The Life-Cycle Dynamics of Wealth Mobility

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- Intergenerational “social” wealth mobility key as context for large wealth inequality
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  - How much? Who moves how? What is behind these mobility patterns?

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Today: Flexibly and non-parametrically characterize lifetime wealth mobility

Possible with **Norwegian administrative data** on wealth 1993–2017

This paper

1. Study individuals as they transition across the wealth distribution over their lives
   - Study individuals' relative and absolute mobility (within-cohort wealth ranks + wealth levels)
   - But: as many different wealth histories as individuals
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1. Study individuals as they transition across the wealth distribution over their lives
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   - But: as many different wealth histories as individuals
   - Use clustering techniques to find "typical" trajectories responsible for mobility
2. Study how "typical" trajectories relate to other observable characteristics
   - Lifetime choices and events (portfolio composition, income, etc.)
   - Role of heterogeneity in income, savings, and returns
   - To which extent do individual characteristics at age 30 predict future trajectories?

Contributions

1. New evidence on wealth mobility and wealth accumulation: Full life cycle trajectories
   - Add to results for the super wealthy (Gomez; Ozkan, Hubmer, Salgado, Halvorsen), the role of individual factors (Huggett, Ventura, Yaron; Black, Devereux, Landaud, Salvanes), and short-run mobility and race (Hurst, Luoh, Stafford, Gale).
2. New facts documenting the distribution of changes in wealth ranks
   - Extensive literature on income (Guvenen, Ozkan, Karahan, Song; Guvenen, Pistaferri, Violante; Arellano, Blundell, Bonhomme; De Nardi, Fella, Paz-Pardo)
3. Inter-generational links to full life cycle wealth dynamics
   - Complements "snapshot" links in income (Solon; Aaronson, Mazumder; Chetty, Hendren, Kline, Saez, Turner; Chetty, Grusky, Hendren, Hell, Manduca, Narang) & wealth (Charles, Hurst; Boserup, Kopczuk, Kreiner; Fagereng, Guiso, Malacrino, Pistaferri; Fagereng, Mogstad, Rønning)
4. Dimension reduction methods in economics & applications to labor markets
   - K-Means (Bonhomme, Lamadon, Manresa; Gregory, Menzio, Wiczer), Sequence Analysis (Humphries), Hidden Markov (Ahn, Hobijn, Şahin), Finite Mixture

Norwegian Wealth Data

Data: Norwegian Tax Registry 1993 – 2017

- No top-coding + Limited misreporting or measurement error (third-party reporting)
  - Focus on wealth (e.g., don't include public pensions)
  - No transaction data (e.g., changing houses or selling stocks $\longrightarrow$ limited info. on returns)
- We adjust the tax value of real estate to market values (Fagereng, Holm, Torstensen, 2023)
- We focus on wealth at the individual level (additional results for household wealth)
- Key: We link to administrative records (Education, Family, Civil Status, Income)

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Sample selection: Norwegian residents 1993–2017 (no immigrants after 25/2011, no emigrants)

- Focus on birth cohort born between 1960 and 1965 (first observed in early 30s)
  - 292,222 individuals in this sample (279,002 after balancing)

Key Variables

- **Wealth:** Net worth = assets-debt $\longrightarrow$ **Primary Variable**
- **Assets & Debt:** Total assets and debt, and major asset categories
  - Domestic, foreign, property, vehicles, "safe," publicly and privately traded
  - Leverage, some assets are net positions
- **Income:** Including gifts/bequests, transfers, asset income, & earnings
- **Demographics:** Age, sex, education, civil status, place-of-birth
- **Lineage:** Match individuals to their parents and siblings

Ranks and Histories

- Compute within cohort ranks as

$$r_{i,t} = 100 \times F_w \left(w_{i,t} | t, i \in BC(i) \right)$$

  - Computed separately for each year and each cohort

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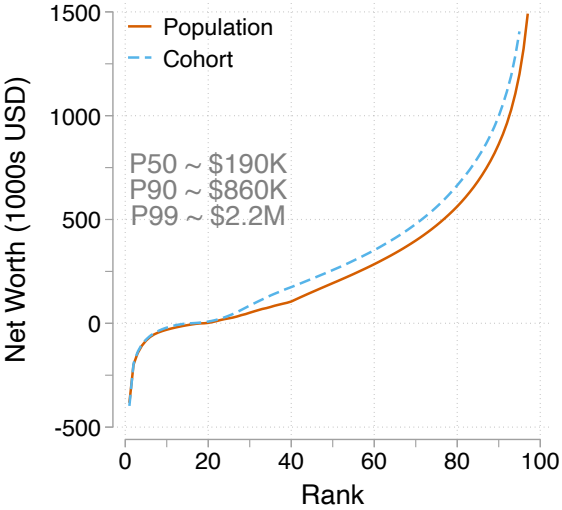
- Trajectories: Histories of ranks

$$\mathbf{R}_i = (r_{i,1993}, r_{i,1994}, \ldots, r_{i,2016}, r_{i,2017}) \in [0, 100]^{25}$$

We are interested in the distribution of the trajectories $\mathbf{R}_i$

Ranks vs Wealth Levels

Net Worth Inverse CDF (2014)



- Substantial wealth inequality in Norway
  ▸ Context
- Relative mobility in rank $\Longrightarrow$ absolute mobility in wealth level
- e.g. at the median, 10 ranks $\approx$ 60k USD
  ▸ BC vs Pop Ranks

US ~20: $620K ~80: $2.5M (SCF, 2022)

Wealth and Income Mobility

Measuring average intra-generational mobility

Relative Mobility Measures

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Relative Mobility Measures

- Rank-rank persistence: $r_{i,t} = \alpha_t + \rho_t r_{i,0} + u_{i,t}$; $M_t^R \equiv 1 - \rho_t$.
- Shorrocks Index: Transitions out of quintiles; $M_t^S \equiv 1 - \sum_i \mathbb{1}\{Q_{it} = Q_{i,1993}\}$.

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- Ray and Genicot: Cumulative instantaneous upward mobility;

$$M_t^{R\&G} \equiv \log\left(\frac{1}{N_t}\sum_i w_{i,t}^{-\alpha}\right)^{\frac{-1}{\alpha}} - \log\left(\frac{1}{N_{1993}}\sum_j w_{j,1993}^{-\alpha}\right)^{\frac{-1}{\alpha}}.$$

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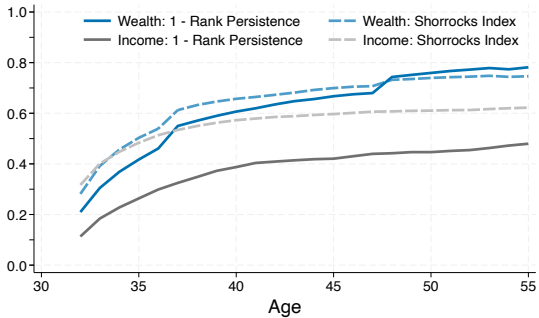
Exercise: Plot intra-generational mobility for income and wealth

Wealth is more mobile than income (!)

Relative Mobility



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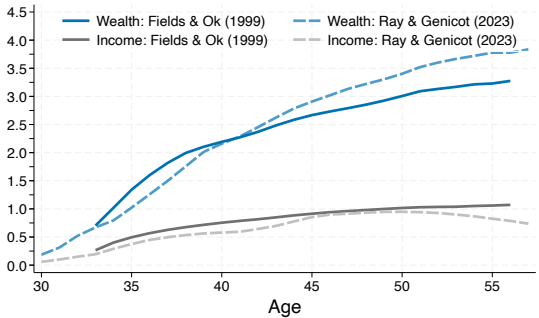

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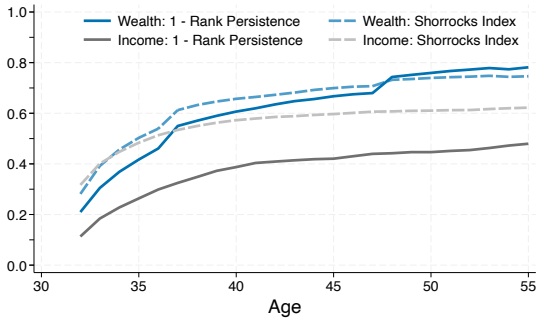

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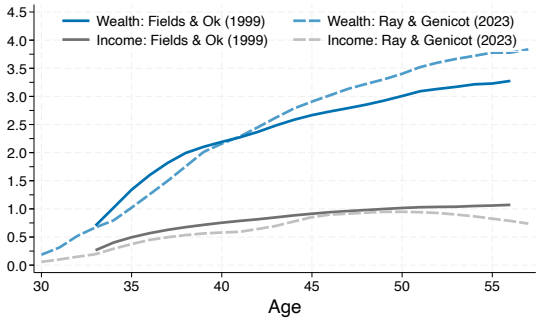

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  - Income: $M_t^R = 0.48$ and $M_t^S = 0.58$ by age 55

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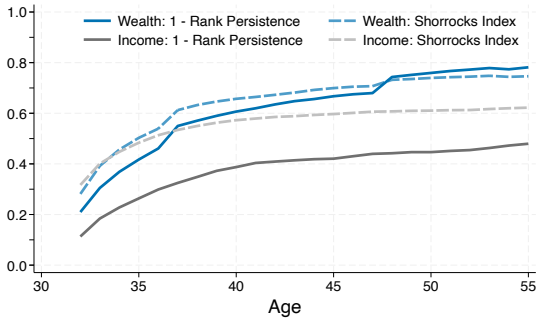

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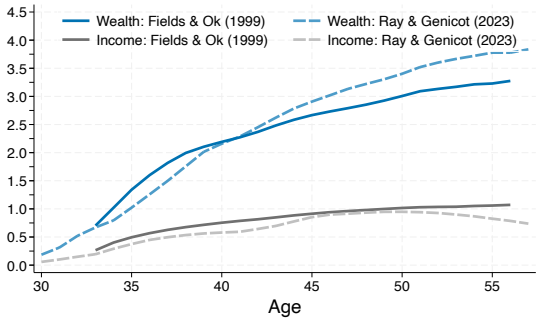

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- How broad-based is mobility? What (who) drives patterns?

Clustering Wealth Histories

Grouping Individuals Into Typical Histories

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Method: Agglomerative Hierarchical Clustering to group rank histories

- Start with $G = N$ groups (one for each individual)
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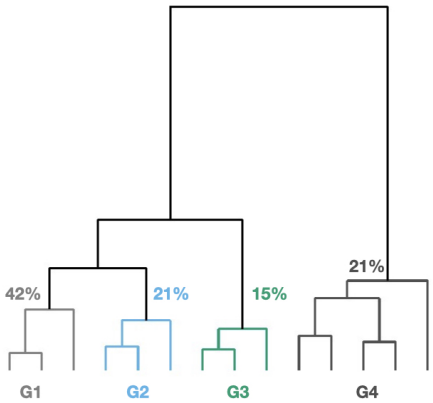
Result: Hierarchy of partitions ranging from $G = N$ to $G = 1$.

