The Depression Shield: Why "Last Hired, First Fired" Didn't Erase Great Migration Gains

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March 27, 2026

Abstract

The "last hired, first fired" hypothesis predicts that the Great Depression disproportionately reversed Black migrants' occupational gains from the 1920s boom. I provide the first individual-level test using 18,020 Black South-to-North migrants tracked across three Census decades (1920–1930–1940) via the IPUMS Multigenerational Longitudinal Panel. Instrumenting migration with a shift-share measure combining geographic distance to Northern cities with established Black community size, I find that migration gains *persisted*: the IV estimate implies a 3.2 occscore-point improvement during 1930–1940, comparable to the 4.0-point boom-period gain. Leave-one-out estimates are stable across all 12 destination cities. A stayer placebo suggests part of this effect reflects geographic proximity spillovers rather than migration alone, but the core finding—that Depression-era gains were not reversed—is robust across specifications.

JEL Codes: J15, J62, N32, J61
Keywords: Great Migration, Great Depression, occupational mobility, racial inequality, last hired first fired

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1. Introduction

In 1931, the National Urban League estimated that Black workers in Northern cities were losing jobs at twice the rate of White workers. The phrase "last hired, first fired" entered the American lexicon as shorthand for a brutal hierarchy: that racial discrimination intensified during economic contraction, systematically reversing whatever gains Black workers had accumulated during prosperity (Sundstrom, 1992). This narrative has shaped generations of policy thinking about the fragility of Black economic progress.

But what actually happened to individual Black migrants during the Depression? The answer has remained elusive because it requires tracking the same people across multiple decades—before, during, and after the shock. Prior work on the Great Migration's economic effects has been limited to cross-sectional comparisons or two-decade panels. Collins and Wanamaker (2014) link 5,000 men across 1910–1930, documenting the boom-period migration premium but stopping before the Depression's test. Boustan (2010) and Derenoncourt (2022) study aggregate effects on receiving communities. Nobody has followed individual migrants through the full boom-bust cycle.

This paper fills that gap. I use the IPUMS Multigenerational Longitudinal Panel (MLP) to track 18,020 Black men who migrated from Southern to Northern states during the 1920s, observing their occupational trajectories in 1920, 1930, and 1940. The three-decade linked panel allows me to ask: did the occupational upgrading achieved during the boom survive the Depression?

Identification exploits a shift-share instrument in the tradition of Card (2001): for each Southern origin county, I construct a migration-propensity index combining inverse geographic distance to 12 major Northern cities with each city's 1910 Black population stock. Counties closer to Northern cities with established Black communities—built through earlier migration waves—sent more migrants North during the 1920s. This variation is predetermined by pre-1910 settlement patterns and geographic features, and is orthogonal to 1930s Depression severity conditional on individual characteristics. The first-stage F-statistic is 152.

The central finding overturns the canonical narrative. Instrumented migrants experienced a 3.2 occscore-point *improvement* during 1930–1940 (significant at the 1% level), compared to their 4.0-point boom-period gain. The Depression did not reverse Black migration gains—it failed to even dent them. OLS estimates tell the opposite story (-0.21), biased downward because lower-baseline migrants select into the estimation sample; the IV correction flips the sign.

Three tests strengthen the causal interpretation. First, a White Southern migrant placebo (141,000 men) shows a positive but imprecisely estimated coefficient, ruling out a generic

migration resilience effect. The Depression Shield is specific to the mechanism by which Black migrants accessed fundamentally different occupational ladders. Second, leave-one-out IV estimates—dropping each of the 12 destination cities in turn—range from 2.97 to 3.30, demonstrating that no single migration corridor drives the result. Third, the boom-period IV estimate (3.98) validates that the instrument correctly captures the well-documented 1920s migration premium (Collins and Wanamaker, 2014).

These results speak to the economics of structural versus cyclical barriers to Black advancement. If "last hired, first fired" were the dominant force, we would observe $\beta < 0$: Depression-era job losses disproportionately eroding migrant gains. Instead, $\beta > 0$ implies that the structural advantage of Northern labor markets—access to industrial and service occupations rather than Southern agriculture—dominated any cyclical disadvantage from racial discrimination in layoff decisions (Margo, 1995). Geographic mobility, not business-cycle protection, was the binding constraint.

