Evaluating Policies Using the MVPF

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A Unified Welfare Analysis of Government Policies

- What government policies do the most to improve social well-being?

    - Should we spend more (or less) on health insurance?
    - Should we raise top marginal income tax rates?
    - Should we invest more in children? At what age?

- There is existing research analyzing the effect of many of these policy changes

    - But little work quantifying the broad trade-offs across policy categories
    - Often different welfare methods used (CBA, MCPF, cost per life saved…)

A Unified Welfare Analysis of Government Policies

Hendren and Sprung-Keyser (2020)

- We conduct a unified welfare analysis of 133 historical policy changes in the US over the past half century

  - Study policy changes spanning four major categories: Social insurance, education and job training, taxes and cash transfers, and in-kind transfers

The Marginal Value of Public Funds

- For each policy change, we draw upon estimates in existing literature to measure:

    - The benefits to its recipients (measured as willingness to pay)

    - The net cost to the government (inclusive of fiscal externalities)

- We take the ratio of benefits to net cost to form its **Marginal Value of Public Funds (MVPF)**:

$$MVPF = \frac{Beneficiaries'\ Willingness\ to\ Pay}{Net\ Government\ Cost}$$

    - Differs from traditional benefit/cost ratios by focusing on incidence of costs on government

The Marginal Value of Public Funds and Social Well-being

- Comparisons of MVPFs evaluate the impact on societal well-being (social welfare) of hypothetical budget-neutral policies

  - Suppose Policy 1 has $MVPF_1 = 1$ and Policy 2 has $MVPF_2 = 2$

  - More spending on policy 1 financed by less on 2 increases social welfare iff prefer to take $2 from Policy 2 beneficiaries to give $1 to policy 1 beneficiaries

- MVPF provides a unified measure of the tradeoffs across policies

  - You decide whether these tradeoffs are "worth it"

- Infinite MVPFs correspond to policies that pay for themselves

  - $WTP > 0$ and $Cost < 0$

Admission to Florida International University

- Example: Admitting additional students into college

- Florida International University (FIU) had a minimum GPA threshold for admission that created a fuzzy discontinuity

- Zimmerman (2014) utilizes this discontinuity to examine the impact of FIU admission on earnings for 14 years after admission.

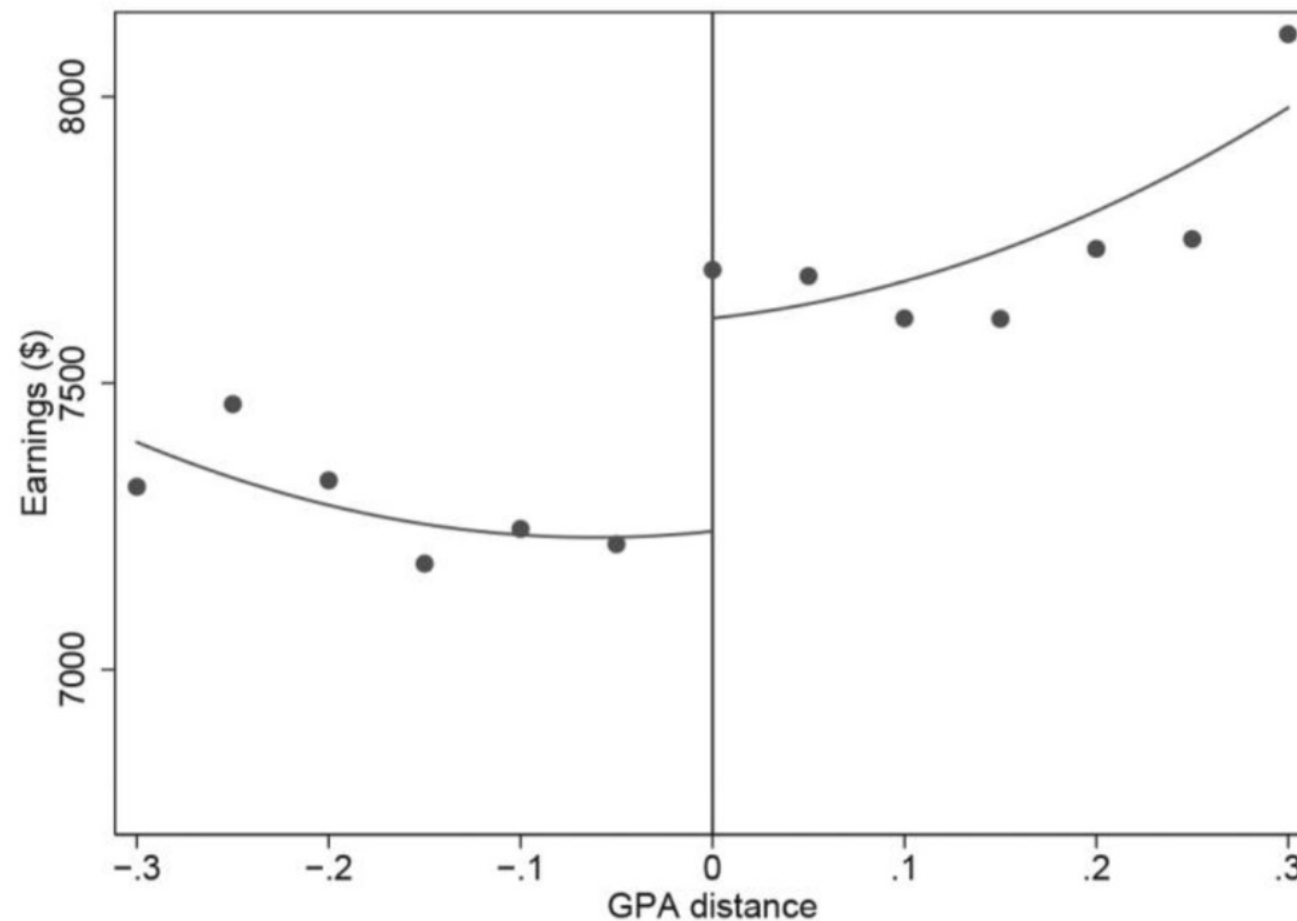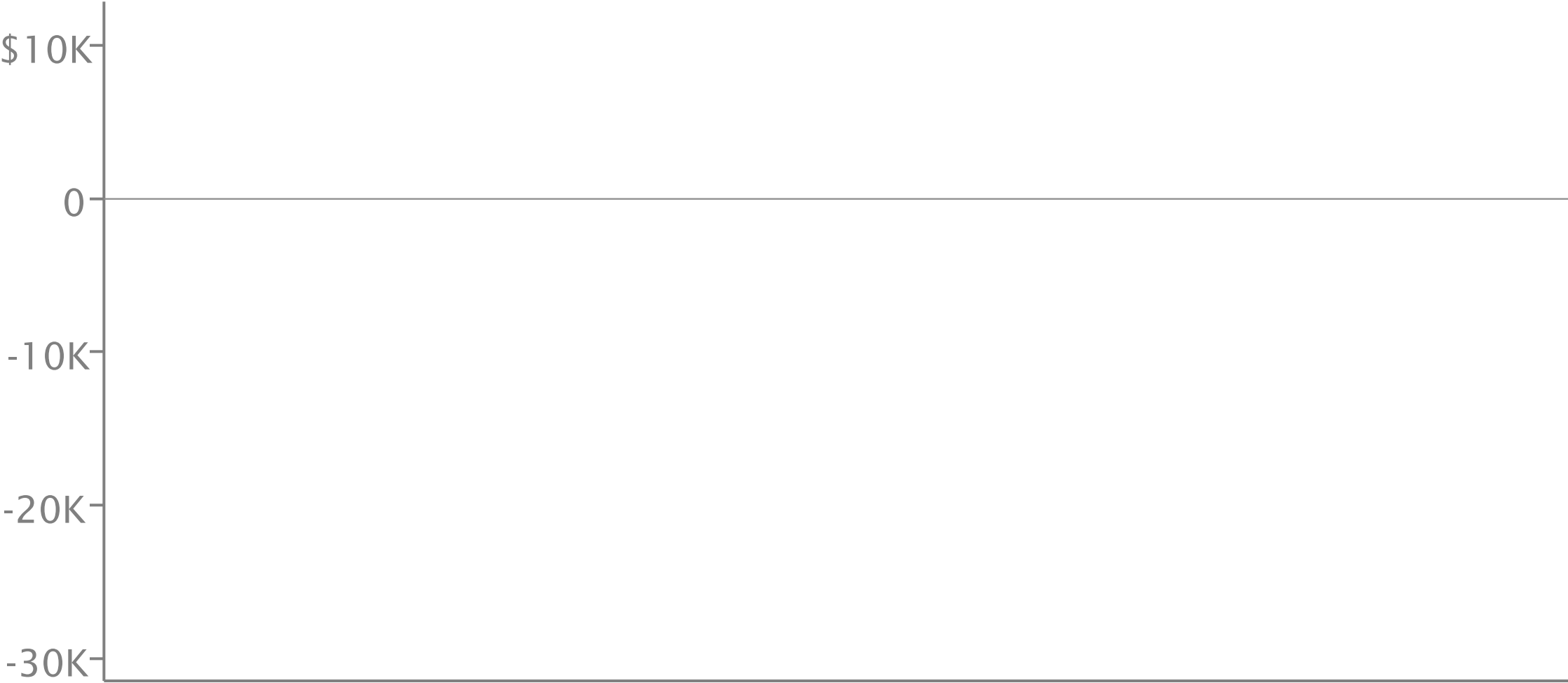# Admission to Florida International University: Zimmerman (2014)