- Global result with nested clusters (feasible in large datasets)
- Asymptotically consistent as we observe longer trajectories, even for fixed N

  (Borysov, Hannig, Marron, 2014; Egashira, Yata, Aoshima, 2024)

Two Levels of Clustering

Clustering Tree



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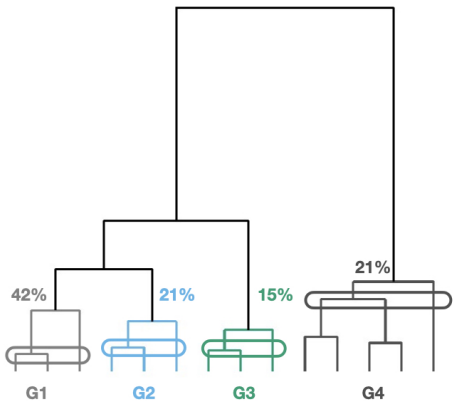
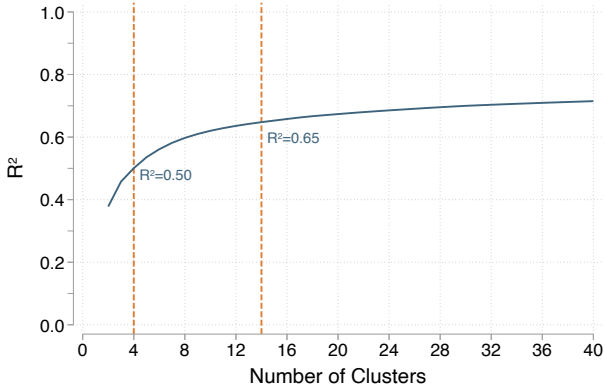
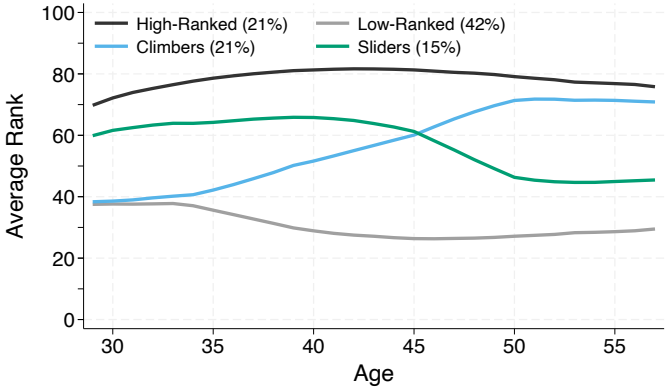


Variation Explained



Typical Rank Histories

Cohort Ranks



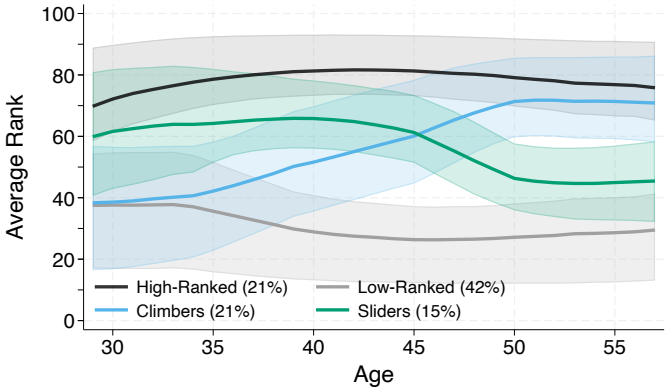
▸ Alt. Clustering ▸ Inc. Clustering ▸ Rnd Clustering

Four largest groups

- Wealthy/High Ranked: always at top of the distribution
- Poor/Low Ranked: always at the bottom of the distribution
- Middle: one group of Climbers and one group of Sliders

Typical Rank Histories

Cohort Ranks, interquartile range



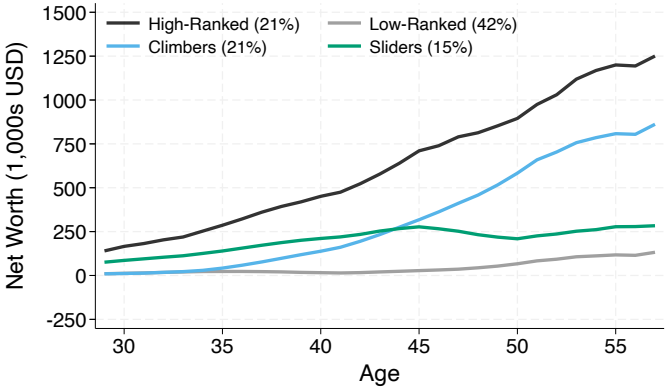
Segmented mobility

- Individuals move within segments of the distribution
- The mean trajectory of a group hides rank swaps within
  - Subclusters reveal patterns
- Segments overlap:
  Middle 60% Top & Bottom 40%

▸ Subclusters

Wealth Histories Across Segments of the Distribution

Net Worth ($1000s)



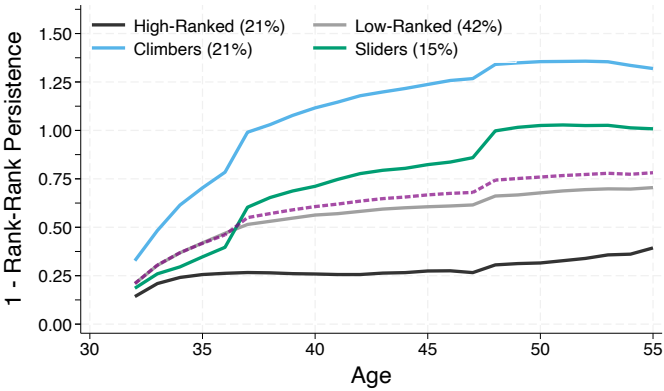
Significant diff. in wealth profiles

- Top: Maintaining rank means level growth (8-10%)
- Bottom: Stay very low
- Climbers: Grow on avg. 18%/y
- Sliders: ahead in 30s + low growth (5%) + Great Recession

▸ Absolute Mobility

Decomposing Mobility

Linear rank-rank persistence: $y^k_{i,t} = \alpha_t + \rho_t^{g(i)} y^k_{i,0} + u_{i,t}$



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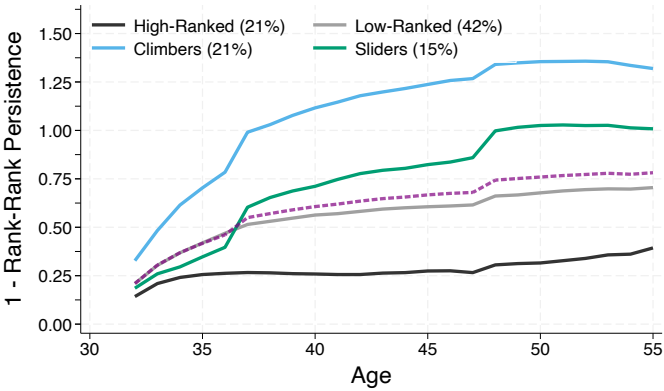

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- Middle-class mobility drives population mobility patterns. Climbers are key.

▸ Inter-Generational Mobility

Interpreting Mobility Groups

Wealth mobility in models of wealth dynamics

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Three exercises to contextualize our results:

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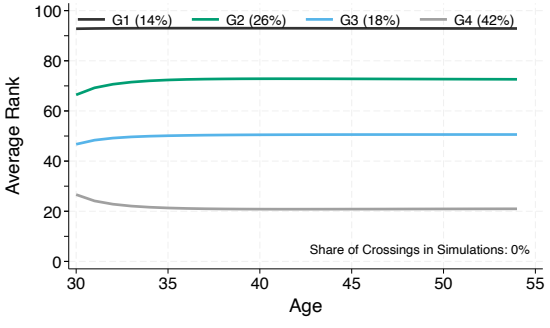
2. Portfolio choice and return heterogeneity details
   - Differences in wealth growth capable of matching wealth dynamics
3. Statistical models of wealth (Benhabib & Bisin, 2018; Gomez, 2023) details
   - Microfounded from canonical 2-asset model
   - Same results from full household heterogeneity model (Fagereng, Holm, Natvik, 2021, AEJ)

Wealth mobility in models of wealth dynamics

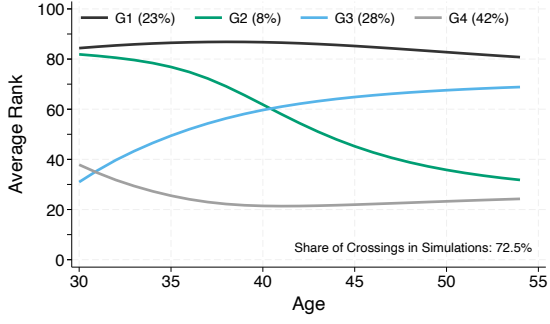
$$w_{i,t+1} = (1 + r_i)\, w_{i,t} + s y_{i,t}; \qquad \log y_{i,t+1} = \rho \log y_{i,t} + \epsilon^y_{i,t}; \quad \epsilon^y_{i,t} \sim N(0, \sigma(\epsilon^y))$$

Baseline: $\sigma(r) = 0$ and $s = 0.25$ (Fagereng, Holm, Moll, Natvik, 2019) and $\rho, \sigma(\epsilon^Y)$ (Fagereng, Holm, Natvik, 2021)

Baseline



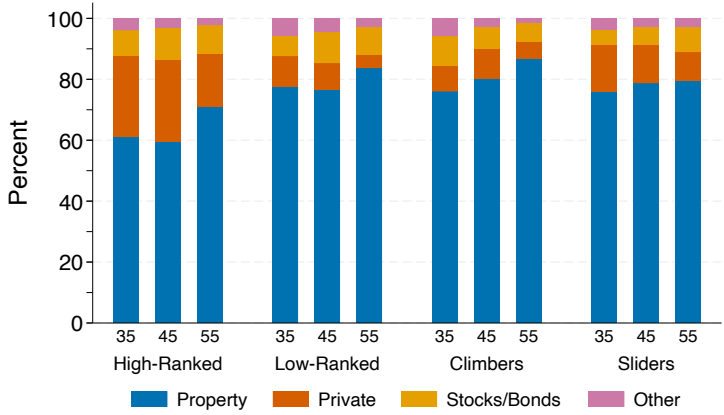
Return Het + $\text{Corr}(w_{i,0}, r_i) < 0$



- Return or savings rate heterogeneity is key along with distribution of initial conditions

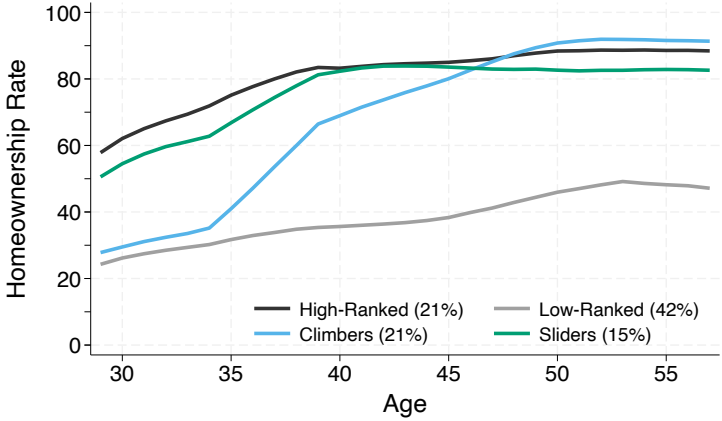
Drivers of Wealth Accumulation

Portfolio composition: Mostly housing (except at the top!)



- Private business wealth more important at the top and for sliders

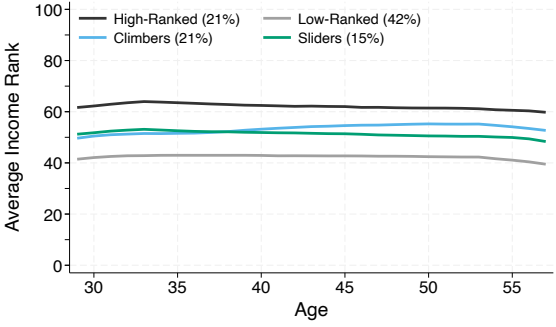
Homeownership Rates by Cluster



- Climbers: Catching up in homeownership. Relevant for wealth divergence.