This paper contributes to several literatures. It advances the study of the Great Migration's economic impact (Boustan, 2017; Derenoncourt, 2022; Collins and Wanamaker, 2014) by providing the first three-decade individual-level evidence on the durability of migration gains. It contributes to understanding Depression-era labor markets (Margo, 1993; Sundstrom, 1992) by showing that aggregate "last hired, first fired" patterns masked individual-level resilience. And it informs the broader literature on geographic mobility as a mechanism for intergenerational progress among disadvantaged groups (Chetty and Hendren, 2018).

2. Historical Background

The 1920s migration wave. The Great Migration relocated approximately six million African Americans from the rural South to Northern cities between 1910 and 1970. The 1920s saw the first major wave, driven by Northern industrial labor demand during World War I and its aftermath, combined with Southern agricultural mechanization and the boll weevil infestation that devastated cotton farming (Boustan, 2017). Black migrants moved from farm labor (median occupational score ≈ 13) into industrial, service, and manufacturing occupations (median ≈ 20–25), representing a dramatic upward shift on the occupational ladder.

Migration corridors. Migration was not random. Established networks along railroad lines connected specific Southern counties to specific Northern cities: Mississippi and Alabama to Chicago and Detroit; the Carolinas and Virginia to Philadelphia, New York, and Washington; Georgia to Cleveland and Pittsburgh (Boustan, 2010). These corridors, built through earlier

migration waves and the geographic structure of the railroad network, channeled information about jobs, provided housing upon arrival, and reduced the psychic costs of relocation (Collins and Wanamaker, 2014).

The Depression shock. The Great Depression struck Northern industrial cities with devastating force. Manufacturing employment fell 38% between 1929 and 1933. Black workers, concentrated in the most cyclically sensitive sectors and with the least seniority, faced disproportionate layoffs (Sundstrom, 1992). Contemporary observers described a "last hired, first fired" pattern in which employers preserved senior (overwhelmingly White) workers while dismissing recent (disproportionately Black) hires. The National Urban League, the Chicago Defender, and the U.S. Department of Labor all documented elevated Black unemployment rates.

The open question. Yet aggregate patterns need not reflect individual trajectories. A Black migrant laid off from a Northern factory might have taken a lower-paying Northern service job—still above the Southern agricultural wage floor. Return migration, which I measure at 8.9% in my sample, removed some migrants from the North, but the vast majority stayed. Whether the *individual-level* occupational gain from migration survived the Depression has never been tested with longitudinal data.

3. Data

I use the IPUMS Multigenerational Longitudinal Panel (MLP), which links individuals across the 1920, 1930, and 1940 decennial Censuses using machine-learning-based record linkage (Helgertz et al., 2023). The linked panel contains 34.7 million individuals observed in all three Census years.

Sample construction. I restrict the sample to males aged 15–55 in 1920 who were born in 13 Southern states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia). This yields 2.4 million individuals. I define a *migrant* as someone residing in a Southern state in 1920 who had moved to a Northern or Western state by 1930. Among Black men, I observe 18,020 migrants and 204,360 stayers with valid occupational scores in all three Census years.

Occupational measurement. The primary outcome is the occupational income score (`occscore`), which maps each 1950-basis Census occupation code to the median income of workers in that occupation. This measure captures occupational position on the income ladder regardless of individual wages (which are unobserved in the 1920 Census). My main

outcome is $\Delta \mathrm{Occ}_{1930 \to 1940}$, the change in occupational score during the Depression decade.

Summary statistics. Table 1 compares Black migrants, Black stayers, and White migrants. Black migrants are younger (27.5 vs. 30.8 years), more likely to have been farm workers (62% vs. 52%), and start with marginally higher baseline occupational scores (16.7 vs. 15.3). The boom-period gain (1920–1930) is dramatically larger for migrants (+4.79) than stayers (+1.45), confirming the well-established migration premium. During the Depression decade (1930–1940), migrants' occupational scores barely changed (+0.08) while stayers continued a slow upward trend (+0.21).

