Referee's Appendix

I. Inconsistency of OLS Estimates

The method of ordinary least squares (OLS) could be used to infer the values of β and γ in equation (2). However, Evans (1997b) states that the OLS estimates obtained from (2) are unlikely to be consistent.[1] In order to demonstrate this inconsistency, Evans first specifies a general autoregressive moving average (ARMA) data-generating process for y_{nt}:

$$(1A) \qquad y_{nt} - a_t = \delta_n + \lambda_n (y_{n,t-1} - a_{t-1}) + \sum_{i=1}^{q} \theta_{ni} \varepsilon_{n,t-i}$$

with

$$(2A) \qquad \delta_n = \kappa + \xi_n' x_n + \omega_n$$

where ε_{nt} is a zero-mean, covariance stationary error process independently distributed over time and across economies. The error term, ε_{nt}, is uncorrelated with x_n, λ_n is an autoregressive parameter which lies on $(0,1]$, and $\theta_{n0} ... \theta_{nq}$ satisfy the restriction $\theta_{n0} = 1$. As such, $y_{nt} - a_t$ will also have an autoregressive representation and will be covariance stationary if $\lambda_n < 1$ or difference stationary if $\lambda_n = 1$. The common time-specific effect experienced by every economy is represented by the term a_t. Evans assumes that Δa_t is covariance stationary and independent of ε_{nt}.

The common trend a_t for all the y variables will be the sole catalyst of economic growth in all economies if $\lambda_n < 1$. In this case, growth is exogenous and economies would follow a balanced-growth path. If $\lambda_n = 1$, on the other hand, then economy n will grow endogenously since y_{nt} diverges from a_t and the y variables of all remaining economies. The parameter δ_n controls for the relative height of economy n's balanced growth path if all the λs are less than one. If $\lambda_n = 1$, then δ_n controls for economy n's relative growth rate. The error term ω_n measures the portion of δ_n that is not explained by x_n. This error term is assumed to be

[1] This appendix borrows heavily from Evans (1997b), which can be consulted for further details. It is not intended for publication.

uncorrelated with x_n. The inequality λ_n<1 will hold for an economy described by the neoclassical growth model.

Solving equation (1A) backward from year *T* to year 0, substituting from equation (2A), and rearranging produces

$$\text{(3A)}\qquad \begin{aligned} g_n &= \alpha_n + \beta_n y_{n0} + \gamma_n' x_n - \frac{\beta_n \omega_n}{1-\gamma_n} + \frac{1}{T}\sum_{i=0}^{T-1} \lambda_n^i \left(\sum_{j=0}^{\min[i,q]} \lambda_n^{-j} \theta_{nj} \right) \varepsilon_{n,T-i} \\ &+ \left(\frac{\lambda_n^T}{T} \right) \sum_{i=0}^{q-1} \lambda_n^i \left(\sum_{j=i+1}^{q} \lambda_n^{-j} \theta_{nj} \right) \varepsilon_{n,-i} \end{aligned}$$

where $\beta_n = \dfrac{\lambda_n^T - 1}{T}$, $\gamma_n = \dfrac{-\beta_n \xi_n}{1-\lambda_n}$, and $\alpha_n = \dfrac{a_T - a_0}{T - \beta_n \left(\dfrac{a_0 + \kappa}{1-\lambda_n} \right)}$. If $\beta_n < 0$, then economy n grows exogenously $(\lambda_n < 1)$. On the other hand, if $\beta_n = 0$, then economy n grows endogenously $(\lambda_n = 1)$.

Now consider a special case in which every intercept δ_n is completely explained by the county characteristics included in x_n $(\omega_n = 0, \forall n)$ and every series $y_{nt} - a_t$ is a first-order auto-regression $(q = 0)$. Under these restrictions equation (3A) reduces to:

$$\text{(4A)}\qquad g_n = \alpha_n + \beta_n y_{n0} + \gamma_n' x_n + \frac{1}{T}\sum_{i=0}^{T-1} \lambda_n^i \varepsilon_{n,T-i}$$

The estimator for $\hat{\beta}$ can then be obtained in two steps. First, regress y_{n0} on an intercept and x_n to obtain the residual r_n and then regress g_n on r_n. (This is simply the OLS estimator of β.) Each term in $\dfrac{1}{T}\sum_{i=0}^{T-1} \lambda_n^i \varepsilon_{n,T-i}$ is uncorrelated with the intercept, y_n, x_n and the residual r_n. As a result, one has

$$\text{(5A)}\qquad \operatorname*{plim}_{N\to\infty} \hat{\beta} = \frac{\operatorname*{plim}_{N\to\infty} \dfrac{1}{N}\sum_{n=1}^{N} \alpha_n r_n + \operatorname*{plim}_{N\to\infty} \dfrac{1}{N}\sum_{n=1}^{N} \beta_n r_n y_n + \operatorname*{plim}_{N\to\infty} \dfrac{1}{N}\sum_{n=1}^{N} \gamma_n' r_n x_n}{\operatorname*{plim}_{N\to\infty} \dfrac{1}{N}\sum_{n=1}^{N} r_n^2}$$

Making further assumptions that α_n is uncorrelated with r_n, β_n is uncorrelated with $r_n y_n$, and γ_n is uncorrelated with $r_n x_n$, equation (5A) leads to

$$\text{(6A)} \qquad \underset{N\to\infty}{p\lim}\,\hat{\beta} = \frac{\underset{N\to\infty}{p\lim}\frac{1}{N}\sum_{n=1}^{N}\beta_n r_n^2}{\underset{N\to\infty}{p\lim}\frac{1}{N}\sum_{n=1}^{N} r_n^2}$$

The probability limit of the OLS estimator is then a weighted average of the economy specific β_ns. It is a consistent estimator of that weighted average.[2]

But what if the assumption that every intercept δ_n is completely explained by x_n and also the assumption that every series $y_{nt} - a_t$ is a first-order auto-regression, are relaxed? Relaxing these assumptions, and imposing the additional restriction that the λs and ξs and, as a result, the βs and γs are identical across all economies (for the simplicity of the exposition), (3A) can be re-written as

$$\text{(7A)} \qquad \begin{aligned} g_n &= \alpha + \beta y_{n0} + \gamma' x_n - \frac{\beta\omega_n}{1-\gamma} + \frac{1}{T}\sum_{i=0}^{T-1}\lambda^i\left(\sum_{j=0}^{\min[i,q]}\lambda^{-j}\theta_{nj}\right)\varepsilon_{n,T-i} \\ &+ \left(\frac{\lambda^T}{T}\right)\sum_{i=0}^{q-1}\lambda^i\left(\sum_{j=i+1}^{q}\lambda^{-j}\theta_{nj}\right)\varepsilon_{n,-i} \end{aligned}$$

where $\beta = \frac{\lambda^T - 1}{T}$, $\gamma = \frac{-\beta\xi}{1-\lambda}$, and $\alpha = \frac{a_T - a_0}{T - \beta\left(\frac{a_0 + \kappa}{1-\lambda}\right)}$. Applying the same steps to equation (6A) yields

$$\text{(8A)} \qquad \underset{N\to\infty}{p\lim}\,\hat{\beta} = \beta + \frac{(\Phi + \Psi)}{\underset{N\to\infty}{p\lim}\frac{1}{N}\sum_{n=1}^{N} r_n^2}$$

[2] Strictly speaking, even for this restrictive case, an OLS estimate less than unity does not mean that all the economies in the sample conform to the neoclassical growth model. Rather, it would mean that enough economies conform, so that the weighted average is less than unity. It would mean, therefore, that exogenous growth is the predominant case across the sample.

where $\Phi = \frac{\lambda^T}{T} \underset{N\to\infty}{p\lim} \frac{I}{N} \sum_{n=1}^{N} \left[\sum_{i=0}^{q-1} \lambda^i \left(\sum \lambda^{-j} \theta_{n,j+i+1} \right) r_n \varepsilon_{n,-i} \right]$ and $\Psi = -\frac{\beta}{1-\lambda} \underset{N\to\infty}{p\lim} \frac{1}{N} \sum r_n \omega_n$.

As a result, equation (8A) implies that $\underset{N\to\infty}{p\lim} \hat{\beta}$ differs from β if *either* $q > 0$ ($y_{nt} - a_t$ is not a first-order AR process) or the cross-sectional variance of ω_n is positive (not all cross-sectional heterogeneity is accounted for). In other words, the OLS estimator is inconsistent unless (a) the log of income per capita has an identical first-order AR representation across economies, and (b) all cross-section heterogeneity is controlled for.

Evans shows that the resulting bias from $q > 0$ is likely to be negligible in practice but the bias resulting from a positive cross-sectional variance for ω_n can be substantial. This is essentially an omitted variable bias. Evans demonstrates that

(9A) $$\underset{N\to\infty}{p\lim} \hat{\beta} = \left[\frac{\text{var}(y \mid x, \omega)}{\text{var}(y \mid x)} \right] \beta$$

and

(10A) $$\underset{N\to\infty}{p\lim} \hat{\gamma} = \left[\frac{\text{var}(y \mid x, \omega)}{\text{var}(y \mid x)} \right] \gamma.$$

The bracketed portions in equations (9A) and (10A) are the ratio of the cross-sectional variance of y_{n0} conditional on both x_n and ω_n to the cross-sectional variance of y_{n0} on x_n. As such, $\hat{\beta}$ and $\hat{\gamma}$ will be biased towards zero unless the *xs* are able to control for a large portion of the cross-economy variation in the *ys*.

The intuition here is that if a large portion of the growth of per capita income is explained by variables left out of the OLS regression, then the estimate of the convergence effect will be biased. In general, omitted variable bias can be either positive or negative. However, in this case, theoretically, the bias is negative. Evans (1997b, Tables on p. 11 and p. 15) estimates β for Mankiw, et al.'s (1992) international data using both the OLS, which yields inconsistent estimates, and the 2SLS approach (as outlined in section 2), which yields consistent estimates of both β and γ. He finds that the 2SLS estimate implies a conditional convergence rate between 4 to 5 times as large as the OLS estimate. The bias produced by the OLS in this case, therefore, is substantial.

II. Growth Equation Regression Estimates: Complete Tables

In Table A1 we report the growth equation estimation results for the entire U.S. In Tables A2–A6 we report the regional growth equation estimation results for the Great Lakes Region, Northeastern Region, Plains Region, Southern Region, and the Western Region, respectively.

The information presented in Tables A1–A8 is organized as follows. In the first column of each table, we report the estimation results for all counties together. In the second and third columns we report the estimation results for the metro and non-metro counties, respectively. In each column, we first report the OLS estimation results, with and without Conley-Rappaport standard errors, and then the 2SLS estimation results.

