TABLE A-6

Results for simultaneous equations model with 1990 lags—urban commuting zones

(Estimated regression coefficients on patents and population subset)

Variable	Inventive class (IC) Coefficient estimate	p-value	Science, engineering, and technical (SET) employment Coefficient estimate	p-value	Creative class (CC) Coefficient estimate	p-value	At least 4-year college degree (BA) Coefficient estimate	p-value
Patents dependent variable								
IC	0.016	0.474	-	-	-	-	-	-
SET	-	-	0.024	0.406	-	-	-	-
CC	-	-	-	-	0.003	0.674	-	-
BA	-	-	-	-	-	-	0.003	0.672
1975–80 patent stock (PatStock)	1.113 **	0.027	1.076 **	0.013	1.182* **	0.037	1.110 *	0.075
Population density (PopDens)	−0.197	0.495	−0.317	0.247	0.288	0.660	0.522	0.607
Wage-rental ratio (WageRentR)	−411.929	0.260	−384.873	0.291	−439.507	0.255	−449.847	0.245
Natural amenity rank (NatAmen)	550.612 **	0.017	579.413 **	0.010	543.445 **	0.037	538.322 **	0.045
University research expenditures (UniResExp)	13.045 ***	0.005	13.893 ***	0.002	14.247 ***	0.002	14.239 ***	0.004
Location quotient for patent-intensive industries (LQPatInd)	1,191.419 ***	1.33E−06	1,223.056 ***	8.70E−07	1,253.222 ***	4.75E−06	1,295.560 ***	7.41E−06
Root mean square error (RMSE)	2,552.841		2,510.494		2,692.624		2,725.356	
Chi-squared	1,078.636		1,058.332		1,004.023		1,023.413	
p-value	<0.0001		<0.0001		<0.0001		<0.0001	
Mean variance inflation factor (VIF)	3.374		3.148		3.402		3.517	
Population subset equation								
Patents	13.584 ***	<1.00E−08	9.347 ***	<1.00E−08	42.664 ***	<1.00E−08	59.663 ***	<1.00E−08
Unemployment rate (UR)	−759.789	0.295	−704.864	0.179	−2,554.620	0.342	−3,206.771	0.428
WageRentR	7,250.033	0.178	4,560.261	0.216	27,975.158	0.167	41,925.136	0.145
NatAmen	−6,829.17 **	0.042	−5,650.838 **	0.014	−15,510.885	0.219	−20,441.373	0.255
Crime	261.270 **	0.013	193.705 ***	0.006	942.270 **	0.019	1,204.408 **	0.032
Proximity to urban center (ProxUrbCen)	−36.770	0.122	−29.114 *	0.086	−95.285	0.267	−115.383	0.350
LQPatInd	−15,330.98 ***	1.19E−04	−11,621.99 ***	2.04E−05	−57,477.17 ***	1.29E−04	−87,142.5 ***	4.57E−05
RMSE	34,459.443		23,591.927		1.300E+05		1.850E+05	
Chi-squared	803.360		823.482		559.812		532.736	
p-value	<0.0001		<0.0001		<0.0001		<0.0001	
Mean VIF	2.206		2.206		2.206		2.206	

* p < 0.10; ** p < 0.05; *** p < 0.01.

Note(s):
PopDens, WageRentR, UniResExp, UR, Crime, and ProxUrbCen are lagged to 1990. Structural equation estimates are based on 307 observations. Controls for Census region and Rural-Urban Continuum Code are included in each regression.

Source(s):
Authors' estimation using U.S. Patent and Trademark Office; Census Bureau, Special Tabulation (2000), 2000 Census of Population and Housing, Summary File 1 and Summary File 4, and Shapefile; Integrated Postsecondary Data System, 2000; Department of Agriculture, Economic Research Service, 1999, 2000; Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 1998.