Income Histories Across Segments of the Distribution

Income Cohort Ranks



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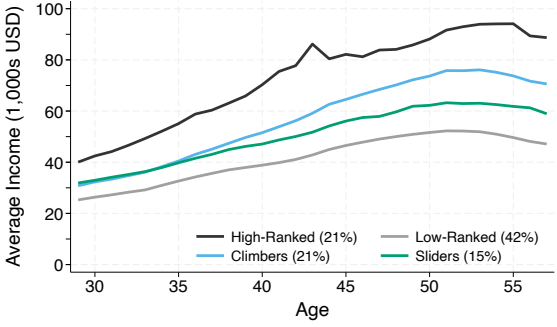

- Distribution of income across clusters compressed relative to wealth
- Clustering on income reveals parallel groups of permanent income
- Similar for HH income; Climbers same inc. as high-ranked on average

Median Income
Inc. Clusters
HH Inc.
CS

Towards Determinants of Trajectories

Hereditary Advantage: Wealth vs Human Capital

Goal: Understand role of different circumstances/characteristics in determining trajectories

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$$Pr\left(g=j\right)=F\left(\alpha_0^j+\beta^j_{\boldsymbol{q(i)}}+\gamma^j_{educ(i)}+\delta^j_{subj(i)}+\lambda^j_{male(i)}+\mu^j_{bcounty(i)}\right)$$

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- $\lambda_{male(i)}^j$: Indicator for sex ▸ Sex APE
- $\mu_{bcounty(i)}^j$: Indicator for birth location ▸ Location APE

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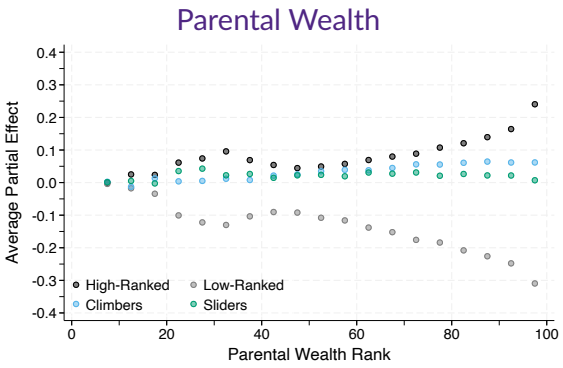
$$Pr\left(g=j\right)=F\left(\alpha_0^j+\beta_{q(i)}^j+\gamma_{educ(i)}^j+\delta_{subj(i)}^j+\lambda_{male(i)}^j+\mu_{bcounty(i)}^j\right)$$

- $\beta_{q(i)}^j$: Indicators for 1993 parental wealth (cohort rank by ventile)
- $\gamma_{educ(i)}^j$, $\delta_{subj(i)}^j$: Indicators for education level and subject (only for higher ed.) ▸ Levels
- $\lambda_{male(i)}^j$: Indicator for sex ▸ Sex APE
- $\mu_{bcounty(i)}^j$: Indicator for birth location ▸ Location APE

Predictors explain at most 6% of cross-group variation (same as rank-rank inter-gen reg) ▸ Results

Non-Linear Effects of Parental Wealth and Education

PW CIs | ED CIs | ED Field

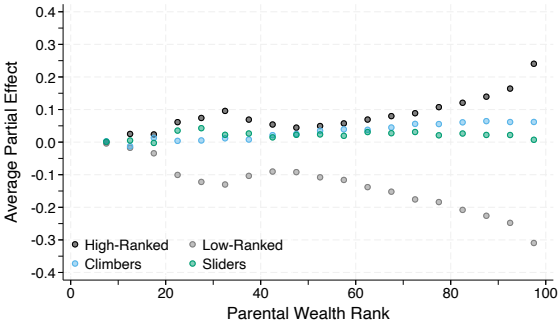


- Parental wealth's explanatory power: High for top/bottom, limited for middle groups

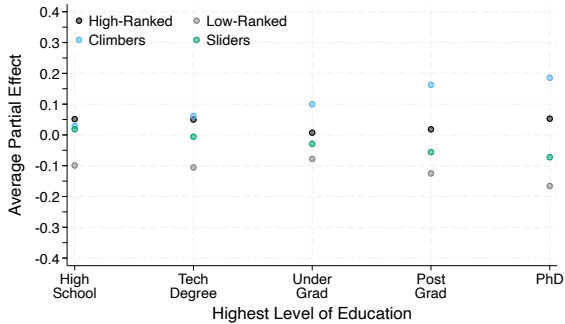
Non-Linear Effects of Parental Wealth and Education

PW CIs | ED CIs | ED Field

Parental Wealth



Education



- Parental wealth's explanatory power: High for top/bottom, limited for middle groups
- Education tells risers/fallers apart: Equalizing effect but doesn't overcome initial cond.

Ex Ante and Ex Post Heterogeneity Together

Mobility of Human Wealth

- Education matters for mobility through incomes; Parents through initial conditions.
- Human Wealth: Assets $+$ present value of future labor income

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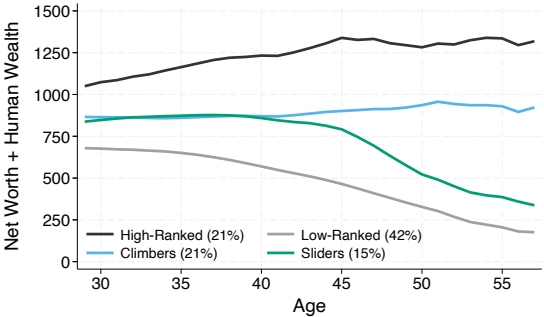
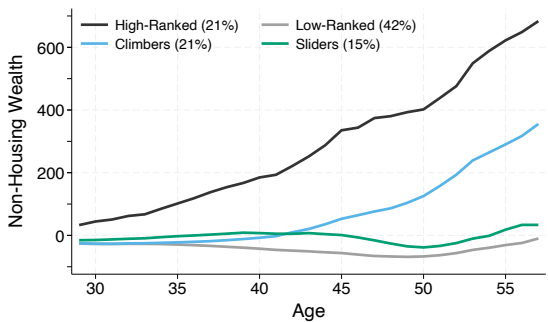
Human Wealth



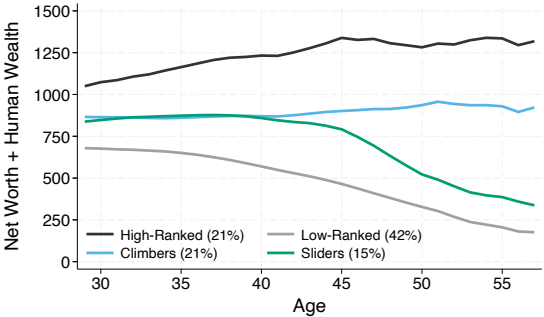
Non-Housing Wealth



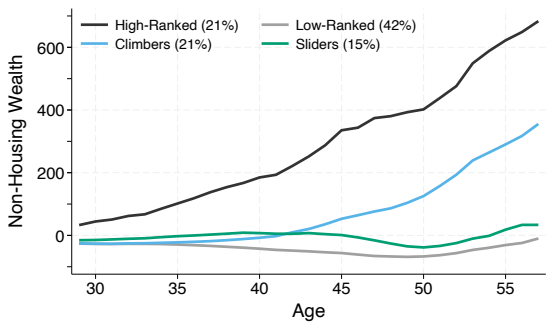
Mobility of Human Wealth

- Education matters for mobility through incomes; Parents through initial conditions.
- Human Wealth: Assets + present value of future labor income

Human Wealth



Non-Housing Wealth



- Initial Climber/Slider gap closed by future earnings
- Divergence as Climbers move from housing to fin. assets & Sliders' businesses stall

Conclusions

Conclusions

Contribution: Flexibly and non-parametrically characterize lifetime wealth mobility

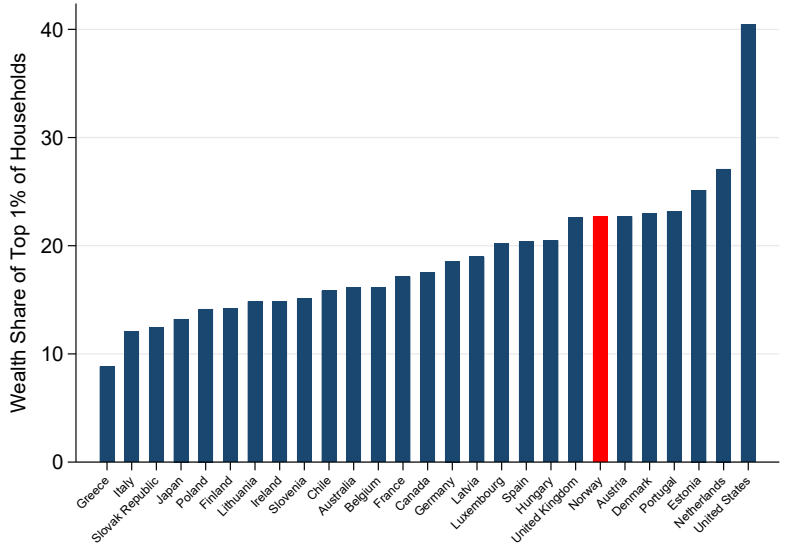
Key takeaways:

1. Find evidence of substantial changes in wealth ranks over a quarter century
2. Mobility driven by selected groups in the middle of the distribution
3. Persistent differences in saving behavior across groups beyond income
4. Parental background and education predict distinct wealth trajectories

