

# Family Responses to the College Financial Aid Implicit Income Tax

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Nick Gebbia  
UC Berkeley  
(Job Market 2023-24)

Joseph Gray-Hancuch  
OTA

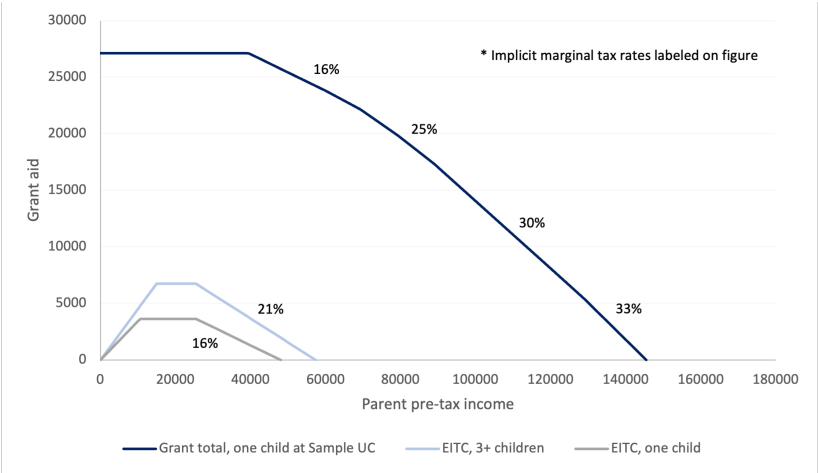
Paul Organ  
OTA

September 22, 2023

\* The findings, interpretations, and conclusions expressed here are entirely the authors' own and do not necessarily reflect the views or the official positions of the U.S. Department of the Treasury. Any taxpayer data used in this research was kept in a secured Treasury or IRS data repository, accessed only by Treasury staff, and all results have been reviewed to ensure that no confidential information is disclosed.

# Motivation

## Example Grant Aid Schedule at Sample UC vs. EITC



Details

Federal vs. state

- Estimate elasticity of taxable income (ETI) with respect to college aid implicit tax on parent income.
- Unique setting:
  1. Means-testing creates **high-stakes** incentives.
    - ▶ MTR's > 30%, added on top of federal & state income tax.
  2. Primarily **middle income** range affected.
    - ▶ MTR's concentrated from \$40k – 160k.
  3. **Temporary & (potentially) anticipated** implicit tax.
    - ▶ Frisch elasticity governs behavior response.
  4. **Complex** tax schedule that is difficult to learn about.
    - ▶ Highly nonlinear. Uncertainty over many schedules (colleges) ex ante. Info sources lacking.

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  - 2a. Design
  - 2b. Results
3. Conclusion and future directions

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- Our full data build

- ▶ Universe of:

- ▶ F1040 (2008 – 2022): Link dependents; measure outcomes (AGI, wages, +).
    - ▶ F1098-T (2010 – 2020): Measure college enrollment.

- ▶ Link these to tax unit: primary TIN and secondary TIN.

- ▶ Currently link current/former dependents to any tax unit that claimed them at least once in their lifetime.

- For today

- ▶ Tax units in CA with a dependent who begins enrollment at a CA public 4-year university (UC or CSU) in 2011 - 2016 & remains enrolled for three years.

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- Timing:

- ▶ Financial aid depends on income reported on Free Application for Federal Student Aid (FAFSA).
- ▶ In our sample period, FAFSA asks for income one year prior – e.g. enroll in Fall 2015  $\implies$  report income from 2014.
- ▶ Must submit a new FAFSA for each year enrolled.

Event study regression:

$$\ln(AGI_{it}) = \alpha_{c(i)} + \gamma_t + \delta_{a(it)} + \sum_{k=-5}^6 \beta_k D_{it}^k + \epsilon_{it}$$

- Where
  - ▶  $i$  indexes tax unit.  $t$  indexes year.
  - ▶  $\alpha_{c(i)}$  is a cohort FE.  $\gamma_t$  is a year FE.  $\delta_{a(it)}$  is a FE for age of primary filer.
  - ▶  $D_{it}^k$  is an indicator for an observation  $k$  years after the first FAFSA base year.  $\beta_k$  is dynamic effect on income  $k$  years after first base year.
- Two versions:
  1. As above.
  2. Additionally control for linear trend extrapolated from pre-period, fit between  $k = -5$  and  $-2$ .



