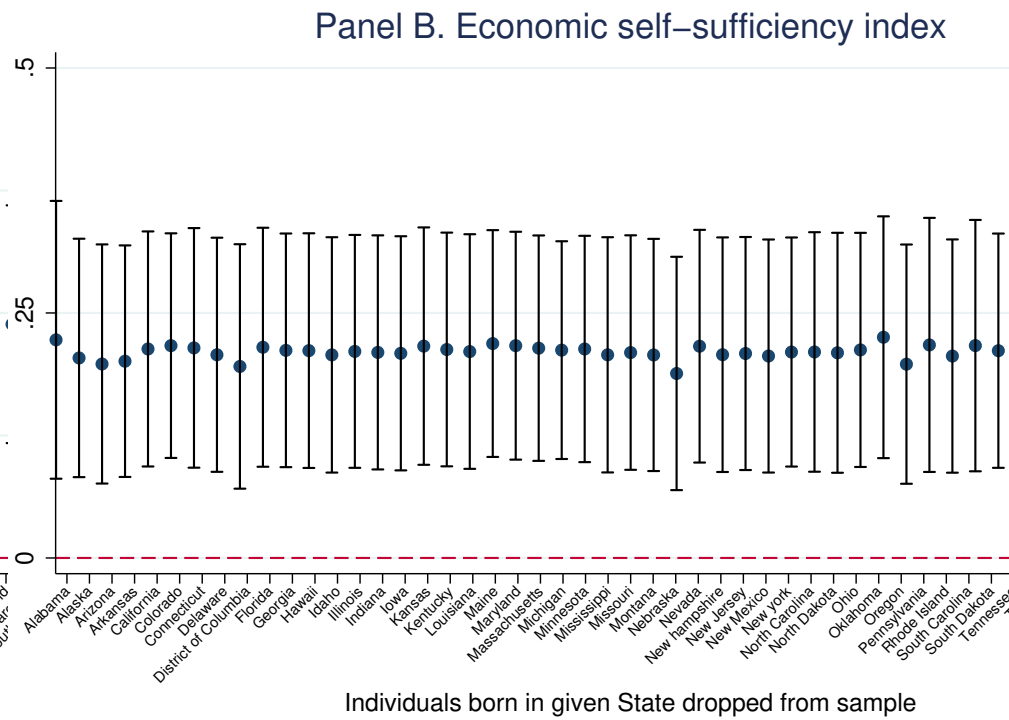
Back to main.