Details on Wealth Measurement

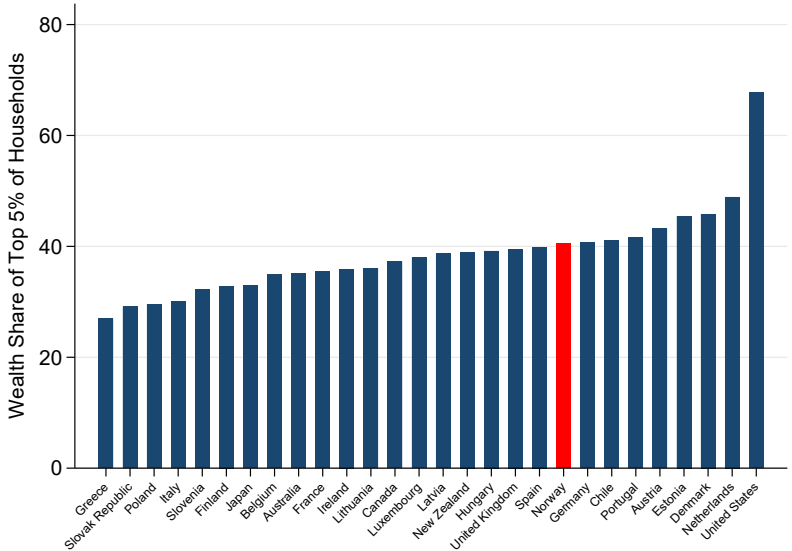
Norway in Context

Back



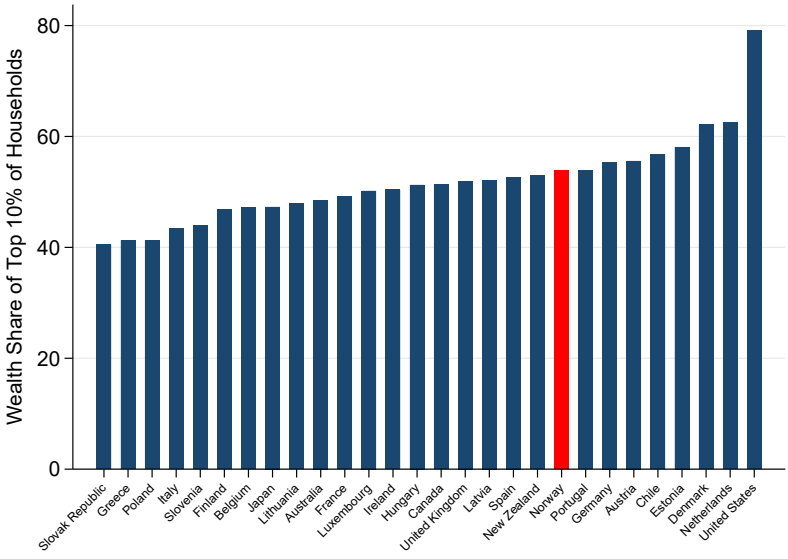
Norway in Context: Top 5% Share

Back



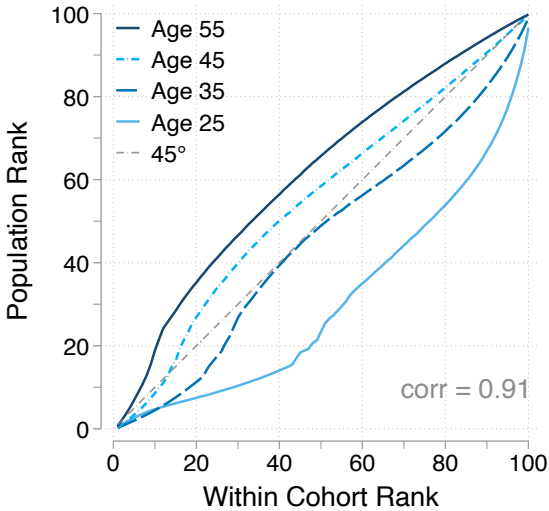
Norway in Context: Top 10% Share

Back



Birth Cohort Ranks vs Population Ranks

back



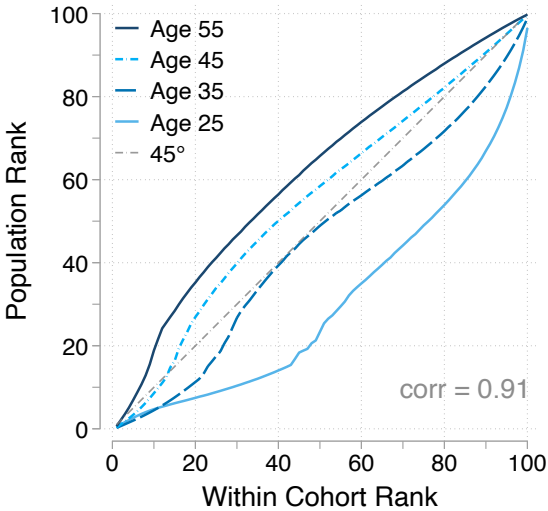
- Changes in wealth levels at each rank as the cohort ages
- 75 percent of age 25 individuals are below the median
- 35 percent of age 55 individuals are below the median

Household Ranks

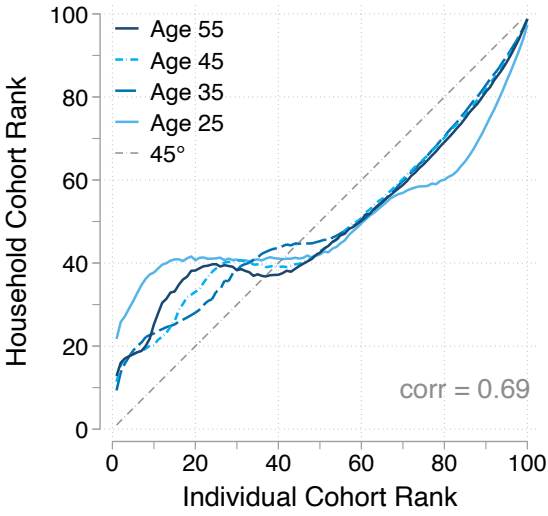
Birth Cohort Individual Ranks vs Household Ranks

back

BC Ranks vs Pop Ranks



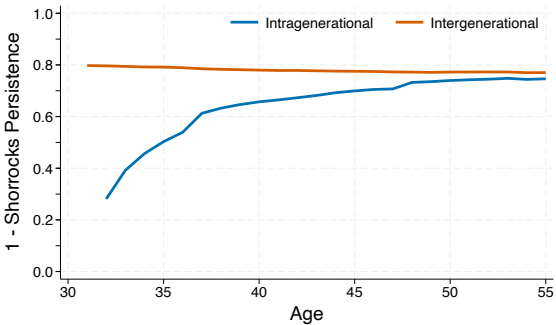
BC Individual Ranks vs Household Ranks



Shorrocks Mobility Index

Shorrocks Mobility Index back

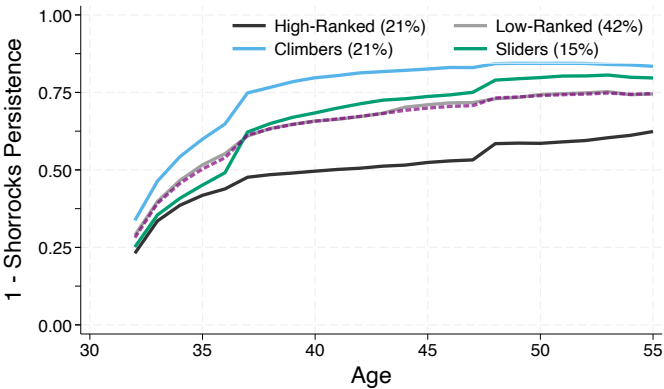
Trace of transition matrix: Divide individuals by quintiles.



- Declining intra-generational persistence $\longrightarrow$ Increased mobility
- Increasing inter-generational persistence $\longrightarrow$ Decreased mobility

Intra-Generational Shorrocks Mobility Index

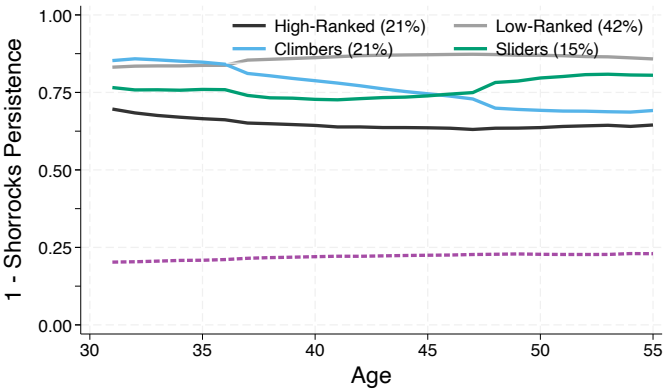
back



- Top: Higher persistence than population
- Fallers: Lower persistence than population

Inter-Generational Shorrocks Mobility Index

back



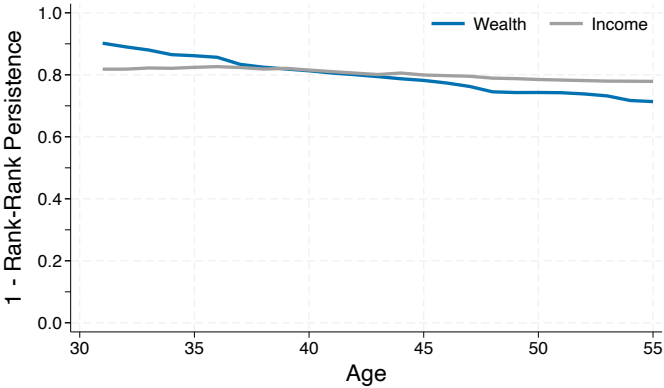
- Risers have clear upwards persistence trend
- Flat patterns for other groups

Intergenerational Mobility

Decreasing Inter-Generational Mobility

back

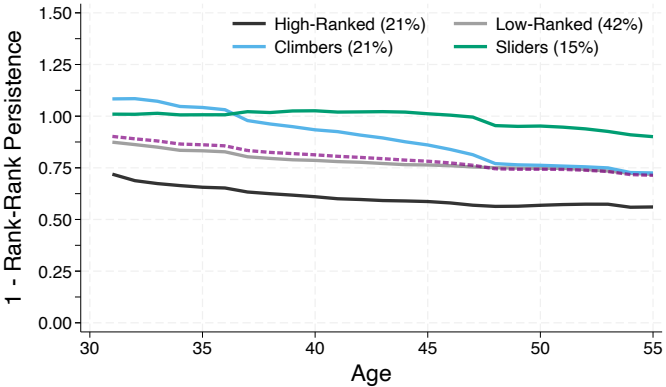
Linear rank-rank persistence: $y^k_{i,t} = \alpha_t + \rho_t y^p_{i,0} + u_{i,t}$



- Compute measure of mobility with respect to wealth of parents at age $\sim$ 55
- Mobility slightly dropping over life cycle
- People become more like their parents as they age
- Income has no trend, consistent with permanent income types

Decreasing Inter-Generational Mobility

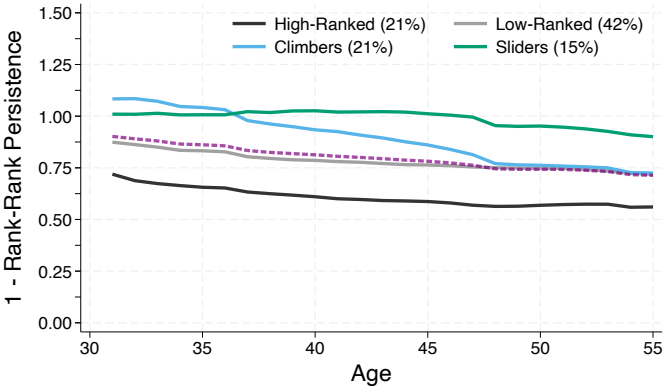
Linear rank-rank persistence: $y^k_{i,t} = \alpha_t + \rho_t^{g(i)} y^p_{i,0} + u_{i,t}$



- Persistence rises for all groups
- Level differences look parallel

Decreasing Inter-Generational Mobility

Linear rank-rank persistence: $y^k_{i,t} = \alpha_t + \rho^{g(i)}_t y^p_{i,0} + u_{i,t}$



- Persistence rises for all groups
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- Except for climbers! Clear upward trend increasing inter-generational persistence
- Sliders are clearly below ($\rho^{g(i)}_t \approx 0$) and dampen inter-generational persistence

Decreasing Inter-Generational Mobility

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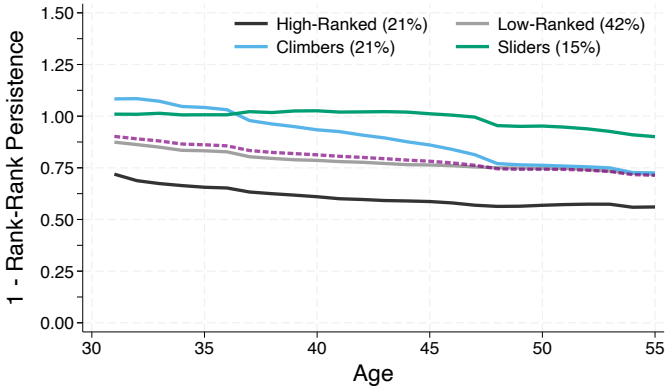

- Persistence rises for all groups
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- Except for climbers! Clear upward trend increasing inter-generational persistence
- Sliders are clearly below ($\rho^{g(i)}_t \approx 0$) and dampen inter-generational persistence

- Clustering of trajectories captures persistent differences in mobility

Contextualize Clusters

Grouping wealth trajectories within the buffer-stock model

back

Standard model w/ permanent skill differences (l) and homothetic preferences ($u(\cdot), v(\cdot)$)

$$\max_{\{c_t, a_{t+1}\}} \mathbb{E}_0 \left[\sum_{t=0}^{T} \beta^t S_t \left(u(c_t) + \frac{S_{t+1}}{S_t} v(a_{t+1}) \right) \right]$$

$$\text{s.t.} \quad c_t + a_{t+1} = (1+r) a_t + l y_t(z_t); \quad a_{t+1} \geq 0; \quad a_0 = 0$$