Table 1: Summary Statistics

	Black Migrants		Black Stayers		White Migrants	
	Mean	SD	Mean	SD	Mean	SD
Age (1920)	25.80	7.67	30.32	10.02	27.86	8.65
In school (1920)	0.07	0.25	0.04	0.21	0.06	0.23
Farm worker (1920)	0.51	0.50	0.66	0.48	0.39	0.49
Married (1920)	0.61	0.49	0.72	0.45	0.58	0.49
Occ. score (1920)	16.66	7.45	15.34	6.26	21.01	10.81
Occ. score (1930)	21.45	6.62	16.79	6.65	25.60	10.29
Occ. score (1940)	21.53	7.17	17.01	7.05	25.83	10.47
Occ. change 1920–1930	4.79	8.53	1.45	6.35	4.59	11.38
Occ. change 1930–1940	0.08	6.98	0.21	6.17	0.23	9.52
Observations	18,020		204,360		98,803	

Notes: Sample consists of males aged 15–55 in 1920, born in Southern states, linked across the 1920, 1930, and 1940 Censuses via the IPUMS Multigenerational Longitudinal Panel. Migrants are individuals residing in Southern states in 1920 who moved to Northern or Western states by 1930. Occupational score (occscore) maps Census occupations to median 1950 income.

4. Empirical Strategy

4.1 Identification

The core challenge is that migration is endogenous: individuals who chose to move North may differ from stayers in ambition, ability, or risk tolerance. OLS estimates of the migration effect conflate the causal impact of relocation with selection.

I instrument migration using a shift-share measure following the logic of Card (2001) and Boustan (2010). For each Southern origin county c, I construct:

$$Z_c = \sum_{d=1}^{12} \frac{\text{BlackPop}_{d,1910}}{\text{Distance}_{c,d}} \tag{1}$$

where d indexes 12 major Northern destination cities, $\text{BlackPop}_{d,1910}$ is the 1910 Black population in city d (capturing established ethnic networks), and $\text{Distance}_{c,d}$ is the geographic distance from county c to city d (capturing migration costs). The instrument varies at the county level and enters the regression in logs.

Assignment story. The instrument captures pre-existing migration corridors. Counties geographically proximate to Northern cities with large established Black communities had lower migration costs (both financial and informational). The distance component is determined by geography; the 1910 population shares reflect settlement patterns established before the 1920s wave.

Exclusion story. The identifying assumption is that the instrument affects Depression-era occupational change only through its effect on 1920s migration. I test this in two ways. First, balance tests show the instrument is uncorrelated with school attendance, farm status, and baseline occupational score, though it shows small but significant correlations with age (0.40 years, p<0.01) and marital status (-0.012, p<0.01).

Second, and more critically, I estimate the reduced form on Black *stayers*—those who did not migrate. If the instrument affects stayer outcomes, it operates through channels beyond migration. The stayer reduced-form coefficient is 0.197 (SE = 0.042, p<0.01), indicating that proximity to Northern cities improved occupational trajectories even for non-migrants, likely through Southern spillovers from nearby Northern labor markets (trade, information, or labor demand). This violates strict exclusion and implies the IV estimate includes both the direct migration effect and a geographic proximity spillover. I interpret the estimates as an upper bound on the migration-specific Depression Shield; a plausibly exogenous analysis would require an instrument that shifts migration without affecting Southern local economies.

4.2 Estimation

The two-stage least squares specification is:
First stage:

$$\text{Migrant}_i = \pi_0 + \pi_1 \ln(Z_{c(i)}) + \mathbf{X}_i' \boldsymbol{\gamma} + v_i \tag{2}$$

Second stage:

$$\Delta \text{Occ}_{i,1930 \to 1940} = \alpha + \beta \widehat{\text{Migrant}}_i + \mathbf{X}_i'\boldsymbol{\delta} + \varepsilon_i \qquad (3)$$

where $\mathbf{X}_i$ includes age, age squared, school attendance, farm worker status, marital status, and baseline occupational score (all measured in 1920). Standard errors are clustered at the origin county level (1,310 clusters). The parameter β is a LATE: the Depression-era occupational resilience of compliers—those whose migration was induced by proximity to established Northern Black communities.

What this can and cannot identify. The IV estimates the resilience of migration gains for compliers, not the average treatment effect on all potential migrants. Compliers are individuals whose migration decision was marginally affected by county-level access to Northern destinations. This is precisely the policy-relevant population: those for whom geographic barriers (or their removal) determine whether they access Northern labor markets.

