

Inequity in Equities

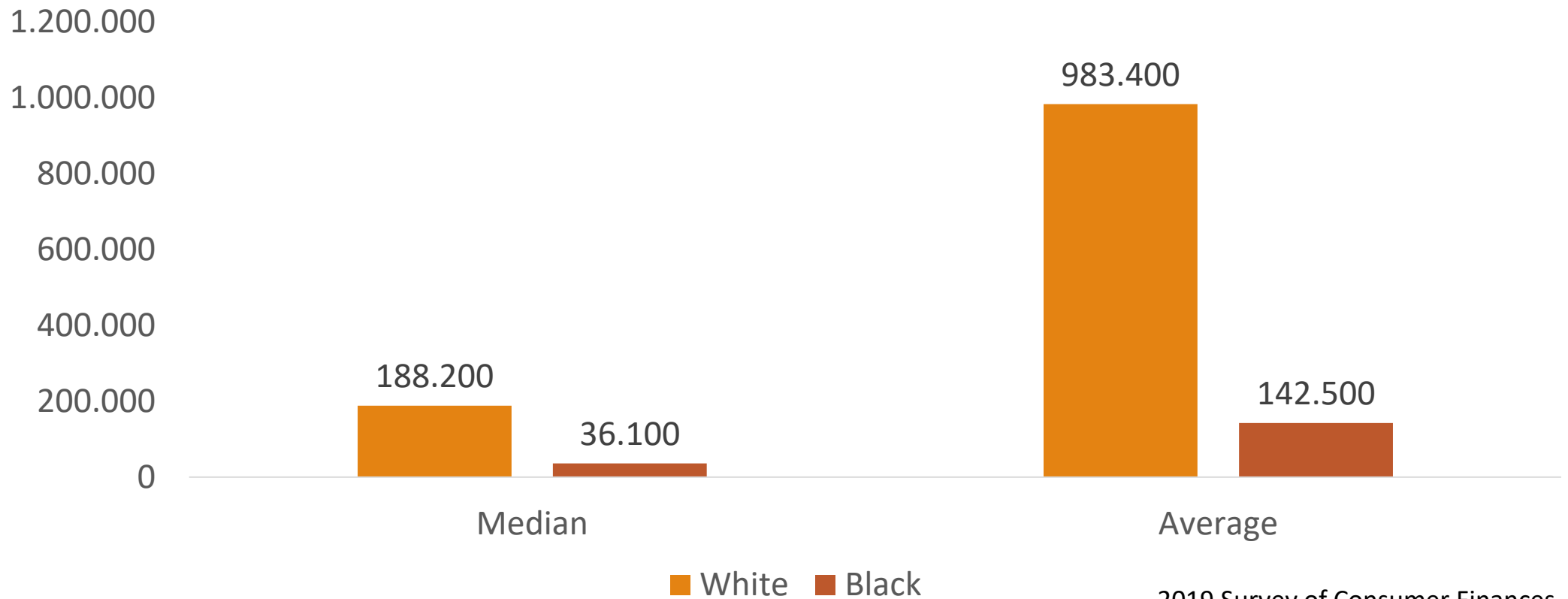
What explains the black-white gap in equity market participation?

