A Study of Consumption Decisions and Wealth, Individual Data, Political Economy and Theory

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Recent studies have used regression decomposition to analyze recent data and found that over seventy percent of the black-white wealth differences remained unexplained (See, e.g., Gittleman and Wolff 2000; Altonji, Doraszelski and Segal 2000; and Blau and Graham 1990). Their results are limited to the variation in modern data. This study contributes improved methodology and historical empirical results to the literature on economic discrimination. In this paper, (i) James Curtis Jr presents structural regression decompositions, which are modifications to methods developed by Becker (1957) and Oaxaca (1973); (ii) James Curtis Jr presents a basic empirical test when analyzing structural regression decompositions; (iii) James Curtis Jr reports the estimated sources of black-white differences in wealth directly before and after emancipation; (iv) James Curtis Jr links these findings to recent studies. Empirical estimates confirm that the size and persistence of modern black-white wealth differences have historical roots. (v) James Curtis Jr presents decision-making considerations of "individuals" in an economy with grouped individuals, owners of firms, and social planner(s), conditional on wealth constraints with applied social economic considerations.

JEL Codes: J7 D9 E2 C2 H5 N3

Key words: theory of economic discrimination, structural regression decomposition, wealth inequality

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I. Case One: Agent-Specific Constraints

$$\mathbf{MAX}_{\{x_{nij} \geq 0\}} \quad \mathbf{U} = \gamma_{\mathbf{U}} \Pi_{SP=1} U_{SP}{}^{\theta(SP)}$$

subject to $\mathbf{X}_{ijSP} \leq \mathbf{E}_{ijSP}$

Let: $U_{SP} = \gamma_{U(SP)} \Pi_{j=1} (\Pi_{i=1} \boldsymbol{u}_{ij(SP)}{}^{\theta ij(SP)})$

such that $\mathbf{U} \ = \boldsymbol{\gamma^*} \Pi_{SP=1} [\Pi_{j=1} (\Pi_{i=1} \boldsymbol{u}_{ij(SP)}{}^{\boldsymbol{\theta^*}})]$

where $\boldsymbol{\gamma^*} = \gamma_{\mathbf{U}} \ \Pi_{SP=1} \ \gamma_{U(SP)}$

$\boldsymbol{\theta^*} = \theta_{\ ij(SP)} \theta_{(SP)}$

Further, let: $\boldsymbol{u}_{ijSP} = \gamma_{\boldsymbol{u}ijSP} \Pi_{n=1} (\boldsymbol{x}_{(n)ij} - s_{\boldsymbol{x}(n)ijSP})^{\alpha(n)}$

such that $\mathbf{U} \ = \boldsymbol{\gamma'} \Pi_{SP=1} [\Pi_{j=1} (\Pi_{i=1} (\Pi_{n=1} (\boldsymbol{x}_{(n)ij} - s_{\boldsymbol{x}(n)ijSP})^{\boldsymbol{\alpha(n)'}}))]$

where $\boldsymbol{\gamma'} = \gamma_{\mathbf{U}} \ [\Pi_{SP=1} \gamma_{U(SP)} \ (\Pi_{j=1} (\Pi_{i=1} \ \gamma_{\boldsymbol{u}ijSP}))]$

$\boldsymbol{\alpha(n)'} = \alpha(n) \theta_{\ ij(SP)} \theta_{(SP)}$

Further, let: $\mathbf{E}_{ijSP} \ = \Sigma_{n=1} \ \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \boldsymbol{p}_{\boldsymbol{x}(l)} \mathrm{e}_{\boldsymbol{x}(l)ij} + \mathrm{e}_{ijSP}$ *for all* $n = 1,2,..,E \neq l$

Further, let: $\mathbf{X}_{\ ij} = \Sigma_{n=1} \ \boldsymbol{P}_{\boldsymbol{x}(n)j} \boldsymbol{x}_{(n)ij} + \boldsymbol{p}_{\boldsymbol{x}(l)j} \boldsymbol{x}_{(l)ij}$

where $\boldsymbol{P}_{\boldsymbol{x}(n)\ j} = \boldsymbol{p}_{\boldsymbol{x}(n)} (1 + \delta_{\boldsymbol{x}jg} + \Sigma_{\ q=1} t'_{\ q\boldsymbol{x}(n)})$

$\boldsymbol{P}_{\boldsymbol{x}(E)} = \eta(\mathrm{B})$

Therefore, the decision becomes:

$$\mathbf{MAX}_{\{x_{nij} \geq 0\}} \quad \mathbf{U} = \gamma' \Pi_{SP=1} [\Pi_{j=1} (\Pi_{i=1} (\Pi_{n=1} (\boldsymbol{x}_{nij} - s_{\boldsymbol{x}(n)ijSP})^{\boldsymbol{\alpha(n)'}}))]$$

subject to $\Sigma_{n=1} \ \boldsymbol{P}_{\boldsymbol{x}(n)\ j} \ \boldsymbol{x}_{(n)ij} + \boldsymbol{p}_{\boldsymbol{x}(l)j} \boldsymbol{x}_{(l)ij} \leq \Sigma_{n=1} \ \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \boldsymbol{p}_{\boldsymbol{x}(l)} \mathrm{e}_{\boldsymbol{x}(l)ij} + \mathrm{e}_{ijSP}$