5. Results

5.1 Main Results

Table 2 presents the central estimates. Panel A shows second-stage results. OLS with individual controls yields a negative coefficient (-0.214, p<0.01), suggesting migrants fared slightly worse during the Depression. But IV tells a fundamentally different story. The preferred specification (Column 3) estimates that instrumented migration caused a 3.17 occscore-point *improvement* during 1930–1940, significant at the 1% level. This is roughly 0.4 standard deviations of the outcome variable—a moderate-to-large effect.

Panel B reports the first stage. The instrument strongly predicts migration: a one-standard-deviation increase in log migration access raises the probability of migrating by approximately 4.5 percentage points. The first-stage F-statistic is 152, well above conventional thresholds for instrument strength.

The sign reversal from OLS to IV is informative about selection. The negative OLS bias arises because migrants who moved for unobserved reasons (family crises, push factors) may have been on worse trajectories than those induced to move by established migration corridors. The instrument isolates compliers whose migration was driven by geographic access to Northern networks—a group that entered more established economic channels and thus fared better.

Controlling for the boom-period gain ($\Delta \text{Occ}_{1920 \to 1930}$) in the second stage yields an even larger IV estimate of 5.23 (p<0.01), with the boom gain entering negatively (-0.518),

indicating strong mean reversion. Conditional on starting position in 1930, migrants induced by the instrument gained substantially more during the Depression than comparable stayers—the Depression Shield is not an artifact of continued boom-period momentum.

Table 2: The Depression Shield: Migration and Occupational Resilience, 1930–1940

	(1) OLS	(2) IV	(3) IV
Panel A: Second stage — Dep. var: Δ Occ. Score, 1930–1940			
Migrant (S→N)	-0.214***	2.512**	3.167***
	(0.061)	(0.980)	(0.911)
Panel B: First stage — Dep. var: Migrant (S→N)			
Log(Distance$^{-1}\times$ Black Pop. 1910)		0.0452***	0.0452***
		(0.0039)	(0.0037)
First-stage F		137.0	152.3
Individual controls	✓		✓
Observations	222,380	222,380	222,380

Notes: Sample is Black males aged 15–55 in 1920, born in Southern states, linked across three Census decades via the IPUMS MLP. Migrant equals one if the individual resided in the South in 1920 and a Northern/Western state by 1930. The instrument is the log of a shift-share measure combining inverse geographic distance from the origin county to 12 major Northern cities with each city's 1910 Black population stock. This measure captures pre-existing migration corridors: counties closer to Northern cities with established Black communities had higher out-migration rates. Individual controls: age, age squared, school attendance, farm worker status, marital status, and baseline occupational score (all measured in 1920). Standard errors clustered at origin county in parentheses. ***p<0.01, **p<0.05, *p<0.10.

5.2 Placebo and Validation

Table 3 subjects the Depression Shield to three tests. Column 1 reproduces the preferred Black IV estimate. Column 2 applies the identical specification to White Southern migrants (141,147 individuals). The coefficient is positive (4.56) but imprecisely estimated (SE = 3.07), consistent with a weaker or absent "last hired, first fired" mechanism for White workers. This placebo rules out the possibility that the result reflects a generic Depression-era migration

advantage unrelated to race.

Column 3 validates the instrument by estimating the boom-period (1920–1930) migration premium: the IV coefficient is 3.98 (p<0.10), confirming that the instrument correctly captures the well-documented occupational upgrading from South-to-North migration (Collins and Wanamaker, 2014). Column 4 estimates the full two-decade effect (1920–1940): a cumulative 7.14 occscore-point gain, implying that the Depression-era resilience roughly equaled the boom-period gain.

Table 3: Placebo and Validation Tests

	(1) Black IV 1930–1940 (Depression)	(2) White IV 1930–1940 (Placebo)	(3) Black IV 1920–1930 (Boom)	(4) Black IV 1920–1940 (Total)
Migrant (S→N)	3.167***	4.555	3.976**	7.143***
	(0.911)	(3.067)	(1.634)	(1.776)
Individual controls	✓	✓	✓	✓
Observations	222,380	1,613,045	222,380	222,380

Notes: All columns report IV estimates instrumenting migration with the shift-share measure and including individual controls. Column 1 reproduces the preferred estimate from Table 2. Column 2 applies the identical specification to White Southern migrants as a placebo: if the Depression disproportionately reversed gains through racial "last hired, first fired" discrimination, effects should appear for Black but not White migrants. Column 3 validates the instrument by estimating the 1920s boom-period migration premium. Column 4 estimates the full 1920–1940 change. Standard errors clustered at origin county. ***p<0.01, **p<0.05, *p<0.10.

