

TABLE A-3

**Results for simultaneous equations model with 1998 lags—rural commuting zones**

(Estimated regression coefficients on patents and population subset)

Variable	Population subset										
	Inventive class (IC)			Science, engineering, and technical (SET) employment			Creative class (CC)			At least 4-year college degree (BA)	
	Coefficient estimate		p-value	Coefficient estimate		p-value	Coefficient estimate		p-value	Coefficient estimate	p-value
Patents dependent variable											
IC	0.053	***	5.22E-05	-	-	-	-	-	-	-	-
SET	-	-	-	0.102	***	2.66E-04	-	-	-	-	-
CC	-	-	-	-	-	-	0.022	***	0.003	-	-
BA	-	-	-	-	-	-	-	-	-	0.017	***
1975–80 patent stock (PatStock)	0.077	**	0.037	0.021		0.670	0.047		0.345	0.015	
Population density (PopDens)	0.028		0.877	-0.024		0.905	-0.079		0.815	-0.080	
Wage-rental ratio (WageRentR)	2.231		0.380	2.729		0.338	3.025		0.384	2.260	
Natural amenity rank (NatAmen)	2.041		0.459	1.287		0.673	-3.280		0.414	-6.944	
University research expenditures (UniResExp)	0.619	**	0.042	0.113		0.829	0.294		0.589	0.025	
Location quotient for patent-intensive industries (LQPatInd)	-4.380		0.376	-0.026		0.996	4.006		0.380	11.275	**
Root mean square error (RMSE)	35.140			39.431			50.411			57.763	
Chi-squared	665.812			673.690			495.559			502.329	
p-value	<0.0001			<0.0001			<0.0001			<0.0001	
Mean variance inflation factor (VIF)	3.391			3.402			3.362			3.383	
Population subset equation											
Patents	12.621	***	<1.00E-08	9.068	***	<1.00E-08	38.334	***	<1.00E-08	57.478	***
Unemployment rate (UR)	-9.702		0.316	-1.970		0.626	-19.472		0.531	-5.228	
WageRentR	-74.166		0.125	-32.340		0.282	-202.734		0.273	-164.034	
NatAmen	-35.807		0.488	-11.760		0.715	161.523		0.414	417.482	
Crime	-2.556		0.367	-0.191		0.915	-2.052		0.844	0.313	
Proximity to urban center (ProxUrbCen)	-0.355		0.170	-0.040		0.710	-0.458		0.592	-0.172	
LQPatInd	173.306	***	0.003	12.274		0.740	-43.419		0.849	-610.417	*
RMSE	604.616			379.259			2,327.936			3,436.582	
Chi-squared	839.564			810.320			662.437			626.077	
p-value	<0.0001			<0.0001			<0.0001			<0.0001	
Mean VIF	3.164			3.164			3.164			3.164	

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .**Note(s):**

PopDens, WageRentR, UniResExp, UR, Crime, and ProxUrbCen are lagged to 1998. Structural equation estimates are based on 329 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.