FIG. 8.—Quarterly earnings by distance from GPA cutoff. Lines are fitted values based on the main specification. Dots, shown every .05 grade points, are rolling averages of values within .05 grade points on either side that have the same value of the threshold-crossing dummy.
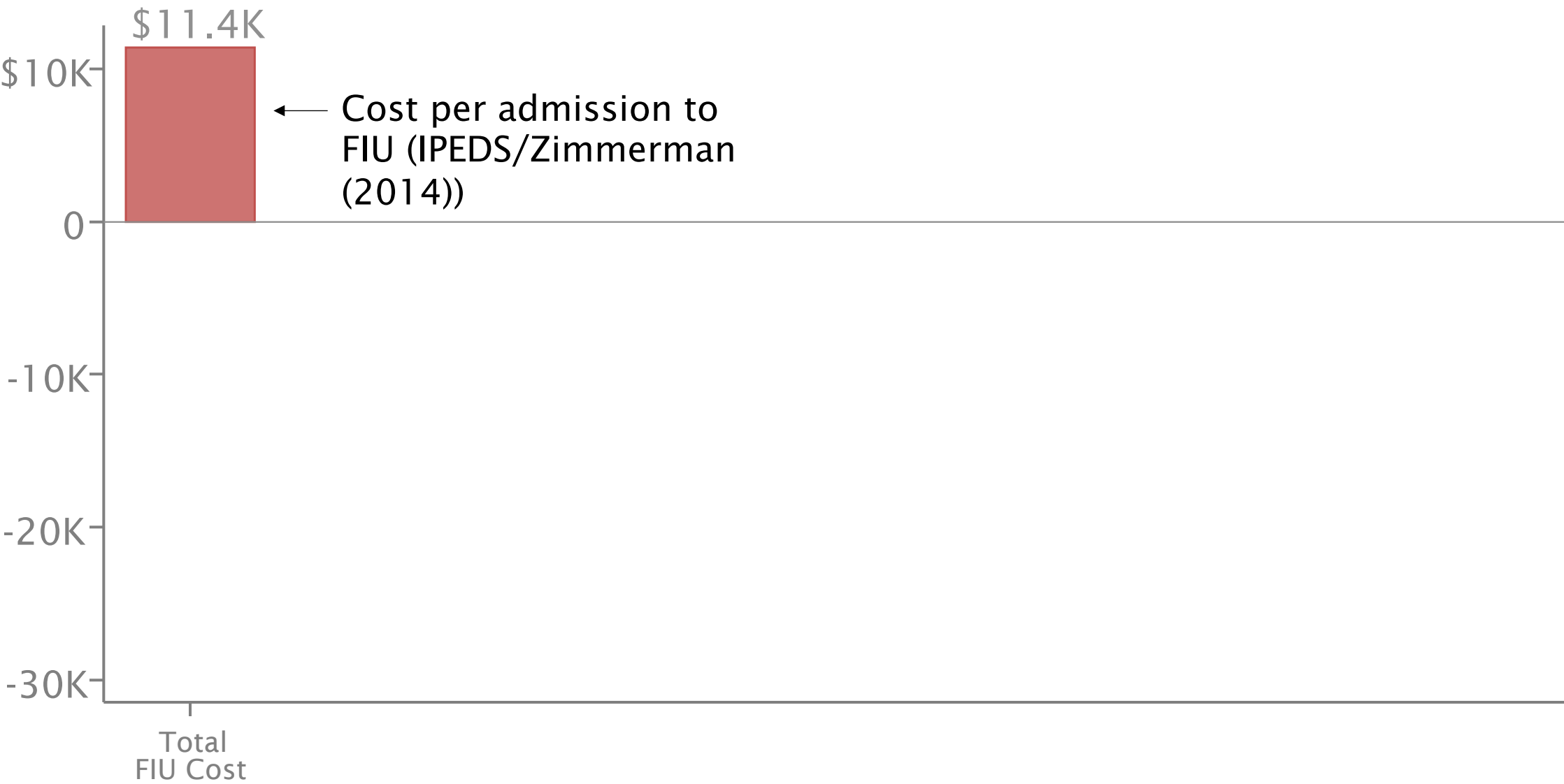
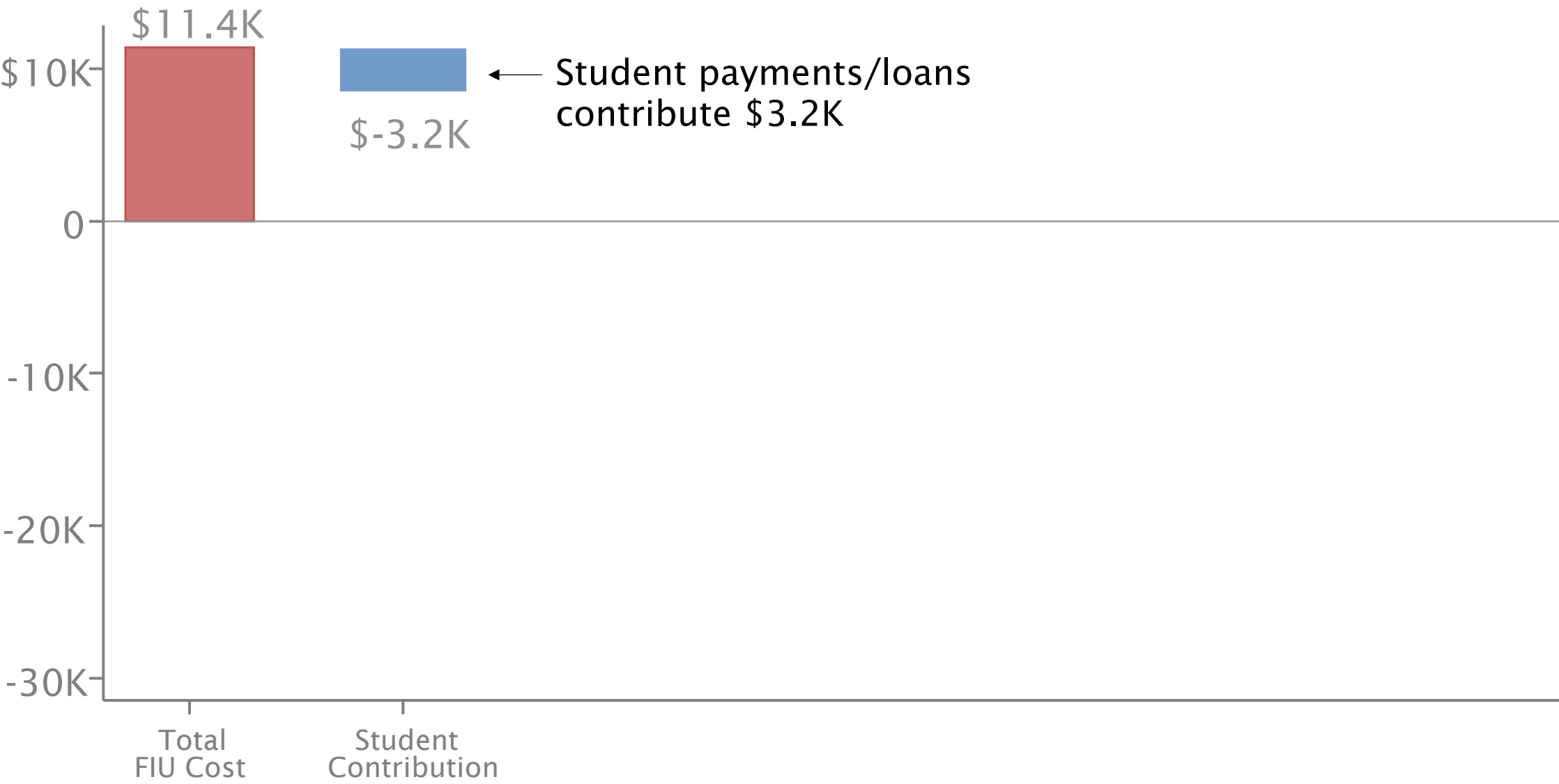# Net Cost to Government of Admission to Florida International University

Note: All amounts in 2005 USD, discounted using a 3% real interest rate

Net Cost to Government of Admission to Florida International Universsity

$11.4K

$10K -

0 -

← Cost per admission to
FIU (IPEDS/Zimmerman
(2014))

-10K -

-20K -

-30K -

Total
FIU Cost

Note: All amounts in 2005 USD, discounted using a 3% real interest rate

Net Cost to Government of Admission to Florida International University
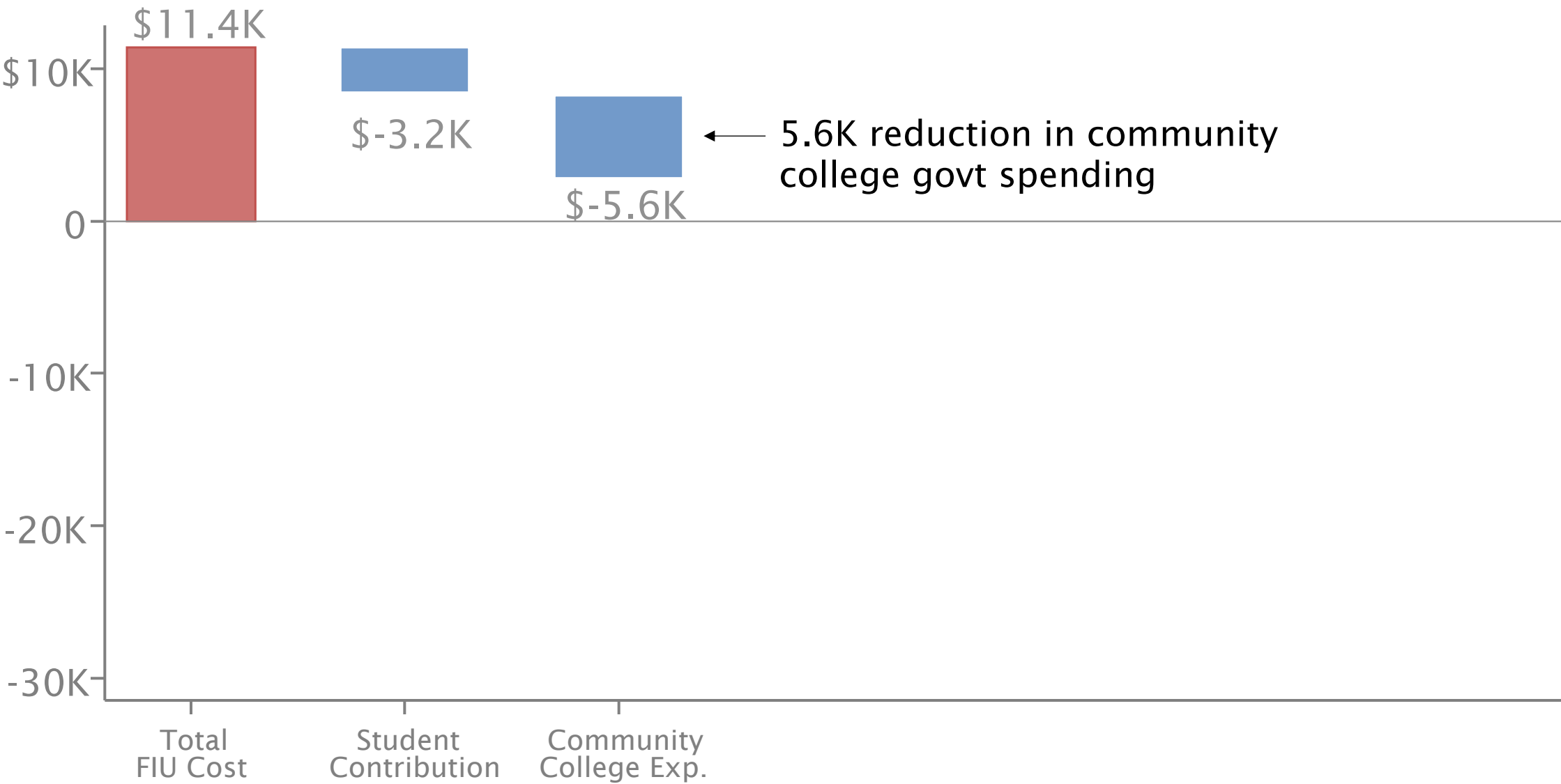
$11.4K

$10K —

$-3.2K ← Student payments/loans contribute $3.2K

0 —

-10K —

-20K —

-30K —

Total
FIU Cost

Student
Contribution

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

Net Cost to Government of Admission to Florida International Universeity

$11.4K

$10K ─

$-3.2K

← 5.6K reduction in community
college govt spending

$-5.6K

0

-10K ─

-20K ─

-30K ─

Total
FIU Cost

Student
Contribution

Community
College Exp.