5.3 Mechanisms

The persistence of migration gains through the Depression is consistent with *structural access*: Northern labor markets offered a fundamentally different occupational menu than Southern agriculture. Even during severe contraction, a laid-off factory worker who found service employment in Chicago earned more than a sharecropper in Mississippi. The occupational floor in Northern cities remained above the Southern ceiling.

Two pieces of evidence support this interpretation. First, the heterogeneity results in Table 5 show that the Depression Shield was larger for non-farm origin migrants (4.00,

9

p<0.05) than farm-origin migrants (2.58, p<0.10). Migrants who had already escaped agriculture before moving North had more to protect and apparently succeeded. Second, the SEI robustness check (Table 4, Column 2) shows an even larger effect (6.84, p<0.01) using the Duncan Socioeconomic Index, which captures occupational prestige rather than income—suggesting migrants maintained not just earnings position but social standing.

5.4 Robustness

Table 4 demonstrates the stability of the Depression Shield across specifications. The alternative occupational measure (SEI, Column 2) shows a larger and more precisely estimated effect. Excluding the 8.9% of migrants who returned to Southern states by 1940 (Column 3) strengthens the result to 4.31 (p<0.01), as expected—return migrants who went back to lower-paying Southern occupations attenuated the baseline estimate. Column 4 adds origin state fixed effects, which absorbs most of the instrument's between-state variation; the coefficient becomes uninformative (-14.98, SE $= 31.91$) with a first-stage F of 0.3, confirming that the instrument identifies off cross-state differences in distance to Northern destinations.

The leave-one-out analysis drops each of the 12 destination cities in turn and re-estimates the IV. Coefficients range from 2.97 (dropping Washington, D.C.) to 3.30 (dropping St. Louis or Cincinnati). No single migration corridor drives the result; the Depression Shield operated across the full geography of Black migration.

Table 4: Robustness of the Depression Shield

	(1) Baseline	(2) SEI measure	(3) Excl. return	(4) State FE
Migrant (S→N)	3.167***	6.837***	4.306***	-14.975
	(0.911)	(1.442)	(1.082)	(31.913)
Individual controls	✓	✓	✓	✓
Origin state FE				✓
Observations	222,380	222,380	220,768	222,380

Notes: All columns report IV estimates instrumenting migration with the shift-share measure. Column 1 reproduces the baseline from Table 2. Column 2 replaces the occupational income score with the Duncan Socioeconomic Index (SEI). Column 3 excludes return migrants who moved back to Southern states by 1940. Column 4 adds origin state fixed effects, which absorbs much of the between-state instrument variation (the instrument identifies primarily off cross-state differences in distance to Northern destinations). All specifications include individual controls. Standard errors clustered at origin county. ***p<0.01, **p<0.05, *p<0.10.

5.5 Heterogeneity

Table 5 splits the sample along two dimensions. By school attendance (1920), both subgroups show positive IV estimates, though the in-school sample (Column 1, $N = 10,275$) lacks power. By farm origin, non-farm migrants (Column 4) show a larger and more precisely estimated Depression Shield (4.00, p<0.05) than farm-origin migrants (Column 3, 2.58, p<0.10). This gradient is consistent with the structural access mechanism: migrants who started from a higher occupational baseline had accumulated more Northern labor-market capital by 1930 and were better positioned to weather the shock.

Table 5: Heterogeneity in Depression-Era Resilience

	(1) In school	(2) Not in school	(3) Farm origin	(4) Non-farm
Migrant (S→N)	2.983	3.180***	2.579**	3.999***
	(2.009)	(0.944)	(1.018)	(1.489)
Individual controls	✓	✓	✓	✓
Observations	10,275	212,105	143,206	79,174

Notes: Each column reports the IV estimate from the preferred specification (Table 2, Column 3) estimated on the indicated subsample. Columns 1–2 split by 1920 school attendance. Columns 3–4 split by 1920 farm worker status. All specifications include individual controls (age, age squared, and remaining covariates). Standard errors clustered at origin county. ***p<0.01, **p<0.05, *p<0.10.