Results: Robustness to sample restrictions

Figura: Robustness to Sample Restrictions



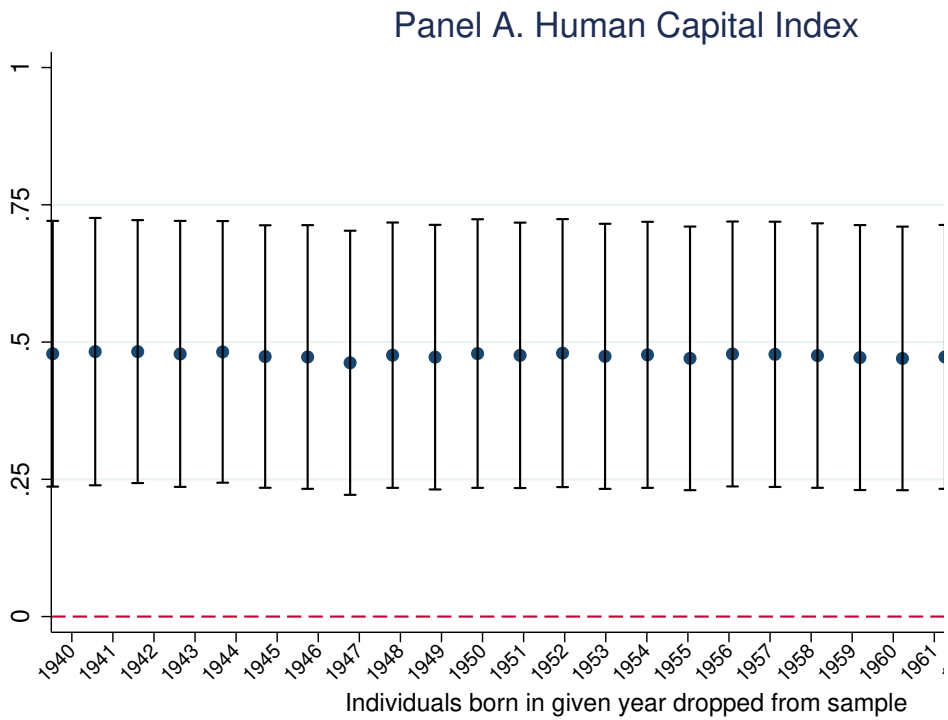
(a) Droping states



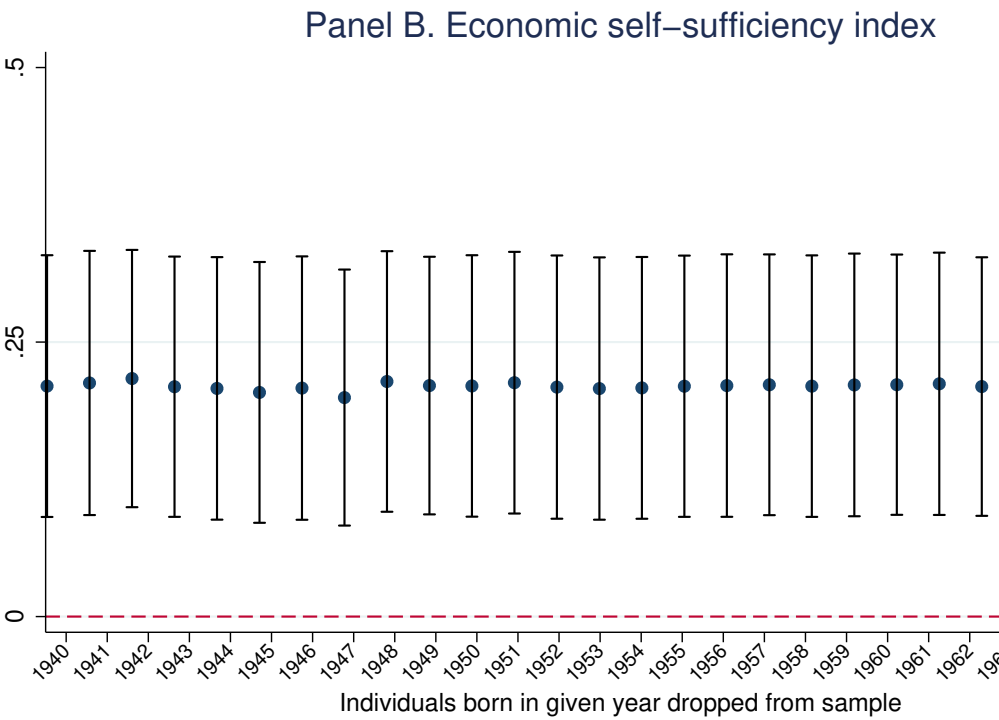
(b) Dropping states

Results: Robustness to sample restrictions

Figura: Robustness to Sample Restrictions



(a) Dropping birth cohorts

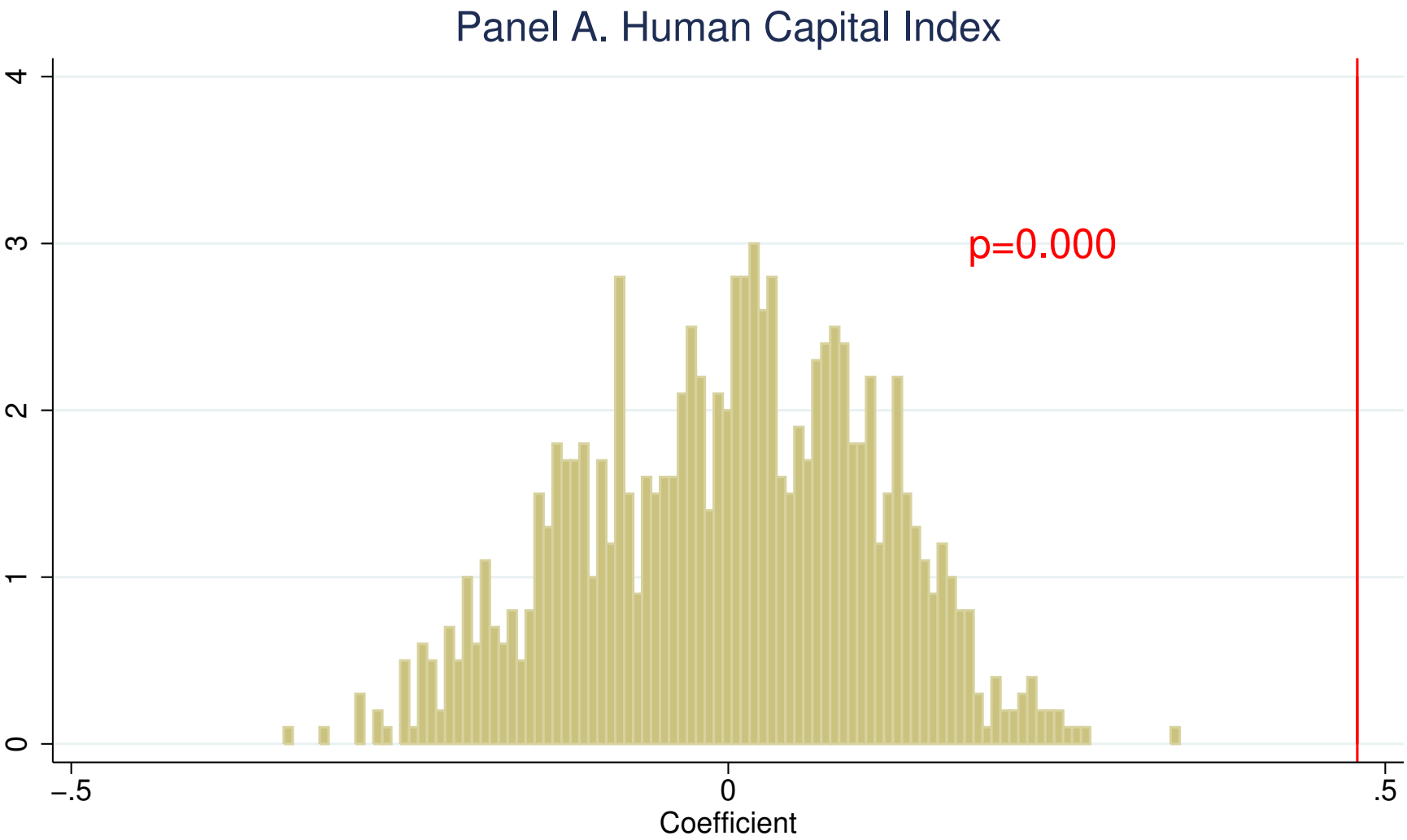


(b) Dropping birth cohorts

Back to main.

Results: Permutation Tests

Figura: Permutation tests



Results: Permutation Tests

Back to main.

Figura: Permutation tests