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

Net Cost to Government of Admission to Florida International University

$11.4K — Total FIU Cost

$-3.2K — Student Contribution

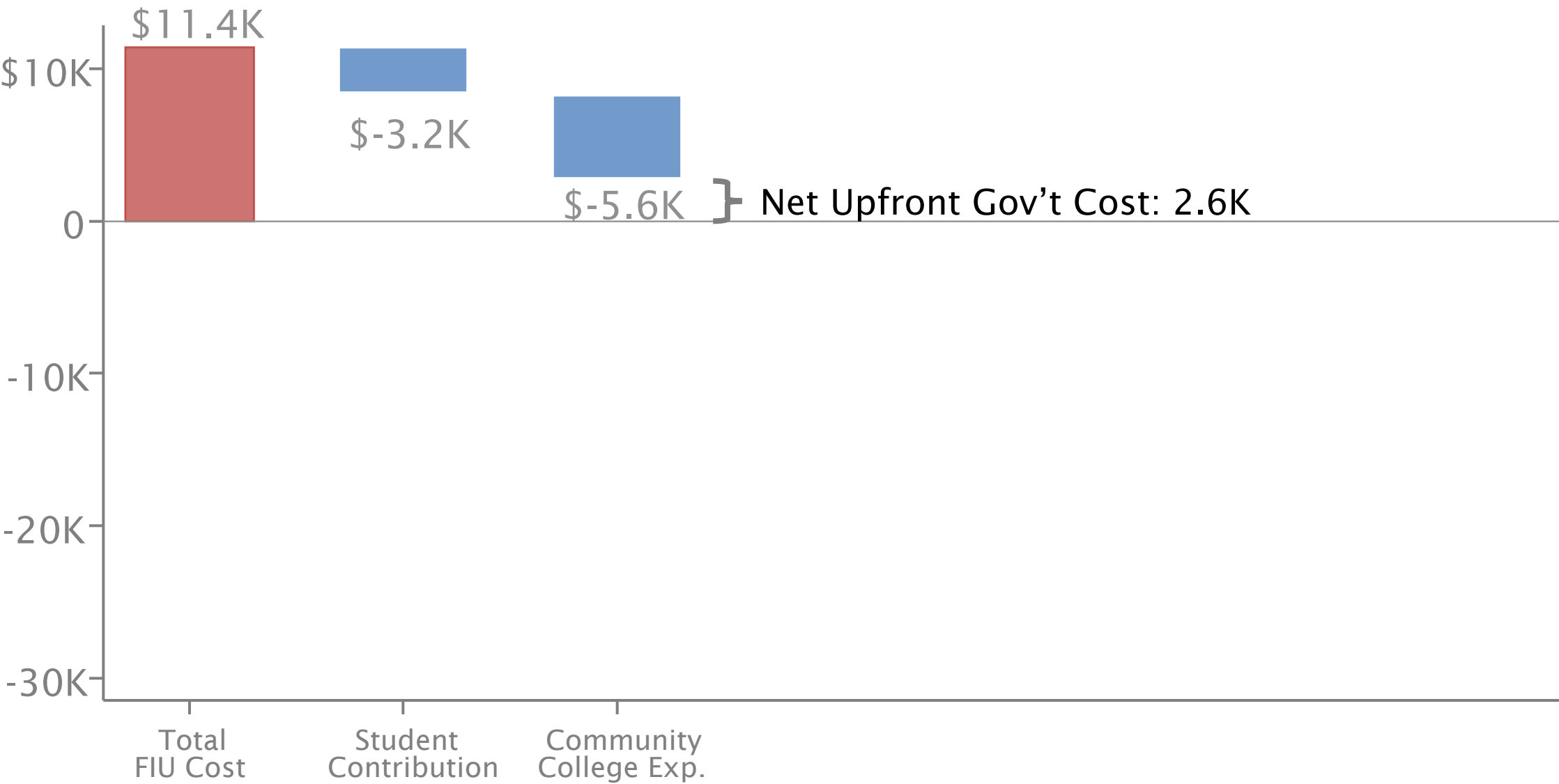$-5.6K — Community College Exp.

Net Upfront Gov't Cost: 2.6K

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

Net Cost to Government of Admission to Florida International University

$11.4K

$10K

$-3.2K

$2.0K ← Lost tax revenue from initial earnings declines from college attendance

$-5.6K

0

-10K

-20K

-30K

Total FIU Cost

Student Contribution

Community College Exp.
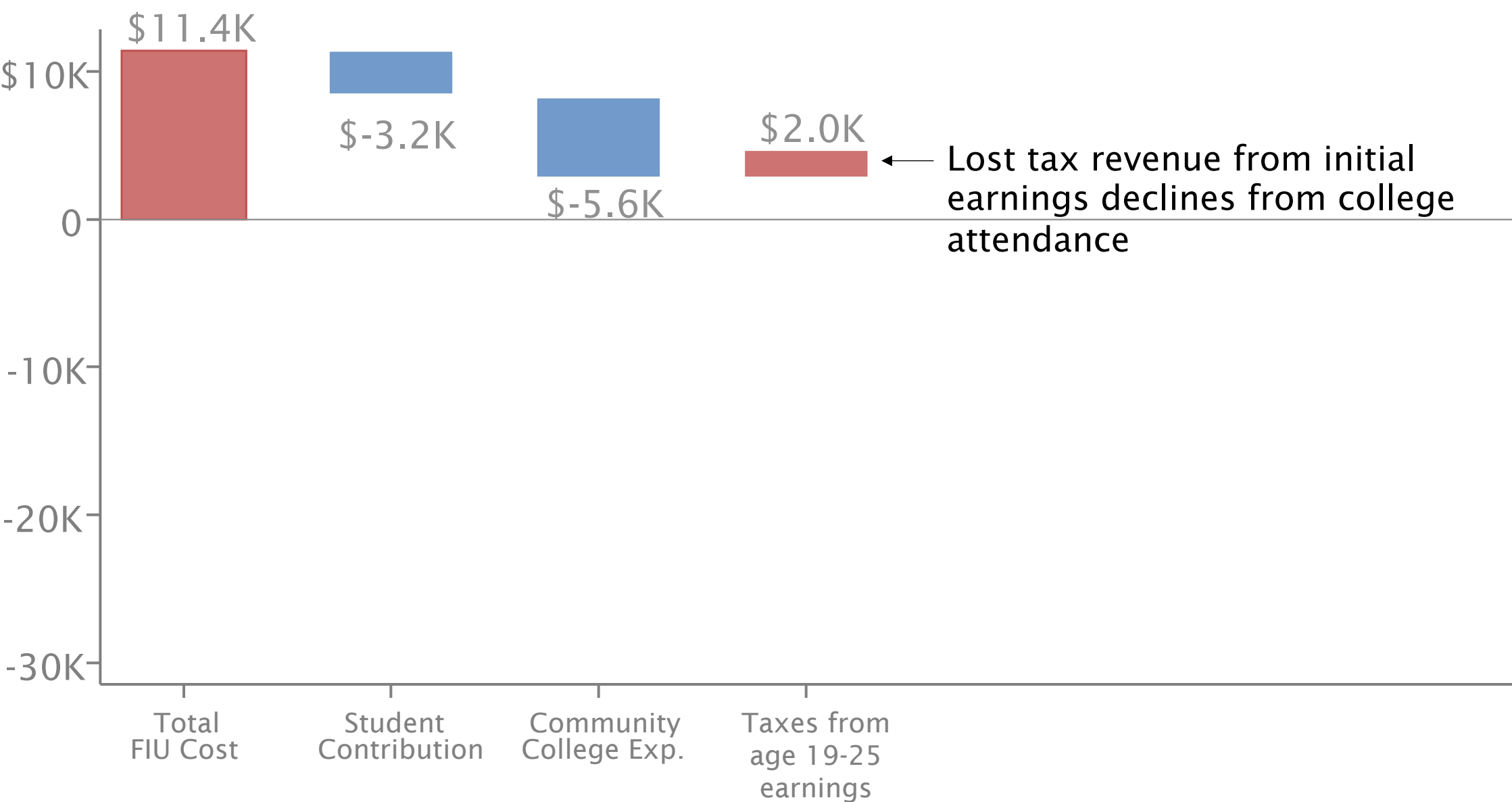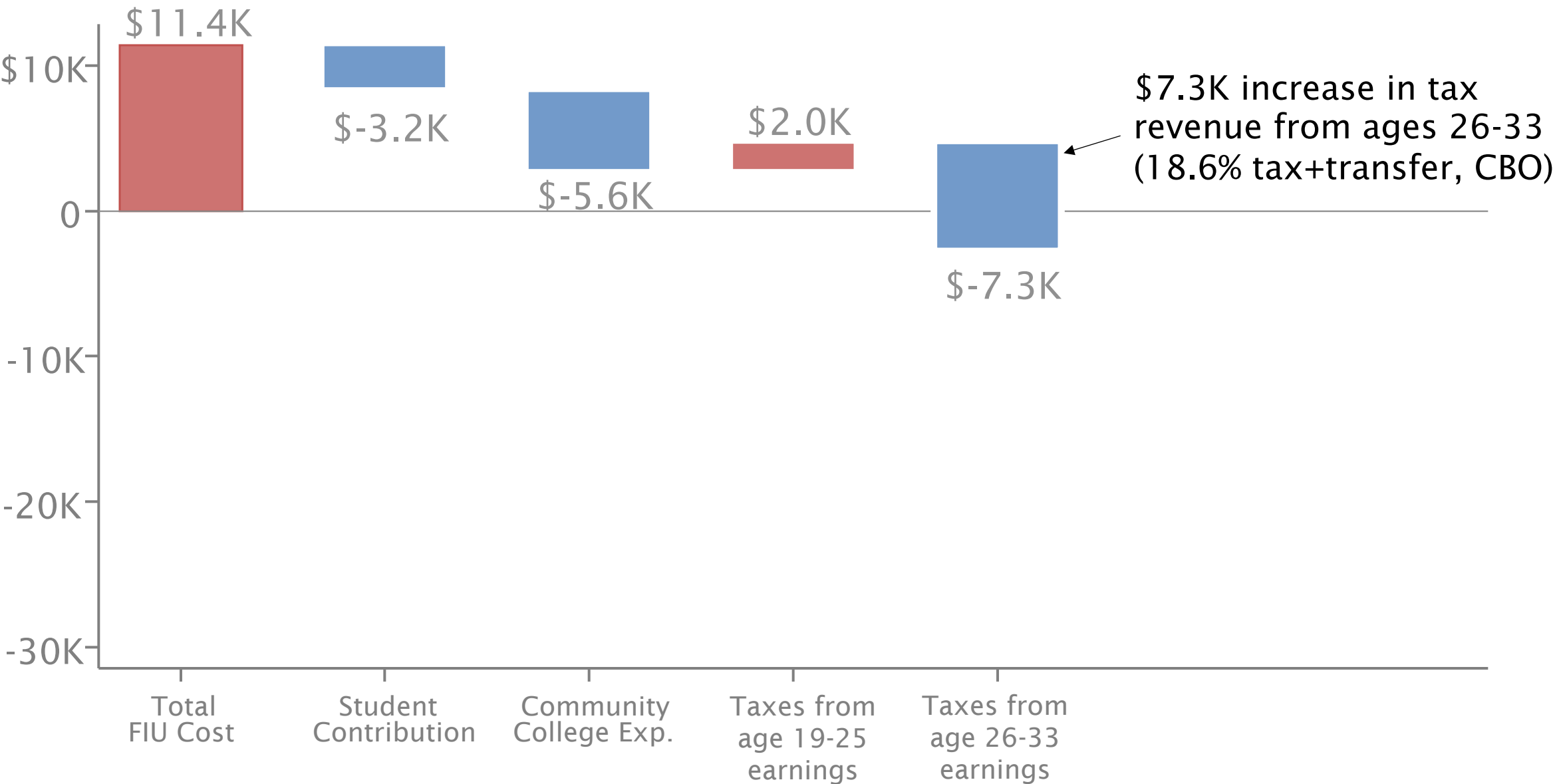
Taxes from age 19-25 earnings

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

Net Cost to Government of Admission to Florida International University

$11.4K

$10K

$-3.2K

$-5.6K

$2.0K

$7.3K increase in tax revenue from ages 26-33 (18.6% tax+transfer, CBO)

0

$-7.3K

-10K

-20K

-30K

Total FIU Cost

Student Contribution

Community College Exp.