TABLE A1.— GROWTH EQUATION ESTIMATES - ENTIRE UNITED STATES

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	0.1682	0.1682	0.3320	0.0859	0.0859	0.3280	0.1901	0.1901	0.3275
	(0.0158)[a]	(0.0140)[a]	(0.0149)[a]	(0.0358)[b]	(0.0339)[b]	(0.0344)[a]	(0.0181)[a]	(0.0141)[a]	(0.0171)[a]
Log 1970 per capita income[2]	-0.0173	-0.0173	-0.0344	-0.0133	-0.0133	-0.0354	-0.0190	-0.0190	-0.0337
	(0.0007)[a]	(0.0013)[a]	(0.0014)[a]	(0.0016)[a]	(0.0019)[a]	(0.0011)[a]	(0.0009)[a]	(0.0013)[a]	(0.0018)[a]
Land area per capita	-0.0008	-0.0008	-0.0008	-0.0003	-0.0003	-0.0002	-0.0010	-0.0010	-0.0009
	(0.0001)[a]	(0.0003)[a]	(0.0001)$_a$	(0.0003)	(0.0003)	(0.0003)	(0.0001)[a]	(0.0003)[a]	(0.0001)[a]
Water area per capita	0.0025	0.0025	0.0023	0.0056	0.0056	0.0063	0.0020	0.0020	0.0018
	(0.0007)[a]	(0.0009)	(0.0007)[a]	(0.0036)	(0.0030)[c]	(0.0040)	(0.0007)[a]	(0.0007)[a]	(0.0008)[b]
Age: 5-13 years	0.0313	0.0313	0.0337	0.0545	0.0545	0.0428	0.0187	0.0187	0.0200
	(0.0181)[c]	(0.0219)	(0.0195)[c]	(0.0433)	(0.0392)	(0.0480)	(0.0204)	(0.0207)	(0.0216)
Age: 14-17 years	0.0286	0.0286	0.0255	0.0334	0.0334	0.0180	0.0280	0.0280	0.0270
	(0.0162)[c]	(0.0172)[c]	(0.0175)	(0.0332)	(0.0319)	(0.0368)	(0.0189)	(0.0175)	(0.0201)
Age: 18-64 years	0.0136	0.0136	0.0074	0.0340	0.0340	0.0111	0.0094	0.0094	0.0053
	(0.0134)	(0.0114)	(0.0144)	(0.0309)	(0.0296)	(0.0342)	(0.0152)	(0.0135)	(0.0162)
Age: 65+	0.0116	0.0116	-0.0039	0.0305	0.0305	0.0113	0.0074	0.0074	-0.0084
	(0.0123)	(0.0109)	(0.0132)	(0.0285)	(0.0237)	(0.0316)	(0.0140)	(0.0131)	(0.0148)
Blacks	-0.0000	-0.0000	0.0022	0.0033	0.0033	0.0065	-0.0019	-0.0019	-0.0000
	(0.0013)	(0.0016)	(0.0013)	(0.0025)	(0.0020)[c]	(0.0028)[a]	(0.0015)	(0.0020)	(0.0016)
Hispanic	-0.0057	-0.0057	-0.0059	-0.0024	-0.0024	-0.0015	-0.0081	-0.0081	-0.0082
	(0.0014)[a]	(0.0014)[a]	(0.0015)[a]	(0.0026)	(0.0023)	(0.0029)	(0.0019)[a]	(0.0021)[a]	(0.0020)[a]
Education: 9-11 years	-0.0209	-0.0209	-0.0204	-0.0250	-0.0250	-0.0173	-0.0195	-0.0195	-0.0202
	(0.0033)[a]	(0.0089)[b]	(0.0035)[a]	(0.0070)[a]	(0.0081)[a]	(0.0078)[a]	(0.0038)[a]	(0.0099)[b]	(0.0041)[a]
Education: H.S. diploma	0.0007	0.0007	0.0091	-0.0017	-0.0017	0.0022	0.0012	0.0012	0.0106
	(0.0027)	(0.0052)	(0.0029)[a]	(0.0057)	(0.0049)	(0.0064)	(0.0032)	(0.0053)[b]	(0.0033)[a]
Education: Some college	-0.0106	-0.0106	-0.0014	-0.0029	0.0029	0.0009	-0.0067	-0.0067	0.0031
	(0.0056)[c]	(0.0089)	(0.0061)	(0.0122)	(0.0128)	(0.0136)	(0.0064)	(0.0097)	(0.0068)
Education: Bachelor +	0.0424	0.0424	0.0700	0.0629	0.0629	0.1151	0.0326	0.0326	0.0544
	(0.0058)[a]	(0.0108)[a]	(0.0061)[a]	(0.0111)[a]	(0.0175)	(0.0116)[a]	(0.0072)[a]	(0.0166)[b]	(0.0075)[a]
Education: Public elementary	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Education: Public nursery	-0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Education: Private elementary	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Education: Private nursery	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Housing	-0.0000	-0.0000	0.0000	-0.0000	-0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Federal government employment	-0.0145	-0.0145	-0.0226	-0.0095	-0.0095	-0.0300	-0.0137	-0.0137	-0.0179
	(0.0048)[a]	(0.0046)[a]	(0.0051)[a]	(0.0098)	(0.0105)	(0.0107)[a]	(0.0056)[b]	(0.0049)[a]	(0.0060)[a]
State government employment	-0.0040	-0.0040	-0.0177	-0.0058	-0.0058	-0.0264	0.0021	0.0021	-0.0081
	(0.0037)	(0.0045)	(0.0040)[a]	(0.0071)	(0.0049)	(0.0076)[a]	(0.0004)	(0.0064)	(0.0048)[c]
Local government employment	-0.0211	-0.0211	-0.0198	-0.0141	-0.0141	-0.0214	-0.0165	-0.0165	-0.0128
	(0.0048)[a]	(0.0079)[a]	(0.00252)[a]	(0.0108)	(0.0117)	(0.0120)[c]	(0.0055)[a]	(0.0087)[c]	(0.0059)[b]

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A1.—GROWTH EQUATION ESTIMATES - ENTIRE UNITED STATES (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	0.0076	0.0076	0.0025	0.0075	0.0075	-0.0029	0.0099	0.0099	0.0066
	(0.0032)[b]	(0.0053)	(0.0034)	(0.0074)	(0.0082)	(0.0082)	(0.0037)[a]	(0.0051)[c]	(0.0039)[c]
Agriculture	-0.0109	-0.0109	-0.0038	0.0006	0.0006	0.0035	-0.0136	-0.0136	-0.0057
	(0.0061)[c]	(0.0059)[c]	(0.0066)	(0.0114)	(0.0076)	(0.0126)	(0.0075)[c]	(0.0083)	(0.0079)
Communications	-0.0276	-0.0276	-0.0205	0.0033	0.0033	-0.0107	-0.0311	-0.0311	-0.0022
	(0.0096)[a]	(0.0134)[b]	(0.0103)[b]	(0.0213)	(0.0213)	(0.0237)	(0.0109)[a]	(0.0132)[b]	(0.0115)[c]
Construction	0.0183	0.0183	0.0120	0.0607	0.0607	0.0486	0.0077	0.0077	0.0052
	(0.0068)[a]	(0.0058)[a]	(0.0073)[c]	(0.0128)[a]	(0.0085)[a]	(0.0142)[a]	(0.0082)	(0.0064)	(0.0087)
Finance, insurance & real estate	0.0632	0.0632	0.0731	0.0600	0.0600	0.0600	0.0608	0.0608	0.0699
	(0.0117)[a]	(0.0233)[a]	(0.0125)[a]	(0.0213)[a]	(0.0243)[b]	(0.0237)[b]	(0.0143)[a]	(0.0258)[b]	(0.0152)[a]
Manufacturing – durables	0.0010	0.0010	-0.0044	0.0184	0.0184	-0.0015	-0.0026	-0.0026	-0.0046
	(0.0057)	(0.0077)	(0.0062)	(0.0109)[c]	(0.0104)[c]	(0.0120)	(0.0070)	(0.0100)	(0.0074)
Manufacturing – nondurables	-0.0079	-0.0079	-0.0141	0.0038	0.0038	-0.0144	-0.0099	-0.0099	-0.0123
	(0.0059)	(0.0064)	(0.0062)[b]	(0.0110)	(0.0110)	(0.0121)	(0.0072)	(0.0092)	(0.0076)[c]
Mining	-0.0109	-0.0109	-0.0148	0.0061	0.0061	-0.0206	-0.0145	-0.0145	-0.0147
	(0.0061)[c]	(0.0077)	(0.0066)[b]	(0.0127)	(0.0133)	(0.0139)	(0.0073)[b]	(0.0092)	(0.0078)[c]
Retail	-0.0150	-0.0150	-0.0216	-0.0076	-0.0076	-0.0264	-0.0140	-0.0140	-0.0155
	(0.0068)[b]	(0.0074)[b]	(0.0066)[b]	(0.0131)	(0.0113)	(0.0145)[c]	(0.0082)[c]	(0.0098)	(0.0087)[c]
Business & repair services	-0.0059	-0.0059	-0.0008	0.0109	0.0109	0.0094	-0.0145	-0.0145	-0.0075
	(0.0117)	(0.0157)	(0.0126)	(0.0241)	(0.0242)	(0.0267)	(0.0136)	(0.0187)	(0.0144)
Educational services	-0.0257	-0.0257	-0.0445	-0.0246	-0.0246	-0.0577	-0.0232	-0.0232	-0.0335
	(0.0082)[a]	(0.0060)[a]	(0.0087)[a]	(0.0121)[b]	(0.0154)	(0.0131)[a]	(0.0124)[c]	(0.0108)[b]	(0.0132)[b]
Professional related services	0.0092	0.0092	0.0099	0.0063	0.0063	0.0000	0.0057	0.0057	0.0029
	(0.0089)	(0.0079)	(0.0095)	(0.0136)	(0.0097)	(0.0151)	(0.0129)	(0.0128)	(0.0137)
Health services	-0.0070	-0.0070	-0.0079	0.0061	0.0061	-0.0027	-0.0082	-0.0082	-0.0022
	(0.0085)	(0.0087)	(0.0092)	(0.0129)	(0.0165)	(0.0143)	(0.0125)	(0.0117)	(0.0133)
Personal services	0.0317	0.0317	0.0341	0.0172	0.0172	0.0144	0.0399	0.0399	0.0445
	(0.0078)[a]	(0.0105)[a]	(0.0084)[a]	(0.0153)	(0.0102)[c]	(0.0169)	(0.0092)[a]	(0.0157)[b]	(0.0098)[a]
Entertainment & recreational services	0.0272	0.0272	0.0335	0.0778	0.0778	0.0670	0.0134	0.0134	0.0229
	(0.0154)[c]	(0.0230)	(0.0166)[b]	(0.0314)[b]	(0.0251)[a]	(0.0349)[c]	(0.0177)	(0.0233)	(0.0188)
Transportation	-0.0077	-0.0077	-0.0179	0.0293	0.0293	0.01882	-0.0163	-0.0163	-0.0228
	(0.0079)	(0.0098)	(0.0084)[b]	(0.0154)[c]	(0.0218)	(0.0171)	(0.0094)[c]	(0.0118)	(0.0099)[b]
Wholesale trade	0.0402	0.0402	0.0402	0.0240	0.0240	0.0085	0.0408	0.0408	0.0448
	(0.0098)[a]	(0.0102)[a]	(0.0105)[a]	(0.0176)	(0.0106)b	(0.0195)	(0.0120)[a]	(0.0135)[a]	(0.0128)[a]
Poverty	-0.0325	-0.0325	-0.0603	-0.0129	-0.0129	-0.0484	-0.0341	-0.0341	-0.0565
	(0.0048)[a]	(0.0060)[a]	(0.0049)[a]	(0.0104)	(0.0068)[c]	(0.0111)[a]	(0.0054)[a]	(0.0058)[a]	(0.0056)[a]
College Town	0.0007	0.0007	0.0009	0.0009	0.0009	0.0013	0.0003	0.0003	0.0001
	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0006)	(0.0007)[c]	(0.0009)	(0.0004)	(0.0010)
Metro area, 1970	0.0011	0.0011	0.0013	0.0005	0.0005	0.0005	-0.0000	-0.0000	0.0001
	(0.0003)[a]	(0.0004)[a]	(0.0003)[a]	(0.0005)	(0.0005	(0.0005)	(0.0005)	(0.0004)	(0.0006)
R^2	0.47	0.92	0.72	0.53	0.94	0.80	0.51	0.91	0.66
# Observations	3,058	3,058	3,058	867	867	867	2,191	2,191	2,191

