Who Benefits from Retirement Saving Incentives in the U.S.? Evidence on Racial Gaps in Retirement Wealth Accumulation

Taha Choukhmane Jorge Colmenares Cormac O'Dea
Jonathan Rothbaum Lawrence Schmidt

March 2024

Outline

Disclaimer

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement and Disability Research Consortium through the Michigan Retirement and Disability Research Center Award RDR18000002. The opinions and conclusions expressed are solely those of the author(s) and do not represent the opinions or policy of SSA or any agency of the Federal Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof.

Introduction

- **1.5% of U.S. GDP** dedicated to encouraging contributions to retirement savings plans
  - Employers: contribute \$180bn to DC plans, largely by ‘matching’ employee contributions
  - Government: \$120bn tax expenditure on DC plans

Introduction

- **1.5% of U.S. GDP** dedicated to encouraging contributions to retirement savings plans
  - Employers: contribute \$180bn to DC plans, largely by 'matching' employee contributions
  - Government: \$120bn tax expenditure on DC plans
- This institutional design benefits those who can and do save more for retirement

Introduction

- **1.5% of U.S. GDP** dedicated to encouraging contributions to retirement savings plans
  - Employers: contribute $180bn to DC plans, largely by ‘matching’ employee contributions
  - Government: $120bn tax expenditure on DC plans
- This institutional design benefits those who can and do save more for retirement
- We link newly-collected data on employer retirement plan to administrative data to study the distributional impact of these incentives

Introduction

- **1.5% of U.S. GDP** dedicated to encouraging contributions to retirement savings plans
  - Employers: contribute \$180bn to DC plans, largely by ‘matching’ employee contributions
  - Government: \$120bn tax expenditure on DC plans
- This institutional design benefits those who can and do save more for retirement
- We link newly-collected data on employer retirement plan to administrative data to study the distributional impact of these incentives
- Focus on difference in take-up by i) race ii) parental background

Introduction

Wealth gaps by race and family background are large & persistent

- White-Black wealth ratio $\approx$ 6-to-1 from 1980 (Oliver-Shapiro, '89; Derenoncourt et al, '21) w/ lack of convergence heavily influenced by differences in rates of return
- White-Hispanic wealth ratio $\approx$ 4-to-1 (Sabelhaus et al, '21)
- Wealth & rates of return persistent btwn generations (Charles-Hurst, '03; Fagereng et al, '20)

Introduction

Wealth gaps by race and family background are large & persistent

- White-Black wealth ratio $\approx$ 6-to-1 from 1980 (Oliver-Shapiro, '89; Derenoncourt et al, '21) w/ lack of convergence heavily influenced by differences in rates of return
- White-Hispanic wealth ratio $\approx$ 4-to-1 (Sabelhaus et al, '21)
- Wealth & rates of return persistent btwn generations (Charles-Hurst, '03; Fagereng et al, '20)

Q: How do retirement incentives contribute to gaps by race these and parental income?

Important channel for wealth inequality:

1. Retirement wealth is households' 2nd largest asset class (FRB '22)

Introduction

Wealth gaps by race and family background are large & persistent

- White-Black wealth ratio ≈ 6-to-1 from 1980 (Oliver-Shapiro, '89; Derenoncourt et al, '21) w/ lack of convergence heavily influenced by differences in rates of return
- White-Hispanic wealth ratio ≈ 4-to-1 (Sabelhaus et al, '21)
- Wealth & rates of return persistent btwn generations (Charles-Hurst, '03; Fagereng et al, '20)

Q: How do retirement incentives contribute to gaps by race these and parental income?

Important channel for wealth inequality:

1. Retirement wealth is households' 2nd largest asset class (FRB '22)
2. One of best investments going (mean match on first dollar of saving is over 60 cents)...

Introduction

Wealth gaps by race and family background are large & persistent

- White-Black wealth ratio ≈ 6-to-1 from 1980 (Oliver-Shapiro, '89; Derenoncourt et al, '21) w/ lack of convergence heavily influenced by differences in rates of return
- White-Hispanic wealth ratio ≈ 4-to-1 (Sabelhaus et al, '21)
- Wealth & rates of return persistent btwn generations (Charles-Hurst, '03; Fagereng et al, '20)

Q: How do retirement incentives contribute to gaps by race these and parental income?

Important channel for wealth inequality:

1. Retirement wealth is households' 2nd largest asset class (FRB '22)
2. One of best investments going (mean match on first dollar of saving is over 60 cents)...
3. ... yet many do not take full advantage of this incentive (avg. foregone match ≈ 1.25%)

Main Findings

1. **There are large gaps in retirement saving by race and parental income**
    - Black (Hispanic) workers contribute 39% (34%) less than White workers
    - Workers from Q1 (Q3) of parental income distribution save 46% (30%) less than those in Q5
    - Differences in firms account for a third of gaps, income/age explain another third
    - Even after accounting for a rich set of individual characteristics, sizable gaps remain
    - Family structure and parental resources account for significant share of (residual) racial gaps

Main Findings

1. **There are large gaps in retirement saving by race and parental income**
   - Black (Hispanic) workers contribute 39% (34%) less than White workers
   - Workers from Q1 (Q3) of parental income distribution save 46% (30%) less than those in Q5
   - Differences in firms account for a third of gaps, income/age explain another third
   - Even after accounting for a rich set of individual characteristics, sizable gaps remain
   - Family structure and parental resources account for significant share of (residual) racial gaps

2. **Large gaps in early withdrawals highlight likely importance of liquidity demand**
   - Black retirement savers twice as likely as White savers to take an early withdrawal
   - Similar result holds for respondents from Q1 of parental income distribution
   - Gaps by race and parental income widen in years with large earnings losses

Main Findings

1. **There are large gaps in retirement saving by race and parental income**
    - Black (Hispanic) workers contribute 39% (34%) less than White workers
    - Workers from Q1 (Q3) of parental income distribution save 46% (30%) less than those in Q5
    - Differences in firms account for a third of gaps, income/age explain another third
    - Even after accounting for a rich set of individual characteristics, sizable gaps remain
    - Family structure and parental resources account for significant share of (residual) racial gaps
2. **Large gaps in early withdrawals highlight likely importance of liquidity demand**
    - Black retirement savers twice as likely as White savers to take an early withdrawal
    - Similar result holds for respondents from Q1 of parental income distribution
    - Gaps by race and parental income widen in years with large earnings losses
3. **Emphasize distributional features of the current institutional design**
    - Budget-neutral changes to retirement plan design can reduce these wealth gaps

Literature

- Wealth and Race in the U.S. Oliver & Shapiro (1989), Barsky et al. (2002), Darity & Nicholson (2005), Ganong et al. (2020), Sabelhaus and Thompson (2021), Viceisza et al. (2022), Derenoncourt et al. (2022)

  Highlight importance of interplay b/w **saving subsidies** & **saving patterns** for wealth gaps

- Wages and Race in the U.S. Altonji & Blank (1999), Bayer & Charles (2018), Chetty et al. (2020)

  Measure racial **pay difference** due to racial **saving differences**

- Race & Policy Instruments Darity & Myers (1983, 1987), Myers (1995), Ross & Yinger (2002), Kermani & Wong (2021), Bhutta et al. (2021), Brown (2021), Avenancio-Leon & Howard (2022)

  Study of second largest federal tax expenditure – that for DC retirement plans

- Intergenerational Wealth Persistence & Rates of Return Chiteji & Hamilton (2002), Charles & Hurst (2003), Fagereng et al. (2020), Francis and Weller (2022), Fagereng et al. (2023),

  Document link between **parental resources** and **rates of return**

- Retirement plan design Mitchell et al. (2007), Coyne et al. (2022), Briere et al. (2022)

  Show distributional importance of interplay b/w **liquidity** needs and match **take-up**

Outline

Data: Primary sample contains

- Survey and administrative **employee** data on earnings and retirement saving decisions

- New **employer** data on retirement plan characteristics

Data: Primary sample contains

- Survey and administrative **employee** data on earnings and retirement saving decisions
  - American Community Survey, 2001-2019: Race, education, location, occupation

- New **employer** data on retirement plan characteristics

Data: Primary sample contains

- Survey and administrative **employee** data on earnings and retirement saving decisions
  - American Community Survey, 2001-2019: Race, education, location, occupation
  - Tax data, 2005-2020: Taxable earnings, deferred compensation, early withdrawals
- New **employer** data on retirement plan characteristics

Data: Primary sample contains

- Survey and administrative **employee** data on earnings and retirement saving decisions
  - American Community Survey, 2001-2019: Race, education, location, occupation
  - Tax data, 2005-2020: Taxable earnings, deferred compensation, early withdrawals
- New **employer** data on retirement plan characteristics
  - Firms must submit narrative descriptions of their retirement plans with regulatory Form 5500
  - Codified these for other work (Choukkhmane, Goodman, O'Dea 2023)

Form 5500 has *narrative* descriptions of:

- Eligibility
- Matching schedule
- Vesting schedule
- Auto-features

Form 5500 has *narrative* descriptions of:

- Eligibility
- Matching schedule
- Vesting schedule
- Auto-features

2011

Lowe's 401(k) Plan
Notes to Financial Statements

Note 1 - Description of the Plan

The following description of the Lowe's 401(k) Plan (the Plan) provides only general information. Participants should refer to the Plan document and summary plan description for more complete descriptions of the Plan's provisions.