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Motivation

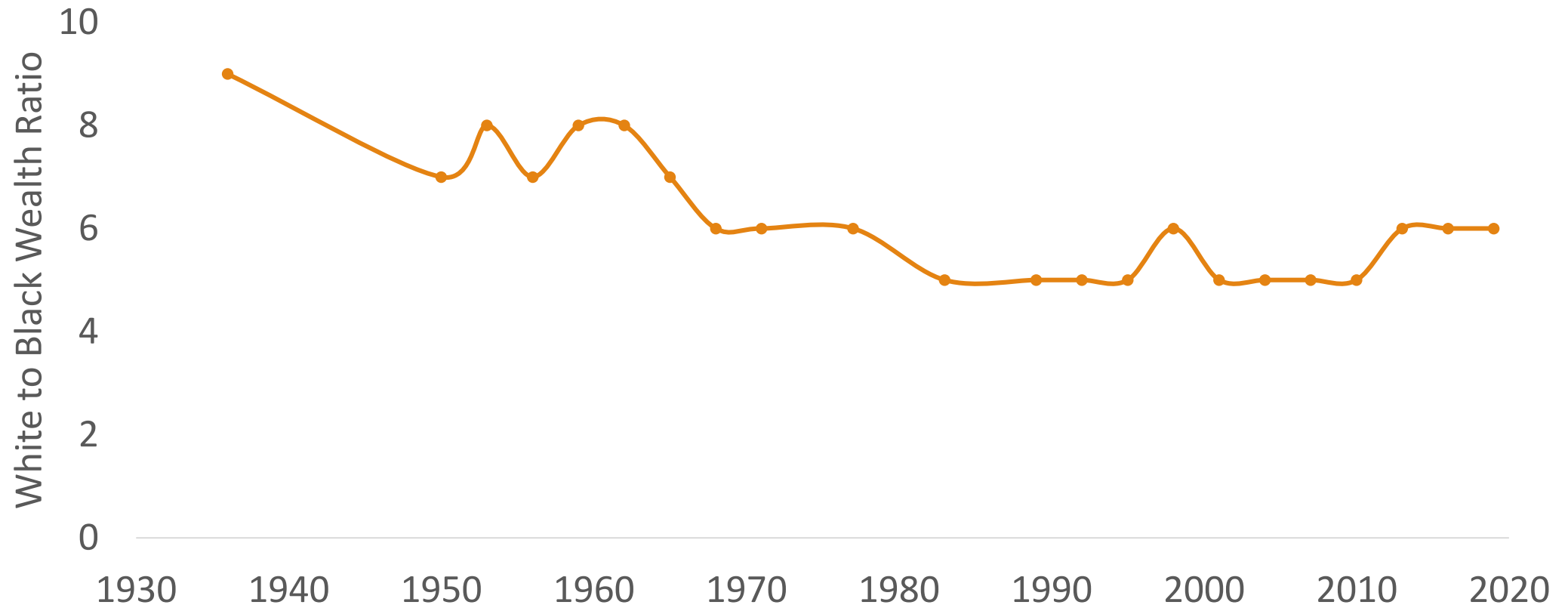
The black – white wealth gap is **astounding** and ...



2019 Survey of Consumer Finances

Motivation

The black – white wealth gap is **stubbornly persistent**



Source: Derenoncourt et al (2022)

Previous Studies

- Gutter and Fontes (2006)
 - Black households less likely to hold equities even after controlling for income, education, age, risk tolerance, etc.
 - Authors suggest racial disparities may be attributable to differences in information exposure and barriers to investment markets.

- Hanna, Wang, Yuh (2010)
 - Black-white gap in equity ownership attributed to following characteristics: homeownership, risk tolerance, income, education.

Survey of Consumer Finances (Federal Reserve)

White households have more exposure to equities

	All	Black	White
Positive Equities	0.632	0.433	0.678
Equity Share	0.277	0.187	0.298

Survey of Consumer Finances

- Data on 6,500 households
- 749 Black households
- 4,143 white households

Equity market participation

- Whites have 11.1% higher equity share
- Whites are 24.5% likely to have equity exposure

Explanatory Variables

	All	Black	White
Homeowner	0.664	0.431	0.718
ln (income)	11.060	10.684	11.146
Risk Aversion	0.281	0.356	0.263
Financial Lit	2.253	1.858	2.344
DC Plans	0.495	0.390	0.519

SCF Data

Why do White households have more exposure to equities?

Homeownership: Black households more likely to be saving for a home

Income: Higher white incomes

Risk Aversion: Black households less willing to take financial risk

Financial Literacy: Score on a three-question test

DC Plans: if one member of household has access to a plan

DC Plans associated with higher equity share Especially for Black Households (Tobit analysis)