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.

TABLE A2.—GROWTH EQUATION ESTIMATES – GREAT LAKES REGION

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	0.1143 (0.0475)[b]	0.1143 (0.0361)[a]	0.2687 (0.0397)[a]	-0.0518 (0.0932)	-0.0518 (0.0417)	01648 (0.0894)[c]	0.1693 (0.0608)[a]	0.1693 (0.0339)[a]	0.2634 (0.0505)[a]
Log 1970 per capita income[2]	-0.0164 (0.0023)[a]	-0.0164 (0.0016)[a]	-0.0289 (0.0017)[a]	-0.0106 (0.0047)[b]	-0.0106 (0.0014)[a]	-0.0328 (0.0025)[a]	-0.0195 (0.0029)[a]	-0.0195 (0.0019)[a]	-0.0273 (0.0019)[a]
Land area per capita	0.0111 (0.0051)[b]	0.0111 (0.0026)[a]	0.0058 (0.0052)	-0.0689 (0.0438)	-0.0689 (0.0229)[a]	-0.0793 (0.0483)	0.0068 (0.0058)	0.0068 (0.0024)[a]	0.0039 (0.0058)
Water area per capita	0.0006 (0.0008)	0.0006 (0.0005)	0.0010 (0.0008)	0.0328 (0.0449)	0.0328 (0.0081)[a]	0.0491 (0.0494)	0.0010 (0.0009)	0.0010 (0.0004)[b]	0.0013 (0.0009)
Age: 5-13 years	0.1074 (0.0534)[b]	0.1074 (0.0304)[a]	0.0556 (0.0545)	0.1761 (0.1081)	0.1761 (0.0439)[a]	0.1528 (0.1193)	0.0526 (0.0673)	0.0526 (0.0256)[b]	0.0137 (0.0666)
Age: 14-17 years	0.1233 (0.0433)[a]	0.1233 (0.0263)[a]	0.0744 (0.0440)[c]	0.2577 (0.0959)[a]	0.2577 (0.0537)[a]	0.2952 (0.1060)[b]	0.0751 0.0528)	0.0751 (0.0221)[a]	0.0397 (0.0519)
Age: 18-64 years	0.0632 (0.0392)	0.0632 (0.0181)[a]	0.0212 (0.0400)	0.1130 (0.0807)	0.1130 (0.0268)[a]	0.1246 (0.0891)	0.0252 (0.0492)	0.0252 (0.0191)	-0.0059 (0.0484)
Age: 65+	0.0252 (0.0369)	0.0252 (0.0235)	-0.0161 (0.0374)	0.1315 (0.0787)[c]	0.1315 (0.0366)[a]	0.1340 (0.0870)	-0.0074 (0.0463)	-0.0074 (0.0213)	-0.0380 (0.0455)
Blacks	-0.0176 (0.0062)[a]	-0.0176 (0.0036)[a]	-0.0144 (0.0064)[b]	-0.0212 (0.0111)[c]	-0.0212 (0.0046)[a]	-0.0238 (0.0123)[c]	-0.0086 (0.0083)	-0.0086 (0.0041)[b]	-0.0062 (0.0084)
Hispanic	-0.0278 (0.0211)	-0.0278 (0.0088)[a]	-0.0180 (0.0218)	-0.0268 (0.0279)	-0.0268 (0.0112)[b]	-0.0040 (0.0303)	-0.0416 (0.0349)	-0.0416 (0.0163)[b]	-0.0345 (0.0352)
Education: 9-11 years	-0.0493 (0.0091)[a]	-0.0493 (0.0048)[a]	-0.0462 (0.0094)[a]	-0.0651 (0.0207)[a]	-0.0651 (0.0097)[a]	-0.0704 (0.0229)[a]	-0.0433 (0.0114)[a]	-0.0433 (0.0060)[a]	-0.0412 (0.0115)[a]
Education: H.S. diploma	-0.0175 (0.0055)[a]	-0.0175 (0.0033)[a]	-0.0092 (0.0055)[c]	0.0048 (0.0119)	0.0048 (0.0056)	0.0126 (0.0131)	-0.0157 (0.0070)[b]	-0.0157 (0.0044)[a]	-0.0103 (0.0068)
Education: Some college	0.0328 (0.0153)[b]	0.0328 (0.0092)[a]	0.0423 (0.0158)[a]	-0.0237 (0.0334)	-0.0237 (0.0137)[c]	-0.0261 (0.0369)	0.0359 (0.0191)[c]	0.0359 (0.0095)[a]	0.0452 (0.0190)[b]
Education: Bachelor +	0.0398 (0.0145)[a]	0.0398 (0.0056)[a]	0.0607 (0.0145)[a]	0.0544 (0.0303)[c]	0.0544 (0.0142)[a]	0.01024 (0.0315)[a]	0.0428 (0.0195)[b]	0.0428 (0.0074)[a]	0.0513 (0.0194)[a]
Education: Public elementary	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Public nursery	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private elementary	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private nursery	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)
Housing	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Federal government employment	-0.0004 (0.0147)	-0.0004 (0.0081)	-0.0029 (0.0153)	0.0353 (0.0315)	0.0353 (0.0136)a	0.0114 (0.0344)	0.0075 (0.0192)	0.0075 (0.0057)	0.0111 (0.0194)
State government employment	-0.0116 (0.0093)	-0.0116 (0.0059)[b]	-0.0181 (0.0096)[c]	0.0016 (0.0120)	0.0016 (0.0049)	-0.0203 (0.0214)	-0.0188 (0.0115)	-0.0188 (0.0063)[a]	-0.0223 (0.0115)[c]
Local government employment	-0.0362 (0.0125)[a]	-0.0362 (0.0038)[a]	-0.0343 (0.0130)[a]	-0.0540 (0.0362)	-0.0540 (0.0135)[a]	-0.0333 (0.0397)	-0.0345 (0.0143)[b]	-0.0345 (0.0061)[a]	-0.0331 (0.0145)[b]