General - The Plan, adopted effective February 1, 1984, is a defined contribution plan covering substantially all employees of Lowe's Companies, Inc. and subsidiaries (the Plan Sponsor or the Company). An employee of the Plan Sponsor is eligible to participate in the Plan six months after the employee's original hire date. The Administrative Committee of Lowe's Companies, Inc. (the Administrative Committee), as appointed by the Board of Directors, controls the management and administration of the Plan. The Plan's trustee and recordkeeper is Wells Fargo Bank, N.A. (Wells Fargo). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA) and is a safe harbor-designed plan.

Contributions - Each year, participants may contribute from 1% to 50% of their pre-tax annual compensation, as defined by the Plan, subject to the Internal Revenue Code limitations. Eligible employees are automatically enrolled as participants at a contribution rate of 1% of their pre-tax annual compensation unless they elect otherwise. Participants age 50 and older, or who reach age 50 during the Plan year, are eligible to contribute an additional pre-tax dollar amount per year in addition to the deferral contribution. For 2011, the maximum annual amount of catch up that could be contributed was $5,500. The Company makes contributions to the Plan each payroll period, based upon a matching formula applied to employee deferrals (the Company Match). The Company Match formula is as follows: the first 3% of contributions are matched by the Plan Sponsor at the rate of 100%; the next 2% of contributions are matched at the rate of 50%; and the next 1% of contributions are matched at the rate of 25%. Participants are eligible to receive the Company Match pursuant to the terms of the Plan. Participants may also contribute amounts representing eligible rollover distributions from other qualified plans.

Participant Accounts - Individual accounts are maintained for each Plan participant. Each participant's account is credited with the participant's contribution, the Company Match, and an allocation of Plan earnings, and charged with benefit payments and allocations of Plan losses and investment expenses. Allocations are based on participant earnings or account balances. The benefit to which a participant is entitled to is the benefit that can be provided from the participant's vested account balance.

Vesting - All participants are 100% vested in the Plan at all times.

Investments – During Plan Year 2011, the 22 investment options to which participants could direct their contributions included one investment contract (stable value) fund, 11 target retirement date funds (collective trusts), nine mutual funds consisting of two small-cap funds, two mid-cap funds, three large-cap funds, one intermediate-term bond fund, and one international fund, and Lowe's Companies, Inc. common stock. Excess cash is held in a non-interest bearing cash account.

Payment of Benefits - Subsequent to termination of service, a participant with a vested account value of $1,000 or less will receive a lump-sum distribution equal to the participant's vested account balance. If the vested account value is greater than $1,000, a participant may elect to receive a lump-sum distribution equal to the participant's vested account balance. If the participant does not make such an election and the vested account value is $5,000 or less, the Plan performs a direct rollover to an individual retirement account designated by the participant or, if the participant has not designated an individual retirement account, to an individual retirement account designated by the Administrative Committee. If the vested account value is greater than $5,000, the participant's vested account balance remains in the Plan and is not distributed without the participant's consent until the participant reaches age 62.

The Plan allows for in-service withdrawals to participants under age 59½ only in cases of financial hardship. Such withdrawals must total at least $1,000 and be approved by the Plan's recordkeeper or the Administrative Committee. Participants who have attained age 59½ are entitled to a one-time in-service withdrawal of their accumulated balances.

The Plan allows for a one-time in-service withdrawal to participants in the former Lowe's Companies Employee Stock Ownership Plan (the ESOP) who have attained 20 or more years of service with the Plan Sponsor. The ESOP was merged into the Plan effective September 13, 2002. Eligible participants may withdraw up to 50% of their former

Form 5500 has *narrative* descriptions of:

- Eligibility
- Matching schedule
- Vesting schedule
- Auto-features

2011

Lowe's 401(k) Plan
Notes to Financial Statements

Note 1 - Description of the Plan

The following description of the Lowe's 401(k) Plan (the Plan) provides only general information. Participants should refer to the Plan document and summary plan description for more complete descriptions of the Plan's provisions.

General - The Plan, adopted effective February 1, 1984, is a defined contribution plan covering substantially all employees of Lowe's Companies, Inc. and subsidiaries (the Plan Sponsor or the Company). An employee of the Plan Sponsor is eligible to participate in the Plan six months after the employee's original hire date. The Administrative Committee of Lowe's Companies, Inc. (the Administrative Committee), as appointed by the Board of Directors, controls the management and administration of the Plan. The Plan's trustee and recordkeeper is Wells Fargo Bank, N.A. (Wells Fargo). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA) and is a safe harbor-designed plan.

Contributions - Each year, participants may contribute from 1% to 50% of their pre-tax annual compensation, as defined by the Plan, subject to the Internal Revenue Code limitations. Eligible employees are automatically enrolled as participants at a contribution rate of 1% of their pre-tax annual compensation unless they elect otherwise. Participants age 50 and older, or who reach age 50 during the Plan year, are eligible to contribute an additional pre-tax dollar amount per year in addition to the deferral contribution. For 2011, the maximum annual amount of catch up that could be contributed was $5,500. The Company makes contributions to the Plan each payroll period, based upon a matching formula applied to employee deferrals (the Company Match). The Company Match formula is as follows: the first 3% of contributions are matched by the Plan Sponsor at the rate of 100%; the next 2% of contributions are matched at the rate of 50%; and the next 1% of contributions are matched at the rate of 25%. Participants are eligible to receive the Company Match pursuant to the terms of the Plan. Participants may also contribute amounts representing eligible rollover distributions from other qualified plans.

Participant Accounts - Individual accounts are maintained for each Plan participant. Each participant's account is credited with the participant's contribution, the Company Match, and an allocation of Plan earnings, and charged with benefit payments and allocations of Plan losses and investment expenses. Allocations are based on participant earnings or account balances. The benefit to which a participant is entitled to is the benefit that can be provided from the participant's vested account balance.

Vesting - All participants are 100% vested in the Plan at all times.

Investments – During Plan Year 2011, the 22 investment options to which participants could direct their contributions included one investment contract (stable value) fund, 11 target retirement date funds (collective trusts), nine mutual funds consisting of two small-cap funds, two mid-cap funds, three large-cap funds, one intermediate-term bond fund, and one international fund, and Lowe's Companies, Inc. common stock. Excess cash is held in a non-interest bearing cash account.

Payment of Benefits - Subsequent to termination of service, a participant with a vested account value of $1,000 or less will receive a lump-sum distribution equal to the participant's vested account balance. If the vested account value is greater than $1,000, a participant may elect to receive a lump-sum distribution equal to the participant's vested account balance. If the participant does not make such an election and the vested account value is $5,000 or less, the Plan performs a direct rollover to an individual retirement account designated by the participant or, if the participant has not designated an individual retirement account, to an individual retirement account designated by the Administrative Committee. If the vested account value is greater than $5,000, the participant's vested account balance remains in the Plan and is not distributed without the participant's consent until the participant reaches age 62.

The Plan allows for in-service withdrawals to participants under age 59½ only in cases of financial hardship. Such withdrawals must total at least $1,000 and be approved by the Plan's recordkeeper or the Administrative Committee. Participants who have attained age 59½ are entitled to a one-time in-service withdrawal of their accumulated balances.