	(1)	(2)	(3)	(4) Avg Marg Effect
Black	-0.065*** (0.019)	-0.065*** (0.018)	-0.201*** (0.027)	- 0.023** (0.012)
Age	0.002*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.002*** (0.000)
College	0.089*** (0.014)	0.074*** (0.014)	0.074*** (0.014)	0.047*** (0.009)
Income (ln)	0.072*** (0.004)	0.023*** (0.005)	0.023*** (0.005)	0.015*** (0.003)
No financial risk	-0.156*** (0.018)	-0.141*** (0.017)	-0.144*** (0.017)	-0.089*** (0.011)
Homeowner	0.130*** (0.017)	0.101*** (0.016)	0.101*** (0.016)	0.063*** (0.010)
Financial Literacy	0.061*** (0.008)	0.056*** (0.008)	0.057*** (0.008)	0.036*** (0.005)
DC Plan participation		0.353*** (0.010)	0.313*** (0.100)	0.237*** (0.007)
Black x DC Plan			0.261*** (0.035)	

Marginal effect of DC Plan Participation on Equity Portfolio Weight by Race

	<u>Predicted Equity Portfolio Weight</u>		Marginal Effect
	Without DC Plan	With DC Plan	
White households	17.1%	38.7%	21.6%
Black households	8.2%	43.6%	35.4%

Decomposition Methods

HOW MUCH OF THE BLACK-WHITE GAP IS
EXPLAINED BY DIFFERING ENDOWMENTS?

Methods to decompose black-white gap:
How much is explained by differing “endowments”?

Relax the assumption of equal coefficients

Identify “explained” portion of the gap

Latent: Wolff (2012)

- Simulate latent variable using our regression results
- Decompose the latent variable

Methods to decompose black-white gap: How much is explained by differing “endowments”?

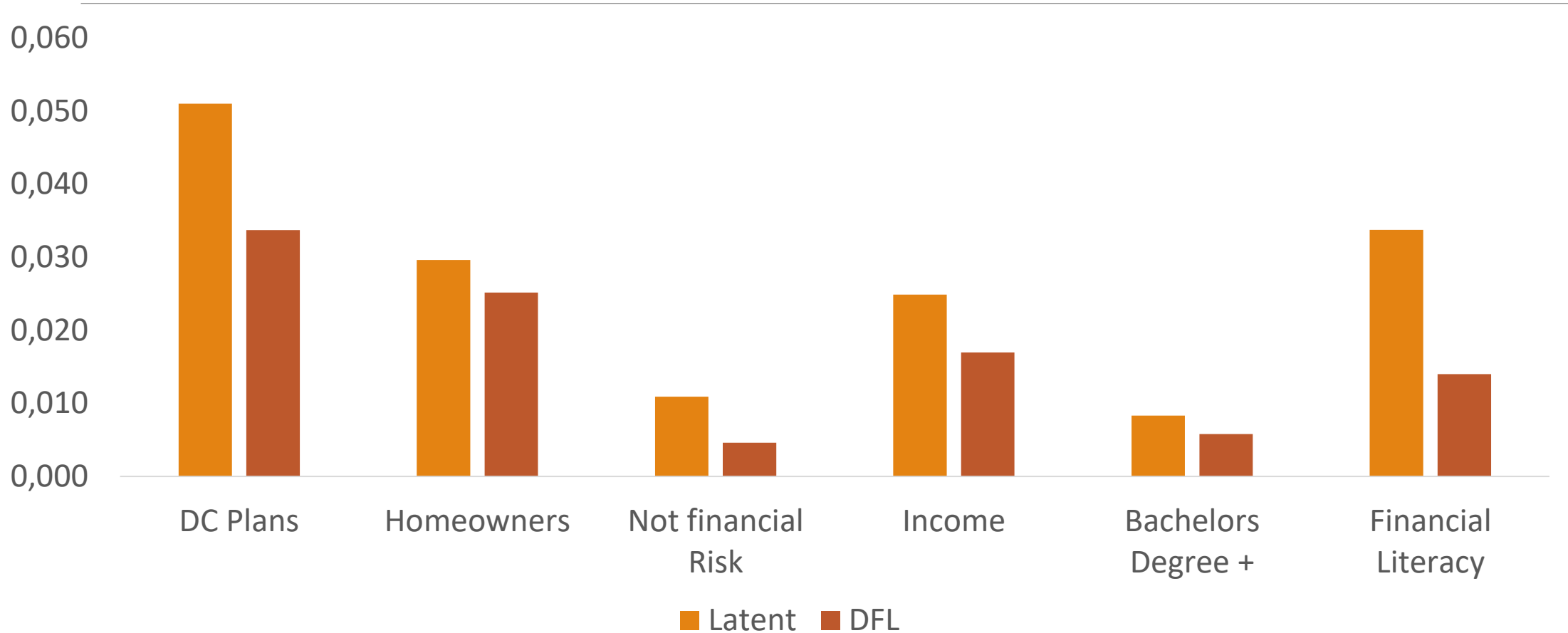
DFL: Dinardo, Fortin and Lemieux (1996)