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A2.—GROWTH EQUATION ESTIMATES – GREAT LAKES REGION (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	-0.0132	-0.0132	-0.0201	-0.1041	-0.1041	-0.1541	-0.0060	-0.0060	-0.0086
	(0.0122)	(0.0082)	(0.0126)	(0.0438)[b]	(0.0243)[a]	(0.0469)[a]	(0.0136)	(0.0064)	(0.0137)
Agriculture	0.0021	0.0021	0.0118	0.1322	0.1322	0.1720	0.0067	0.0067	0.0174
	(0.0199)	(0.0129)	(0.0206)	(0.0561)[b]	(0.0339)[a]	(0.0612)[a]	(0.0255)	(0.0095)	(0.0255)
Communications	-0.0054	-0.0054	-0.0002	0.0456	0.0456	0.0647	-0.0011	-0.0011	0.0094
	(0.0266)	(0.0154)	(0.0276)	(0.0581)	(0.0139)[a]	(0.0641)	(0.0334)	(0.0149)	(0.0336)
Construction	0.0061	0.0061	0.0076	0.1153	0.1153	0.1129	0.0137	0.0137	0.0207
	(0.0192)	(0.0092)	(0.0199)	(0.0432)[a]	(0.0189)[a]	(0.0478)[b]	(0.0249)	(0.0063)[b]	(0.0250)
Finance, insurance & real estate	0.0343	0.0343	0.0337	0.1013	0.1013	0.1112	0.0360	0.0360	0.0412
	(0.0272)	(0.0111)[a]	(0.0282)	(0.0592)[c]	(0.0241)[a]	(0.0654)[c]	(0.0328)	(0.0179)[b]	(0.0332)
Manufacturing – durables	0.0007	0.0007	-0.0007	0.0550	0.0550	0.0391	0.0111	0.0111	0.0164
	(0.0168)	(0.0083)	(0.0174)	(0.0345)	(0.0140)[a]	(0.0379)	(0.0226)	(0.0062)[c]	(0.0228)
Manufacturing – nondurables	-0.0016	-0.0016	-0.0040	0.0490	0.0490	0.0333	0.0070	0.0070	0.0120
	(0.0168)	(0.0076)	(0.0174)	(0.0336)	(0.0137)[a]	(0.0369)	(0.0229)	(0.0069)	(0.0231)
Mining	-0.0167	-0.0167	-0.0166	0.0426	0.0426	0.0194	-0.0049	-0.0049	0.0019
	(0.0179)	(0.0091)[c]	(0.0186)	0.0468	(0.0239)[c]	(0.0514)	(0.0238)	(0.0076)	(0.0239)
Retail	-0.0162	-0.0162	-0.0153	0.0167	0.0167	0.0044	0.0049	0.0049	0.0123
	(0.0193)	(0.0058)[a]	(0.0201)	(0.0417)	(0.0112)	(0.0460)	(0.0254)	(0.0063)	(0.0256)
Business & repair services	0.0520	0.0520	0.0576	0.0564	0.0564	0.0546	0.0420	0.0420	0.0540
	(0.0404)	(0.0219)[b]	(0.0419)	(0.0825)	(0.0594)	(0.0912)	(0.0510)	(0.0198)[b]	(0.0515)
Educational services	-0.0896	-0.0896	-0.1088	-0.1091	-0.1091	-0.1468	-0.0748	-0.0748	-0.0824
	(0.0316)[a]	(0.0141)[a]	(0.0326)[a]	(0.0759)	(0.0275)[a]	(0.0834)[c]	(0.0373)[b]	(0.0180)[a]	(0.0376)[b]
Professional related services	0.0679	0.0679	0.0701	0.1412	0.1412	0.1261	0.0657	0.0657	0.0708
	(0.0325)[b]	(0.0161)[a]	(0.0336)[b]	(0.0775)[c]	(0.0307)[a]	(0.0856)	(0.0374)[c]	(0.0140)[a]	(0.0378)[c]
Health services	-0.0853	-0.0853	-0.0910	-0.1369	-0.1369	-0.1311	-0.0627	-0.0627	-0.6373
	(0.0308)[a]	(0.0149)[a]	(0.0320)[a]	(0.0789)[c]	(0.0239)[a]	(0.0872)	(0.0362)[c]	(0.0174)	(0.0366)[c]
Personal services	0.0223	0.0223	0.0265	0.1091	0.1091	0.1057	0.0432	0.0432	0.0525
	(0.0268)	(0.0121)[c]	(0.0278)	(0.0725)	(0.0249)[a]	(0.0802)	(0.0332)	(0.0121)[a]	(0.0334)
Entertainment & recreational services	0.1002	0.1002	0.1206	0.6307	0.6307	0.5911	0.0115	0.0115	0.0358
	(0.0784)	(0.0616)	(0.0812)	(0.1684)[a]	(0.0858)[a]	(0.1859)[a]	(0.0944)	(0.0628)	(0.0952)
Transportation	-0.0137	-0.0137	-0.0186	0.0109	0.0109	-0.0219	-0.0030	-0.0030	0.0021
	(0.0210)	(0.0107)	(0.0217)	(0.0381)	(0.0104)	(0.0414)	(0.0280)	(0.0098)	(0.0283)
Wholesale trade	0.0602	0.0602	0.0614	0.1147	0.1147	0.1067	0.0671	0.0671	0.0708
	(0.0240)[b]	(0.0101)[a]	(0.0248)[b]	(0.0452)[b]	(0.0164)[a]	(0.0499)[b]	(0.0317)[b]	(0.0110)[a]	(0.0320)[b]
Poverty	-0.0228	-0.0228	-0.0418	0.0072	0.0072	-0.0292	-0.0304	-0.0304	-0.0421
	(0.0082)[a]	(0.0059)[a]	(0.0077)[a]	(0.0260)	(0.0240)	(0.0274)	(0.0099)[a]	(0.0076)[a]	(0.0090)[a]
College Town	-0.0002	-0.0002	-0.0001	-0.0013	-0.0013	-0.0002	0.0010	0.0010	0.0007
	(0.0010)	(0.0003)	(0.0010)	(0.0014)	(0.0003)[a]	(0.0015)	(0.0016)	(0.0003)[a]	(0.0016)
Metro area, 1970	0.0010	0.0010	0.0012	0.0010	0.0010	0.0014	0.0002	0.0002	0.0002
	(0.0006)[c]	(0.0002)[a]	(0.0006)[b]	(0.0009)	(0.0004)[b]	(0.0010)	(0.0009)	(0.0003)	(0.0009)
R^2	0.70	0.96	0.79	0.78	0.93	0.86	0.53	0.96	0.70
# Observations	435	435	435	140	140	140	295	295	295

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.

TABLE A3.—GROWTH EQUATION ESTIMATES – NORTHEAST REGION

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	-0.0626	-0.0626	0.1793	-0.1869	-0.1869	0.0934	0.1697	0.1697	0.3867
	(0.0702)	(0.0559)	(0.0686)[a]	(0.1292)	(0.0730)[a]	(0.1293)	(0.0926)[c]	(0.0408)[a]	(0.0890)[a]
Log 1970 per capita income[2]	0.0033	0.0033	-0.0264	-0.0000	-0.0000	-0.2684	-0.0027	-0.0027	-0.0281
	(0.0042)	(0.0033)	(0.0024)[a]	(0.0079)	(0.0025)	(0.0041)[a]	(0.0053)	(0.0029)	(0.0028)[a]
Land area per capita	0.0022	0.0022	-0.0010	-0.0621	-0.0621	-0.0470	0.0041	0.0041	0.0017
	(0.0046)	(0.0026)	(0.0051)	(0.0419)	(0.0107)[a]	(0.0466)	(0.0055)	(0.0035)	(0.0060)
Water area per capita	0.0305	0.0305	0.0376	0.1486	0.1486	0.2111	0.0349	0.0349	0.0418
	(0.0186)	(0.0105)[a]	(0.0207)[c]	(0.0850)[c]	(0.0245)[a]	(0.0930)[b]	(0.0222)	(0.0161)[b]	(0.0245)[c]
Age: 5-13 years	0.1577	0.1577	0.2041	0.2684	0.2684	0.3411	-0.1058	-0.1058	-0.0805
	(0.0930)[c]	(0.0814)[b]	(0.1039)[c]	(0.1676)	(0.0782)[a]	(0.1861)[c]	(0.1230)	(0.0520)[b]	(0.1353)
Age: 14-17 years	-0.1186	-0.1186	-0.0397	0.1279	0.1279	0.0960	-0.2200	-0.2200	-0.1177
	(0.0696)[c]	(0.0217)[a]	(0.0769)	(0.1036)	(0.0656)[b]	(0.1155)	(0.1010)[b]	(0.0638)[a]	(0.1088)
Age: 18-64 years	0.0460	0.0460	0.1058	0.1663	0.1663	0.2113	-0.1407	-0.1407	-0.0920
	(0.0626)	(0.0488)	(0.0695)	(0.1043)	(0.0419)[a]	(0.1159)[c]	(0.0843)[c]	(0.0339)[a]	(0.0922)
Age: 65+	0.0210	0.0210	0.0410	0.0882	0.0882	0.1086	-0.1139	-0.1139	-0.0998
	(0.0590)	(0.0379)	(0.0659)	(0.1194)	(0.0416)[b]	(0.1336)	(0.0759)	(0.0389)[a]	(0.0835)
Blacks	-0.0102	-0.0102	0.0049	-0.0660	-0.0660	-0.0560	-0.0059	-0.0059	0.0042
	(0.0073)	(0.0026)[a]	(0.0078)	(0.0124)[a]	(0.0057)[a]	(0.0135)[a]	(0.0092)	(0.0033)[c]	(0.0099)
Hispanic	-0.0665	-0.0665	-0.0547	-0.0950	-0.0950	-0.0811	-0.1406	-0.1406	-0.1449
	(0.0208)[a]	(0.0057)[a]	(0.0232)[b]	(0.0202)[a]	(0.0078)[a]	(0.0221)[a]	(0.0746)[c]	(0.0276)[a]	(0.0821)[c]
Education: 9-11 years	0.0120	0.0120	0.0078	0.0770	0.0770	0.0548	-0.0026	-0.0026	-0.0023
	(0.0137)	(0.0067)[c]	(0.0153)	(0.0256)[a]	(0.0101)[a]	(0.0377)[c]	(0.0167)	(0.0064)	(0.0184)
Education: H.S. diploma	-0.0090	-0.0090	-0.0167	-0.0357	-0.0357	-0.0414	-0.0063	-0.0063	-0.0119
	(0.0104)	(0.0047)[c]	(0.0116)	(0.0182)[c]	(0.0068)	(0.0203)[b]	(0.0129)	(0.0047)	(0.0141)
Education: Some college	-0.0189	-0.0189	-0.0209	0.0406	0.0406	0.0480	0.0037	0.0037	0.0095
	(0.0258)	(0.0137)	(0.0288)	(0.0418)	(0.0261)	(0.0468)	(0.0313)	(0.0094)	(0.0345)
Education: Bachelor +	0.0589	0.0589	0.1050	0.1037	0.1037	0.0900	0.0746	0.0746	0.1241
	(0.0219)[a]	(0.0101)[a]	(0.0234)[a]	(0.0421)[b]	(0.0178)[a]	(0.0469)[c]	(0.0271)[a]	(0.0114)[a]	(0.0276)[c]
Education: Public elementary	-0.0000	-0.0000	-0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)[a]	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Education: Public nursery	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)[a]	(0.0000)	(0.0000)[a]	(0.0000)	(0.0000)	(0.0000)
Education: Private elementary	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000
	(0.0000)[b]	(0.0000)	(0.0000)[a]	(0.0000)[b]	(0.0000)	(0.0000)[b]	(0.0000)[b]	(0.0000)	(0.0000)[c]
Education: Private nursery	0.0000	0.0000	0.0000	-0.0000	-0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)[b]	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Housing	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)[c]	(0.0000)	(0.0000)[a]	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Federal government employment	-0.0118	-0.0118	-0.0252	0.0304	0.0304	0.0163	-0.0112	-0.0112	-0.0267
	(0.0184)	(0.0094)	(0.0205)	(0.0322)	(0.0171)[c]	(0.0357)	(0.0231)	(0.0061)[c]	(0.0252)
State government employment	0.0010	0.0010	-0.0095	-0.0107	-0.0107	-0.0172	0.0124	0.0124	0.0049
	(0.0122)	(0.0060)	(0.0135)	(0.0268)	(0.0110)	(0.0299)	(0.0140)	(0.0033)[a]	(0.0153)
Local government employment	-0.0261	-0.0261	-0.0431	-0.0511	-0.0511	-0.1152	-0.0300	-0.0300	-0.0477
	(0.0235)	(0.0169)	(0.0262)	(0.0564)	(0.0189)[a]	(0.0596)[c]	(0.0304)	(0.0146)[b]	(0.0334)

