Stratification Foundations: Core Propositions (DRAFT)

Monique E. Davis, Ph.D.*

April 30, 2026

Abstract

This paper develops a formal framework for stratification economics that centers the role of identity and hierarchy in shaping economic outcomes. Rather than treating inequality as the result of random shocks or individual choices alone, the framework embeds group-conditioned endowments, identity-augmented preferences, stratified risks, and institutionally biased interactions directly into utility and game-theoretic structures. These features generate persistent inequality as the equilibrium outcome of stratified systems, not as an anomaly to be explained away. The framework also provides a compact parametric representation of the core stratification levers—choice breadth, information quality, constraint tightness, risk exposure, and payoff multipliers—that can be mapped into estimation-ready equations. This bridge connects theory to standard empirical methods (DiD, IV, QTE, field experiments), enabling systematic tests of stratification mechanisms and evaluation of equity-enhancing policies.

Keywords: Stratification Economics
JEL Codes: Z13, J15, D63

*Economist, W.E. Upjohn Institute for Employment Research. Email: davis@upjohn.org.

Author Note and Acknowledgements. This note is part of an ongoing project to formalize a stratification economics framework to connect theory and empirics. Feedback welcome at davis@upjohn.org. Please do not cite without permission.

These ideas are inspired by, and build on, the robust existing stratification economics literature, to which the author is indebted. This includes, but is not limited to, foundational and ongoing contributions from Nina Banks, Herbert Blumer, Glen G. Cain, Kerwin Kofi Charles, Grieve Chelwa, Lisa D. Cook, William A. Darity, Jr., John B. Davis, Timothy M. Diette, W.E.B. Du Bois, Juliet U. Elu, Nancy Folbre, Dania V. Francis, Mwangi wa Gĩthĩnji, Arthur H. Goldsmith, Darrick Hamilton, Bradley L. Hardy, Damon Jones, John Komlos, Trevon D. Logan, Ray Marshall, Patrick L. Mason, Douglas S. Massey, Kyle K. Moore, Samuel L. Myers, Jr., Franklin Obeng-Odoom, Orlando Patterson, Anita Alves Pena, Luke Petach, Michael J. Piore, Gregory N. Price, James B. Stewart, T. Jerome Utley, Jr., and Robert B. Williams.

This work also draws on foundational contributions in economics and related fields that inform the study of group-based inequality, including Kenneth J. Arrow, Gary S. Becker, Marianne Bertrand, Eduardo Bonilla-Silva, Michel Foucault, Glenn C. Loury, Karl Marx, Devah Pager, Barbara Reskin, Donald Tomaskovic-Devey, and Max Weber, among others. While these contributions are not always situated within the stratification economics tradition, they provide important conceptual and empirical foundations that this framework engages with, builds on, and in some cases challenges.

A full bibliography will be developed in future drafts.

The author used generative AI as an aid for editing, refinement, and consistency checking. All ideas originate with the author, and any AI-suggested text was carefully reviewed for accuracy and alignment with the author's voice and original text. Final content decisions and any errors remain the sole responsibility of the author.

1 Core Propositions

Notes 1–6 developed the stratification framework from primitives to equilibrium and welfare. This note summarizes the core propositions implied by that framework. Each proposition corresponds to a distinct layer of the model—endowments, behavior, equilibrium, and welfare—and follows directly from the identity-conditioned structure introduced earlier. Together, these results formalize how stratification generates persistent inequality and shapes the effects of policy interventions.

1.1 Propositions

The following propositions summarize the core theoretical implications of the stratification framework. Each proposition corresponds to a distinct layer of the model: endowments (Note 1), policy transmission (Notes 1 and 6), equilibrium behavior (Notes 5-6), and welfare (Note 6). Rather than relying on full formal proofs, each result follows directly from the primitives and equilibrium structure developed in Notes 1-6, with proof sketches provided for transparency.