The Plan allows for a one-time in-service withdrawal to participants in the former Lowe's Companies Employee Stock Ownership Plan (the ESOP) who have attained 20 or more years of service with the Plan Sponsor. The ESOP was merged into the Plan effective September 13, 2002. Eligible participants may withdraw up to 50% of their former

6

Form 5500 has *narrative* descriptions of:

- Eligibility
- Matching schedule
- Vesting schedule
- Auto-features

Contributions - Each year, participants may contribute from 1% to 50% of their pre-tax annual compensation, as defined by the Plan, subject to the Internal Revenue Code limitations. Eligible employees are automatically enrolled as participants at a contribution rate of 1% of their pre-tax annual compensation unless they elect otherwise. Participants age 50 and older, or who reach age 50 during the Plan year, are eligible to contribute an additional pre-tax dollar amount per year in addition to the deferral contribution. For 2011, the maximum annual amount of catch up that could be contributed was $5,500. The Company makes contributions to the Plan each payroll period, based upon a matching formula applied to employee deferrals (the Company Match). The Company Match formula is as follows: the first 3% of contributions are matched by the Plan Sponsor at the rate of 100%; the next 2% of contributions are matched at the rate of 50%; and the next 1% of contributions are matched at the rate of 25%. Participants are eligible to receive the Company Match pursuant to the terms of the Plan. Participants may also contribute amounts representing eligible rollover distributions from other qualified plans.

Participant Accounts - Individual accounts are maintained for each Plan participant. Each participant's account is credited with the participant's contribution, the Company Match, and an allocation of Plan earnings, and charged with benefit payments and allocations of Plan losses and investment expenses. Allocations are based on participant earnings or account balances. The benefit to which a participant is entitled to is the benefit that can be provided from the participant's vested account balance.

Vesting - All participants are 100% vested in the Plan at all times.

2011

Lowe's 401(k) Plan
Notes to Financial Statements

Note 1 - Description of the Plan

The following description of the Lowe's 401(k) Plan (the Plan) provides only general information. Participants should refer to the Plan document and summary plan description for more complete descriptions of the Plan's provisions.

General - The Plan, adopted effective February 1, 1984, is a defined contribution plan covering substantially all employees of Lowe's Companies, Inc. and subsidiaries (the Plan Sponsor or the Company). An employee of the Plan Sponsor is eligible to participate in the Plan six months after the employee's original hire date. The Administrative Committee of Lowe's Companies, Inc. (the Administrative Committee), as appointed by the Board of Directors, controls the management and administration of the Plan. The Plan's trustee and recordkeeper is Wells Fargo Bank, N.A. (Wells Fargo). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA) and is a safe harbor-designed plan.

Contributions - Each year, participants may contribute from 1% to 50% of their pre-tax annual compensation, as defined by the Plan, subject to the Internal Revenue Code limitations. Eligible employees are automatically enrolled as participants at a contribution rate of 1% of their pre-tax annual compensation unless they elect otherwise. Participants age 50 and older, or who reach age 50 during the Plan year, are eligible to contribute an additional pre-tax dollar amount per year in addition to the deferral contribution. For 2011, the maximum annual amount of catch up that could be contributed was $5,500. The Company makes contributions to the Plan each payroll period, based upon a matching formula applied to employee deferrals (the Company Match). The Company Match formula is as follows: the first 3% of contributions are matched by the Plan Sponsor at the rate of 100%; the next 2% of contributions are matched at the rate of 50%; and the next 1% of contributions are matched at the rate of 25%. Participants are eligible to receive the Company Match pursuant to the terms of the Plan. Participants may also contribute amounts representing eligible rollover distributions from other qualified plans.

Participant Accounts - Individual accounts are maintained for each Plan participant. Each participant's account is credited with the participant's contribution, the Company Match, and an allocation of Plan earnings, and charged with benefit payments and allocations of Plan losses and investment expenses. Allocations are based on participant earnings or account balances. The benefit to which a participant is entitled to is the benefit that can be provided from the participant's vested account balance.

Vesting - All participants are 100% vested in the Plan at all times.

Investments – During Plan Year 2011, the 22 investment options to which participants could direct their contributions included one investment contract (stable value) fund, 11 target retirement date funds (collective trusts), nine mutual funds consisting of two small-cap funds, two mid-cap funds, three large-cap funds, one intermediate-term bond fund, and one international fund, and Lowe's Companies, Inc. common stock. Excess cash is held in a non-interest bearing cash account.

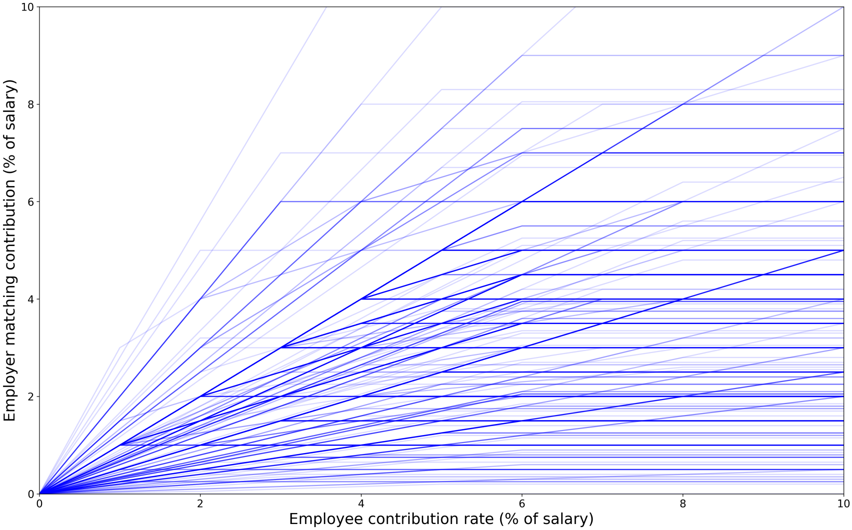
Payment of Benefits - Subsequent to termination of service, a participant with a vested account value of $1,000 or less will receive a lump-sum distribution equal to the participant's vested account balance. If the vested account value is greater than $1,000, a participant may elect to receive a lump-sum distribution equal to the participant's vested account balance. If the participant does not make such an election and the vested account value is $5,000 or less, the Plan performs a direct rollover to an individual retirement account designated by the participant or, if the participant has not designated an individual retirement account, to an individual retirement account designated by the Administrative Committee. If the vested account value is greater than $5,000, the participant's vested account balance remains in the Plan and is not distributed without the participant's consent until the participant reaches age 62.

The Plan allows for in-service withdrawals to participants under age 59½ only in cases of financial hardship. Such withdrawals must total at least $1,000 and be approved by the Plan's recordkeeper or the Administrative Committee. Participants who have attained age 59½ are entitled to a one-time in-service withdrawal of their accumulated balances.

The Plan allows for a one-time in-service withdrawal to participants in the former Lowe's Companies Employee Stock Ownership Plan (the ESOP) who have attained 20 or more years of service with the Plan Sponsor. The ESOP was merged into the Plan effective September 13, 2002. Eligible participants may withdraw up to 50% of their former

6

Matching Schedules



Data: Primary sample contains

- Survey and administrative **employee** data on earnings and retirement saving decisions
  - American Community Survey, 2001-2019: Race, education, location, occupation
  - Tax data, 2005-2020: Taxable earnings, deferred compensation, early withdrawals
- New **employer** data on retirement plan characteristics
  - Firms must submit narrative descriptions of their retirement plans with regulatory Form 5500
  - Codified these for other work (Choukkhmane, Goodman, O'Dea 2023)
  - We codified these for the largest 5,000 U.S. DC plans over the period 2003-2018
  - Matching schedules, vesting schedules, auto features, etc... More details

Parent Characteristics Sample

- We've known for a long time that the rich save more (Dynan, Skinner & Zeldes 2004)
- What about the kids of the rich?
- Why might parental income be a driver of saving in this illiquid form?
  - Richer parents insure their kids' shocks? (Fagereng et al. (2023))
  - Evidence that kids of poorer parents use retirement accounts to insure their parents (Francis and Weller (2022))

Parent Characteristics Sample

- We've known for a long time that the rich save more (Dynan, Skinner & Zeldes 2004)
- What about the kids of the rich?
- Why might parental income be a driver of saving in this illiquid form?
  - Richer parents insure their kids' shocks? (Fagereng et al. (2023))
  - Evidence that kids of poorer parents use retirement accounts to insure their parents (Francis and Weller (2022))