Taxes from age 19-25 earnings

Taxes from age 26-33 earnings

Net Cost to Government of Admission to Florida International University

$11.4K

$10K

$-3.2K

$-5.6K

$2.0K

0

$-7.3K

$-2.7K

-10K

Net government savings
of $2.7K by age 33

-20K

-30K

Total
FIU Cost

Student
Contribution

Community
College Exp.

Taxes from
age 19-25
earnings

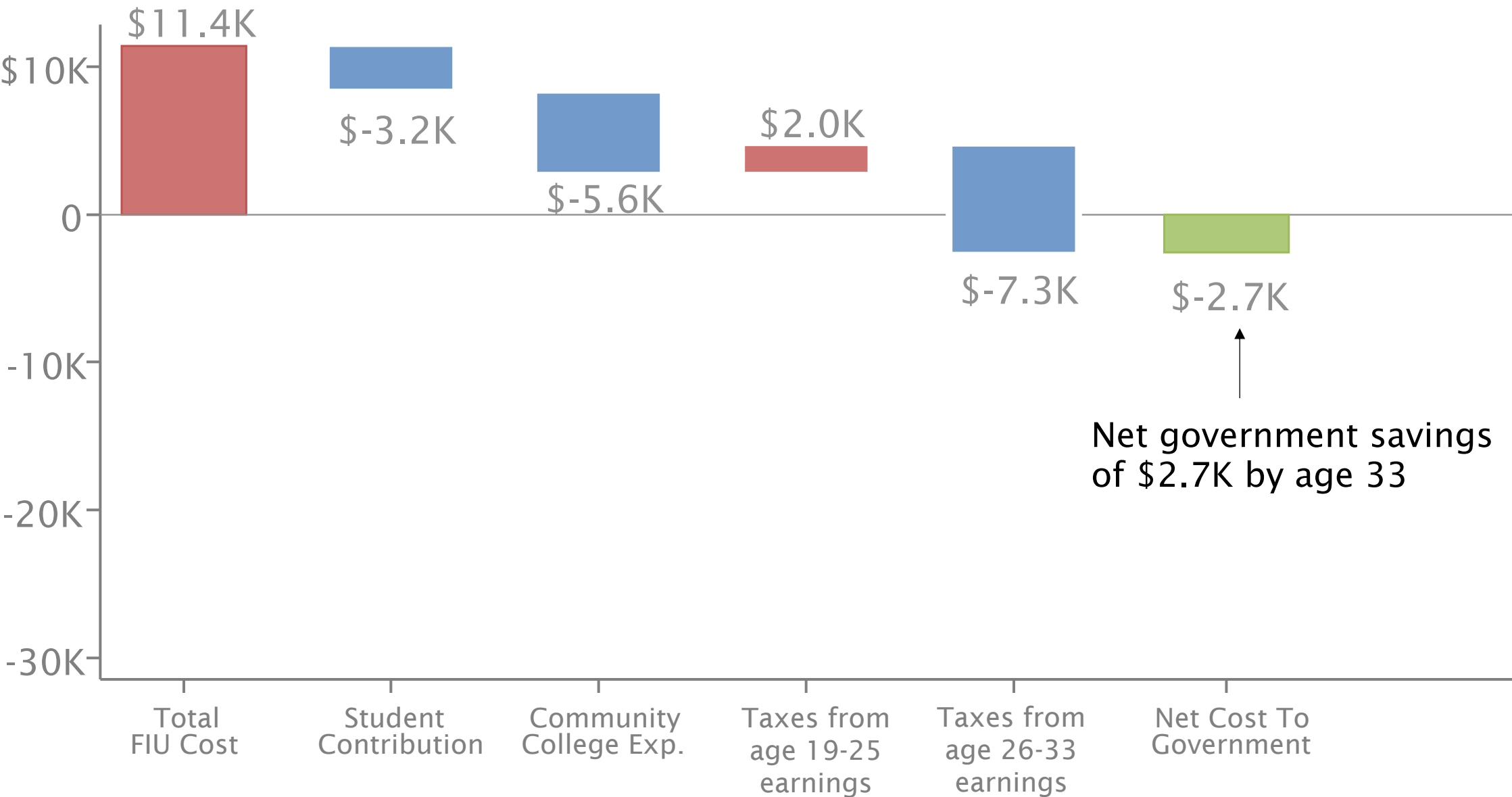Taxes from
age 26-33
earnings

Net Cost To
Government

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

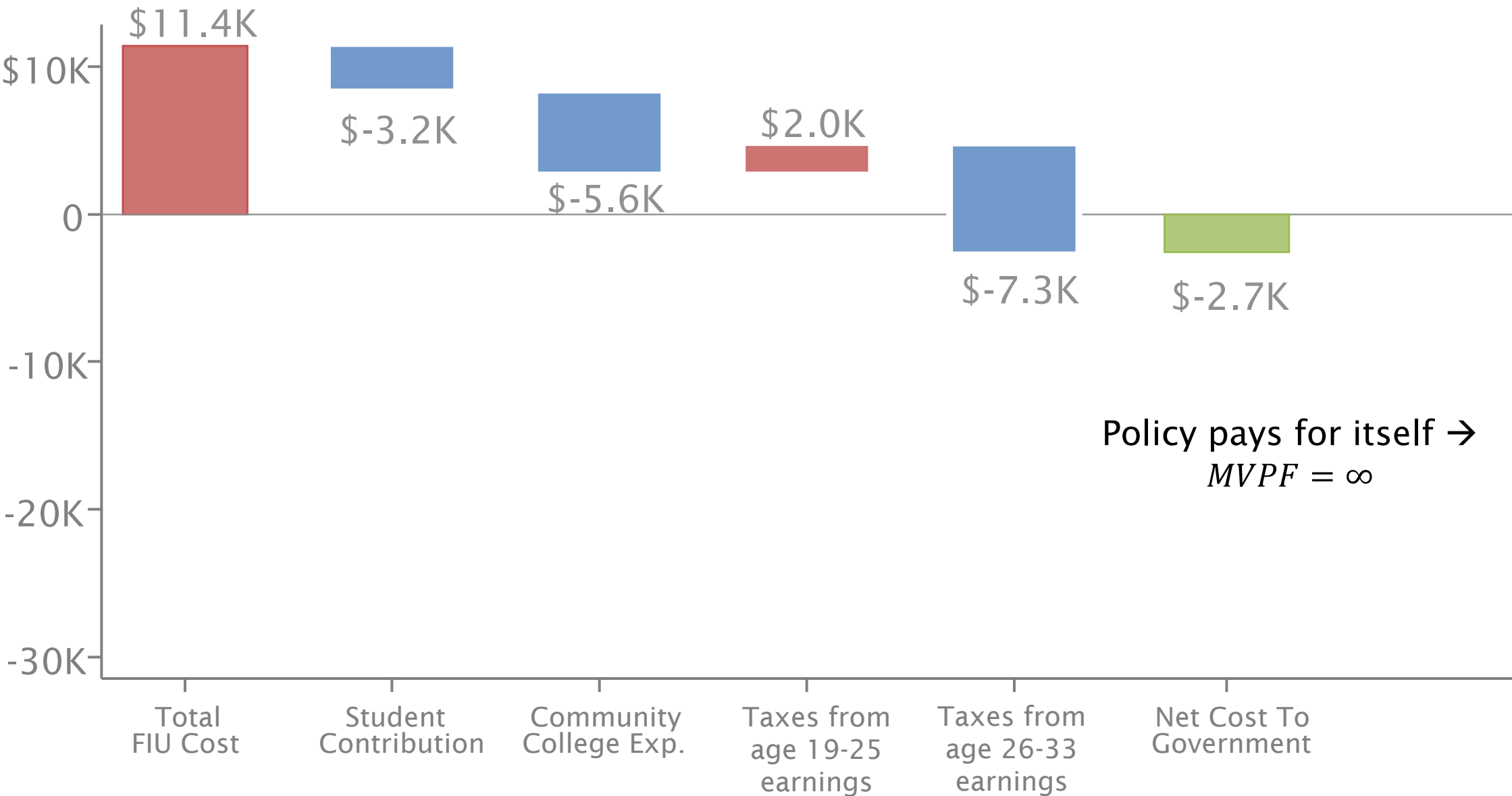# Net Cost to Government of Admission to Florida International University

Policy pays for itself →

$MVPF = \infty$

$11.4K $-3.2K $-5.6K $2.0K $-7.3K $-2.7K

Total FIU Cost   Student Contribution   Community College Exp.   Taxes from age 19-25 earnings   Taxes from age 26-33 earnings   Net Cost To Government

Note: All amounts in 2012 USD, discounted using CPI-U-RS and 3% real interest rate