- Weight the distribution of black households' characteristics to match white households
- Example: Increase weight on higher income blacks, decrease weight on lower income blacks
- Construct the reweighting function using a logit regression on an indicator for being white

$$\psi(x) = \frac{\Pr(X|D_B = 0)}{\Pr(X|D_B = 1)} = \frac{\Pr(D_B = 0|X) \Pr(D_B=1)}{\Pr(D_B = 1|X) \Pr(D_B=0)}$$

- Calculate average equity share and positive equities

Equity Share Decomposition Results: Primary roles for DC Plans and Homeownership



Historical Context:
Inequity in the transition from
Defined Benefit to Defined Contribution Plans

	1992	2019
Defined Benefit	White = 34% Black = 31%	White = 24% Black = 21%
Defined Contribution	White = 40% Black = 31%	White = 51% Black = 38%
DB and/or DC	White = 60% Black = 53%	White = 62% Black = 49%

What determines DC plan participation?

Econometric Problem:

- Participation is not random
- Not all households have access to a DC plan

Solution probit Heckman selection model

- First stage models access to a plan
- Second stage models choice to participate

Heckman Selection Analysis (probit): Black households are less likely to be eligible for a DC plan

	DC Plan Eligibility		DC Plan Eligibility
Black	-1.409** (0.571)	Agriculture	-0.544*** (0.135)
Union	0.152* (0.084)	Manufacturing	0.176** (0.081)
Years on job	0.004*** (0.001)	Mining/Construction	-0.232*** (0.083)
College	0.054 (0.045)	Trade	-0.138* (0.073)
Income (ln)	0.286*** (0.016)	Finance/RE/Insurance	-0.018 (0.062)
Income (ln) x Black	0.106** (0.053)	Service	-0.076 (0.074)
<10 employees	-0.559*** (0.046)	Government	0.076 (0.097)
>500 employees	0.654*** (0.054)		

2nd Stage Heckman – DC Plan participation:
 Conditional on eligibility no significant participation difference by race

	DC Plan Participation		
Black	-0.097 (0.101)		
Age	0.006** (0.003)		
College	0.356*** (0.072)		
Income (ln)	0.308*** (0.053)		
Homeowner	0.174** (0.071)		
Risk Aversion	-0.164* (0.084)		
Financial Literacy	0.089** (0.035)		