- Restrict primary sample to individuals under 42 in 2020
- Link to parents in 1040s from 1994, 1995, 1998-2020
  - Find sample individuals when declared as dependents at 16 (or as close as possible)
  - AGI in linked child year
  - W-2 earnings and deferred compensation from 2005-2020

Outline

Key Contribution Gap Results

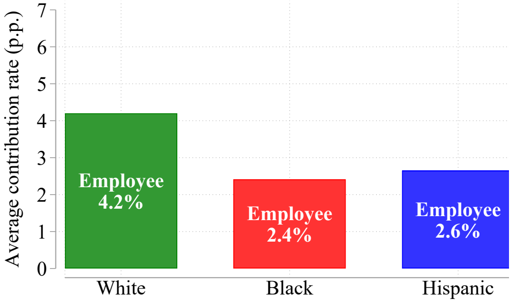
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

Key Contribution Gap Results

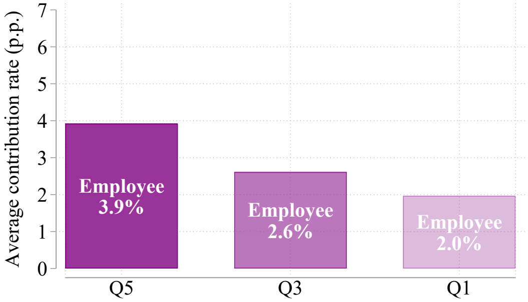
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

1. Gaps in saving by race and parental income are large

(a) Average DC Contrib. Rate, by race



(b) Average DC Contrib. Rate, by parental income

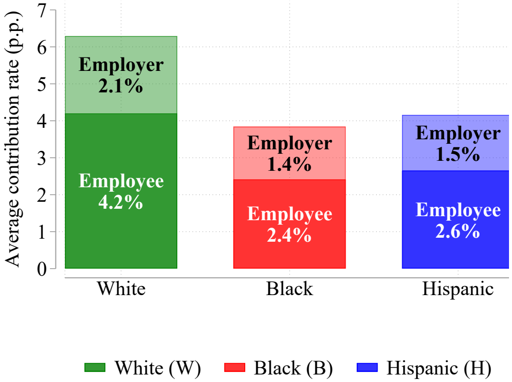


Key Contribution Gap Results

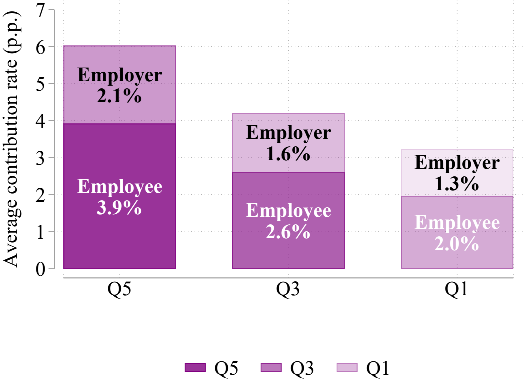
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

2. Employer matching amplifies gaps

(a) Average Employee + Match DC Contrib. Rate, by race

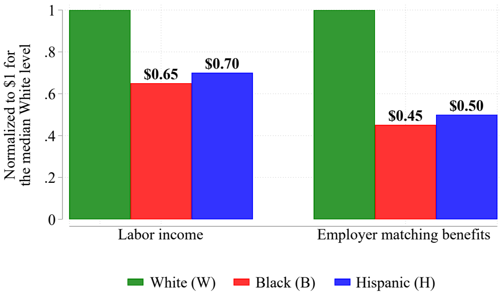


(b) Average Employee + Match DC Contrib. Rate, by parental income



Implication: Gaps in Employer Matching Compensation are Larger than Gaps in Labor Earnings

(a) Income and matching gaps by race



(b) Income and matching gaps by parental income

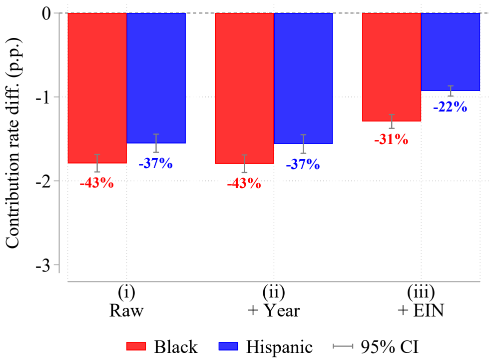
Sample: workers around the median of the group-specific labor earnings distribution in firms with matching data available.

Key Contribution Gap Results

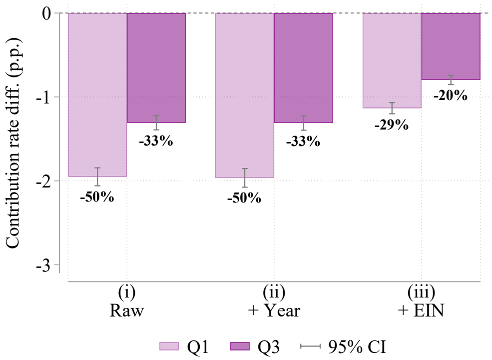
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

3. Around one third of the gap explained by diffs across firms

(a) Employee Contrib. Rate, by race



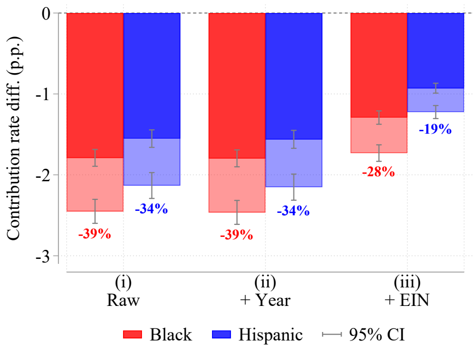
(b) Employee Contrib. Rate, by parent income



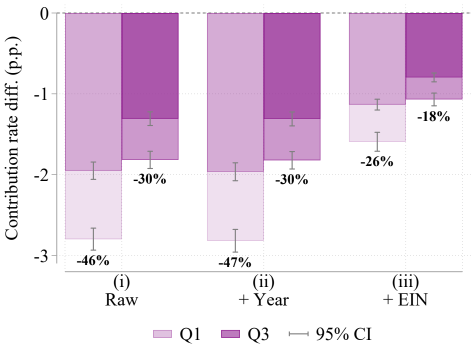
EIN FE ⇒ comparing coworkers at same firm, **match incentives held constant**

3. Around one third of the gap explained by diffs across firms

(a) Employee + Match Contrib. Rate, by race



(b) Employee + Match Contrib. Rate, by parent income



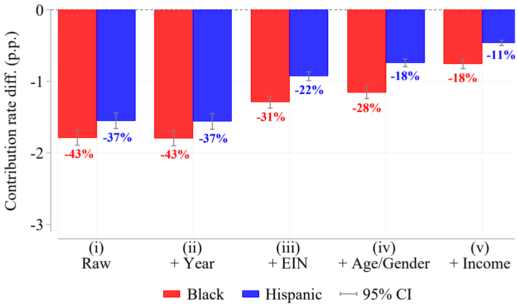
Lighter shading: component coming from employer match

Key Contribution Gap Results

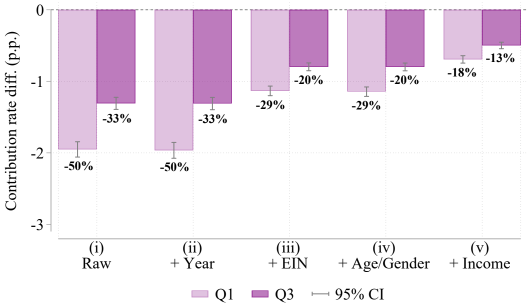
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

4. Another ≈1/3 of the gap explained by diffs in age and income

(a) Employee Contrib. Rate, by race



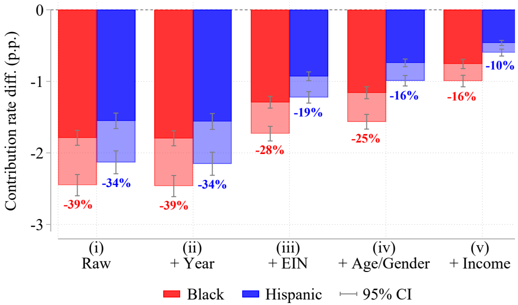
(b) Employee Contrib. Rate, by parent income