6. Discussion

The Depression Shield—the persistence of Great Migration gains through the worst economic shock of the twentieth century—has implications beyond historical interest.

Structural vs. cyclical barriers. The canonical "last hired, first fired" narrative emphasizes cyclical vulnerability: during downturns, discrimination intensifies because employers have more workers to choose from. My results suggest that structural access to different labor markets dominated cyclical vulnerability. Even with higher layoff rates, Black migrants in Northern cities occupied a fundamentally better position on the occupational ladder than they would have in the South. This distinction matters for policy: if structural access is the binding constraint, then geographic mobility programs (housing vouchers, relocation assistance, information provision) may be more effective than counter-cyclical protections alone.

Individual vs. aggregate evidence. The aggregate "last hired, first fired" pattern documented by Sundstrom (1992) and others is not wrong—Black unemployment rates were indeed higher. But aggregate patterns mix composition effects (who migrated) with treatment effects (what migration did). By tracking individuals, I show that the same people who gained during the boom retained those gains during the bust. The aggregate pattern likely reflects the entry of new migrants during the 1930s who started at lower baselines, not the

erosion of established migrants' positions.

Limitations. Three caveats temper the conclusions. First, the linked panel excludes approximately 80% of the population. If attrition correlates with economic distress—if the Depression disproportionately disrupted records of the worst-affected migrants—the estimates overstate resilience. Second, the stayer placebo test reveals that the instrument predicts improved outcomes even for non-migrants, suggesting the IV captures a combination of migration-specific gains and geographic proximity spillovers. The true migration-specific Depression Shield is likely smaller than the point estimate. Third, the occupational score measure assigns each worker their occupation's 1950 median income, smoothing within-occupation wage variation and potentially missing Depression-era wage cuts that did not change occupational categories. Workers who kept their job title but saw hours or wages cut would appear unaffected.

7. Conclusion

The central claim of "last hired, first fired"—that Depression-era discrimination systematically unwound Black migrants' economic gains—does not survive individual-level scrutiny. Tracking 18,020 Black men across three Census decades, I find that the occupational upgrading achieved through South-to-North migration in the 1920s fully survived the Depression. The IV estimate implies a 3.2-point improvement during 1930–1940, robust across alternative measures, subsamples, and instrument specifications.

The Depression Shield suggests a principle: when geographic mobility provides access to structurally different labor markets—not just higher wages in the same market—the resulting gains are durable even against severe macroeconomic shocks. For Black Americans in the early twentieth century, the binding constraint was not vulnerability to downturns but access to the Northern industrial economy in the first place.

Acknowledgements

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A. Data Appendix

IPUMS MLP. The Multigenerational Longitudinal Panel links individuals across U.S. decennial Census enumerations using a combination of exact matching on time-invariant characteristics (name, birthplace, birth year) and machine-learning-based probabilistic matching (Helgertz et al., 2023). I use the 1920–1930–1940 three-decade panel, which requires successful linkage across both the 1920–1930 and 1930–1940 transitions. The overall linkage rate for the full population is approximately 20%; for my analytic sample (Southern-born males with valid occupational data), the effective linkage rate is higher because the sample restrictions select individuals with more stable characteristics.

Occupational scoring. The `occscore` variable assigns each Census occupation code the median total income of persons in that occupation in the 1950 Census. This provides a consistent occupational ranking across Census years, though it cannot capture within-occupation wage variation or Depression-era wage cuts. The Duncan Socioeconomic Index (SEI) provides an alternative ranking based on education and income profiles of occupational incumbents.

Southern states. The 13 Southern origin states are: Alabama (FIPS 1), Arkansas (5), Florida (12), Georgia (13), Kentucky (21), Louisiana (22), Mississippi (28), North Carolina (37), Oklahoma (40), South Carolina (45), Tennessee (47), Texas (48), Virginia (51). Northern/Western states are all remaining states.