Further, let: $\Sigma_{n=1} \ \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \Sigma_{v=1} \boldsymbol{w}_{\boldsymbol{v}} \boldsymbol{h}_{\boldsymbol{v}ij} = \mathbf{W}_{ij}$

where $\boldsymbol{w}_{v} = \boldsymbol{p}_{\boldsymbol{x}(l)}$

$\boldsymbol{h}_{vij} = \mathrm{e}_{\boldsymbol{x}(l)ij} - \boldsymbol{x}_{(l)ij}$

II. Case Two: One Universal Constraint

$$\mathbf{MAX}_{\{x_{nij} \geq 0\}} \; \mathbf{U} = \gamma_{\mathbf{U}} \Pi_{SP=1} \boldsymbol{U}_{SP}^{\;\theta(SP)}$$

Subject to $\mathbf{X} \leq \boldsymbol{\varepsilon}$

Further, let: $\boldsymbol{\varepsilon} = \Sigma_{SP=1} \boldsymbol{E}_{SP} + \mathbf{e}$

$$\boldsymbol{E}_{SP} = \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{E}_{ijSP} + \mathbf{e}_{SP}$$

$$\boldsymbol{E}_{ijSP} = \boldsymbol{E}_{\boldsymbol{x}(n)ijSP} + \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{p}_{\boldsymbol{x}(l)} \mathrm{e}_{\boldsymbol{x}(l)ij} + \mathrm{e}_{ij} \; \textit{for all } n = 1,2,..,E \neq l$$

$$\boldsymbol{E}_{\boldsymbol{x}(n)ijSP} = \Sigma_{n=1} \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP}$$

such that $\boldsymbol{\varepsilon} = \Sigma_{i=1} \Sigma_{j=1} \Sigma_{n=1} \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{p}_{\boldsymbol{x}(l)} \mathrm{e}_{\boldsymbol{x}(l)ij} + \mathbf{e}^*$

where $\mathbf{e}^* = \mathbf{e} + \Sigma_{SP=1} \mathbf{e}_{SP} + \Sigma_{i=1} \Sigma_{j=1} \mathrm{e}_{ij}$

Further, let: $\mathbf{X} = \Sigma_{i=1} \Sigma_{j=1} \Sigma_{n=1} \boldsymbol{P}_{\boldsymbol{x}(n)j} \boldsymbol{x}_{(n)ij} + \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{p}_{\boldsymbol{x}(l)j} \boldsymbol{x}_{(l)ij}$

where $\boldsymbol{P}_{\boldsymbol{x}(n)\,j} = \boldsymbol{p}_{\boldsymbol{x}(n)}(1 + \delta_{\boldsymbol{x}jg} + \Sigma_{q=1} t'_{q\boldsymbol{x}(n)})$

$$\boldsymbol{P}_{\boldsymbol{x}(E)} = \eta(\mathrm{B})$$

Therefore, the decision becomes:

$$\mathbf{MAX}_{\{x_{nij} \geq 0\}} \; \mathbf{U} = \gamma' \Pi_{SP=1}[\Pi_{j=1}(\Pi_{i=1}(\Pi_{n=1}(\boldsymbol{x}_{nij} - s_{\boldsymbol{x}(n)ijSP})^{\boldsymbol{\alpha(n)'}}))]$$

subject to $\Sigma_{i=1} \Sigma_{j=1} \Sigma_{n=1} \boldsymbol{P}_{\boldsymbol{x}(n)j} \boldsymbol{x}_{(n)ij} + \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{p}_{\boldsymbol{x}(l)j} \boldsymbol{x}_{(l)ij} \leq \Sigma_{i=1} \Sigma_{j=1} \Sigma_{n=1} \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{p}_{\boldsymbol{x}(l)} \mathrm{e}_{\boldsymbol{x}(l)ij} + \mathbf{e}^*$

Let: $\Sigma_{i=1} \Sigma_{j=1} \Sigma_{n=1} \boldsymbol{p}_{\boldsymbol{x}(n)} \mathrm{e}_{\boldsymbol{x}(n)ijSP} + \Sigma_{v=1} \Sigma_{i=1} \Sigma_{j=1} \boldsymbol{w}_v \boldsymbol{h}_{vij} = \Sigma_{i=1} \Sigma_{j=1} \mathbf{W}_{ij}$

where $\boldsymbol{w}_v = \boldsymbol{p}_{\boldsymbol{x}(l)}$

$$\boldsymbol{h}_{vij} = \mathrm{e}_{\boldsymbol{x}(l)ij} - \boldsymbol{x}_{(l)ij}$$