Grouping wealth trajectories within the buffer-stock model

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$$\max_{\{c_t, a_{t+1}\}} \mathbb{E}_0 \left[\sum_{t=0}^{T} \beta^t S_t \left(u(c_t) + \frac{S_{t+1}}{S_t} v(a_{t+1}) \right) \right]$$

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1. Average of income & wealth scaled by l at each age t (Straub 2019)
   - Grouping on income or wealth is equivalent $+$ No rank swaps
   - This is not what we find in the data!
2. We can make precise the conditions for consistency: l should be different enough (Egashira, Yata, Aoshima, 2024)

Wealth growth with heterogeneous returns

back

Risky returns vary around *permanent return* I_R

$$\max_{\{c_t, b_{t+1}, x_{t+1}\}} \mathbb{E}_0 \left[\sum_{t=0}^{T} \beta^t u(c_t) + v(a_{T+1}) \right]$$

$$\text{s.t.} \quad c_t + b_{t+1} + x_{t+1} = a_t + Y_t; \quad a_{t+1} = R_f b_{t+1} + R_{t+1} x_{t+1};$$

Wealth growth with heterogeneous returns

back

Risky returns vary around *permanent return* l_R

$$\max_{\{c_t, b_{t+1}, x_{t+1}\}} \mathbb{E}_0 \left[\sum_{t=0}^{T} \beta^t u(c_t) + v(a_{T+1}) \right]$$

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1. Wealth growth independent of permanent income
   - Total wealth $=$ Assets $+$ Human Wealth
   - When initial assets are correlated with permanent income, income differences imply permanent wealth differences
2. Expected wealth growth depends on permanent return differences (Fagereng, et al, 2020)
   - Differences in discount factor work similar in theory, not in practice

Two-asset model of savings

back

Two-asset model of savings with labor income risk + non-homothetic bequest motive

$$\max \mathbb{E}_0 \left[\sum_{t=0}^{T} \beta^t \frac{(c_t)^{1-\gamma}}{1-\gamma} + \beta^T \psi_0 \frac{(a_T + b_T + \psi_1)^{1-\gamma}}{1-\gamma} \right]$$

$$\text{s.t.} \quad b_t = b_{t-1} + r a_{t-1} + \exp(y_t) - d_t - \kappa \mathbb{1}_{a_t \neq a_{t-1}} - c_t ; \quad a_t = a_{t-1} + d_t ;$$

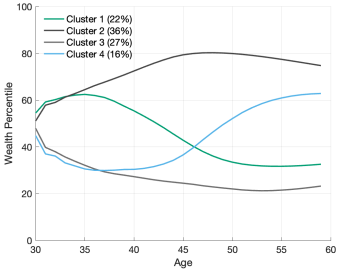
$$y_t = \tau_t + p_t + \varepsilon_t^T ; \quad p_t = \rho p_{t-1} + \varepsilon_t^p ;$$

- Liquid and illiquid assets to match distribution of MPC (wealthy hand-to-mouth)
- Parameters estimated with Norwegian Tax Registry data (incld. life cycle earnings)
- Matches income dynamics + MPC-Age profile + MPC-Wealth correlation

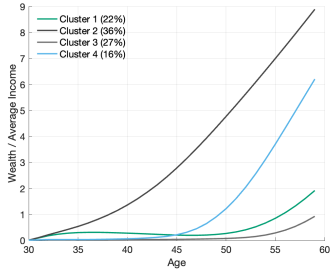
Wealth mobility in Fagereng, Holm, Natvik (2021)

back

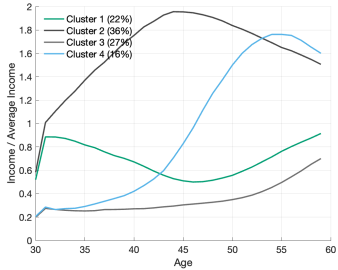
Wealth Ranks



Wealth Levels



Income Levels



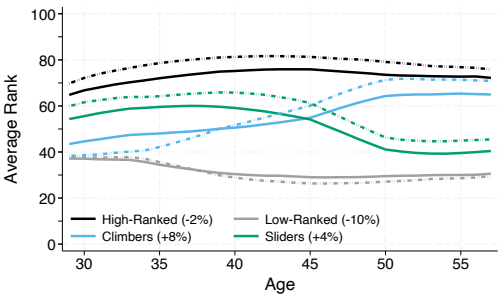
- Model captures crossing pattern (despite low initial dispersion)
  - Age-profile of wealth is off (increased speed at older ages)
- Crossing patter is not enough: Joint income-wealth dynamics are off
  - Wealth follows income too closely
  - Not enough difference in wealth accumulation speed (returns, savings)

Characteristics of Main Clusters

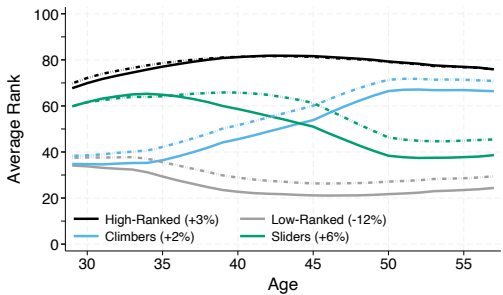
Alternative Clustering

Back

Household Cohort Ranks



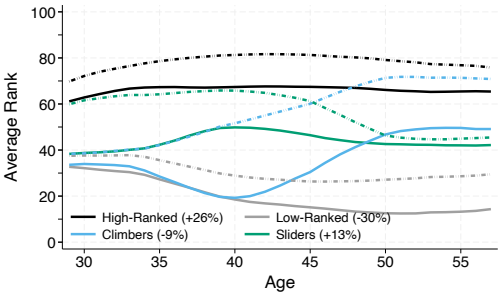
K Means on Ind. Cohort Ranks



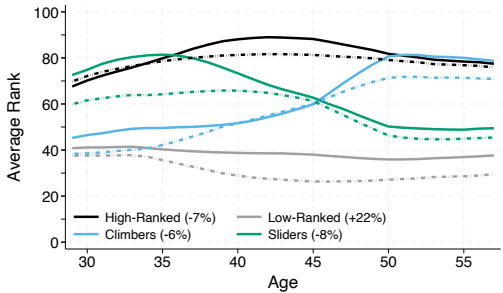
Absolute Mobility

Back

Log Net Worth



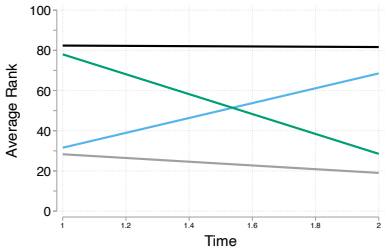
"Lorenz" Ordinates



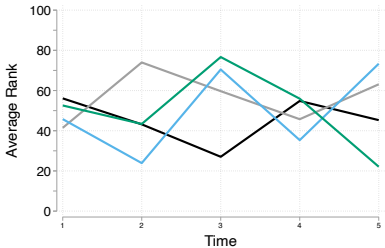
Clustering Random Ranks

Back

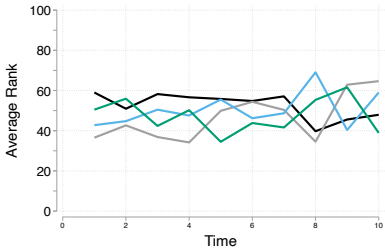
2 Periods



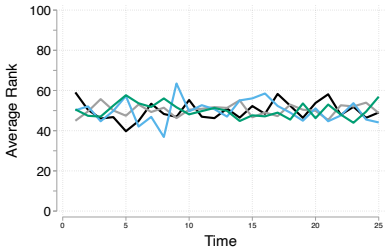
5 Periods



10 Periods

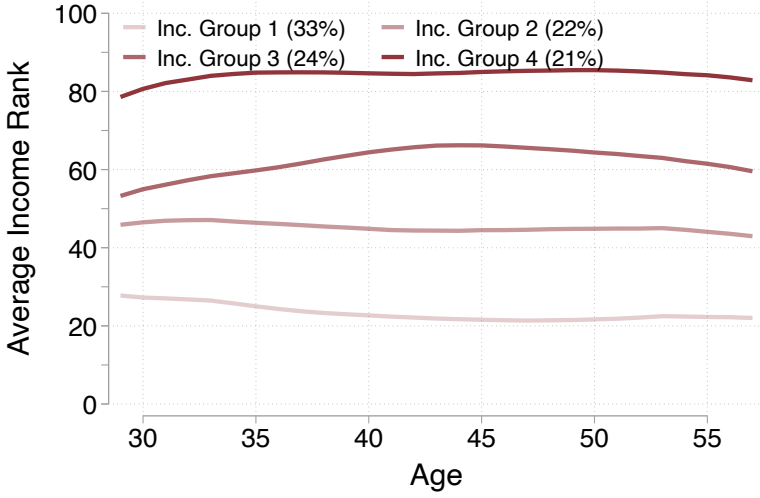


25 Periods



Clustering on Income

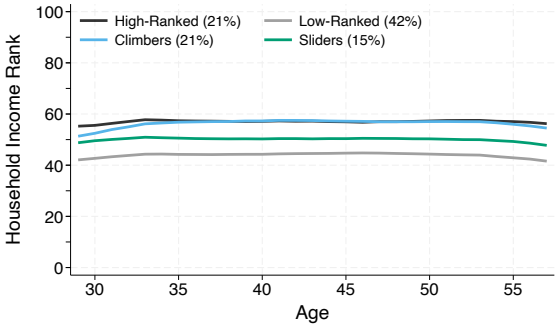
Back



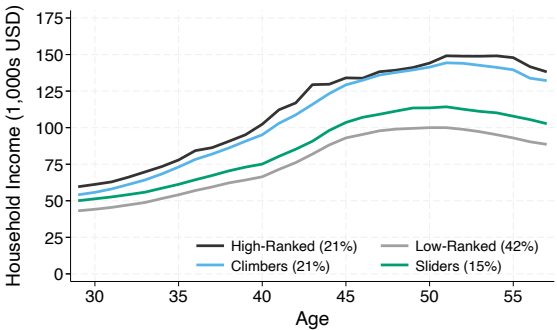
Household Income

Back

Household Income Cohort Ranks



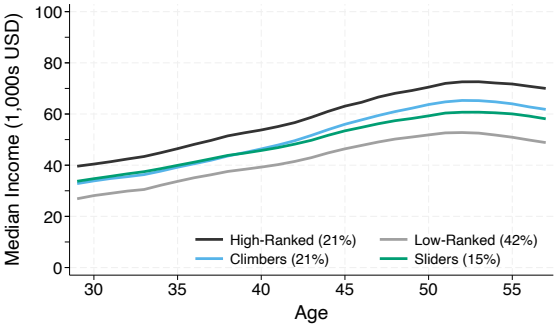
Household Income ($1000s)



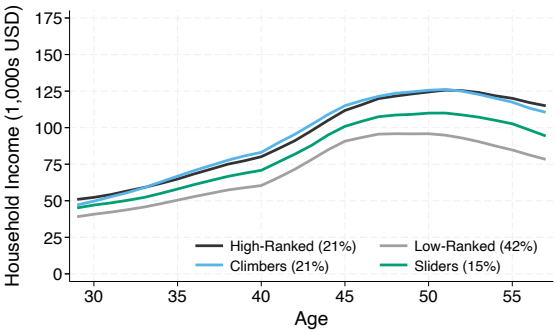
Median Income Histories

Back

Median Income

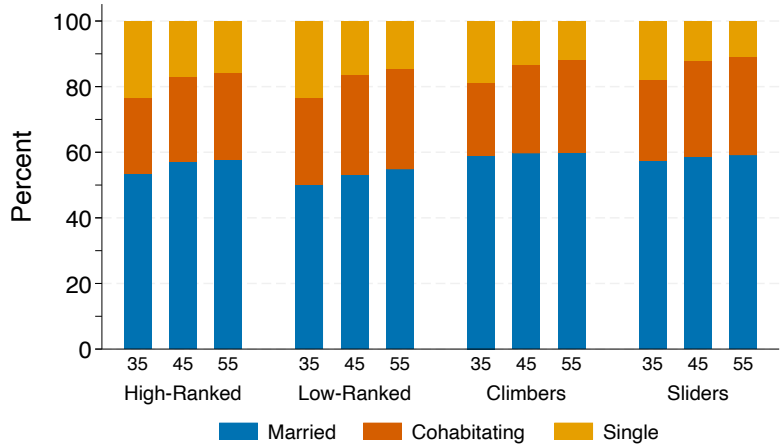


Household Median Income ($1000s)