[Stratified Endowments and Outcome Inequality] Suppose individuals have identical preferences, technologies, and decision rules, but identity-conditioned endowments differ such that

$$\Omega_{\text{dom}} \succ \Omega_{\text{sub}}$$

in the sense of first-order stochastic dominance over $(\kappa, \iota, \lambda, \rho, \pi)$. Then, under the Stratified General Equilibrium (SGE),

$$\mathbb{E}[Y_i \mid g_i = \text{dom}] > \mathbb{E}[Y_i \mid g_i = \text{sub}].$$

Mechanism. This result follows from (i) identity-conditioned feasible sets $K(\kappa_g)$ and constraints $\Lambda(\lambda_g)$ (Note 1), (ii) identity-conditioned payoff schedules Π_g and risk environments P_g (Notes 1-2), and (iii) equilibrium best responses by individuals and institutions (Notes 5-6).

Proof sketch. First-order stochastic dominance of Ω_{dom} implies that dominant-identity individuals face weakly larger choice sets, higher expected payoffs, and weakly lower effective constraints and risks. These advantages propagate through the stratified utility maximization problem (Note 2) and institutional responses (Note 3), yielding higher equilibrium outcomes in the SGE.

[Heterogeneous Policy Effects Across Identities] Let a policy induce a shift in a stratification parameter for group g:

$$\Delta\Omega_g = (\Delta\kappa_g, \Delta\iota_g, \Delta\lambda_g, \Delta\rho_g, \Delta\pi_g).$$

Then, under SGE, for at least one component $j \in \{\kappa, \iota, \lambda, \rho, \pi\}$,

$$\frac{\partial \mathbb{E}[Y_i \mid g_i = \text{sub}]}{\partial \Omega_{g,j}} \neq \frac{\partial \mathbb{E}[Y_i \mid g_i = \text{dom}]}{\partial \Omega_{g,j}}.$$

In particular, for equity-enhancing shifts that relax constraints or expand opportunities for subaltern groups, the marginal gains are expected to be larger for subaltern identities.

Mechanism. Policy shocks shift identity-conditioned endowment distributions Ω_g (Note 6), which enter both individual optimization (Note 2) and institutional decision rules (Note 3), generating heterogeneous equilibrium responses.

Proof sketch. Because subaltern identities begin from tighter constraints (higher λ, higher ρ, lower κ, ι, π), marginal relaxations produce larger changes in feasible sets and expected returns. These nonlinearities in constraints and payoffs imply asymmetric comparative statics across identities in equilibrium.

[Equilibrium Reproduction of Stratification] Under identity-conditioned endowments Ω_g, stratified utilities U_i, and stratified institutional objectives V_k, the Stratified General Equilibrium (SGE) generates outcomes

$$Y_i \sim \tilde{y}_i(x_i^*, x_k^*; \Upsilon, \Pi_{g_i}),$$

such that differences in Ω_g induce persistent differences in

$$\mathbb{E}[Y_i \mid g_i]$$

in equilibrium.

Mechanism. Identity-conditioned endowments (Note 1), preferences (Note 2), institutional responses (Note 3), and perceptions (Note 4) jointly determine best responses in the Stratified Nash Equilibrium (Note 5), which aggregate into the SGE (Note 6).

Proof sketch. Because both individuals and institutions optimize given identity-conditioned inputs, equilibrium strategies differ systematically across identities. These differences propagate through payoff realizations, reproducing identity-conditioned outcome distributions even in the absence of shocks or direct discrimination arising from misperception.

[Conditional Efficiency and Opportunity Inequality] The Stratified General Equilibrium (SGE) is Pareto efficient conditional on identity-conditioned endowments Ω_g. However, if $\Omega_g \neq \Omega_{g'}$, then there may exist counterfactual reallocations of opportunity sets that weakly improve outcomes for at least one group without reducing another's, under non-rival or slack-capacity conditions.

Mechanism. Feasible sets $K(\kappa_g)$ and constraints $\Lambda(\lambda_g)$ differ across identities (Note 1), and equilibrium allocations are efficient only relative to these constrained sets (Note 6).

Proof sketch. Standard arguments imply Pareto efficiency conditional on feasible sets. However, when feasible sets differ across identities, expanding the opportunity set of a constrained group (e.g., increasing κ_g or reducing λ_g) can increase attainable utility without affecting others if resources are non-rival. Thus, apparent efficiency is conditional on stratified constraints rather than globally efficient.