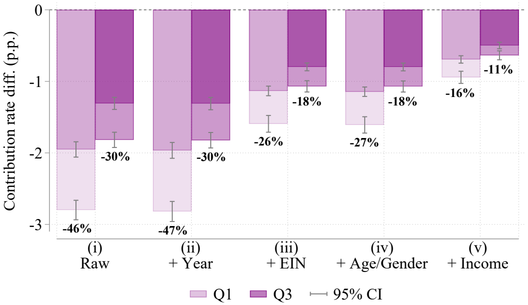
Intensive and Extensive, Race
Intensive and Extensive, Parent

4. Another ≈1/3 of the gap explained by diffs in age and income

(a) Employee + Match Contrib. Rate, by race



(b) Employee + Match Contrib. Rate, by parent income



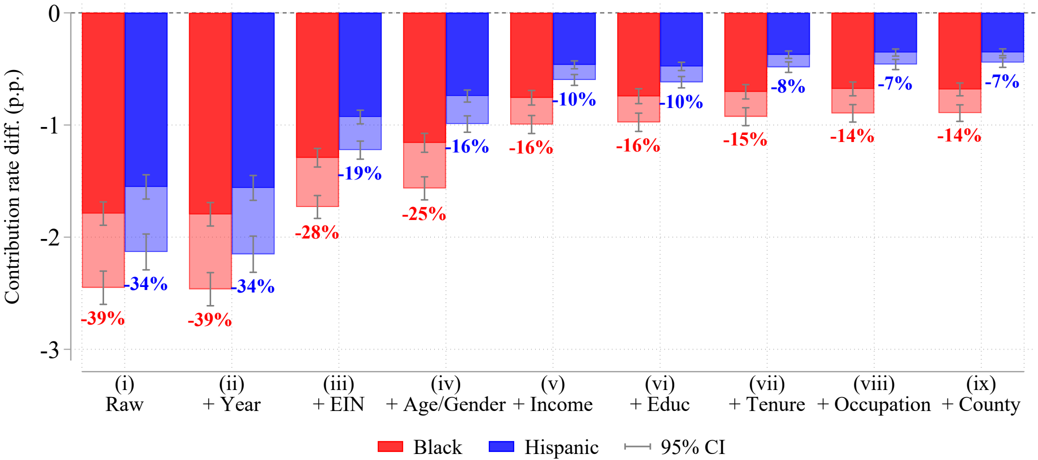
▸ Intensive and Extensive, Race

▸ Intensive and Extensive, Parent

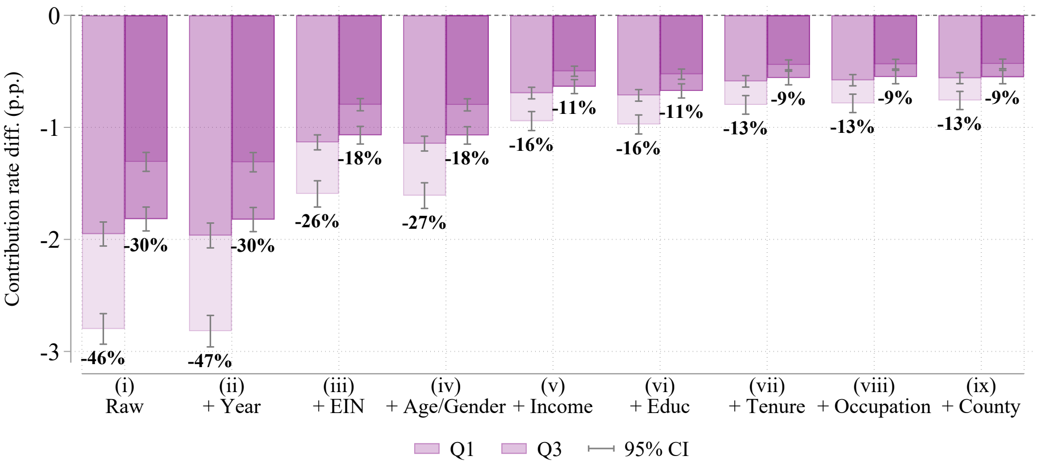
Key Contribution Gap Results

1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

5. Gaps remain after controlling for rich set of characteristics



5. Gaps remain after controlling for rich set of characteristics

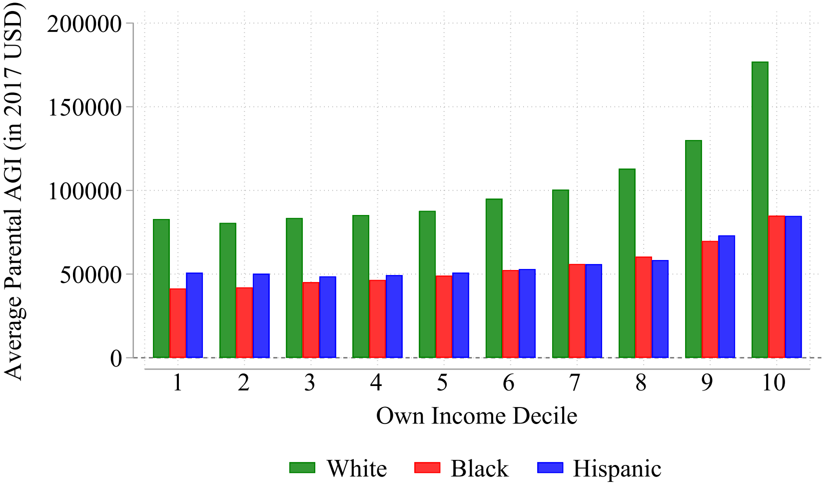


Key Contribution Gap Results

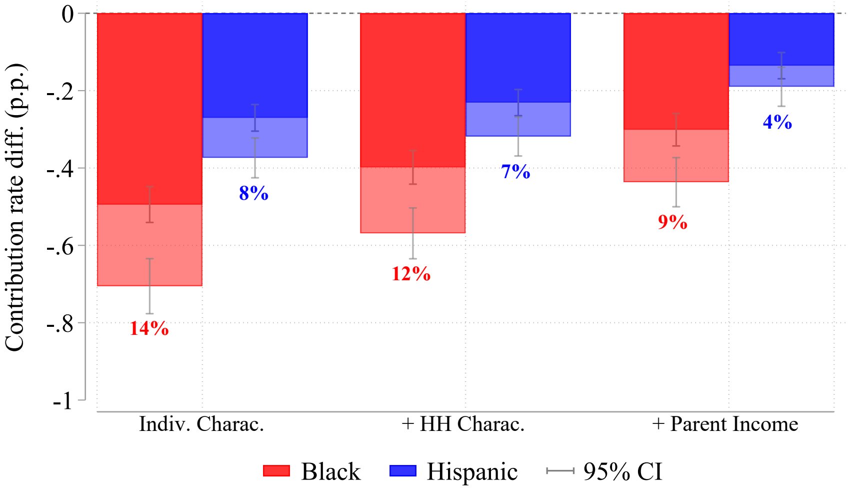
1. Gaps in retirement contributions by race and parental income are large
2. Employer matching contributions amplify the effect on wealth of these gaps
3. Around one third of each gap can be explained by differences across firms
4. Another one third of each gap can be explained by differences in age and income
5. Gaps remain after accounting for role of rich set of characteristics
6. Household structure and parental income controls further attenuate racial savings gaps

Race and parental income are strongly correlated

Figure: Differences by race in average parental income, given own income



Household and parental income controls further attenuate savings gaps by race



Outline

The role of liquidity constraints

- Early withdrawals are often penalized ...
  - Tax penalties
  - Six-month suspension (rule rescinded in 2020)

The role of liquidity constraints

- Early withdrawals are often penalized ...
  - Tax penalties
  - Six-month suspension (rule rescinded in 2020)
- Penalized withdrawals **reveal a preference for liquidity**

The role of liquidity constraints

- Early withdrawals are often penalized ...
  - Tax penalties
  - Six-month suspension (rule rescinded in 2020)

- Penalized withdrawals **reveal a preference for liquidity**

- Early withdrawals are very common: Coyne et al. (2022): 10% aged 40-59 take a penalized withdrawal in a given year

The role of liquidity constraints

- Early withdrawals are often penalized ...
  - Tax penalties
  - Six-month suspension (rule rescinded in 2020)