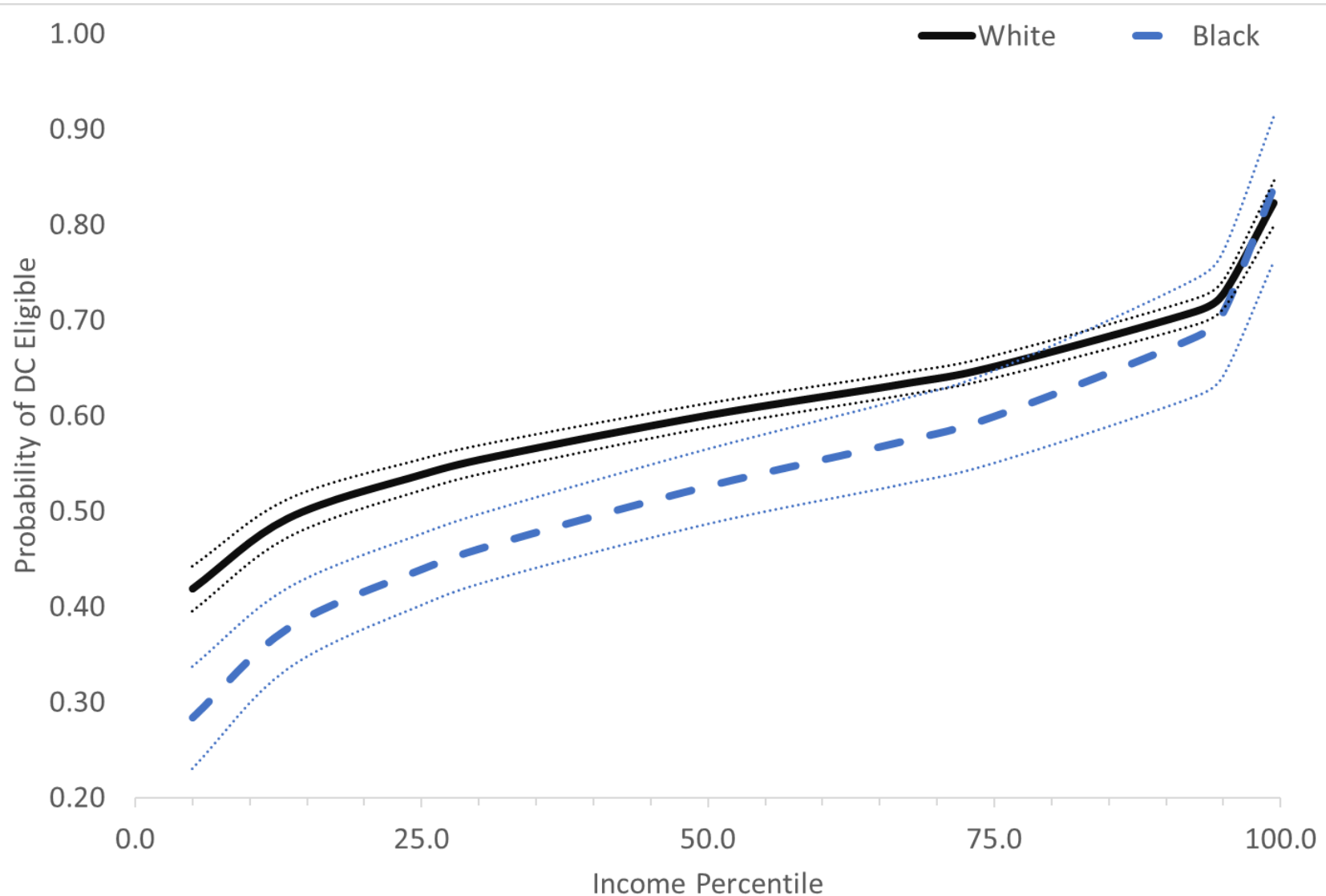
DC Eligibility by Income Percentile

Gap in DC access is concentrated in lower half of income distribution

Potential Explanations

Taste based discrimination: Discriminators are those that offer DC plans

Job search explanations: Black workers mitigate lower job finding rates by accepting low benefit jobs



Concluding Thoughts

- Differential DC plan participation, income, and homeownership explain a large fraction of the black-white gap in equity market participation.
- Racial gap in DC plans is driven by access rather than participation decisions
 - Consistent with arguments of Hamilton and Darity (2017) – explanations for racial wealth gap that emphasize poor financial decision making by black households are likely misguided.
- Any labor market discrimination impacting black workers restrains both the ways (DC plans) and means (income) of equity market investment.
- Future labor market discrimination research might consider extending beyond incomes to include differential access to benefits.