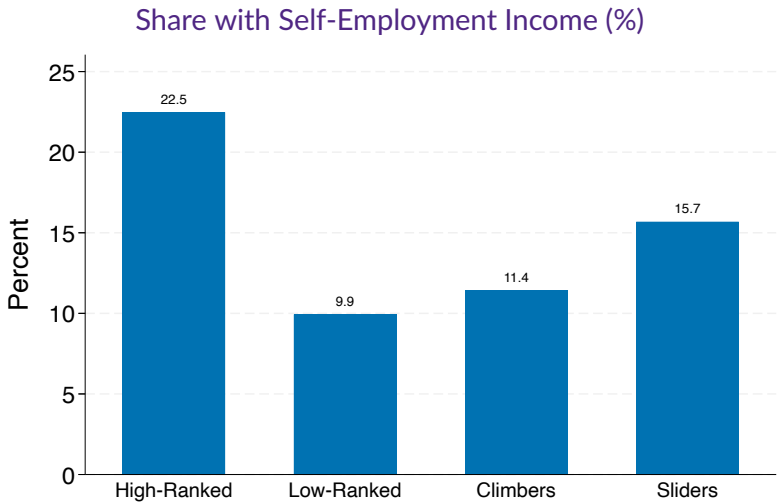
Civil Status

Back



Self-Employment Rates, Age 45

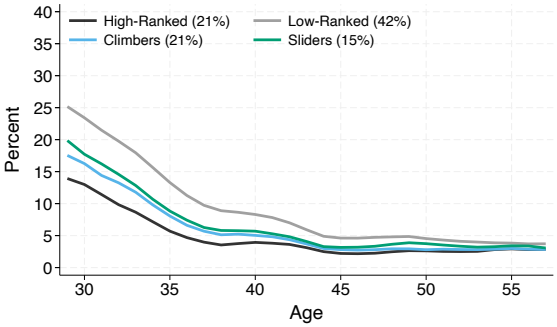
Back



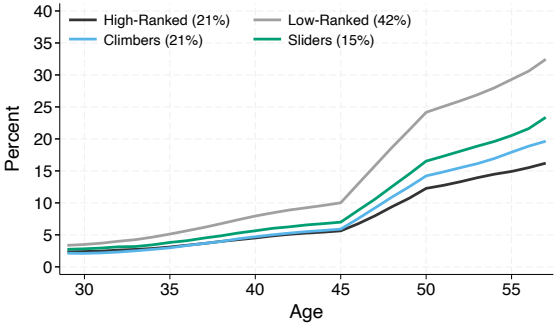
Transfers: Unemployment, Disability, Sick Leave, Nursing

Back

Share with Unemployment Benefits (%)



Share with Health-Related Transfers (%)

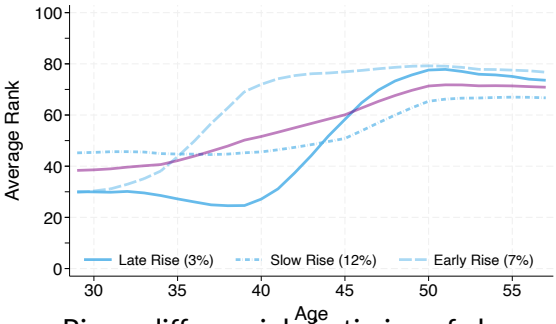


Characteristics of Sub-Clusters

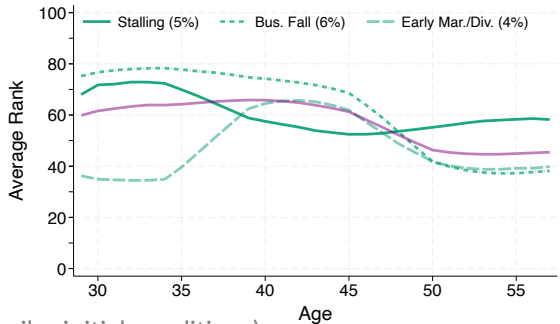
Heterogeneity in Trajectories

Wealth | Portfolio | Homeownership | Inc. | SE | Edu.

Middle-Risers



Middle-Fallers

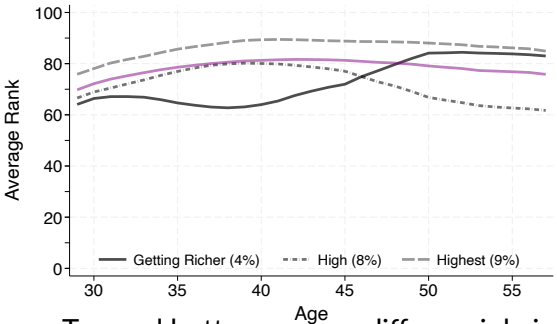


- Risers differ mainly in timing of changes (similar initial conditions)
- Fallers differ in initial conditions and timing of changes (similar final conditions)

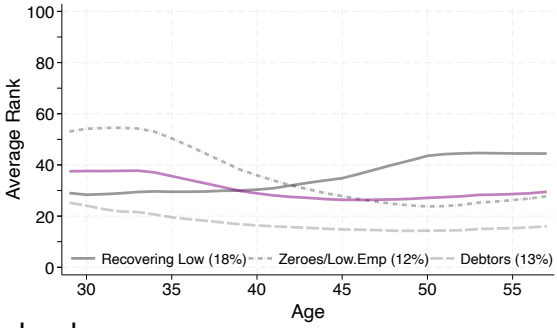
Heterogeneity in Trajectories

Wealth | Portfolio | Homeownership | Inc. | SE | Edu.

High-Ranked



Low-Ranked



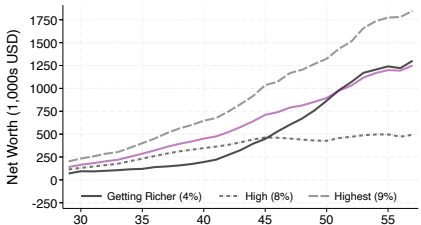
- Top and bottom groups differ mainly in avg. levels
- Zeros are quite different from debtors

Next Step: Relate differences in timing/level to individual circumstances

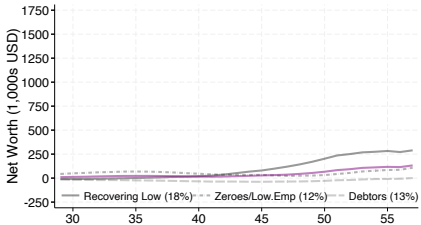
Sub-Clusters: Wealth Levels

Back

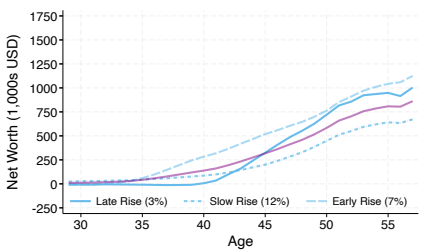
High Ranked



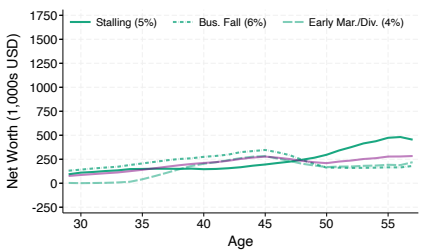
Low Ranked



Middle Risers



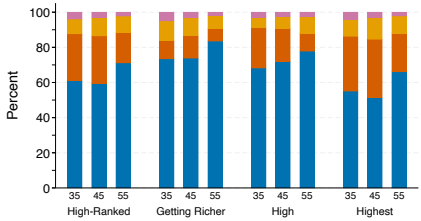
Middle Fallers



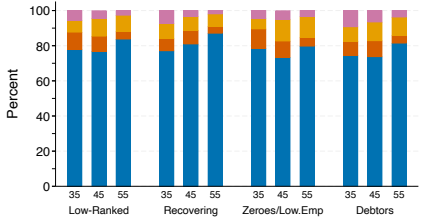
Sub-Clusters: Portfolio

Back

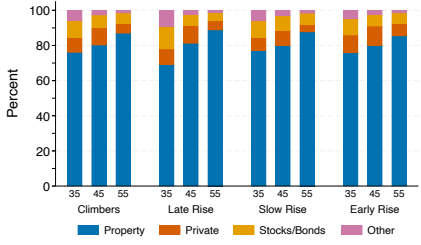
High Ranked



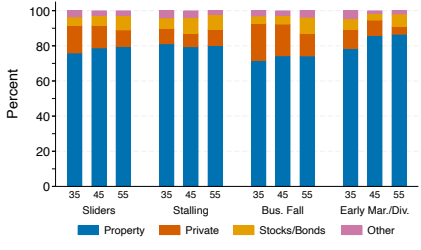
Low Ranked



Middle Risers



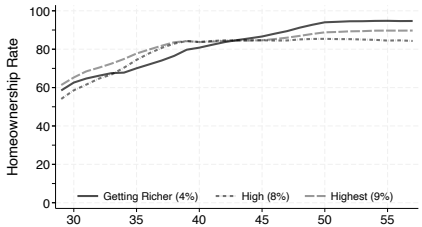
Middle Fallers



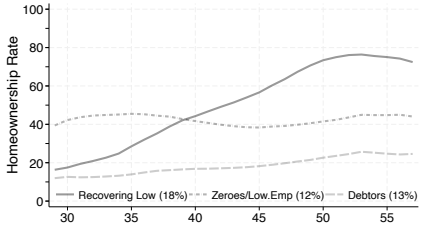
Sub-Clusters: Homeownership

Back

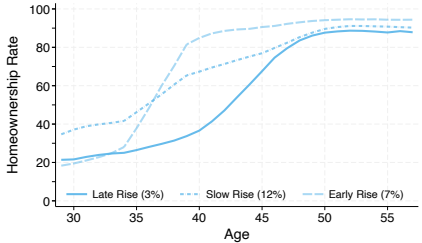
High Ranked



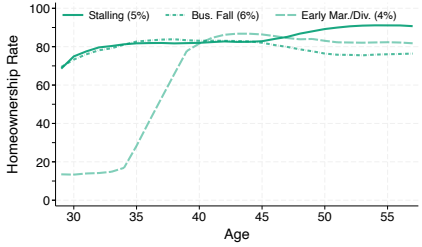
Low Ranked



Middle Risers



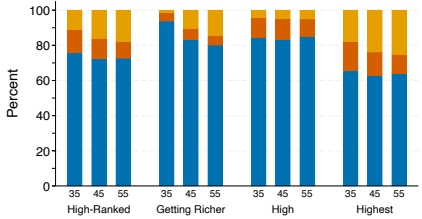
Middle Fallers



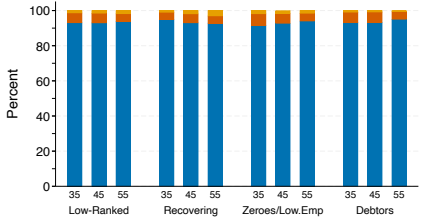
Sub-Clusters: Income Composition

Back

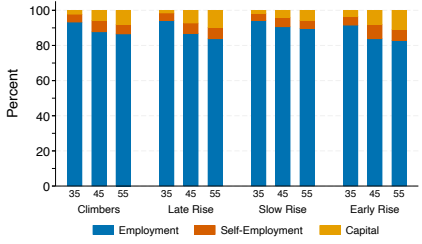
High Ranked



Low Ranked



Middle Risers



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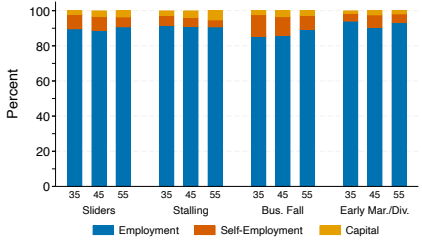
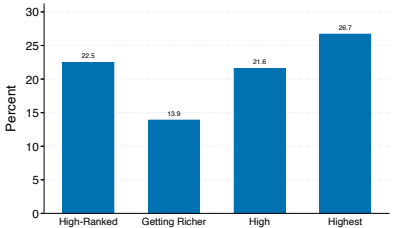