III. A Model of Wealth

Let:

$$\mathbf{W}_{ij} = (1\text{-}g\text{-}\Sigma_{q=1} t_{q\mathbf{I}})\mathbf{I}_{ij} + \mathbf{A}_{ij} + (1\text{-}g)(\Sigma_{q=1} S_{qij} + C_{ij}) - G_{ij}$$

$$\mathbf{I}_{ij} = \Sigma_{v=1}\, \boldsymbol{w'}_v\, \boldsymbol{h'}_{vij}$$

$$\boldsymbol{w'}_v = \boldsymbol{w}_v - \delta_{w(v)jg} - \Sigma_{q=1} t'_q$$

$$\boldsymbol{h'}_{vij} = \boldsymbol{h}_{vij} - \delta_{h(v)jg}$$

$$\mathbf{A}_{ij} = \quad [\ \mathbf{A_0}_{ij}(1\text{-}g\text{-}\Sigma_{q=1} t_{q\mathrm{A}(0)}) + \Sigma_{a=1} N_{(1,a)ij}(R_i,M_i)(1\text{-}g\text{-}\Sigma_{q=1} t_{qN(1,a)})$$

$$+ \Sigma_{m=1}\gamma_{\pi(m)ij}\, \boldsymbol{\pi}_{Z(m)ij}(1\text{-}g)\ ]\ (1+\gamma_{\rho ij}\rho)(1\text{-}\Sigma_{q=1} t_{q\rho})$$

$$+ \Sigma_{b=1} N_{(2,b)ij}(R_i,M_i)(1\text{-}g\text{-}\ \Sigma_{q=1} t_{qN(2,b)}) - G_{\rho ij} - \delta_{Ajg}(\rho,\mathbf{A_0}_{ij})$$

$$\mathbf{A_0}_{ij} = A_{0ij}(\boldsymbol{x}_{n0},\gamma_{\mathbf{W}(0)ijF}\mathbf{W}_{0F}(I_0(\boldsymbol{w}_0,\boldsymbol{h}_0,S_0),A_0(A_{(-1)},N_0(R_0,M_0),\gamma_{0\,\pi(m)}\pi_{0Zm}),t_{0q},\delta_{0g},\gamma_{0\rho}),R,M)$$

$$\boldsymbol{\pi}_{\mathbf{Z}(m)ij} = (\mathbf{P}_{Z(m)j}\mathbf{Z}_{mij} + \Sigma_{q=1} S_{qZ(m)ij} - \Sigma_{d=1}\boldsymbol{P}_{Z(m,d)j}\boldsymbol{X}_{Z(m,d)ij})\ (1 - \Sigma_{q=1} t_{q\,\pi(m)})$$

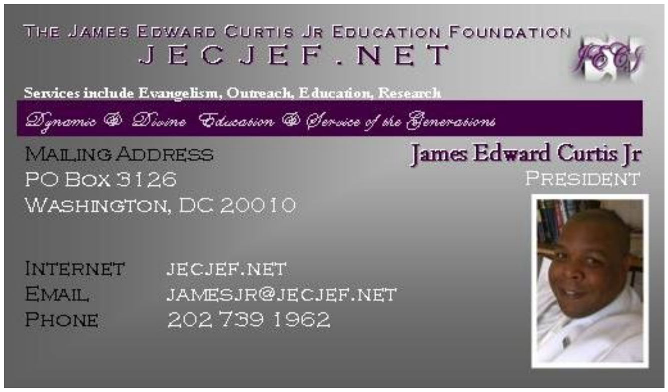
$$\boldsymbol{P}_{\mathbf{Z}(m)\,j} = \boldsymbol{p}_{\mathbf{Z}(m)}(1 - \delta_{\mathbf{Z}(m)jg} + \Sigma_{q=1} t'_{q\mathbf{Z}(m)})$$

$$\mathbf{Z}_{mij} = \gamma_{Zmij}\Pi_{d=1}\boldsymbol{X}_{Z(m,d)ij}^{\ \beta(d)}$$

$$\boldsymbol{P}_{\mathbf{Z}(m,d)\,j} = \boldsymbol{p}_{\mathbf{Z}(m,d)}(1 - \delta_{\mathbf{Z}(m,d)jg} - \Sigma_{q=1} t'_{q\mathbf{Z}(m)})$$

$$\boldsymbol{X}_{Z(m,d)ij} = \boldsymbol{x}_{Z(m,d)ij} - \delta_{Z(m,d)jg}$$

where
S is subsidies,
g is the tithe,
G is offerings,
q is governments,
C is social capital, i.e. food and medications from societal organizations,
ρ is the rate of return,
γ is the knowledge on scaling the rate of return, i.e. the 1996-97 INVESCO case study,
d is inputs,
N_1 is appreciative,
N_2 is non-appreciative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