APPENDIX

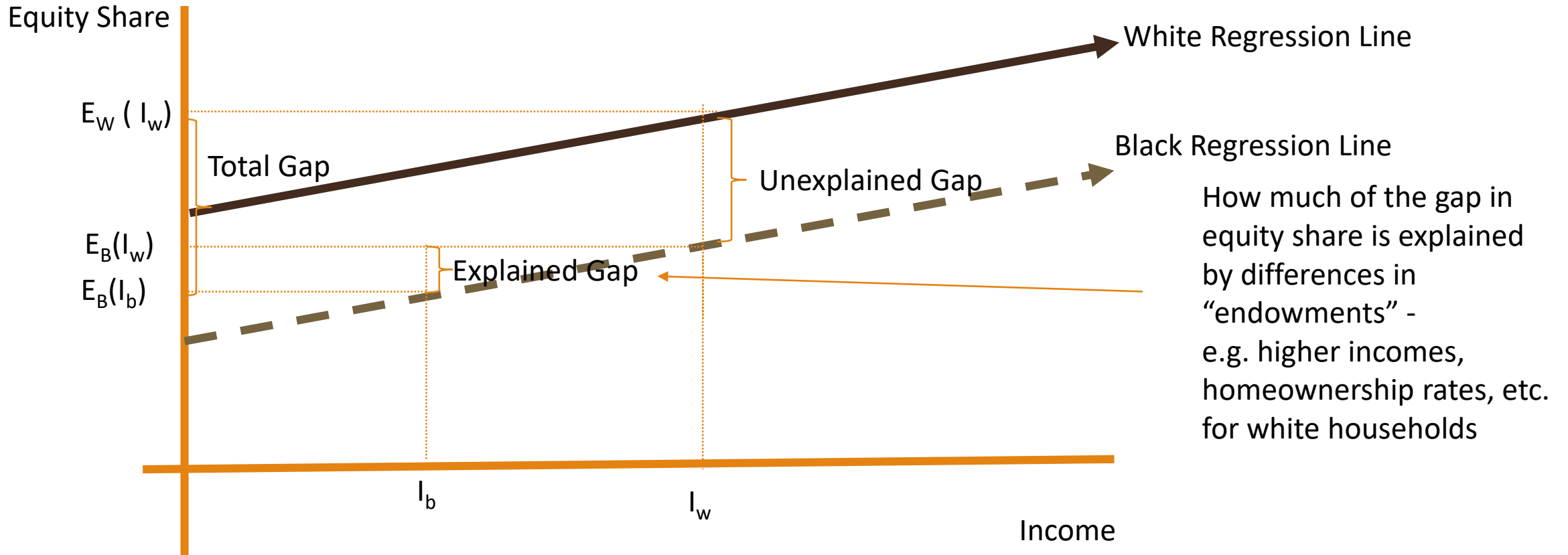
DC Plans associated with positive equity holdings Especially for Black Households (Logit analysis)

	(1)	(2)	(3)	(4) Avg Marg Effect
Black	-0.531*** (0.088)	-0.738*** (0.134)	-0.948** (0.154)	-0.095*** (0.015)
Age	0.013*** (0.003)	0.023*** (0.003)	0.023*** (0.003)	0.003*** (0.000)
College	0.665*** (0.086)	0.693*** (0.113)	0.690*** (0.114)	0.088*** (0.013)
Income (ln)	0.506*** (0.036)	0.179*** (0.035)	0.178*** (0.035)	0.022*** (0.004)
No financial risk	-0.844*** (0.089)	-0.999*** (0.104)	-1.006*** (0.104)	-0.129*** (0.012)
Homeowner	0.597*** (0.090)	0.578*** (0.096)	0.588*** (0.096)	0.074*** (0.011)
Financial Literacy	0.365*** (0.051)	0.454*** (0.063)	0.456*** (0.064)	0.056*** (0.007)
DC Plan participation		3.344*** (0.169)	3.173*** (0.195)	0.494*** (0.012)
Black x DC Plan			0.741** (0.352)	