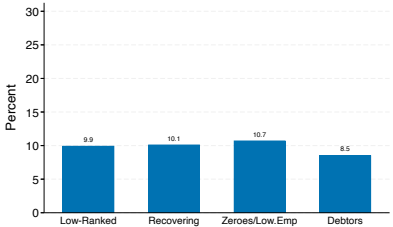
Sub-Clusters: Self-Employment

Back

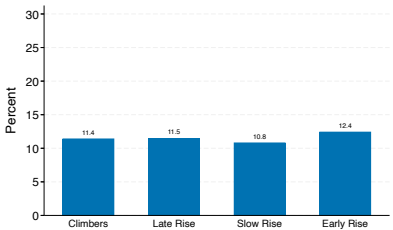
High Ranked



Low Ranked



Middle Risers



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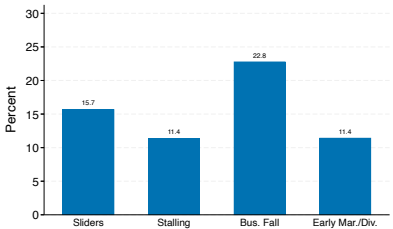
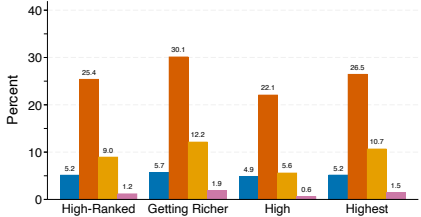


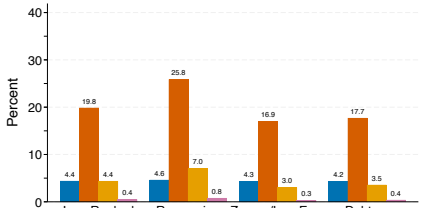
Sub-Clusters: Education

Back

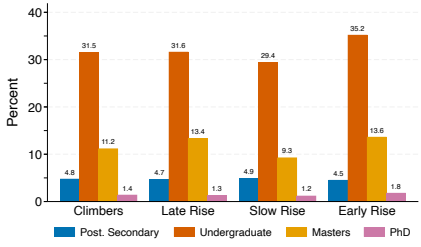
High Ranked



Low Ranked



Middle Risers



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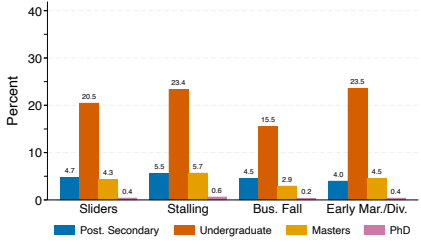

Shapley-Owen Decomposition

How Important Are Ex-Ante Explanations? Back

Two measures:

1. Distance Weighted Classification Rate $\in [0, 1]$

$$1 - \frac{\sum_{i=1}^{N} \sum_{k=1}^{G} \widehat{Pr}(g = k|X_i) D(g(i), k)}{\sum_{i=1}^{N} \sum_{k=1}^{G} \widehat{Pr}(g = k) D(g(i), k)} \qquad \left(\text{in spirit of } \frac{ESS}{TSS} \right)$$

How Important Are Ex-Ante Explanations? Back

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2. Correct Classification Rate $\in [0, 1]$

$$\frac{1}{N} \sum_{i=1}^{N} \sum_{k=1}^{G} \widehat{Pr}\left(g = k \mid X_i\right) \mathbb{1}[g(i) = k]$$

How Important Are Ex-Ante Explanations? Back

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- Report Shapley-Owen decomposition of covariates
  - Order invariant & sums to statistic + Single value per covariate category

How Important Are Ex-Ante Explanations?

Back

Total Contribution*	Partial Contribution			
	Parent	Education	Sex	Birth Place
Share of Distance Variation Explained by Variable (pp)				
5.9	2.4	2.3	0.8	0.4
Share of Individuals Correctly Classified (pp)				
3.1	1.1	1.3	0.6	1.2

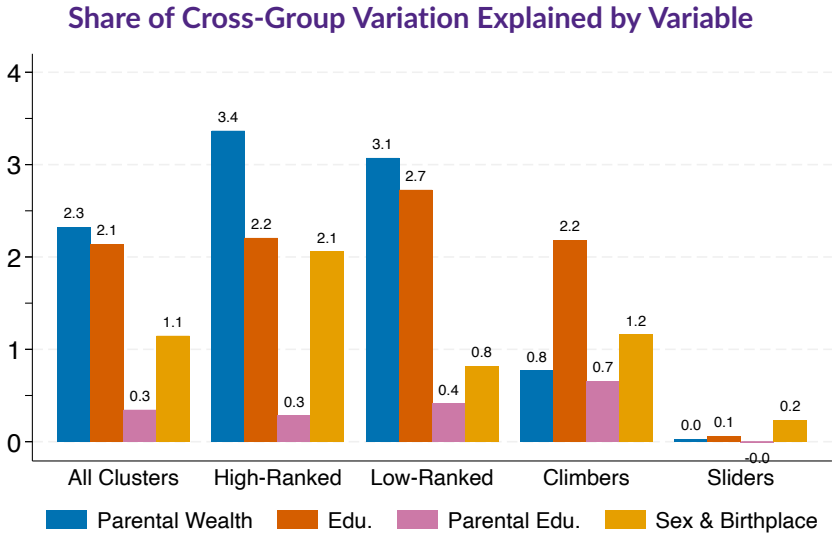
*Contribution relative to random classification using population shares.

Share of individuals correctly classified by random classification 29.3% vs 32.5% with full model.

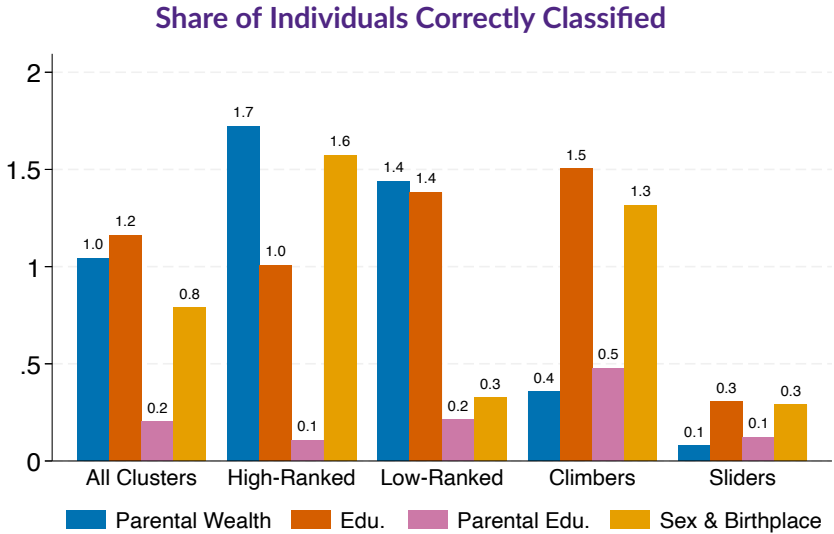
D by Cluster C by Cluster

How Important Are Ex-Ante Explanations?

back



How Important Are Ex-Ante Explanations? back



How Important Are Ex-Ante Explanations? Extra controls

Back

Total Contribution*	Partial Contribution					
	Parent	Education	Sex	Birth Place	Par. Bus.	Own State
Share of Distance Variation Explained by Variable (pp)						
20.0	1.6	2.0	0.6	0.3	0.6	15.0
Share of Individuals Correctly Classified (pp)						
10.6	0.8	1.1	0.4	0.2	0.3	7.9

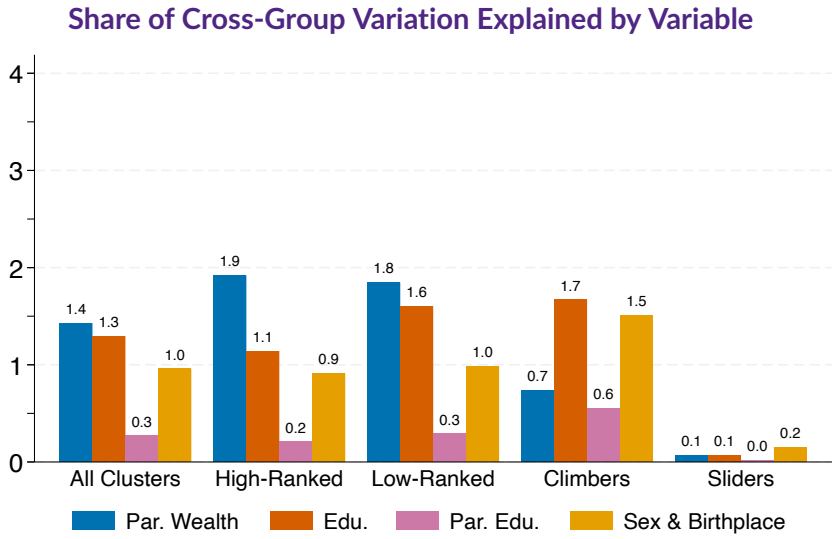
*Contribution relative to random classification using population shares.

Share of individuals correctly classified by random classification 29.3% vs 40.0% with full model.