MVPFs by Age of Beneficiary

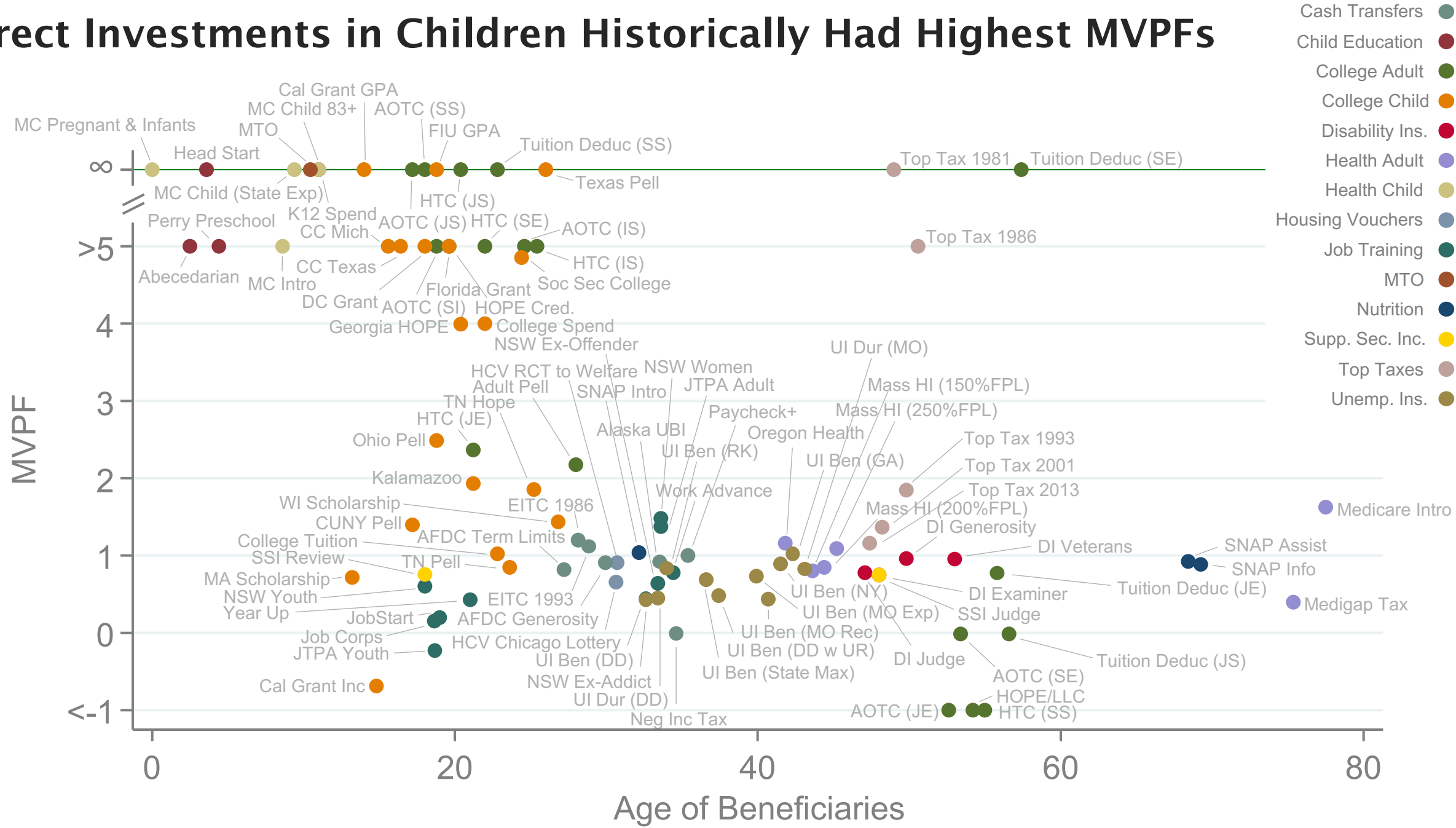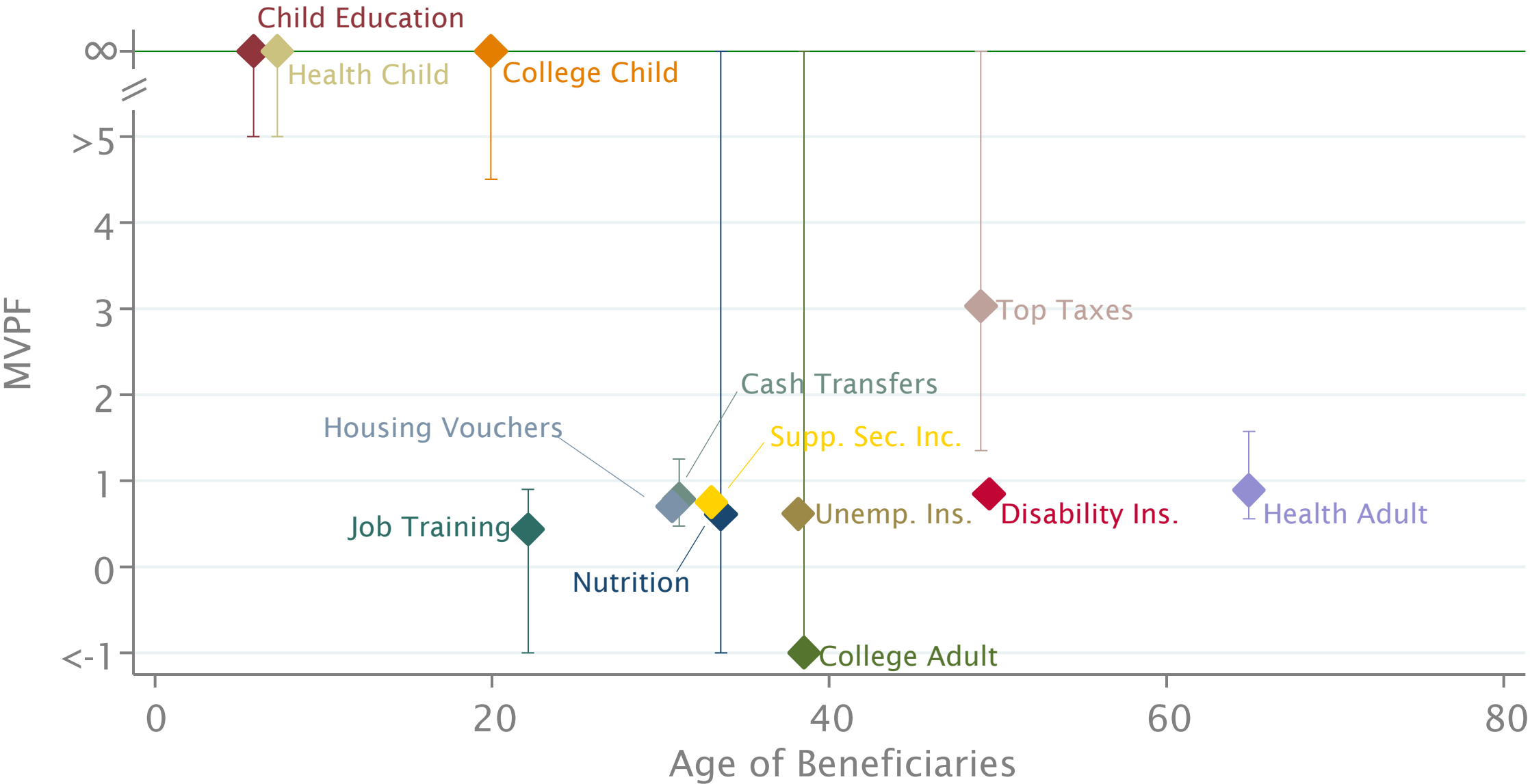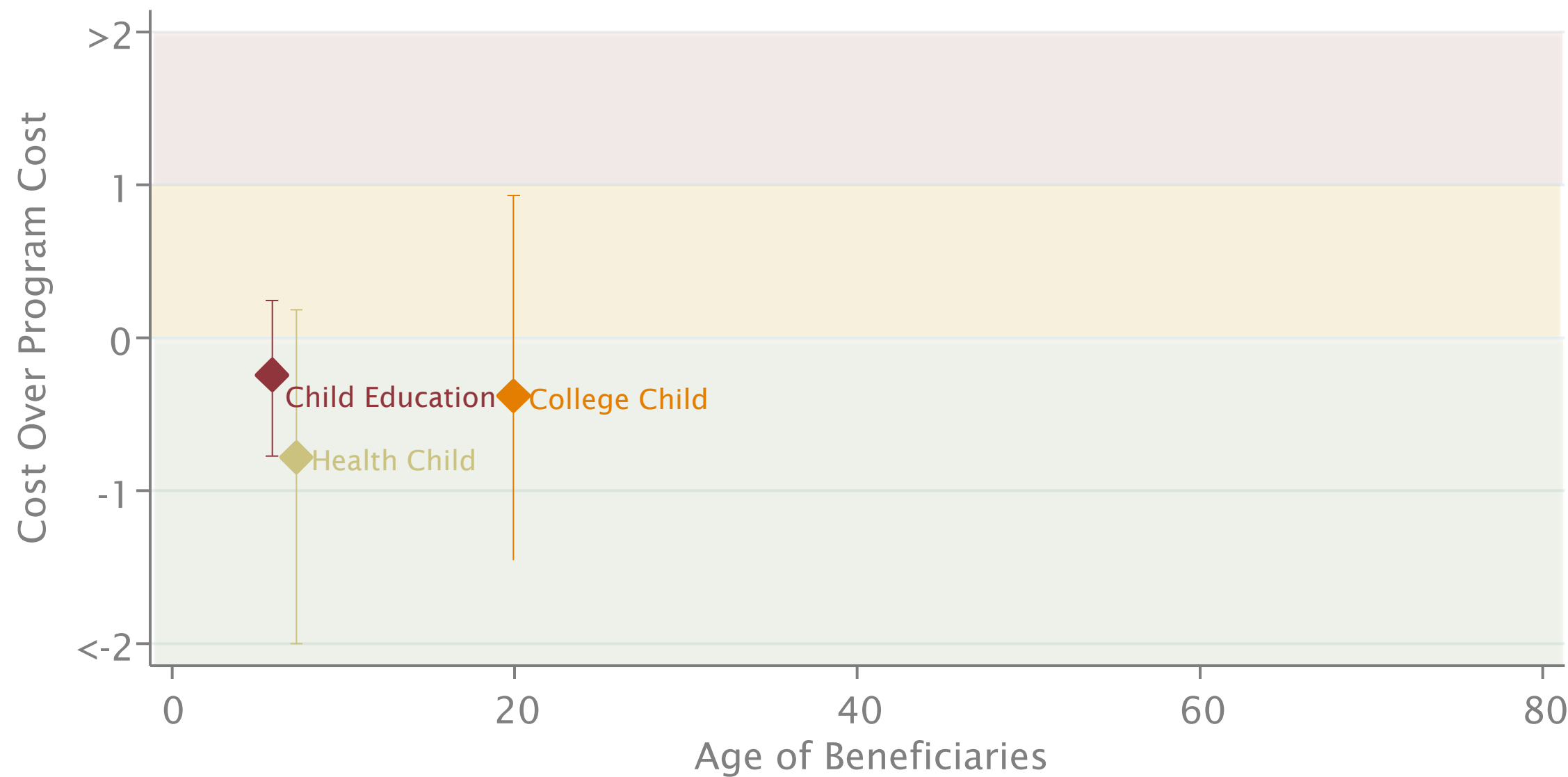# Direct Investments in Children Historically Had Highest MVPFs

Legend:
- Cash Transfers
- Child Education
- College Adult
- College Child
- Disability Ins.
- Health Adult
- Health Child
- Housing Vouchers
- Job Training
- MTO
- Nutrition
- Supp. Sec. Inc.
- Top Taxes
- Unemp. Ins.