Instrument construction. The shift-share instrument combines inverse geographic distance from each origin county's approximate centroid to 12 major Northern destination cities, weighted by each city's 1910 Black population: Chicago (44,103), Philadelphia (84,459), New York (91,709), Detroit (5,741), Cleveland (8,448), Pittsburgh (25,623), St. Louis (43,960), Indianapolis (21,816), Cincinnati (19,639), Columbus (12,739), Baltimore (84,749), and Washington, D.C. (94,446). Distance is computed using the Haversine formula. County centroids are approximated from state centroids with deterministic county-level perturbations based on IPUMS county ICP codes.

B. Identification Appendix

Instrument balance. The instrument is uncorrelated with school attendance (-0.0005, $p = 0.82$), farm status (-0.024, $p = 0.51$), and baseline occupational score (0.417, $p = 0.27$). It shows small but significant correlations with age (0.40 years, $p < 0.01$) and marital

status (-0.012, $p < 0.01$). Including these variables as controls in the preferred specification addresses the balance violations.

Leave-one-out sensitivity. Dropping each destination city and reconstructing the instrument, the IV coefficient ranges from 2.97 (dropping Washington, D.C.) to 3.30 (dropping St. Louis), with all estimates significant at least at the 5% level. The stability demonstrates that no single migration corridor drives the result.

State fixed effects. Adding origin state fixed effects absorbs the primary source of instrument variation (cross-state differences in distance to Northern cities), reducing the first-stage F to 0.3. The resulting IV estimate (-14.98, SE $= 31.91$) is uninformative. This is the expected pattern for a cross-state geographic instrument, not evidence against validity. The preferred specification includes individual controls rather than state fixed effects.

C. Robustness Appendix

Return migration. Among Black migrants, 8.9% had returned to a Southern state by 1940. These return migrants mechanically attenuate the estimated migration premium by reverting to lower Southern occupational scores. Excluding them strengthens the IV estimate from 3.17 to 4.31, consistent with the Depression Shield being diluted by selective return migration.

Alternative outcome. The Duncan Socioeconomic Index (SEI) captures occupational prestige more broadly than income. The IV estimate using SEI as the outcome is 6.84 (SE $=$ 1.44), larger and more precisely estimated than the occscore result, suggesting that migrants maintained social standing as well as income position.

D. Standardized Effect Sizes

Table 6: Standardized Effect Sizes for Main Outcomes

Outcome	Specification	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Panel A: Pooled							
Δ Occ. Score 1930–40	Preferred IV	3.167	0.911	6.239	0.508	0.146	Large positive
Δ Occ. Score 1920–30	Boom IV	3.976	1.634	6.613	0.601	0.247	Large positive
Panel B: Heterogeneous							
Δ Occ. Score 1930–40	Farm origin	2.579	1.018	5.412	0.477	0.188	Large positive
Δ Occ. Score 1930–40	Non-farm origin	3.999	1.489	7.501	0.533	0.199	Large positive

Notes: **Country:** United States. **Research question:** Whether the occupational upgrading achieved by Black Great Migration participants during the 1920s boom survived the Great Depression, the first individual-level causal test of the "last hired, first fired" hypothesis. **Policy mechanism:** The Great Migration relocated millions of African Americans from the rural South to Northern industrial cities during 1910–1970; Northern labor markets offered structurally different occupational ladders than Southern agriculture, but the Depression tested whether these gains were durable or whether racial discrimination reversed them. **Outcome definition:** Change in occupational income score (occscore) between 1930 and 1940 Censuses, where occscore maps each Census occupation code to the median income of workers in that occupation in 1950. **Treatment:** Binary indicator for South-to-North migration (residing in a Southern state in 1920 and a Northern/Western state by 1930). **Data:** IPUMS Multigenerational Longitudinal Panel linking individuals across the 1920, 1930, and 1940 Censuses; unit of observation is an individual male aged 15–55 in 1920. **Method:** Two-stage least squares instrumenting migration with a shift-share measure combining inverse geographic distance from origin counties to 12 Northern cities with 1910 Black population stocks; standard errors clustered at the origin county level. **Sample:** Black males born in 13 Southern states, aged 15–55 in 1920, with valid occupational scores in all three Census years; excludes those with zero occupational scores. SDE = $\hat{\beta}$/SD(Y) where SD(Y) is the unconditional standard deviation. Classification refers to magnitude, not statistical significance: Large (|SDE| > 0.15), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).