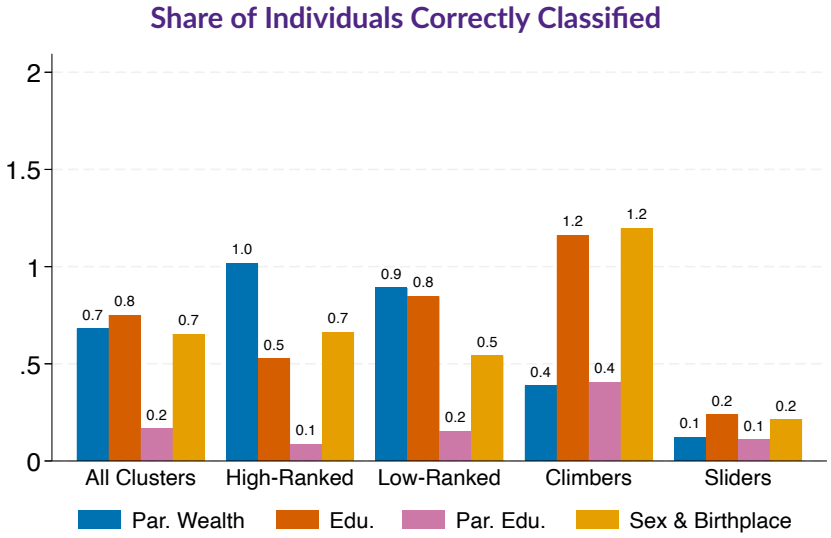
D by Cluster C by Cluster

How Important Are Ex-Ante Explanations?

back



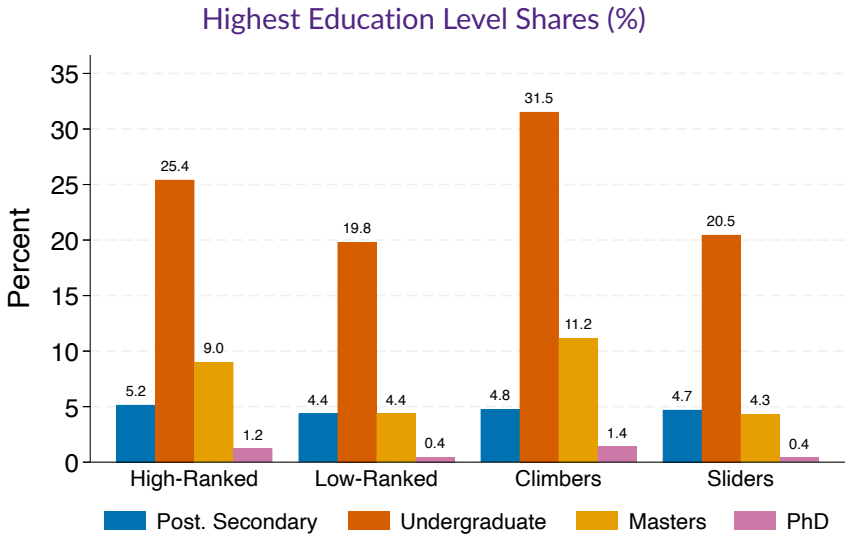
How Important Are Ex-Ante Explanations? back



Additional Classification Results: Main Clusters

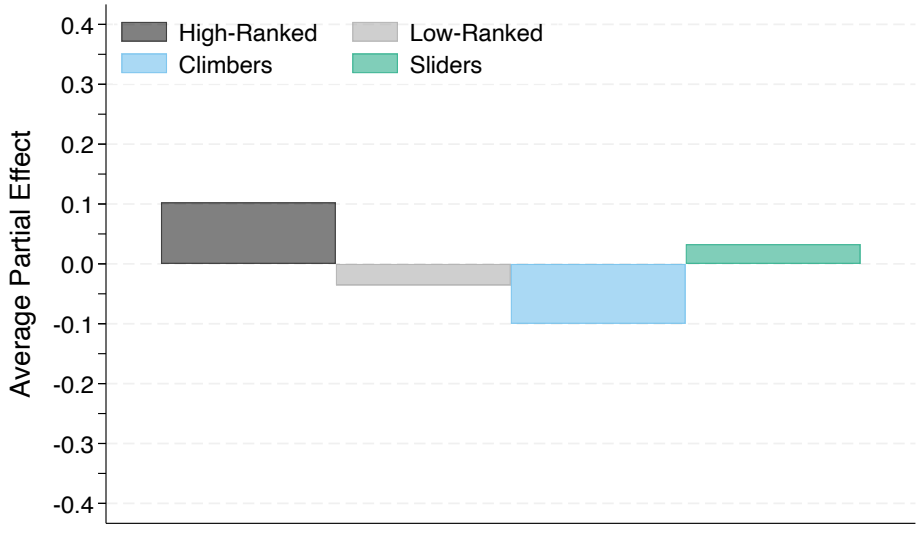
Education: Highest among risers

back



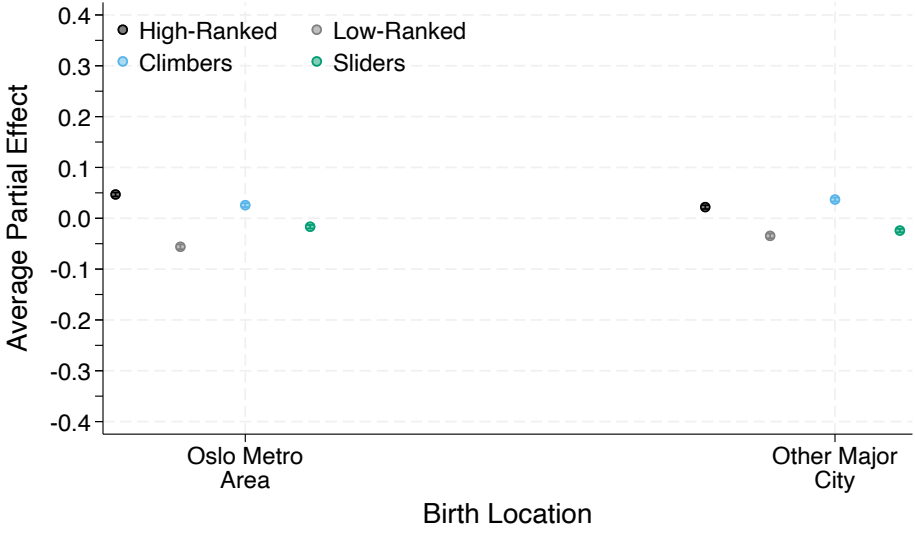
Sex Average Partial Effect

back



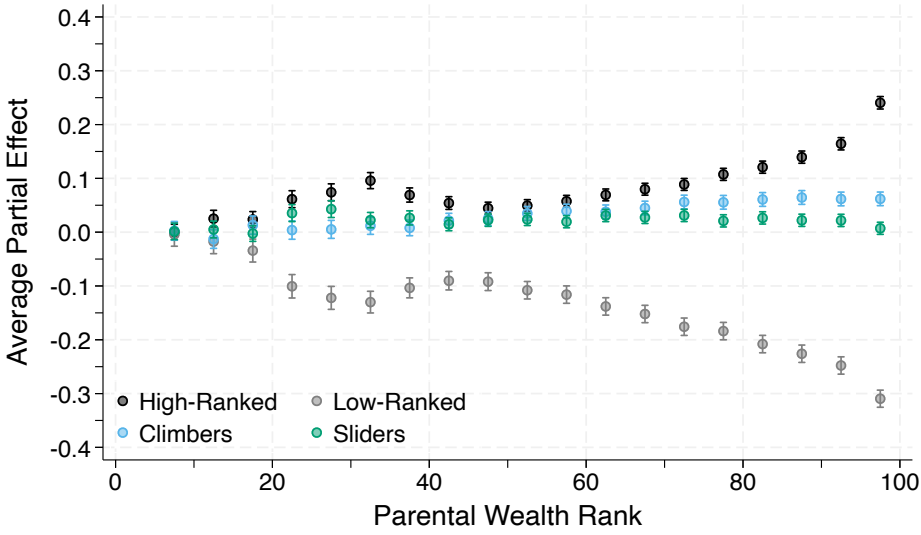
Where Is The Land of Opportunity? Norway

back



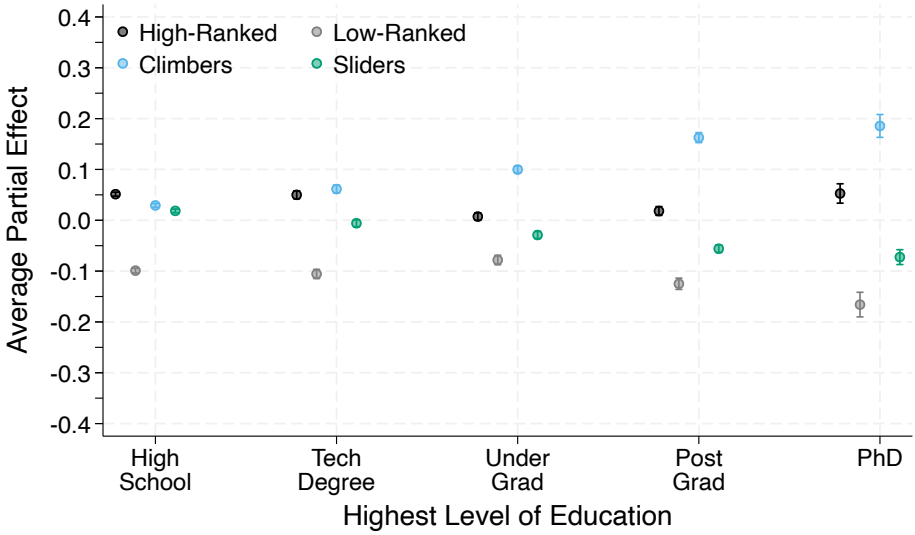
The Non-Linear Effect of Parental Wealth: CI

back



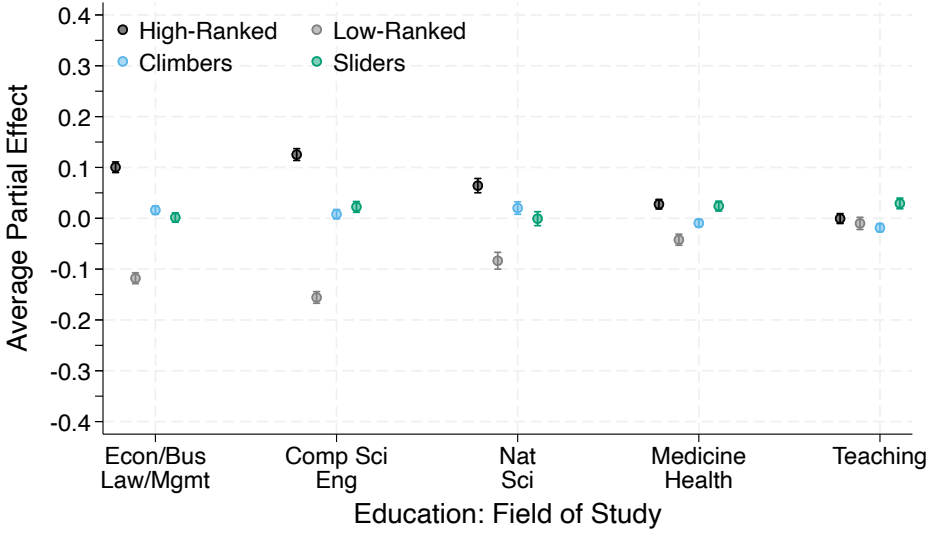
Learn & Rise?: CI

back



Education: Fields

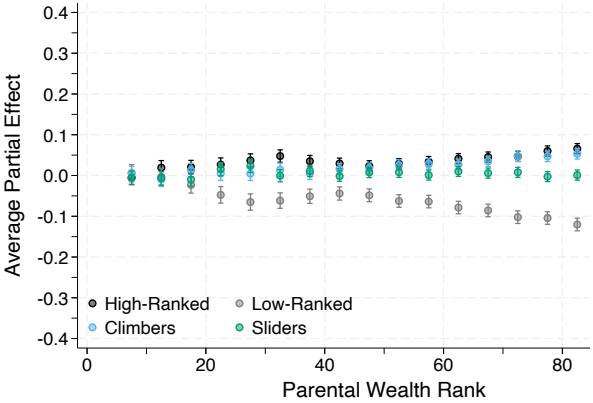
Back



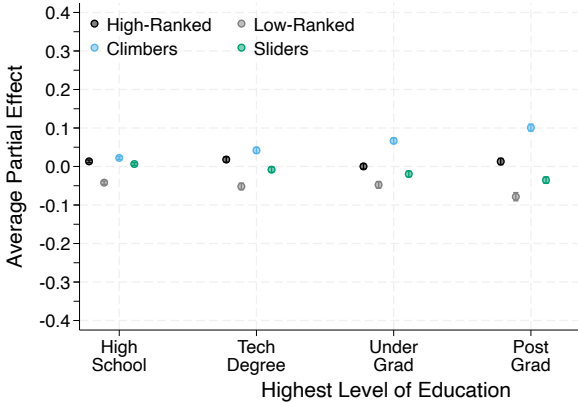
Patterns still present after conditioning on own initial wealth

Back

Parental Wealth



Education



- Robust to controlling for individuals' initial wealth rank + parent portfolio (1993)
  - ↓ Effect sizes by 25-40% (+ explained variation)
  - ↑ Overall variation explained ($\times 4$)