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A3.—GROWTH EQUATION ESTIMATES – NORTHEAST REGION (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	-0.0337	-0.0337	-0.0180	-0.0666	-0.0666	-0.0041	-0.0477	-0.0477	-0.0452
	(0.0273)	(0.0134)[b]	(0.0305)	(0.0641)	(0.0369)	(0.0688)	(0.0329)	(0.0140)[a]	(0.0362)
Agriculture	0.0292	0.0292	0.0173	0.0610	0.0610	0.0655	0.0365	0.0365	0.0184
	(0.0297)	(0.0147)[b]	(0.0332)	(0.0740)	(0.0395)	(0.0829)	(0.0374)	(0.0195)[b]	(0.0410)
Communications	0.0721	0.0721	0.1049	0.1286	0.1286	0.1943	0.0446	0.0446	0.0527
	(0.0457)	(0.0158)[a]	(0.0509)[b]	(0.0878)	(0.0290)[a]	(0.0959)[b]	(0.0556)	(0.0211)[b]	(0.0612)
Construction	0.0533	0.0533	0.0600	0.0401	0.0401	0.0470	0.0348	0.0348	0.0289
	(0.0257)[b]	(0.0069)[a]	(0.0287)[b]	(0.0769)	(0.0318)	(0.0860)	(0.0312)	(0.0085)[a]	(0.0344)
Finance, insurance & real estate	-0.0201	-0.0201	-0.0177	-0.0149	-0.0149	0.0358	-0.0352	-0.0352	-0.0420
	(0.0313)	(0.0106)	(0.0350)	(0.0524)	(0.0266)	(0.0562)	(0.0514)	(0.0251)	(0.0566)
Manufacturing – durables	-0.0102	-0.0102	-0.0163	0.0103	0.0103	0.0381	-0.0147	-0.0147	-0.0309
	(0.0203)	(0.0094)	(0.0227)	(0.0461)	(0.0178)	(0.0509)	(0.0254)	(0.0074)[b]	(0.0277)
Manufacturing – nondurables	-0.0054	-0.0054	-0.0159	0.0217	0.0217	0.0530	-0.0091	-0.0091	-0.0302
	(0.0207)	(0.0107)	(0.0231)	(0.0489)	(0.0188)	(0.0538)	(0.0255)	(0.0099)	(0.0277)
Mining	0.0039	0.0039	-0.0185	0.0304	0.0304	0.0539	-0.0062	-0.0062	-0.0394
	(0.0263)	(0.0129)	(0.0292)	(0.0674)	(0.0277)	(0.0751)	(0.0332)	(0.0083)	(0.0358)
Retail	-0.0325	-0.0325	-0.0305	-0.0367	-0.0367	0.0002	-0.0173	-0.0173	-0.0249
	(0.0261)	(0.0081)[a]	(0.0292)	(0.0607)	(0.0233)	(0.0668)	(0.0331)	(0.0094)[c]	(0.0364)
Business & repair services	-0.0054	-0.0054	0.0273	0.3629	0.3629	0.3966	-0.0014	-0.0014	0.0445
	(0.0577)	(0.0248)	(0.0643)	(0.1119)[a]	(0.0457)[a]	(0.1248)[a]	(0.0702)	(0.0207)	(0.0766)
Educational services	-0.0536	-0.0536	-0.0870	0.0616	0.0616	-0.1225	-0.0873	-0.0873	-0.1009
	(0.0468)	(0.0232)[b]	(0.0522)[c]	(0.1445)	(0.0349)[c]	(0.1500)	(0.0528)	(0.0152)	(0.0580)[c]
Professional related services	0.0379	0.0379	0 .0159	-0.0821	-0.0821	0.1167	0.0567	0.0567	0.0032
	(0.0498)	(0.0223)[c]	(0.0556)	(0.1543)	(0.0374)[b]	(0.1598)	(0.0561)	(0.0118)	(0.0605)
Health services	0.0008	0.0008	0 .0128	0.2066	0.2066	0.0351	-0.0286	-0.0286	0.0019
	(0.0465)	(0.0226)	(0.0520)	(0.1504)	(0.0339)[a]	(0.1586)	(0.0519)	(0.0145)[b]	(0.0567)
Personal services	-0.0289	-0.0289	-0.0341	0.1337	0.1337	0.1335	-0.0078	-0.0078	-0.0153
	(0.0293)	(0.0153)	(0.0328)	(0.1141)	(0.0815)	(0.1278)	(0.0329)	(0.0118)	(0.0362)
Entertainment & recreational services	0.2028	0.2028	0.1964	0.1034	0.1034	0.2496	-0.0157	-0.0157	-0.1018
	(0.1087)[c]	(0.0602)[a]	(0.1217)	(0.2000)	(0.0666)	(0.2186)	(0.1355)	(0.0530)	(0.1480)
Transportation	0.0038	0.0038	-0.0138	0.1494	0.1494	0.1878	-0.0239	-0.0239	-0.0540
	(0.0293)	(0.0089)	(0.0326)	(0.0678)[b]	(0.0249)[a]	(0.0749)[b]	(0.0361)	(0.0089)[a]	(0.0391)
Wholesale trade	0.0257	0.0257	0.0131	-0.0389	-0.0389	0.0082	0.0386	0.0386	0.0007
	(0.0394)	(0.0242)	(0.0441)	(0.0783)	(0.0372)	(0.0863)	(0.0518)	(0.0177)[b]	(0.0564)
Poverty	0.0219	0.0219	-0.0526	0.0992	0.0992	-0.0145	-0.0011	-0.0011	-0.0549
	(0.0196)	(0.0136)	(0.0186)[c]	(0.0511)[c]	(0.0231)[a]	(0.0431)	(0.225)	(0.0241)	(0.0215)[c]
College Town	-0.0005	-0.0005	-0.0005	-0.0011	-0.0011	-0.0026	-0.0016	-0.0016	-0.0009
	(0.0010)	(0.0037)	(0.0012)	(0.0012)	(0.0057)	(0.0013)[b]	(0.0019)	(0.0007)[b]	(0.0021)
Metro area, 1970	0.0003	0.0003	0.0006	-0.0001	-0.0001	-0.0005	0.0003	0.0003	0.0004
	(0.0007)	(0.0001)[a]	(0.0008)	(0.0010)	(0.0005)	(0.0012)	(0.0010)	(0.0006)	(0.0011)
R^2	0.65	0.97	0.85	0.93	0.98	0.96	0.67	0.97	0.85
# Observations	244	244	244	90	90	90	154	154	154

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.

TABLE A4.—GROWTH EQUATION ESTIMATES - SOUTH

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	0.1491 (0.0281)[a]	0.1491 (0.0126)[a]	0.3661 (0.0262)[a]	0.2023 (0.0749)[a]	0.2023 (0.0308)[a]	0.4218 (0.0664)[a]	0.1526 (0.0300)[a]	0.1526 (0.0189)[a]	0.3492 (0.0288)[a]
Log 1970 per capita income[2]	-0.0170 (0.0015)[a]	-0.0170 (0.0014)[a]	-0.0381 (0.0011)[a]	-0.0163 (0.0034)[a]	-0.0163 (0.0027)[a]	-0.0344 (0.0014)[a]	-0.0169 (0.0016)[a]	-0.0169 (0.0014)[a]	-0.0383 (0.0013)[a]
Land area per capita	-0.0083 (0.0033)	-0.0083 (0.0042)	-0.0161 (0.0036)[a]	-0.0144 (0.0093)	-0.0144 (0.0059)[b]	-0.0176 (0.0099)[c]	-0.0067 (0.0036)[c]	-0.0067 (0.0040)[c]	-0.0166 (0.0039)[a]
Water area per capita	0.0010 (0.0069)	0.0010 (0.0052)	0.0036 (0.0076)	0.0377 (0.0099)[a]	0.0377 (0.0163)[b]	0.0554 (0.0316)[c]	0.0007 (0.0069)	0.0007 (0.0048)	0.0064 (0.0076)
Age: 5-13 years	0.0635 (0.0326)[c]	0.0635 (0.0196)[a]	0.0671 (0.0360)[c]	-0.0528 (0.0907)	-0.0528 (0.0464)	-0.0870 (0.0964)	0.0658 (0.0337)[c]	0.0658 (0.0235)[a]	0.0829 (0.0375)[b]
Age: 14-17 years	-0.0198 (0.0284)	-0.0198 (0.0187)	-0.0592 (0.0312)[c]	-0.1036 (0.0709)	-0.1036 (0.0428)[b]	-0.1046 (0.0756)	-0.0117 (0.0306)	-0.0117 (0.0164)	-0.0559 (0.0339)[c]
Age: 18-64 years	0.0167 (0.0230)	0.0167 (0.0110)	-0.0044 (0.0254)	-0.0400 (0.0623)	-0.0400 (0.0269)	-0.0862 (0.0657)	0.0092 (0.0245)	0.0092 (0.0149)	0.0077 (0.0272)
Age: 65+	0.0223 (0.0217)	0.0223 (0.0100)[b]	0.0025 (0.0239)	-0.0689 (0.0593)	-0.0689 (0.0255)[a]	-0.0996 (0.0628)	0.0397 (0.0227)[c]	0.0397 (0.0135)[a]	0.0295 (0.0253)
Blacks	-0.0034 (0.0017)[b]	-0.0034 (0.0011)[a]	-0.0013 (0.0018)	0.0028 (0.0050)	0.0028 (0.0025)	-0.0004 (0.0053)	-0.0069 (0.0019)[a]	-0.0069 (0.0010)[a]	-0.0034 (0.0021)[c]
Hispanic	0.0126 (0.0177)	0.0126 (0.0147)	0.0187 (0.0196)	-0.0504 (0.0275)[c]	-0.0504 (0.0159)[a]	-0.0424 (0.0293)	-0.0173 (0.0472)	-0.0173 (0.0451)	-0.0376 (0.0525)
Education: 9-11 years	0.0074 (0.0054)	0.0074 (0.0043)	0.0175 (0.0059)[a]	0.0001 (0.0151)	0.0001 (0.0058)	0.0081 (0.0160)	0.0119 (0.0057)[b]	0.0119 (0.0035)[a]	0.0211 (0.0063)[a]
Education: H.S. diploma	0.0061 (0.0052)	0.0061 (0.0050)	0.0124 (0.0057)[b]	0.0129 (0.0142)	0.0129 (0.0056)[b]	0.0116 (0.0152)	0.0062 (0.0055)	0.0062 (0.0047)	0.0154 (0.0061)[b]
Education: Some college	0.0346 (0.0135)[b]	0.0346 (0.0060)[a]	0.0314 (0.0149)[b]	-0.0059 (0.0359)	-0.0059 (0.0128)	-0.0098 (0.0382)	0.0437 (0.0144)[a]	0.0437 (0.0097)[a]	0.0437 (0.0160)[a]
Education: Bachelor +	0.0433 (0.0119)[a]	0.0433 (0.0062)[a]	0.0855 (0.0128)[a]	0.0519 (0.0272)[c]	0.0519 (0.0106)	0.0932 (0.0278)[a]	0.0501 (0.0150)[a]	0.0501 (0.0061)[a]	0.0911 (0.0163)[a]
Education: Public elementary	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)[b]	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Public nursery	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Education: Private elementary	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)[c]	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private nursery	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Housing	0.0000 (0.0000)[c]	0.0000 (0.0000)	0.0000 (0.0000)[b]	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)
Federal government employment	-0.0133 (0.0082)	-0.0133 (0.0054)[b]	-0.0208 (0.0090)[b]	-0.0213 (0.0200)	-0.0213 (0.0097)[b]	-0.0345 (0.0211)	-0.0128 (0.0093)	-0.0128 (0.0073)[c]	-0.0132 (0.0103)
State government employment	0.0062 (0.0069)	0.0062 (0.0059)	-0.0048 (0.0075)	0.0028 (0.0172)	0.0028 (0.0087)	-0.0153 (0.0179)	0.0044 (0.0077)	0.0044 (0.0055)	-0.0043 (0.0085)
Local government employment	0.0033 (0.0101)	0.0033 (0.0051)	0.0009 (0.0111)	-0.0001 (0.0328)	-0.0001 (0.0155)	0.0041 (0.0349)	0.0067 (0.0104)	0.0067 (0.0046)	0.0061 (0.0116)