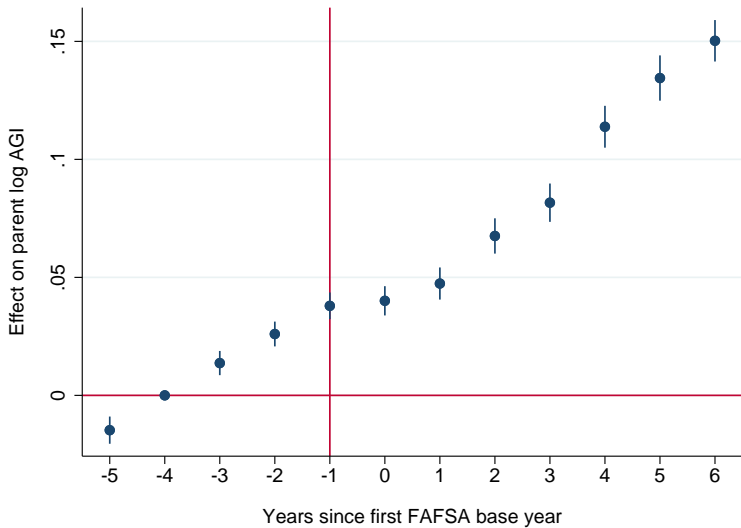
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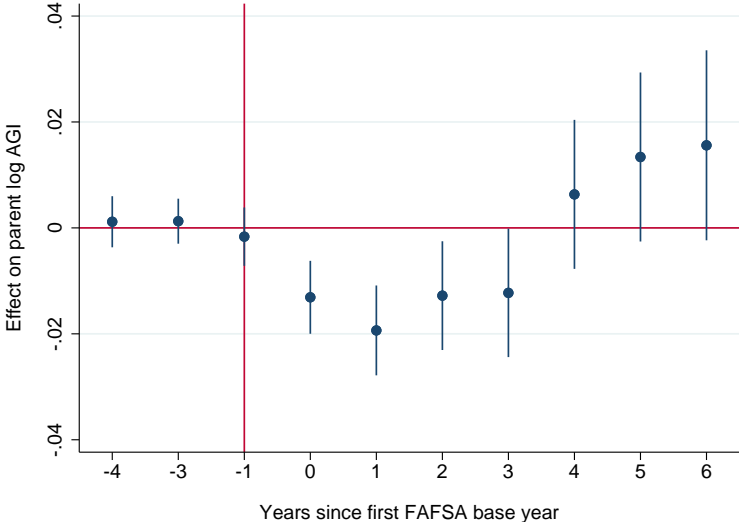
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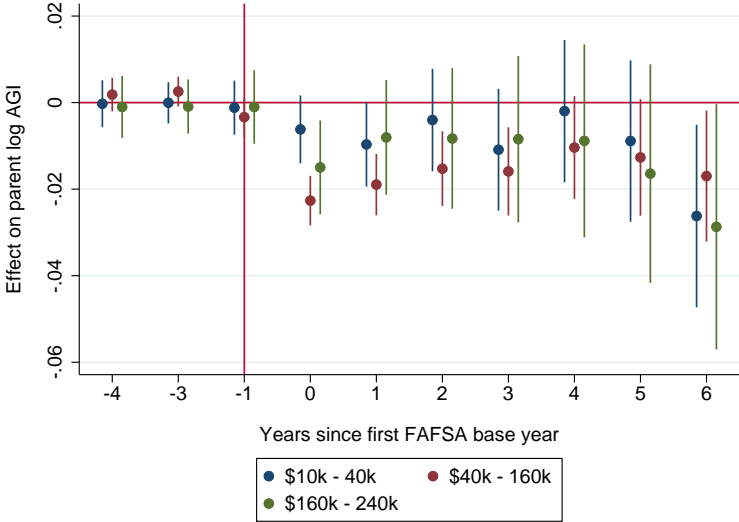
## Effect on parent log AGI – no linear trend control



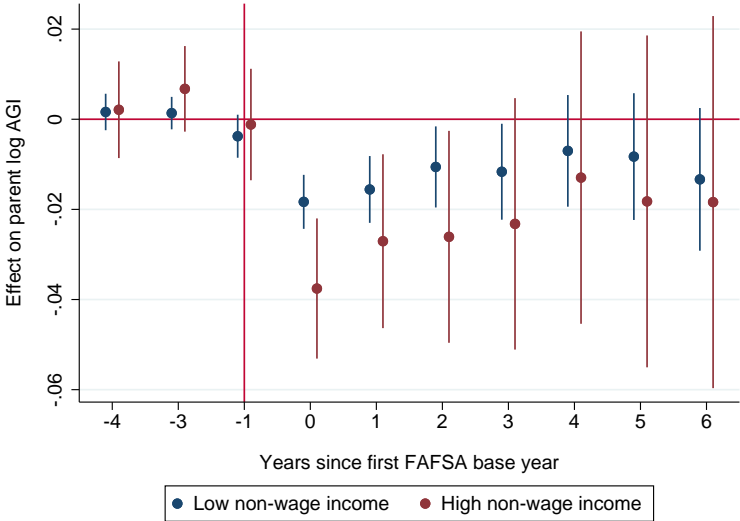
# Effect on parent log AGI



# Effect on parent log AGI – by baseline 2010-11 income



# Effect on parent log AGI – by non-wage share of AGI, \$40k - 160k bin



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- Conclusion

- ▶ In event study design, we estimate  $\approx 2\%$  reduction of parent income in the years a dependent enrolls at CA 4-year public university, among middle-income earners.
- ▶ Back-of-envelope ETI: Scale by roughly .2 for change in  $\log(\text{net of tax rate}) \implies$  College aid ETI  $\approx 0.1$ .
- ▶ Response among those with high non-wage income share of AGI is roughly double.

