

TABLE A-4

**Results for simultaneous equations model with 1998 lags—urban 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	0.021	-	0.660	-	-	-	-	-	-	-	-	-
SET	-	-	-	0.033	-	0.605	-	-	-	-	-	-
CC	-	-	-	-	-	-	0.001	-	0.964	-	-	-
BA	-	-	-	-	-	-	-	-	-	0.002	-	0.892
1975–80 patent stock (PatStock)	0.887		0.335	0.804		0.313	1.208		0.249	1.045		0.407
Population density (PopDens)	-0.294		0.252	-0.388	*	0.095	0.164		0.875	0.327		0.861
Wage-rental ratio (WageRentR)	32.485		0.906	31.501		0.908	54.764		0.847	48.977		0.868
Natural amenity rank (NatAmen)	711.664	**	0.013	744.450	***	0.004	769.971	**	0.033	740.143	*	0.077
University research expenditures (UniResExp)	8.550		0.246	8.931		0.250	11.316		0.112	10.485		0.232
Location quotient for patent-intensive industries (LQPatInd)	1,319.772	***	5.90E-07	1,377.934	***	2.50E-07	1,357.145	***	8.54E-06	1,408.509	***	8.61E-05
Root mean square error (RMSE)	2,573.390			2,531.145			2,725.097			2,756.754		
Chi-squared	960.228			959.819			911.429			941.924		
p-value	<0.0001			<0.0001			<0.0001			<0.0001		
Mean variance inflation factor (VIF)	3.675			3.442			3.613			3.784		
Population subset equation												
Patents	14.324	***	<1.00E-08	10.012	***	<1.00E-08	44.681	***	<1.00E-08	62.592	***	<1.00E-08
Unemployment rate (UR)	-247.231		0.753	-263.662		0.636	-597.505		0.836	-184.117		0.965
WageRentR	623.807		0.877	405.687		0.884	2,204.700		0.883	4,546.623		0.832
NatAmen	-7,772.615	**	0.033	-6,313.327	**	0.013	-18,627.707		0.171	-25,691.080		0.186
Crime	121.722		0.217	74.786		0.244	558.690		0.193	632.919		0.296
Proximity to urban center (ProxUrbCen)	-23.179		0.444	-18.337		0.393	-71.416		0.518	-72.421		0.636
LQPatInd	-18,578.916	***	1.04E-05	-14,410.255	***	8.10E-07	-66,994.938	***	2.13E-05	-1.00E+05	***	7.97E-06
RMSE	36,834.638			25,543.749			1.370E+05			1.950E+05		
Chi-squared	728.605			736.516			511.603			487.382		
p-value	<0.0001			<0.0001			<0.0001			<0.0001		
Mean VIF	2.275			2.275			2.275			2.275		

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

**Note(s):**

PopDens, WageRentR, UniResExp, UR, Crime, and ProxUrbCen are lagged to 1998. Structural equation estimates are based on 295 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.