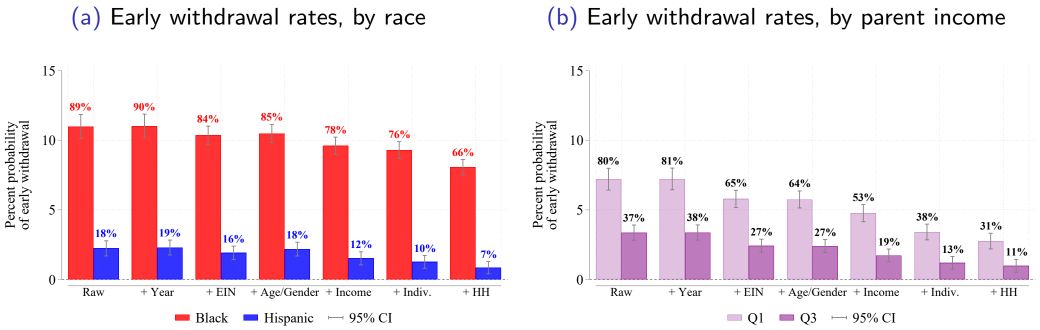
- Penalized withdrawals **reveal a preference for liquidity**

- Early withdrawals are very common: Coyne et al. (2022): 10% aged 40-59 take a penalized withdrawal in a given year

- Note in following, we do not know whether withdrawals were penalized
  - Unpenalized hardship withdrawals permitted in limited circumstances

The role of liquidity constraints

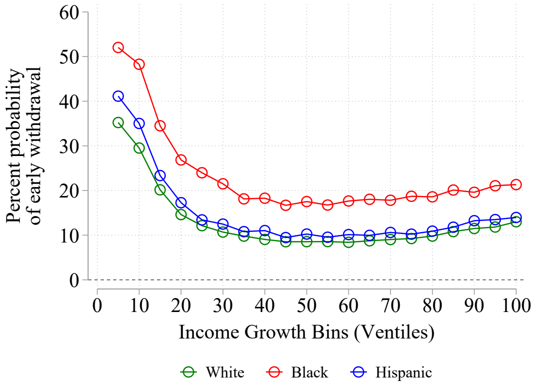
Probability of Early Withdrawal (%), by race and parental income



- Dependent variable = 1 if observe a 1099-R withdrawal above $1,000 in year t+1.
- Sample is restricted to subset of individuals who contributed at least $1,000 to DC accounts prior to year t.

The role of liquidity constraints

Probability of Early Withdrawal, by income growth

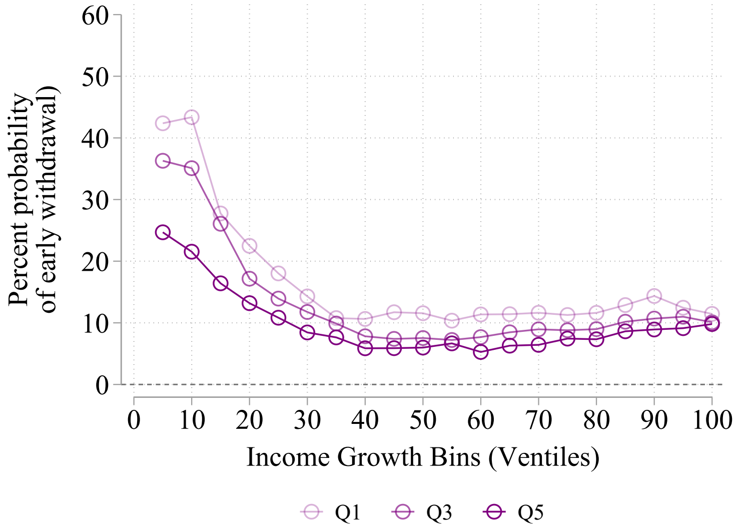


Notes: Figure plots the fraction of workers, by race and 20 ventile bins formed on contemporaneous arc W2 income growth rates from year t to $t+1$. Sample is restricted to subset of individuals who contributed at least \$1,000 to DC accounts prior to year t.

- All racial groups much more likely to take early withdrawals in years w/ large income declines
- Black-White gaps: sizable throughout income growth dist., **especially for those w/ biggest income declines**
- $>$ **50%** of Black workers who had previously contributed to DC accounts in bottom ventile take an early withdrawal

The role of liquidity constraints

Probability of Early Withdrawal, by parental income and own income growth



The role of liquidity constraints

- Evidence from early withdrawals suggestive of liquidity constraints binding more for Black Americans than White and Hispanic Americans see also Ganong et al. (2020)
- Also find large differences in early withdrawal propensity by parental income

The role of liquidity constraints

- Evidence from early withdrawals suggestive of liquidity constraints binding more for Black Americans than White and Hispanic Americans see also Ganong et al. (2020)
- Also find large differences in early withdrawal propensity by parental income
- Illiquidity of DC plans may **deter participation and lower contribution rates** ex-ante, preventing HHs from capturing lucrative match Briere, Poterba & Szafarz, 2022

The role of liquidity constraints

- Evidence from early withdrawals suggestive of liquidity constraints binding more for Black Americans than White and Hispanic Americans see also Ganong et al. (2020)
- Also find large differences in early withdrawal propensity by parental income
- Illiquidity of DC plans may **deter participation and lower contribution rates** ex-ante, preventing HHs from capturing lucrative match Briere, Poterba & Szafarz, 2022
  - Access to liquidity can raise take-up of high return investments & **perpetuate wealth inequality** by generating persistence in expected returns across generations

The role of liquidity constraints

- Evidence from early withdrawals suggestive of liquidity constraints binding more for Black Americans than White and Hispanic Americans see also Ganong et al. (2020)
- Also find large differences in early withdrawal propensity by parental income
- Illiquidity of DC plans may **deter participation and lower contribution rates** ex-ante, preventing HHs from capturing lucrative match Briere, Poterba & Szafarz, 2022
  - Access to liquidity can raise take-up of high return investments & **perpetuate wealth inequality** by generating persistence in expected returns across generations
  - Potential gains from simple plan design changes:
    - Better loan policies, especially post-separation (Mitchell, Utkus, & Yang, 2007 $\Rightarrow$ loans linked w/ $\Uparrow$ contribution rates)

Outline

A Broader Perspective on Distributional Analysis of the Retirement System

Long tradition of distributional analysis of the retirement systems

(Diamond,'77, Kotlikoff et al., '82; Moser and Olea de Souza '19)

Regressive subsidies for private saving...

... balanced by **progressive social security**
& (and in the U.S.) income-based **non-discrimination testing**

A Broader Perspective on Distributional Analysis of the Retirement System

Long tradition of distributional analysis of the retirement systems

(Diamond,'77, Kotlikoff et al., '82; Moser and Olea de Souza '19)

Regressive **subsidies** for private saving...

... balanced by progressive **social security**
& (and in the U.S.) income-based **non-discrimination testing**

Problem: focus only on income may **miss important distributional aspects**

A Broader Perspective on Distributional Analysis of the Retirement System

Long tradition of distributional analysis of the retirement systems

(Diamond,'77, Kotlikoff et al., '82; Moser and Olea de Souza '19)

Regressive subsidies for private saving...

... balanced by **progressive social security**
& (and in the U.S.) income-based **non-discrimination testing**

Problem: focus only on income may **miss important distributional aspects**
Other dimensions matter for subsidies take-up and are not undone by Social Security

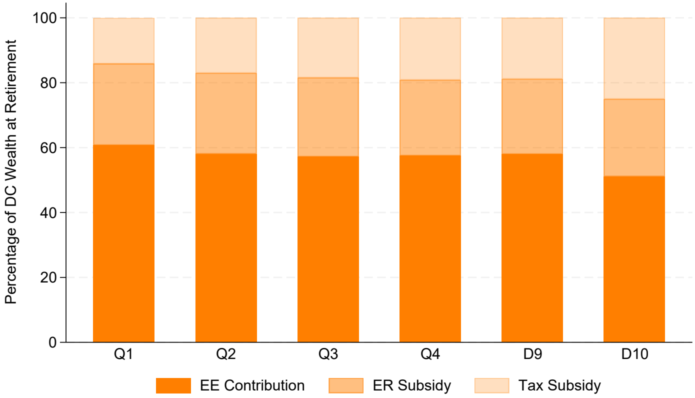
Measurement of cumulative effects

- Data covers flows (earnings, contributions, withdrawals) and covers only partial lifecycles
- What about cumulative effect over the lifecycle of the system of supports?