- Future directions

- ▶ Extend to colleges nationwide.
- ▶ Adjustment along income types – wage, self-employment, capital gains, etc.
- ▶ Consider adjustment on other dimensions (e.g., retirement).



Thank you!

Thank you! Comments welcome:

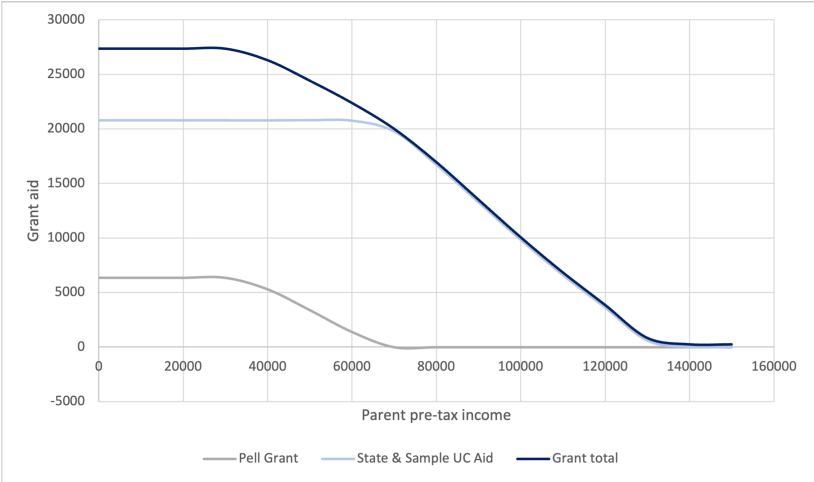
[Paul.Organ2@treasury.gov](mailto:Paul.Organ2@treasury.gov)

## Appendix

Constructed via Net Price Calculator with the following info:

- Parents married
- Income earned by one parent
- Parents' other income and assets = 0
- Parents' federal income taxes estimated
- Student's AGI, other income, income taxes, and assets = 0
- 4 in household
- CA residency
- On-campus housing

# Federal vs. State & campus aid



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# Event study estimates

Years since first FAFSA base year	(1) Aggregate no trend	(2) Aggregate	(3a) \$10k - 40k	(3b) \$40k - 160k	(3c) \$160k - 240k	(4a) \$40k - 160k low non-wage	(4b) \$40k - 160k high non-wage
-5	-.015 (.003)	-	-	-	-	-	-
-4	-	.001 (.002)	.000 (.003)	.002 (.002)	-.001 (.004)	.002 (.002)	.002 (.005)
-3	.014 (.003)	.001 (.002)	.000 (.002)	.003 (.002)	-.001 (.003)	.001 (.002)	.007 (.005)
-2	.026 (.003)	-	-	-	-	-	-
-1	.038 (.003)	-.002 (.003)	-.001 (.003)	-.003 (.002)	-.001 (.004)	-.004 (.002)	-.001 (.006)
0	.040 (.003)	-.013 (.004)	-.006 (.004)	-.023 (.003)	-.015 (.006)	-.018 (.003)	-.038 (.008)
1	.047 (.003)	-.019 (.004)	-.010 (.005)	-.019 (.004)	-.008 (.007)	-.016 (.004)	-.027 (.010)
2	.068 (.004)	-.013 (.005)	-.004 (.006)	-.015 (.004)	-.008 (.008)	-.011 (.005)	-.026 (.012)
3	.082 (.004)	-.012 (.006)	-.011 (.007)	-.016 (.005)	-.008 (.010)	-.012 (.005)	-.023 (.014)
4	.114 (.005)	.006 (.007)	-.002 (.008)	-.010 (.006)	-.009 (.011)	-.007 (.006)	-.013 (.017)
5	.134 (.005)	.013 (.008)	-.009 (.010)	-.013 (.007)	-.016 (.013)	-.008 (.007)	-.018 (.019)
6	.150 (.004)	.016 (.009)	-.026 (.011)	-.017 (.008)	-.029 (.014)	-.013 (.008)	-.018 (.021)
N	2,794,164	2,794,164	1,085,799	1,515,312	193,053	1,216,842	298,470
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear pre-trend	No	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Robust standard errors in parentheses.

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