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A4.—GROWTH EQUATION ESTIMATES – SOUTH (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	-0.0011	-0.0011	-0.0060	0.0260	0.0260	0.0161	-0.0027	-0.0027	-0.0091
	(0.0063)	(0.0058)	(0.0070)	(0.0207)	(0.0163)	(0.0220)	(0.0066)	(0.0024)	(0.0073)
Agriculture	-0.0039	-0.0039	-0.0021	0.0039	0.0039	-0.0034	-0.0086	-0.0086	0.0039
	(0.0108)	(0.0099)	(0.0119)	(0.0248)	(0.0119)	(0.0263)	(0.0125)	(0.0108)	(0.0139)
Communications	-0.0477	-0.0477	-0.0390	-0.0183	-0.0183	-0.0478	-0.0492	-0.0492	-0.0299
	(0.0142)[a]	(0.0071)[a]	(0.0157)[b]	(0.0410)	(0.0191)	(0.0433)	(0.0150)[a]	(0.0089)[a]	(0.0166)[c]
Construction	0.0244	0.0244	0.0123	0.0261	0.0261	0.0098	0.0156	0.0156	0.0117
	(0.0111)[b]	(0.0075)[a]	(0.0122)	(0.0245)	(0.0114)[b]	(0.0259)	(0.0131)	(0.0101)	(0.0145)
Finance, insurance & real estate	0.0246	0.0246	0.0429	0.0404	0.0404	0.0652	-0.0125	-0.0125	-0.0040
	(0.0224)	(0.0111)[b]	(0.0246)[c]	(0.0536)	(0.0310)	(0.0569)	(0.0245)	(0.0108)	(0.0273)
Manufacturing – durables	-0.0025	-0.0025	-0.0125	0.0092	0.0092	-0.0111	-0.0082	-0.0082	-0.0091
	(0.0101)	(0.0103)	(0.0111)	(0.0223)	(0.0093)	(0.0234)	(0.0116)	(0.0122)	(0.0130)
Manufacturing – nondurables	-0.0112	-0.0112	-0.0223	-0.0024	-0.0024	-0.0208	-0.0157	-0.0157	-0.0188
	(0.0100)	(0.0094)	(0.0110)[b]	(0.0225)	(0.0086)	(0.0237)	(0.0116)	(0.0121)	(0.0129)
Mining	-0.0128	-0.0128	-0.0159	-0.0222	-0.0222	-0.0592	-0.0120	-0.0120	-0.0118
	(0.0107)	(0.0097)	(0.0119)	(0.0303)	(0.0140)	(0.0314)[c]	(0.0122)	(0.0124)	(0.0136)
Retail	-0.0298	-0.0298	-0.0424	-0.0139	-0.0139	-0.0377	-0.0280	-0.0280	-0.0303
	(0.0122)[b]	(0.0104)[a]	(0.0135)[a]	(0.0278)	(0.0186)	(0.0292)	(0.0142)[b]	(0.0100)[a]	(0.0158)[c]
Business & repair services	0.0295	0.0295	0.0252	0.0458	0.0458	0.0387	0.0237	0.0237	0.0270
	(0.0213)	(0.0168)[c]	(0.0235)	(0.0604)	(0.0461)	(0.0643)	(0.0223)	(0.0190)	(0.0249)
Educational services	-0.0018	-0.0018	-0.0231	-0.1198	-0.1198	-0.0830	0.0461	0.0461	0.0063
	(0.0221)	(0.0171)	(0.0243)	(0.0567)[b]	(0.0287)[a]	(0.0599)	(0.0239)[c]	(0.0171)[a]	(0.0264)
Professional related services	-0.0217	-0.0217	-0.0276	0.0655	0.0655	0.0073	-0.0631	-0.0631	-0.0486
	(0.0223)	(0.0137)	(0.0247)	(0.0570)	(0.0265)[a]	(0.0596)	(0.0245)[a]	(0.0136)[a]	(0.0273)[c]
Health services	0.0118	0.0118	0.0043	-0.0630	-0.0630	-0.0150	0.0486	0.0486	0.0266
	(0.0225)	(0.0153)	(0.0248)	(0.0591)	(0.0294)[b]	(0.0622)	(0.0241)[b]	(0.0163)[a]	(0.0268)
Personal services	0.0232	0.0232	0.0256	0.0621	0.0621	0.0794	0.0118	0.0118	0.0184
	(0.0130)[c]	(0.0091)[b]	(0.0144)[c]	(0.0360)[c]	(0.0114)[a]	(0.0382)[b]	(0.0143)	(0.0089)	(0.0160)
Entertainment & recreational services	0.1040	0.1040	0.1121	0.1554	0.1554	0.0936	0.0760	0.0760	0.1027
	(0.0409)[b]	(0.0244)[a]	(0.0452)[b]	(0.1082)	(0.0559)[a]	(0.1146)	(0.0436)[c]	(0.0236)[a]	(0.0485)[b]
Transportation	-0.0159	-0.0159	-0.0304	0.0019	0.0019	-0.0083	-0.0275	-0.0275	-0.0357
	(0.0132)	(0.0104)	(0.0145)[b]	(0.0324)	(0.0112)	(0.0345)	(0.0146)[c]	(0.0146)[c]	(0.0163)
Wholesale trade	0.0484	0.0484	0.0390	0.0802	0.0802	0.0656	0.0364	0.0364	0.0288
	(0.0169)[a]	(0.0113)[a]	(0.0186)[b]	(0.0436)[c]	(0.0187)[a]	(0.0464)	(0.0183)[b]	(0.0139)[a]	(0.0204)
Poverty	-0.0157	-0.0157	-0.0457	-0.0183	-0.0183	-0.0459	-0.0137	-0.0137	-0.0416
	(0.0042)[a]	(0.0057)[a]	(0.0040)[a]	(0.0120)	(0.0095)[c]	(0.1155)[a]	(0.0043)[a]	(0.0053)[a]	(0.0042)[a]
Metro area, 1970	-0.0006	-0.0006	-0.0007	-0.0013	-0.0013	-0.0013	-0.0017	-0.0017	-0.0014
	(0.0006)	(0.0005)	(0.0007)	(0.0011)	(0.0005)[a]	(0.0012)	(0.0010)[c]	(0.0004)[a]	(0.0011)
R^2	0.33	0.95	0.77	0.37	0.95	0.75	0.39	0.95	0.75
# Observations	1009	1009	1009	252	252	252	757	757	757

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.

TABLE A5.—GROWTH EQUATION ESTIMATES – PLAINS REGION

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	0.1685 (0.0288)[a]	0.1685 (0.0229)[a]	0.2475 (0.0262)[a]	0.0473 (0.0681)	0.0473 (0.0330)	0.1472 (0.0730)[b]	0.1736 (0.0318)[a]	0.1736 (0.0294)[a]	0.2918 (0.0295)[a]
Log 1970 per capita income[2]	-0.0179 (0.0015)[a]	-0.0179 (0.0018)[a]	-0.0266 (0.0046)[a]	-0.0084 (0.0037)[b]	-0.0084 (0.0023)[a]	-0.0271 (0.0030)[a]	-0.0182 (0.0016)[a]	-0.0182 (0.0019)[a]	-0.0308 (0.0048)[a]
Land area per capita	-0.0013 (0.0002)[a]	-0.0013 (0.0003)[a]	-0.0013 (0.0002)	-0.0014 (0.0010)	-0.0014 (0.0006)[b]	-0.0014 (0.0012)	-0.0013 (0.0002)[a]	-0.0013 (0.0003)[a]	-0.0012 (0.0003)[a]
Water area per capita	0.0032 (0.0037)	0.0032 (0.0021)	0.0021 (0.0038)	0.1273 (0.0755)[c]	0.1273 (0.0215)[a]	0.0918 (0.0843)	0.0049 (0.0038)	0.0049 (0.0024)[b]	0.0031 (0.0040)
Age: 5-13 years	0.0174 (0.0317)	0.0174 (0.0378)	0.0252 (0.0323)	0.0733 (0.0858)	0.0733 (0.0416)[c]	0.1695 (0.0938)[c]	-0.0027 (0.0342)	-0.0027 (0.0391)	0.0006 (0.0358)
Age: 14-17 years	0.0511 (0.0306)[c]	0.0511 (0.0252)[b]	0.0519 (0.0313)[c]	0.0314 (0.0731)	0.0314 (0.0474)	0.0424 (0.0819)	0.0347 (0.0338)	0.0347 (0.0254)	0.0324 (0.0354)
Age: 18-64 years	0.0147 (0.0243)	0.0147 (0.0262)	0.0177 (0.0248)	0.0508 (0.0668)	0.0508 (0.0210)[b]	0.1197 (0.0734)	-0.0023 (0.0266)	-0.0023 (0.0275)	-0.0045 (0.0278)
Age: 65+	-0.0073 (0.0225)	-0.0073 (0.0257)	-0.0148 (0.0230)	0.0168 (0.0581)	0.0168 (0.0275)[a]	0.0852 (0.0634)	-0.0171 (0.0249)	-0.0171 (0.0276)	-0.0354 (0.0259)
Blacks	-0.0009 (0.0103)	-0.0009 (0.0112)	0.0007 (0.0105)	-0.0193 (0.0160)	-0.0193 (0.0064)[a]	-0.0284 (0.0179)	0.0068 (0.0128)	0.0068 (0.0112)	0.0112 (0.0134)
Hispanic	-0.0060 (0.0042)	-0.0060 (0.0027)	-0.0080 (0.0043)[c]	-0.0000 (0.0087)	-0.0000 (0.0034)	-0.0008 (0.0098)	-0.0042 (0.0050)	-0.0042 (0.0033)	-0.0086 (0.0052)[c]
Education: 9-11 years	-0.0561 (0.0084)[a]	-0.0561 (0.0068)	-0.0542 (0.0087)[a]	-0.0459 (0.0186)[b]	-0.0459 (0.0077)[a]	-0.0490 (0.0209)[b]	-0.0573 (0.0096)[a]	-0.0573 (0.0068)[a]	-0.0553 (0.0100)[a]
Education: H.S. diploma	0.0114 (0.0053)[b]	0.0114 (0.0057)[b]	0.0177 (0.0053)[a]	0.0297 (0.0124)[b]	0.0297 (0.0065)[a]	0.0035 (0.0139)[b]	0.0060 (0.0060)	0.0060 (0.0057)	0.0166 (0.0061)[a]
Education: Some college	-0.0347 (0.0091)[a]	-0.0347 (0.0076)[a]	-0.0316 (0.0093)[a]	0.0001 (0.0212)	0.0001 (0.0226)	-0.0095 (0.0237)	-0.0307 (0.0101)[a]	-0.0307 (0.0080)[a]	-0.0246 (0.0106)[b]
Education: Bachelor +	0.0090 (0.0119)	0.0090 (0.0103)	0.0194 (0.0120)	0.0468 (0.0238)[c]	0.0468 (0.0140)[a]	0.0841 (0.0254)[a]	-0.0096 (0.0138)	-0.0096 (0.0115)	0.0062 (0.0143)
Education: Public elementary	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)[b]	-0.0000 (0.0000)	-0.0000 (0.0000)[b]	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Public nursery	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Education: Private elementary	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private nursery	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Housing	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)[b]	0.0000 (0.0000)	0.0000 (0.0000)[b]	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Federal government employment	-0.0201 (0.0102)[b]	-0.0201 (0.0101)[b]	-0.0261 (0.0104)[b]	-0.0201 (0.0253)	-0.0201 (0.0077)[a]	-0.0139 (0.0284)	-0.0182 (0.0114)	-0.0182 (0.0120)	-0.0264 (0.0119)[b]
State government employment	0.0132 (0.0077)[c]	0.0132 (0.0075)[c]	0.0064 (0.0077)	-0.0179 (0.0141)	-0.0179 (0.0145)	-0.0357 (0.0153)[b]	0.0243 (0.0088)[a]	0.0243 (0.0083)[a]	0.0161 (0.0092)[c]
Local government employment	0.0001 (0.0085)	0.0001 (0.0115)	0.0048 (0.0086)	-0.0157 (0.0200)	-0.0157 (0.0162)	-0.0067 (0.0224)	0.0101 (0.0098)	0.0101 (0.0125)	0.0188 (0.0102)[c]