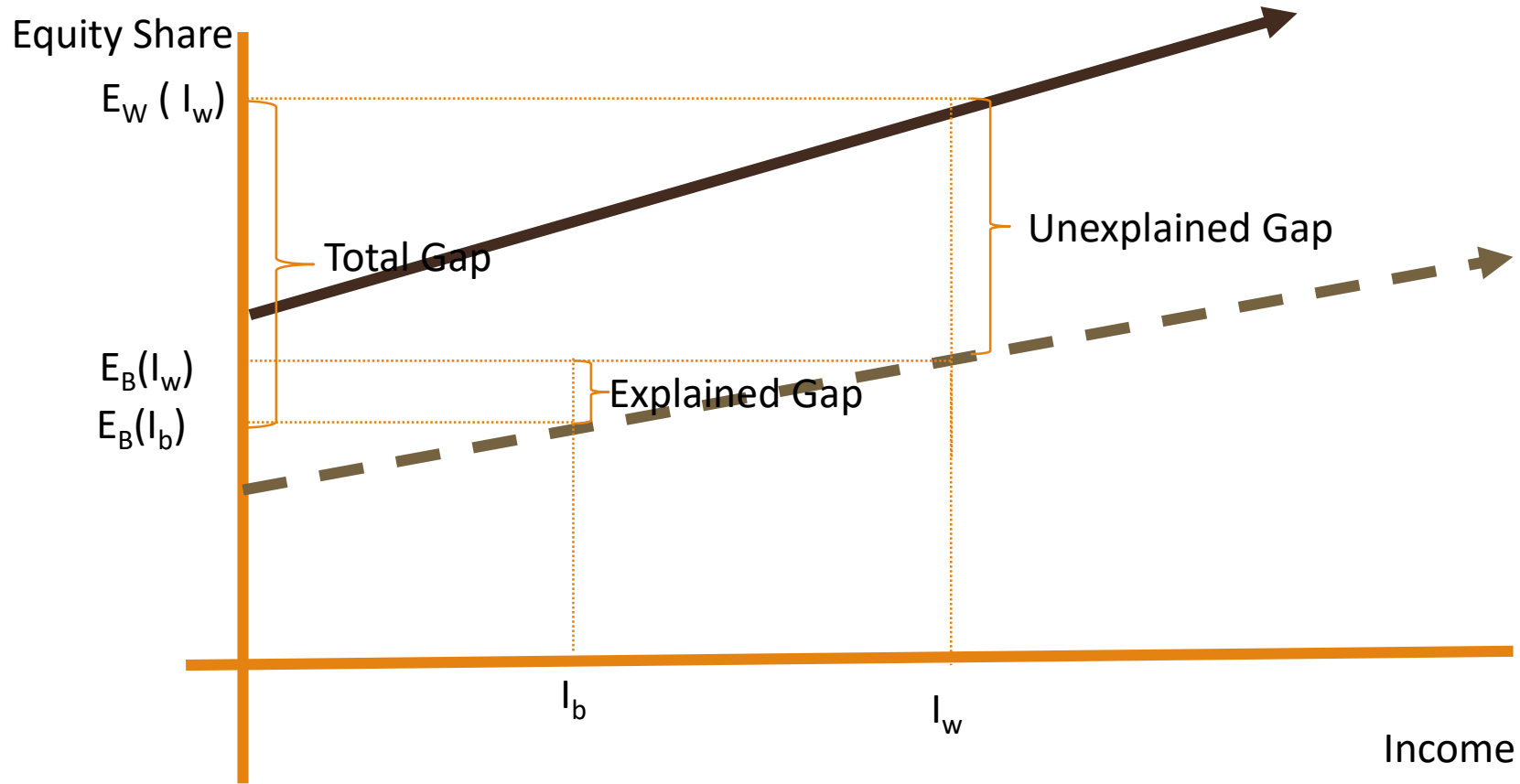
Marginal effect of DC Plan Participation on *Positive Equities* by Race

	<u>Predicted Prob(<i>Positive Equities</i>)</u>		
	Without DC Plan	With DC Plan	Marginal Effect
White households	44.4%	91.5%	+47.1%
Black households	27.1%	89.9%	+62.2%

Decomposition of the black-white gap: How much is explained by differing “endowments”?



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Goal

- Relax the assumption of coefficients are equal
- Identify how much is explained by individual endowments

Linear Blinder-Oaxaca Decomposition:

$$\bar{Y}_W - \bar{Y}_B = \Delta_{OLS,W,B} = \underbrace{[(\beta_W - \beta_B)(\bar{X}_W)]}_{Unexplained} + \underbrace{[(\bar{X}_W - \bar{X}_B)(\beta_B)]}_{Explained}$$

Nonlinear Generalization:

$$\Delta_{NL,W,B} = [F(X_W\beta_W) - F(X_B\beta_W)] + [F(X_B\beta_W) - F(X_B\beta_B)]$$

Methods to decompose black-white gap: How much is explained by differing “endowments”?

Relax the assumption of equal coefficients

Logit: Yun (2004):

- Account for the nonlinearities of a logit model using Taylor approximation around $\overline{X}_W\beta_W$ and $\overline{X}_B\beta_B$
- Decompose a logit if have equities

Positive Equities Decomposition Results: DC Plans explain bulk of the gap