Measurement of cumulative effects

- Data covers flows (earnings, contributions, withdrawals) and covers only partial lifecycles
- What about cumulative effect over the lifecycle of the system of supports?
- We build a microsimulation model that can be used to:
  - Evaluate incidence of preferred taxation of retirement contributions
  - Consider outcomes under counterfactual settings which de-linked contributions from saving
- Key model outputs:
  1. DC wealth: Discounted value of after-tax withdrawals
  2. Consumption in retirement: discounted value of wealth and SS payments (in paper)

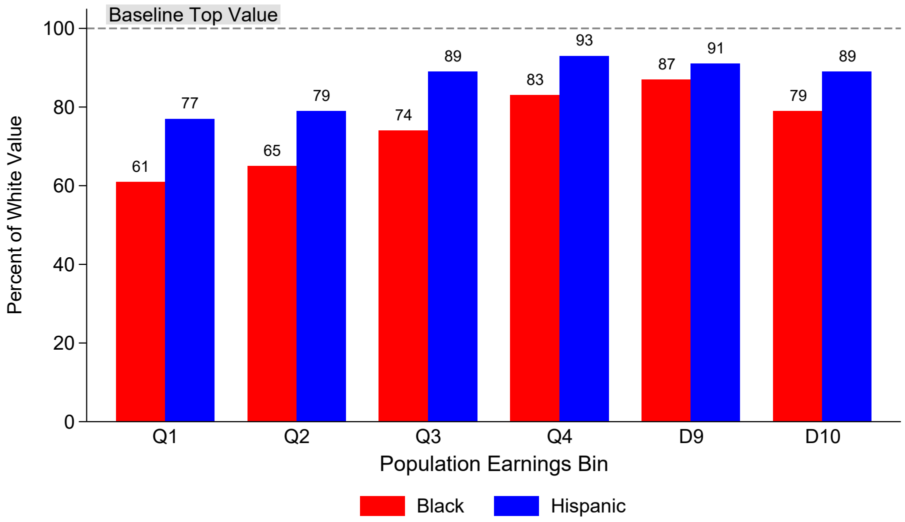
Cumulative effect of subsidies is large: around 40% of DC wealth



- Per \$ contributed, subsidies ↑ modestly with lifetime earnings
- Only modest variation by race and parental income given income

Distributional Incidence of Subsidies, by Race

By Population Quintiles (analogous to controlling for income)



Distributional Incidence of Subsidies, by Parental Income

By Population Quintiles (analogous to controlling for income)

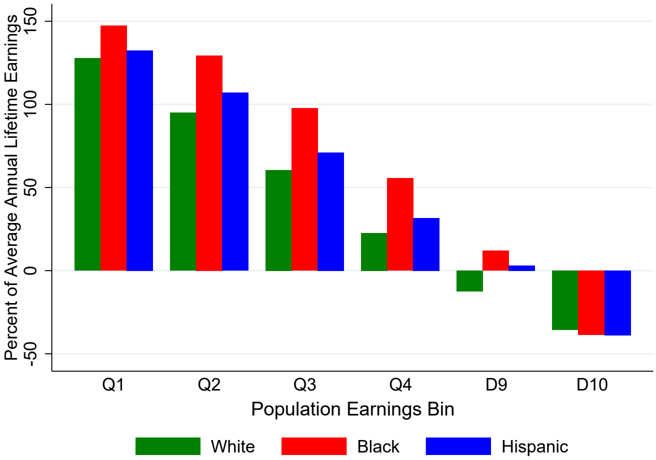
Counterfactuals

We undertake three counterfactuals:

1. Tax counterfactual: assume all workers get same benefit (as % of lifetime earnings)
2. Match counterfactual: Equalizing employer contributions (as % of salary) across all employees in each DC plan.
3. Combined counterfactual does both simultaneously

‘Combined’ Counterfactual, By Race

By population quintiles



▸ By Own-Group Quintiles

‘Combined’ Counterfactual, By Parental Income

By population quintiles

▸ By Own-Group Quintiles

Conclusion

- Current system is most favorable to workers who are White and/ or have richer parents
  - Both groups likely to have more access to liquidity

Conclusion

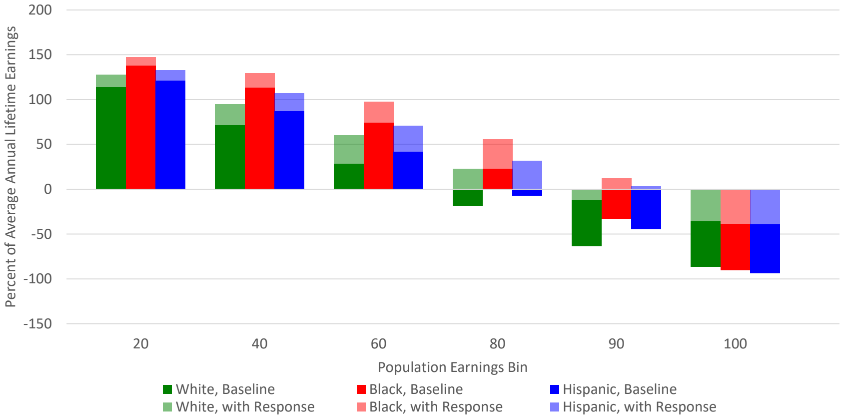
- Current system is most favorable to workers who are White and/ or have richer parents
  - Both groups likely to have more access to liquidity
- Often overlooked distributional impact of current DC system
  - differences across **income groups miss distributional features of system:** disparities (after controlling for income) by race, parents background, family structure, education, etc.
    - "It takes money to make money" ◂ Example: gaps by household structure & education

Conclusion

- Current system is most favorable to workers who are White and/ or have richer parents
  - Both groups likely to have more access to liquidity
- Often overlooked distributional impact of current DC system
  - differences across **income groups miss distributional features of system:** disparities (after controlling for income) by race, parents background, family structure, education, etc.
    - ★ "It takes money to make money" ◂ Example: gaps by household structure & education
- Broader take-aways for the retirement system:
  - more broadly, distributional analysis should look beyond income
  - detaching subsidies from contribution amounts may narrow racial and intergenerational DC wealth gaps – **gaps drop by more than one third** in combined counterfactual
  - perhaps benefits from increasing liquidity (changing loan & withdrawal penalty policies)

Combined counterfactual with behavioral response

Assume for each dollar of incentive removed 20c less employer saving done



Back

Intensive and Extensive Margins by Race

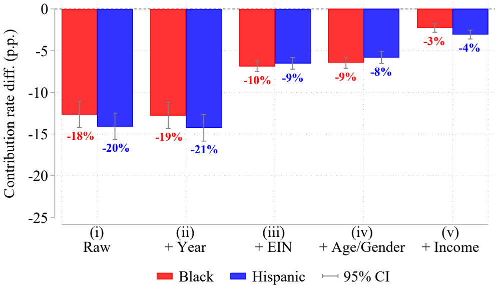


Figure: Participation

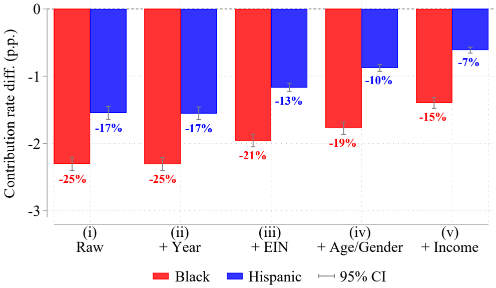


Figure: Contributions for Participators

Back Parent Income

Intensive and Extensive Margins by Parent Income

Figure: Participation

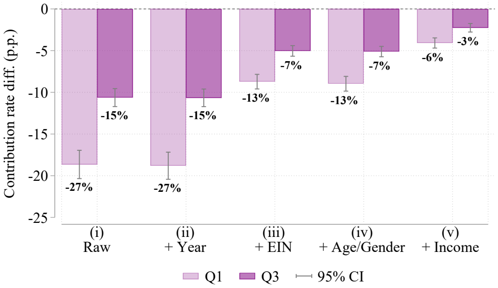
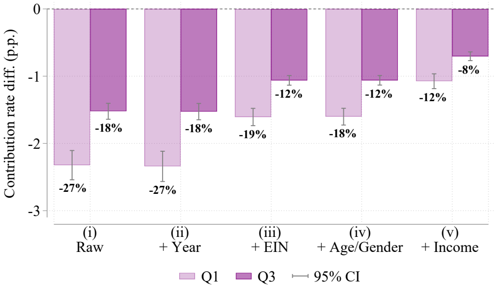