Y-axis: MVPF (∞, >5, 4, 3, 2, 1, 0, <-1)

X-axis: Age of Beneficiaries (0, 20, 40, 60, 80)

Data point labels:
- MC Pregnant & Infants
- Cal Grant GPA
- MC Child 83+
- AOTC (SS)
- MTO
- FIU GPA
- Head Start
- Tuition Deduc (SS)
- Top Tax 1981
- Tuition Deduc (SE)
- Texas Pell
- MC Child (State Exp)
- HTC (JS)
- Perry Preschool
- K12 Spend
- AOTC (JS)
- HTC (SE)
- AOTC (IS)
- Top Tax 1986
- CC Mich
- Abecedarian
- CC Texas
- HTC (IS)
- MC Intro
- Florida Grant
- Soc Sec College
- DC Grant
- AOTC (SI)
- HOPE Cred.
- Georgia HOPE
- College Spend
- NSW Ex-Offender
- UI Dur (MO)
- HCV RCT to Welfare
- NSW Women
- Adult Pell
- SNAP Intro
- JTPA Adult
- Mass HI (150%FPL)
- TN Hope
- HTC (JE)
- Paycheck+
- Mass HI (250%FPL)
- Ohio Pell
- Alaska UBI
- Oregon Health
- Top Tax 1993
- Kalamazoo
- UI Ben (RK)
- UI Ben (GA)
- Top Tax 2001
- WI Scholarship
- Work Advance
- Top Tax 2013
- EITC 1986
- Mass HI (200%FPL)
- Medicare Intro
- CUNY Pell
- AFDC Term Limits
- DI Generosity
- College Tuition
- DI Veterans
- SNAP Assist
- SSI Review
- TN Pell
- SNAP Info
- MA Scholarship
- DI Examiner
- Tuition Deduc (JE)
- NSW Youth
- EITC 1993
- Medigap Tax
- Year Up
- JobStart
- AFDC Generosity
- SSI Judge
- Job Corps
- HCV Chicago Lottery
- UI Ben (NY)
- JTPA Youth
- UI Ben (MO Exp)
- UI Ben (DD)
- UI Ben (MO Rec)
- DI Judge
- NSW Ex-Addict
- UI Ben (DD w UR)
- AOTC (SE)
- Cal Grant Inc
- UI Dur (DD)
- UI Ben (State Max)
- HOPE/LLC
- Neg Inc Tax
- AOTC (JE)
- HTC (SS)
- Tuition Deduc (JS)

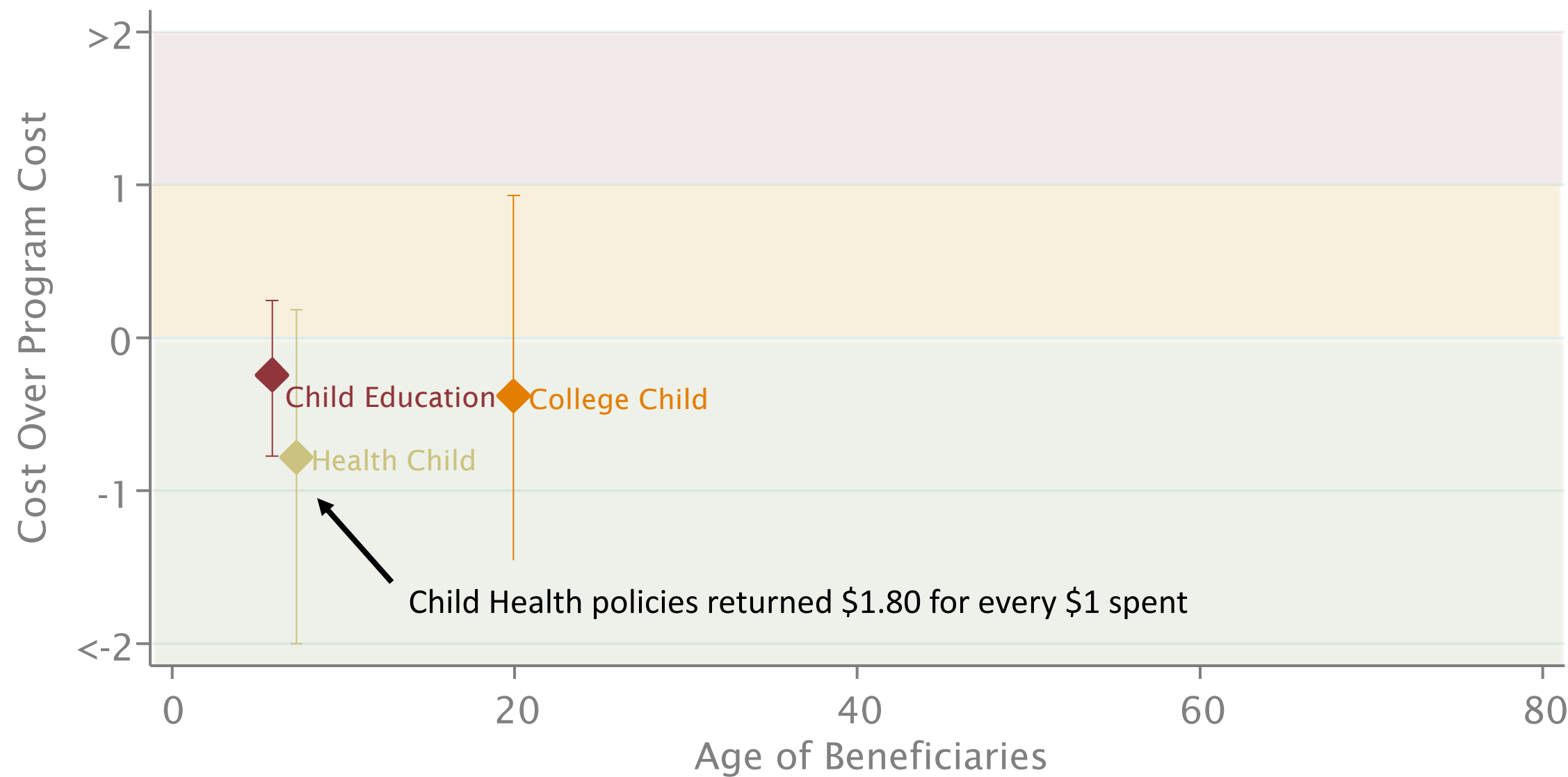# Direct Investments in Children Historically Had Highest MVPFs

Category Averages

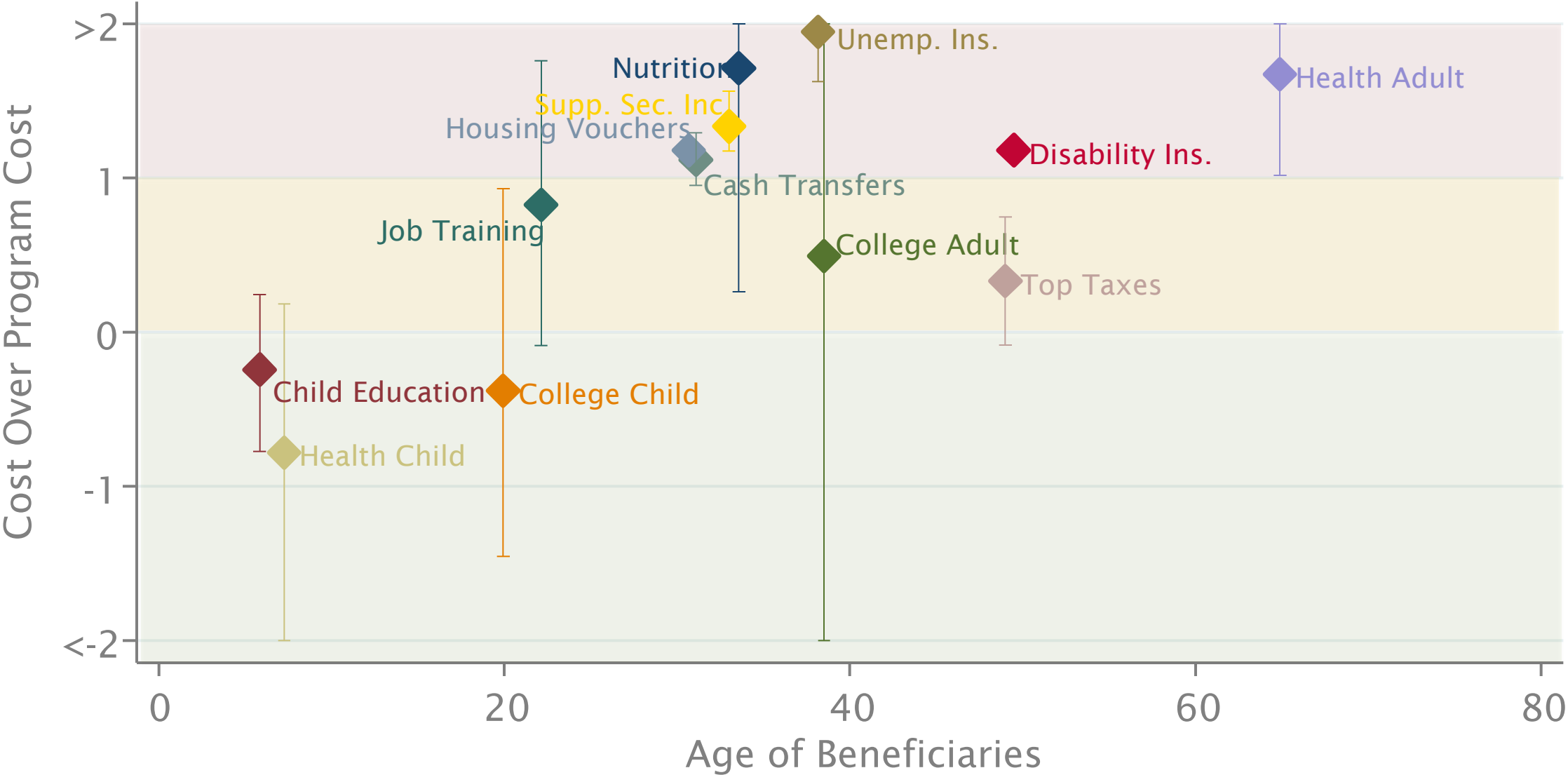# Net Costs to Government per $1 of Initial Expenditure
Category Averages