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A5.—GROWTH EQUATION ESTIMATES – PLAINS REGION (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	0.0115	0.0115	-0.0078	-0.0060	-0.0060	-0.0201	0.0148	0.0148	0.0102
	(0.0060)[c]	(0.0085)	(0.0061)	(0.0150)	(0.0079)	(0.0165)	(0.0065)[b]	(0.0083)[c]	(0.0068)
Agriculture	-0.0030	-0.0030	0.0001	0.0076	0.0076	0.0388	0.0091	0.0091	0.0148
	(0.0125)	(0.0075)	(0.0127)	(0.0283)	(0.0108)	(0.0309)	(0.0148)	(0.0091)	(0.0155)
Communications	-0.0045	-0.0045	0.0012	0.0122	0.0122	0.0424	0.0123	0.0123	0.0224
	(0.0198)	(0.0117)	(0.0202)	(0.0543)	(0.0334)	(0.0605)	(0.0224)	(0.0110)	(0.0234)
Construction	0.0002	0.0002	-0.0051	0.0303	0.0303	0.0348	0.0089	0.0089	0 .0042
	(0.0148)	(0.0106)	(0.0151)	(0.0313)	(0.0288)	(0.0351)	(0.0176)	(0.0133)	(0.0185)
Finance, insurance & real estate	0.0919	0.0919	0.0944	0.0022	0.0022	0.0279	0.1126	0.1126	0.1174
	(0.0228)[a]	(0.0271)[a]	(0.0233)[a]	(0.0460)	(0.0207)	(0.0512)	(0.0264)[a]	(0.0298)[a]	(0.0276)[a]
Manufacturing – durables	0.0156	0.0156	0.0108	0.0138	0.0138	0.0267	0.0224	0.0224	0.0185
	(0.0118)	(0.0097)	(0.0121)	(0.0268)	(0.0088)	(0.0299)	(0.0140)	(0.0086)[a]	(0.0146)
Manufacturing – nondurables	0.0010	0.0010	-0.0028	-0.0142	-0.0142	-0.0006	0.0142	0.0142	0.0113
	(0.0129)	(0.0088)	0.0132)	(0.0277)	(0.0101)	(0.0309)	(0.0154)	(0.0091)	(0.0162)
Mining	0.0030	0.0030	-0.0036	0.0256	0.0256	0.0278	0.0149	0.0149	0.0073
	(0.0124)	(0.0087)	(0.0127)	(0.0331)	(0.0159)	(0.0371)	(0.0148)	(0.0113)	(0.0155)
Retail	0.0001	0.0001	-0.0031	-0.0334	-0.0334	-0.0405	0.0164	0.0164	0.0151
	(0.0132)	(0.0068)	(0.0135)	(0.0269)	(0.0093)[a]	(0.0301)	(0.0156)	(0.0086)[c]	(0.0164)
Business & repair services	-0.0341	-0.0341	-0.0353	0.1676	0.1676	0.1212	-0.0274	-0.0274	-0.0260
	(0.0214)	(0.0183)	(0.0219)	(0.0575)[a]	(0.0330)[a]	(0.0637)[c]	(0.0236)	(0.0184)	(0.0247)
Educational services	-0.0353	-0.0353	-0.0398	0.0085	0.0085	-0.0676	-0.0363	-0.0363	-0.0394
	(0.0187)[b]	(0.0086)[a]	(0.0190)[a]	(0.0516)	(0.0241)	(0.0553)	(0.0209)[c]	(0.0111)[a]	(0.0219)[c]
Professional related services	0.0276	0.0276	0.0216	-0.0117	-0.0117	0.0550	0.0377	0.0377	0.0261
	(0.0200)	(0.0131)[b]	(0.0204)	(0.0521)	(0.0215)	(0.0565)	(0.0233)	(0.0164)[b]	(0.0243)
Health services	-0.0225	-0.0225	-0.0146	0.0409	0.0409	-0.0223	-0.0256	-0.0256	-0.0092
	(0.0188)	(0.0104)	(0.0192)	(0.0512)	(0.0248)	(0.0556)	(0.0210)	(0.0131)[c]	(0.0219)
Personal services	0.0770	0.0770	0.0750	0.0274	0.0274	0.0769	0.1012	0.1012	0.0994
	(0.0172)[a]	(0.0143)[a]	(0.0176)[a]	(0.0440)	(0.0130)[b]	(0.0481)	(0.0199)[a]	(0.0179)[a]	(0.0208)[a]
Entertainment & recreational services	0.1159	0.1159	0.1151	0.1574	0.1574	0.2110	0.1330	0.1330	0.1293
	(0.0381)[a]	(0.0229)[a]	(0.0390)[a]	(0.0801)[c]	(0.0583)[a]	(0.0890)[b]	(0.0440)[a]	(0.0276)[a]	(0.0460)[a]
Transportation	0.0118	0.0118	0.0017	0.0241	0.0241	0.0343	0.0152	0.0152	0.0026
	(0.0159)	(0.0116)	(0.0162)	(0.0318)	(0.0097)[b]	(0.0356)	(0.0189)	(0.0115)	(0.0197)
Wholesale trade	0.0528	0.0528	0.0541	-0.0323	-0.0323	0.0158	0.0538	0.0538	0.0572
	(0.0197)[a]	(0.0163)[a]	(0.0202)[a]	(0.0449)	(0.0175)[c]	(0.0492)	(0.0226)[b]	(0.0198)[a]	(0.0237)[b]
Poverty	-0.0276	-0.0276	-0.0412	0.0154	0.0154	-0.0243	-0.0302	-0.0302	-0.0486
	(0.0055)[a]	(0.0124)[b]	(0.0051)[a]	(0.0144)	(0.0163)	(0.0135)[c]	(0.0061)[a]	(0.0141)	(0.0059)[a]
Metro area, 1970	0.0017	0.0017	0.0015	-0.0004	-0.0004	-0.0007	-0.0017	-0.0017	-0.0019
	(0.0012)	(0.0005)[a]	(0.0013)	(0.0015)	(0.0008)	(0.0017)	(0.0023)	(0.0008)[b]	(0.0023)
R^2	0.54	0.90	0.59	0.73	0.97	0.85	0.55	0.89	0.59
# Observations	832	832	832	143	143	143	689	689	689

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.