Figure: Contributions for Participators



Back Race

Alternative mechanisms that have little impact on racial gaps

Perhaps surprisingly, we found little impact on gaps from the following exercises:

1. **Access / generosity of DC plan**: given income & other indiv. characteristics ...
   - ... small differences in availability of DC plans across racial groups ✗
   - ... employer FE have little impact on racial contribution gaps ✗

Alternative mechanisms that have little impact on racial gaps

Perhaps surprisingly, we found little impact on gaps from the following exercises:

1. **Access / generosity of DC plan**: given income & other indiv. characteristics ...
   - ... small differences in availability of DC plans across racial groups ✗
   - ... employer FE have little impact on racial contribution gaps ✗

2. **Auto-enrollment** matters for level of contributions but does not change size of gaps ✗

Alternative mechanisms that have little impact on racial gaps

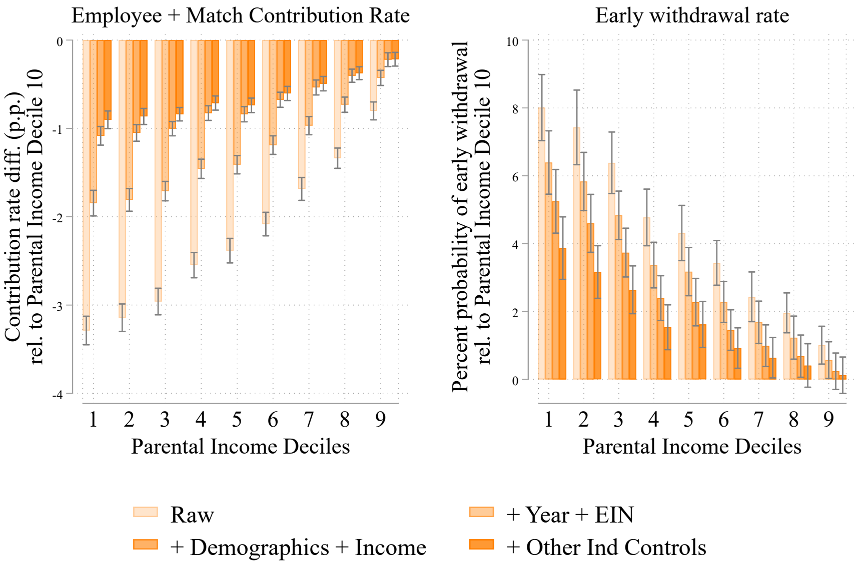
Perhaps surprisingly, we found little impact on gaps from the following exercises:

1. **Access / generosity of DC plan**: given income & other indiv. characteristics ...
   - ... small differences in availability of DC plans across racial groups ✗
   - ... employer FE have little impact on racial contribution gaps ✗

2. **Auto-enrollment** matters for level of contributions but does not change size of gaps ✗

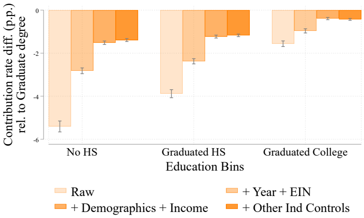
3. **Proxies for financial literacy / awareness**
   - Occupation FE ✗
   - Parental participation in 401(k) ✗

Contribution & Early Withdrawal Gaps by Parent Income Deciles

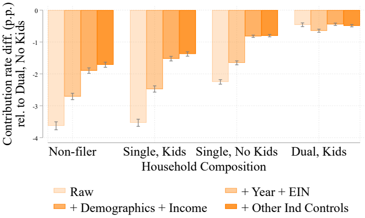


Also find large gaps by education and family structure

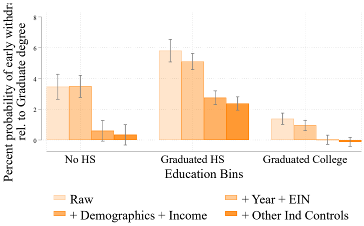
(a) Employee + Match Contrib. Rate, by Education



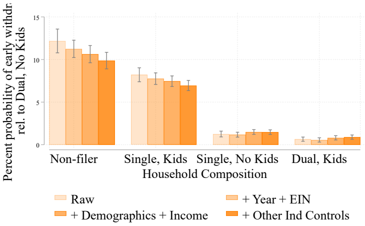
(b) Employee + Match Contrib. Rate, by Household composition



(c) Early withdrawal rate, by Education



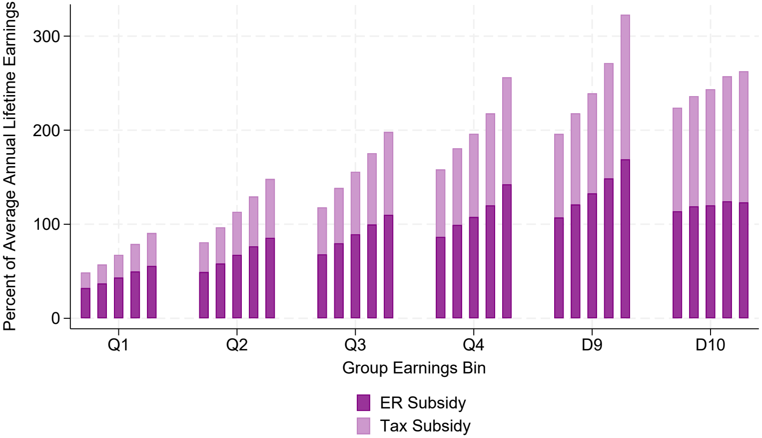
(d) Early withdrawal rate, by Household Composition



Back

Cont. of tax and employer match to wealth, by parent inc.

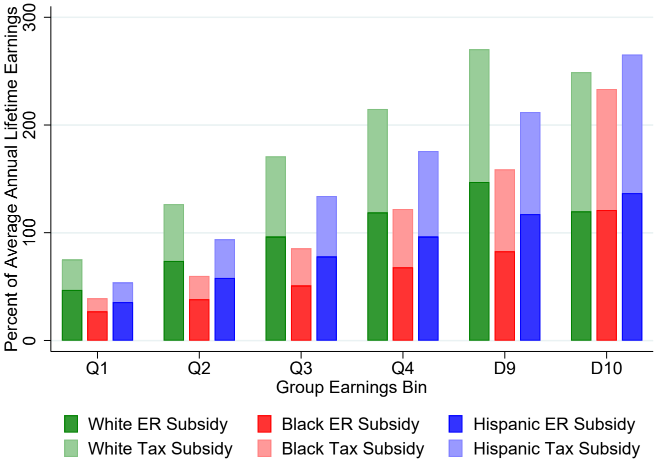
By Group Quintiles



Back

Contributions of tax and employer match to wealth, by race

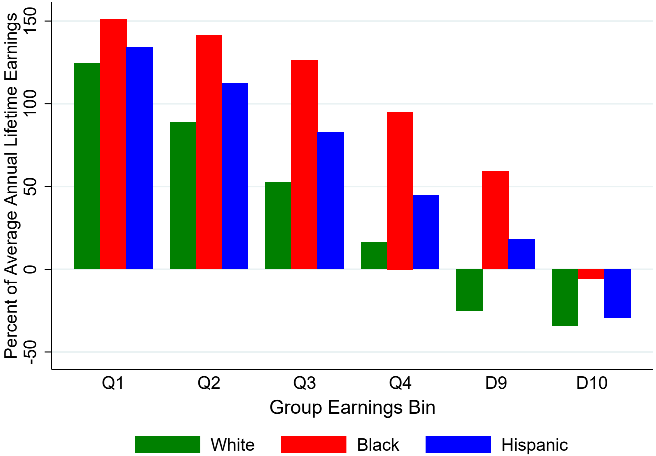
By Race Quintiles



Back

‘Combined’ Counterfactual, By Race

By race quintiles



Back

‘Combined’ Counterfactual, By Parental Income

By group quintiles

Back