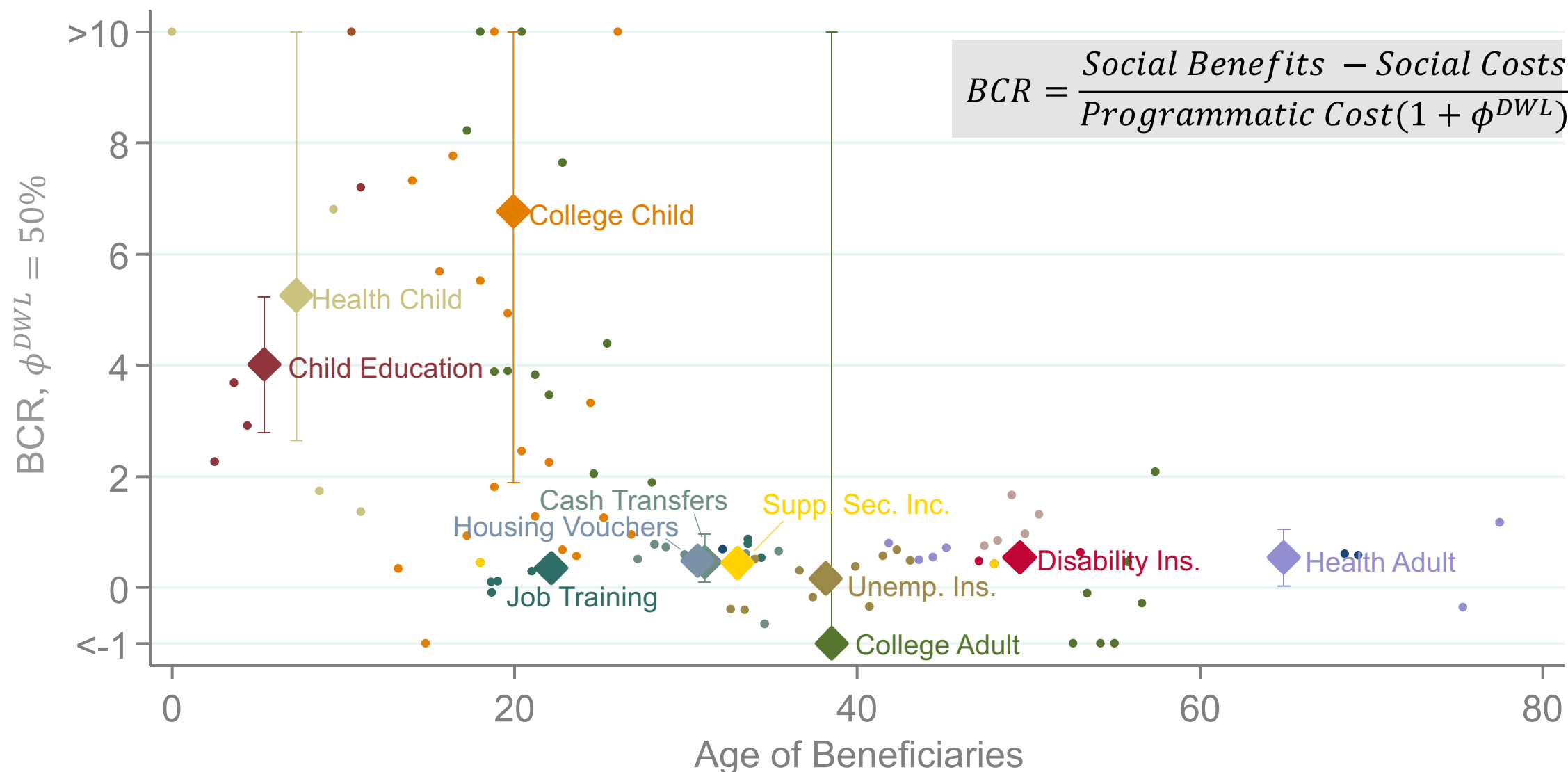# Net Costs to Government per $1 of Initial Expenditure

Category Averages

Child Education

College Child

Health Child

Child Health policies returned $1.80 for every $1 spent

Cost Over Program Cost

Age of Beneficiaries

Net Costs to Government per $1 of Initial Expenditure

Category Averages

Comparison of MVPF to Benefit/Cost Ratio [e.g. Heckman et al. 2012]

- Common in previous literature to construct "Benefits" and "Costs"

- Construct either difference, or a benefit cost ratio,

$$BCR = \frac{Social\ Benefits\ - Social\ Costs}{Programmatic\ Cost(1 + \phi^{DWL})}$$

Benefit/Cost Ratio by Age of Beneficiaries (50% DWL Assumption)

$$BCR = \frac{Social\ Benefits\ -Social\ Costs}{Programmatic\ Cost(1+\phi^{DWL})}$$

BCR, $\phi^{DWL} = 50\%$ (y-axis)

Age of Beneficiaries (x-axis)

College Child

Health Child

Child Education

Cash Transfers

Housing Vouchers

Supp. Sec. Inc.

Job Training

Unemp. Ins.

Disability Ins.

Health Adult

College Adult

Why use the MVPF over a Benefit/Cost Ratio?

Three Reasons:

1. MVPF measures the long-run policy efficacy from the (Federal) government's perspective

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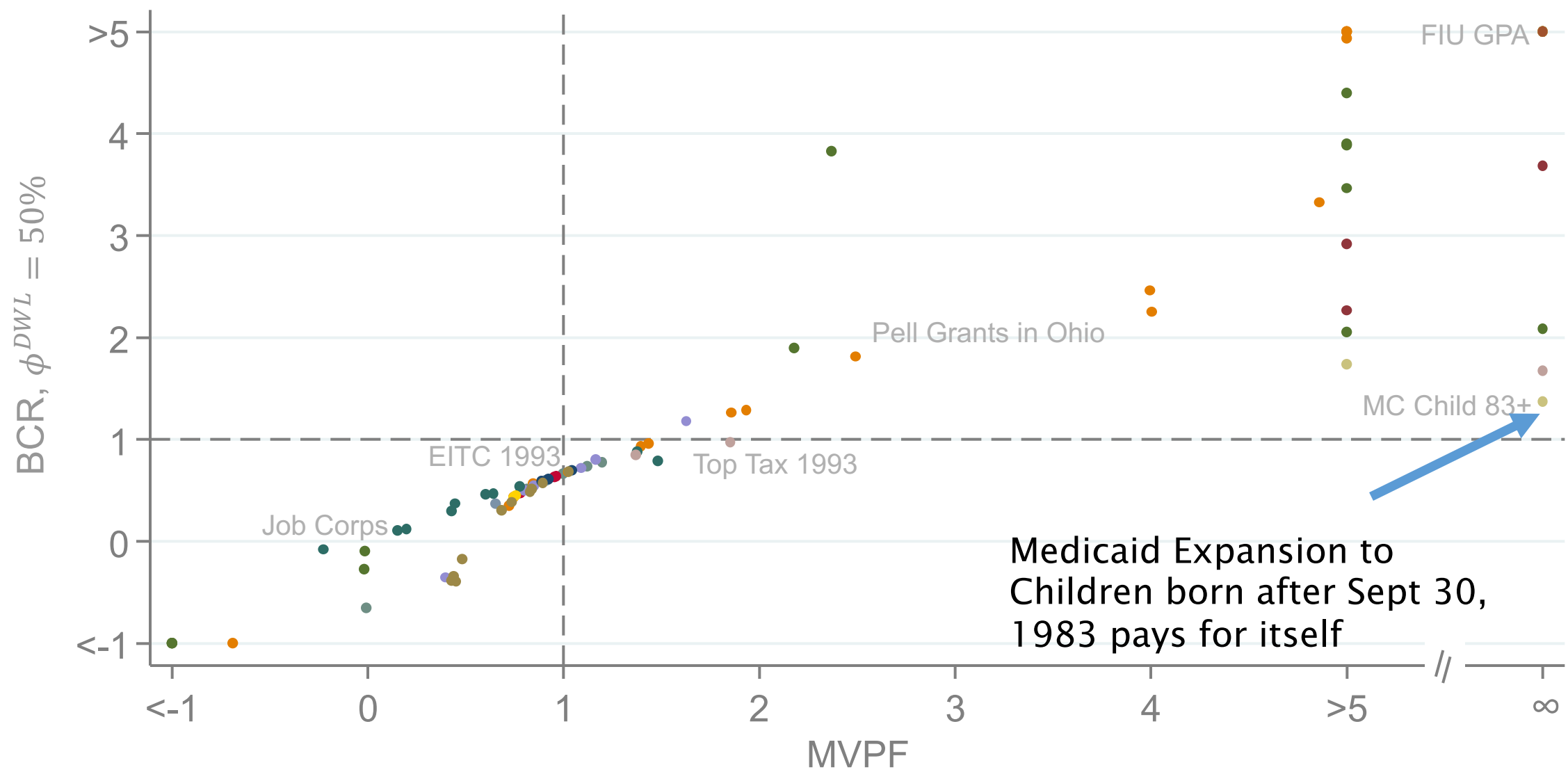2. MVPF identifies policies that pay for themselves