TABLE A6.—GROWTH EQUATION ESTIMATES – WESTERN REGION

	All			Metro			Non-Metro		
RHS Variables[1]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Constant	0.0207 (0.0398)[a]	0.0207 (0.0276)	0.3553 (0.0380)[a]	0.0698 (0.0777)	0.0698 (0.0617)	0.4243 (0.0776)[a]	0.1938 (0.0523)[a]	0.1938 (0.0292)[a]	0.3057 (0.0512)[a]
Log 1970 per capita income[2]	-0.0210 (0.0018)[a]	-0.0210 (0.0019)	-0.0359 (0.0020)[a]	-0.0108 (0.0033)[a]	-0.0108 (0.0026)[a]	-0.0391 (0.0019)[a]	-0.0224 (0.0024)[a]	-0.0224 (0.0018)[a]	-0.0356 (0.0022)[a]
Land area per capita	-0.0008 (0.0002)[a]	-0.0008 (0.0003)	-0.0008 (0.0003)[a]	-0.0006 (0.0004)	-0.0006 (0.0003)[b]	-0.0003 (0.0005)	-0.0010 (0.0003)[a]	-0.0010 (0.0004)[b]	-0.0009 (0.0004)[a]
Water area per capita	0.0086 (0.0022)[a]	0.0086 (0.0014)	0.0099 (0.0023)[a]	0.0069 (0.0052)	0.0069 (0.0032)[b]	0.0097 (0.0061)	0.0095 (0.0031)[a]	0.0095 (0.0036)[b]	0.0092 (0.0033)[a]
Age: 5-13 years	-0.0079 (0.0462)	-0.0079 (0.0343)	-0.0077 (0.0494)	0.0410 (0.0932)	0.0410 (0.0532)	-0.0477 (0.1089)	0.0025 (0.0601)	0.0025 (0.0471)	0.0248 (0.0636)
Age: 14-17 years	0.0069 (0.0412)	0.0069 (0.0315)	0.0113 (0.0440)	0.0815 (0.0711)	0.0815 (0.0555)	-0.0109 (0.0826)	-0.0237 (0.0597)	-0.0237 (0.0435)	0.0089 (0.0629)
Age: 18-64 years	0.0084 (0.0352)	0.0084 (0.0260)	0.0015 (0.0376)	0.0142 (0.0693)	0.0142 (0.0497)	-0.0706 (0.0807)	0.0383 (0.0478)	0.0383 (0.0310)	0.0497 (0.0506)
Age: 65+	-0.0030 (0.0311)	-0.0030 (0.0268)	-0.0202 (0.0331)	0.0324 (0.0611)	0.0324 (0.0419)	-0.0641 (0.0707)	0.0070 (0.0411)	0.0070 (0.0359)	0.0043 (0.0435)
Blacks	0.0053 (0.0044)	0.0053 (0.0028)	0.0064 (0.0047)	0.0070 (0.0063)	0.0070 (0.0031)[b]	0.0121 (0.0074)	0.0052 (0.0065)	0.0052 (0.0035)	0.0053 (0.0069)
Hispanic	-0.0038 (0.0028)	-0.0038 (0.0030)	-0.0052 (0.0030)[c]	-0.0006 (0.0051)	-0.0006 (0.0032)	0.0019 (0.0060)	-0.0044 (0.0038)	-0.0044 (0.0036)	-0.0056 (0.0040)
Education: 9-11 years	-0.0233 (0.0087)[a]	-0.0233 (0.0118)	-0.0347 (0.0092)[a]	-0.0365 (0.0156)[b]	-0.0365 (0.0162)[b]	-0.0339 (0.0184)[c]	-0.0177 (0.0110)	-0.0177 (0.0090)[b]	-0.0285 (0.0114)[b]
Education: H.S. diploma	0.0116 (0.0086)	0.0116 (0.0143)	0.0228 (0.0091)[b]	-0.0043 (0.0138)	-0.0043 (0.0177)	0.0065 (0.0162)	0.0268 (0.0117)[b]	0.0268 (0.0127)[b]	0.0381 (0.0122)[a]
Education: Some college	0.0267 (0.0145)[c]	0.0267 (0.0105)	0.0345 (0.0155)[b]	-0.0238 (0.0249)	-0.0238 (0.0201)	0.0081 (0.0290)	0.0449 (0.0191)[b]	0.0449 (0.0147)[a]	0.0527 (0.0201)[a]
Education: Bachelor +	0.0224 (0.0140)	0.0224 (0.0268)	0.0419 (0.0148)[a]	0.0385 (0.0237)	0.0385 (0.0253)	0.0855 (0.0271)[a]	0.0021 (0.0203)	0.0021 (0.0262)	0.0284 (0.0210)
Education: Public elementary	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)[b]	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)[c]	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Education: Public nursery	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private elementary	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Education: Private nursery	0.0000 (0.0000)[b]	0.0000 (0.0000)	0.0000 (0.0000)[a]	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 0.0000
Housing	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Federal government employment	-0.0134 (0.0106)	-0.0134 (0.0081)	-0.0167 (0.0113)	0.0003 (0.0191)	0.0003 (0.0161)	-0.0108 (0.0224)	-0.0082 (0.0141)	-0.0082 (0.0083)	-0.0104 (0.0150)
State government employment	-0.0011 (0.0097)	-0.0011 (0.0087)	-0.0149 (0.0102)	-0.0041 (0.0138)	-0.0041 (0.0113)	-0.0207 (0.0160)	0.0124 (0.0148)	0.0124 (0.0107)	-0.0038 (0.0154)
Local government employment	-0.0243 (0.0116)[b]	-0.0243 (0.0081)	-0.0294 (0.0124)[b]	-0.0115 (0.0194)	-0.0115 (0.0200)	-0.0398 (0.0225)[c]	-0.0264 (0.0164)	-0.0264 (0.0095)[a]	-0.0271 (0.0174)

[1] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.
[2] All dollar values are in real 1992 dollars.

TABLE A6.—GROWTH EQUATION ESTIMATES – WESTERN REGION (CONTINUED)

	All			Metro			Non-Metro		
RHS Variables[3]	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS	OLS	CR OLS	3SLS
Self-employment	0.0070	0.0070	0.0100	0.0103	0.0103	0.0135	0.0007	0.0007	0.0039
	(0.0084)	(0.0059)	(0.0089)	(0.0152)	(0.0113)	(0.0179)	(0.0115)	(0.0099)	(0.0122)
Agriculture	-0.0090	-0.0090	-0.0034	0.0100	0.0100	0.0242	0.0029	0.0029	0.0063
	(0.0137)	(0.0110)	(0.0146)	(0.0219)	(0.0152)	(0.0257)	(0.0185)	(0.0128)	(0.0195)
Communications	-0.0434	-0.0434	-0.0537	0.0312	0.0312	0.0118	-0.0583	-0.0583	-0.0727
	(0.0246)[c]	(0.0263)[c]	(0.0262)[b]	(0.0406)	(0.0305)	(0.0476)	(0.0322)[c]	(0.0190)[a]	(0.0340)[b]
Construction	0.0139	0.0139	0.0153	0.0693	0.0693	0.0766	0.0050	0.0050	0.0065
	(0.0161)	(0.0138)	(0.0171)	(0.0259)[a]	(0.0156)[a]	(0.0305)[b]	(0.0212)	(0.0140)	(0.0224)
Finance, insurance & real estate	0.0996	0.0996	0.1230	0.1633	0.1633	0.1678	0.0454	0.0454	0.0802
	(0.0308)[a]	(0.0258)[a]	(0.0327)[a]	(0.0481)[a]	(0.0275)[a]	(0.0566)[a]	(0.0436)	(0.0383)	(0.0458)
Manufacturing – durables	0.0092	0.0092	0.0039	0.0384	0.0384	0.0192	0.0187	0.0187	0.0165
	(0.0133)	(0.0087)	(0.0142)	(0.0212)[c]	(0.0147)[a]	(0.0248)	(0.0183)	(0.0112)[c]	(0.0194)
Manufacturing – nondurables	-0.0039	-0.0039	-0.0081	0.0083	0.0083	-0.0015	0.0038	0.0038	0.0016
	(0.0144)	(0.0123)	(0.0154)	(0.0226)	(0.0199)	(0.0266)	(0.0204)	(0.0149)	(0.0216)
Mining	-0.0077	-0.0077	-0.0088	0.0227	0.0277	0.0029	-0.0000	-0.0000	-0.0003
	(0.0138)	(0.0102)	(0.0147)	(0.0230)	(0.0167)[c]	(0.0269)	(0.0186)	(0.0108)	(0.0197)
Retail	-0.0294	-0.0294	-0.0393	-0.0200	-0.0200	-0.0344	-0.0167	-0.0167	-0.0241
	(0.0159)[c]	(0.0108)[a]	(0.0169)[b]	(0.0277)	(0.0276)	(0.0325)	(0.0214)	(0.0125)	(0.0226)
Business & repair services	-0.0045	-0.0045	-0.0032	-0.0212	-0.0212	-0.0321	0.0371	0.0371	0.0494
	(0.0251)	(0.0193)	(0.0267)	(0.0414)	(0.0283)	(0.0487)	(0.0376)	(0.0247)	(0.0398)
Educational services	-0.0361	-0.0361	-0.0542	0.0053	0.0053	-0.0563	-0.0242	-0.0242	-0.0404
	(0.0142)[b]	(0.0061)[a]	(0.0149)[a]	(0.0189)	(0.0102)	(0.0206)[a]	(0.0348)	(0.0193)	(0.0368)
Professional related services	0.0101	0.0101	0.0175	0.0190	0.0190	0.0253	-0.0066	-0.0066	0.0066
	(0.0158)	(0.0088)	(0.0168)	(0.0213)	(0.0124)	(0.0251)	(0.0344)	(0.0235)	(0.0364)
Health services	0.0033	0.0033	0.0007	0.0244	0.0244	0.0265	0.0232	0.0232	0.0127
	(0.0176)	(0.0181)	(0.0188)	(0.0234)	(0.0249)	(0.0275)	(0.0358)	(0.0279)	(0.0379)
Personal services	0.0056	0.0056	0.0114	0.0264	0.0264	0.0249	0.0297	0.0297	0.0386
	(0.0167)	(0.0122)	(0.0178)	(0.0253)	(0.0150)[c]	(0.0298)	(0.0252)	(0.0163)[c]	(0.0266)
Entertainment & recreational services	-0.0155	-0.0155	-0.0126	0.0318	0.0318	0.0301	-0.0079	-0.0079	-0.0054
	(0.0243)	(0.0151)	(0.0260)	(0.0454)	(0.0190)[c]	(0.0533)	(0.0308)	(0.0157)	(0.0326)
Transportation	-0.0063	-0.0063	-0.0041	0.0466	0.0466	0.0545	-0.0082	-0.0082	-0.0074
	(0.0192)	(0.0173)	(0.0206)	(0.0319)	(0.0401)	(0.0375)	(0.0254)	(0.0184)	(0.0269)
Wholesale trade	0.0058	0.0058	0.0071	0.0278	0.0278	0.0049	-0.0064	-0.0064	0.0141
	(0.0217)	(0.0126)	(0.0232)	(0.0294)	(0.0164)[c]	(0.0344)	(0.0359)	(0.0237)	(0.0378)
Poverty	-0.0151	-0.0151	-0.0375	-0.0261	-0.0261	-0.0758	-0.0051	-0.0051	-0.0218
	(0.0070)[b]	(0.0120)	(0.0067)[a]	(0.0113)[b]	(0.0181)	(0.0115)[a]	(0.0094)	(0.0139)	(0.0094)[b]
College Town	0.0024	0.0024	0.0028	0.0021	0.0021	0.0037	-0.0008	-0.0008	-0.0006
	(0.0014)[c]	(0.0007)[a]	(0.0014)[c]	(0.0014)	(0.0009)[b]	(0.0017)[b]	(0.0040)	(0.0200)	(0.0042)
Metro area, 1970	0.0025	0.0025	0.0024	0.0007	0.0007	0.0005	0.1938	0.1938	0.0033
	(0.0010)[a]	(0.0009)[a]	(0.0010)[b]	(0.0011)	(0.0012)	(0.0013)	(0.0523)[a]	(0.0009)[a]	(0.0023)
R^2	0.52	0.87	0.73	0.60	0.91	0.84	0.60	0.87	0.67
# Observations	538	538	538	242	242	242	296	296	296

[a] significant at 1% level
[b] significant at 5% level
[c] significant at 10% level

[3] All RHS variables are initial values from 1970. Also, state dummies were employed in all regressions.