MVPF vs Benefit/Cost Ratio [Heckman et al., 2012; Zimmerman 2014]
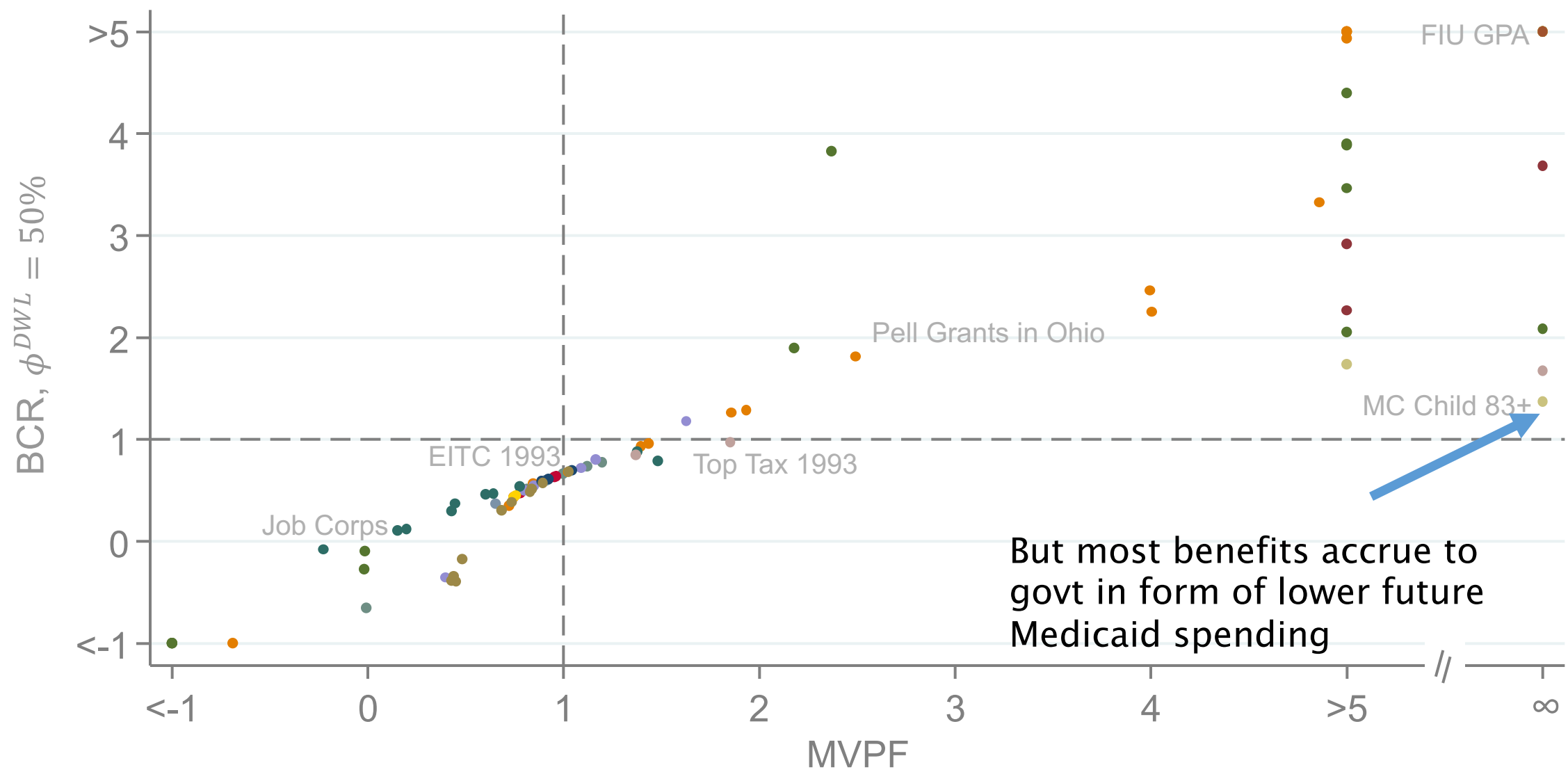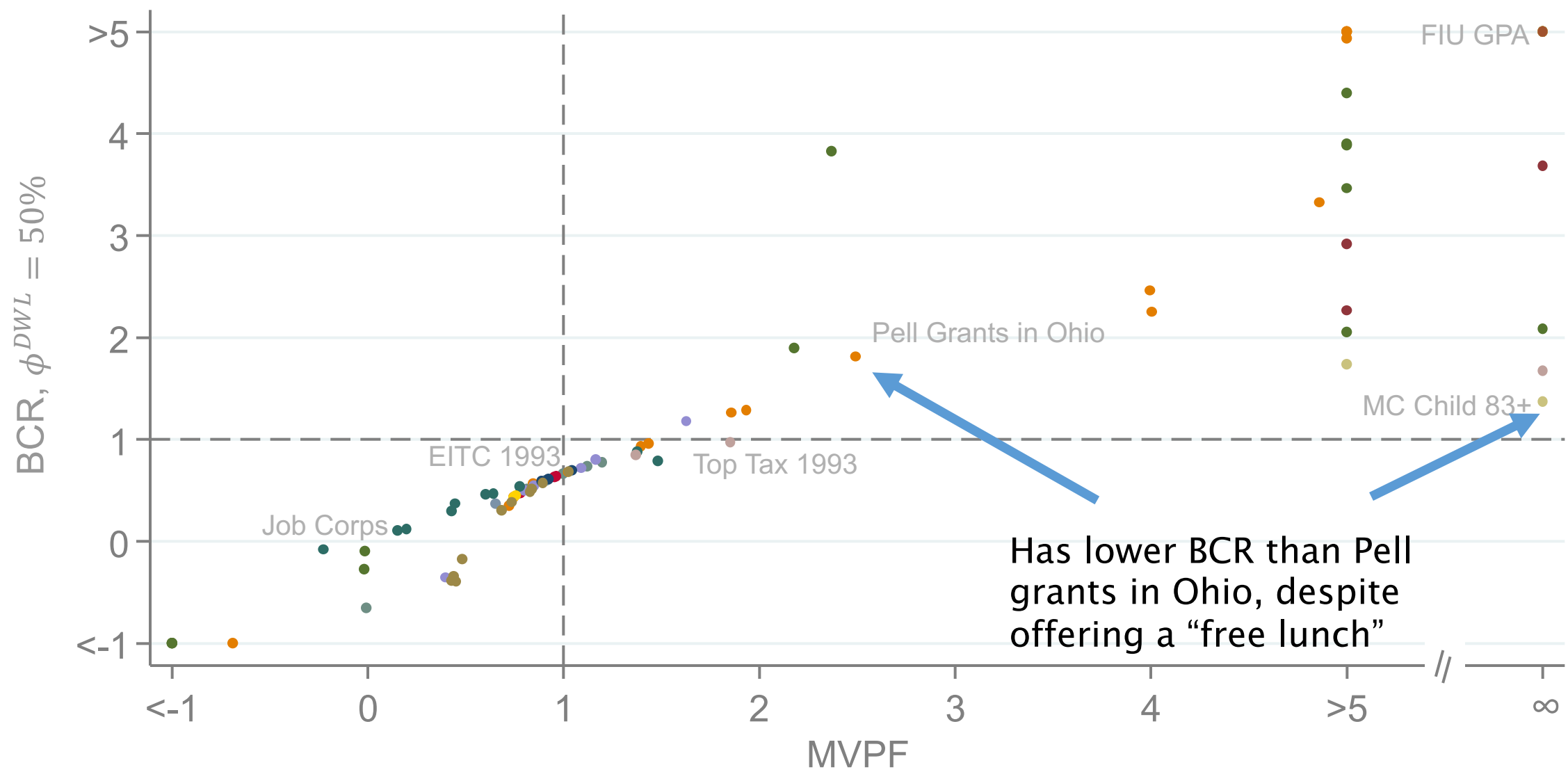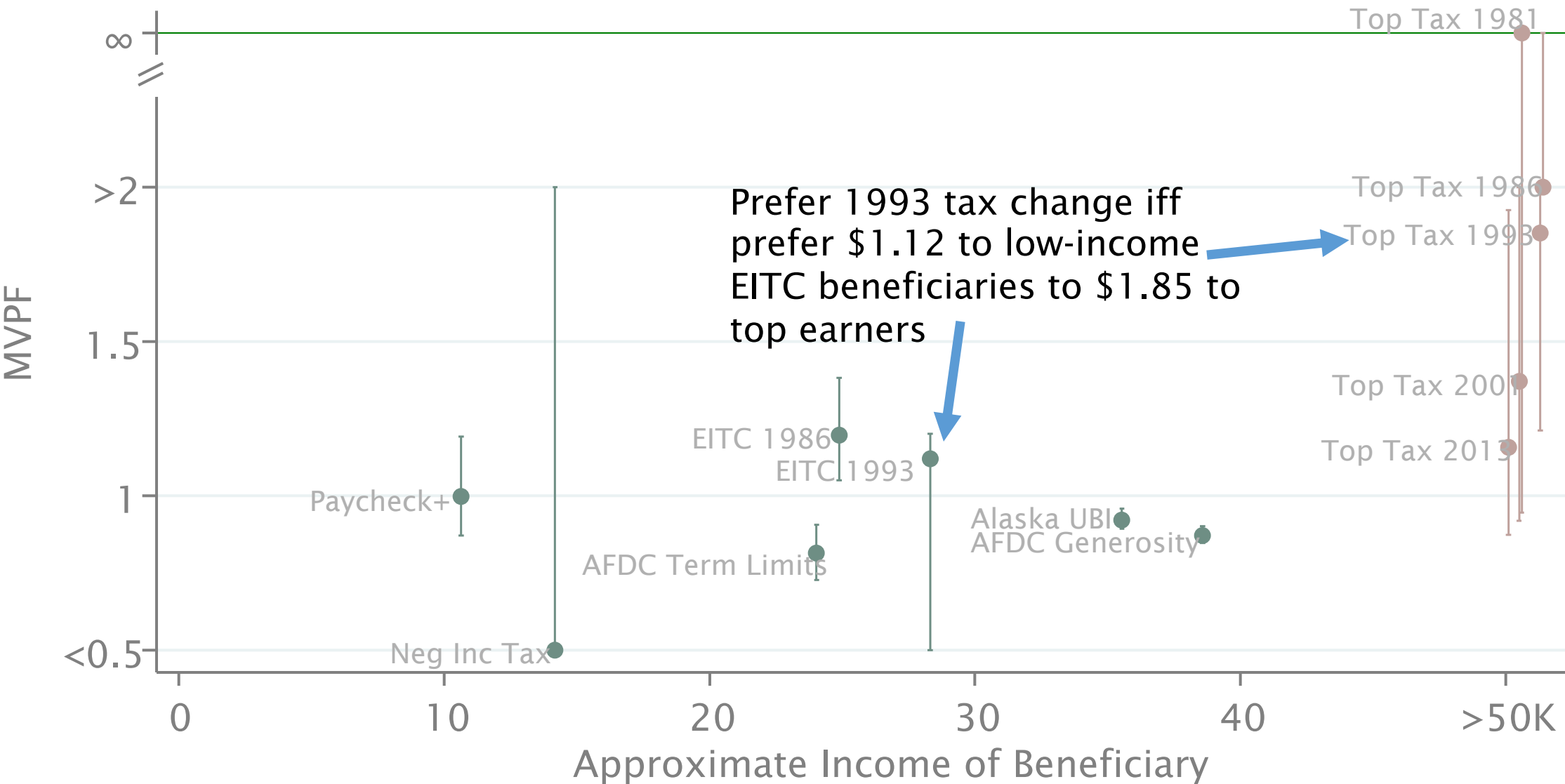
Tax Revenue Impacts Counted as Social Benefits, not Government Cost Reductions

MVPF vs Benefit/Cost Ratio [Heckman et al., 2012; Zimmerman 2014]
Tax Revenue Impacts Counted as Social Benefits, not Government Cost Reductions

FIU GPA

Pell Grants in Ohio

MC Child 83+

EITC 1993

Top Tax 1993

Job Corps

Medicaid Expansion to Children born after Sept 30, 1983 pays for itself

BCR, $\phi^{DWL} = 50\%$

MVPF

MVPF vs Benefit/Cost Ratio [Heckman et al., 2012; Zimmerman 2014]
Tax Revenue Impacts Counted as Social Benefits, not Government Cost Reductions

But most benefits accrue to govt in form of lower future Medicaid spending

MVPF vs Benefit/Cost Ratio [Heckman et al., 2012; Zimmerman 2014]
Tax Revenue Impacts Counted as Social Benefits, not Government Cost Reductions

BCR, $\phi^{DWL} = 50\%$

FIU GPA

Pell Grants in Ohio

MC Child 83+

EITC 1993

Top Tax 1993

Job Corps

Has lower BCR than Pell grants in Ohio, despite offering a "free lunch"

MVPF

Why use the MVPF over a Benefit/Cost Ratio?

Three Reasons:

1. MVPF measures the long-run policy efficacy from the (Federal) government's perspective

2. MVPF identifies policies that pay for themselves

3. MVPF quantifies the distributional tradeoffs associated with policies

Quantifying the Tradeoffs of Redistribution through the Tax Schedule
1993 Clinton Tax Reform

Prefer 1993 tax change iff prefer $1.12 to low-income EITC beneficiaries to $1.85 to top earners

Top Tax 1981
Top Tax 1986
Top Tax 1993
Top Tax 2001
Top Tax 2013

EITC 1986
EITC 1993
Paycheck+
AFDC Term Limits
Alaska UBI
AFDC Generosity
Neg Inc Tax

MVPF

Approximate Income of Beneficiary

Explore the MVPFs at www.policyinsights.org