

Regression Methodology and Results

The data were analyzed using a fixed effects model to control for yearly influence. Employment and GDP numbers were first transformed using the natural logarithm. Three firm size variables were included in order to determine the potential influence of firm size. They indicate the percentage of total employment for the year and industry sector for each state. Industry sector binary variables were included to determine the influence of industry sector. State binaries were included to account for state-specific influence beyond those controlled elsewhere. Finally, autoregressive terms were included to capture the influence of correlation over time.

The fixed effect models use the following formats:

$$Q_{d,t} = \beta_0 + \sum_{g,t} \beta_{g,t} (\ln(X_{g,t})) + \sum_{s,t} \beta_{s,t} (Y_{s,t}) + \sum_t \beta_t (Z_t) + \varepsilon$$

t: Time (year)

Dependent	Q_d :	In (State Employment) (000) In (State Nominal GDP) (\$ 000,000)
Independent	X_g :	Nominal State GDP (\$ 000,000) Nominal State GDP (\$ 000,000) lagged 1 period Nominal State GDP (\$ 000,000) lagged 2 periods
	Y_s :	Small Size Mid-Size Large Size
	Z :	Industry Binaries State Binaries

State Employment			
Fixed Effects Model (Group: Year)			
# of Obs./Groups	5390/11		
F(64,5315)	119916.3		
Prob>F	0.0000		
R-Sqr	within 0.9993		
	between 0.9868		
	overall 0.9930		
coor(u_i,xb)	-0.0815		
Rho	0.9139		

Nominal State GDP			
Fixed Effects Model (Group: Year)			
# of Obs./Groups	5401/11		
F(634,5327)	570968.2		
Prob>F	0.0000		
R-Sqr	within 0.9999		
	between 1		
	overall 0.9999		
coor(u_i,xb)	0.0583		
Rho	0.0311		

Variable	Coef.	Std Error	t	p value
In (Nominal GDP)	0.6534	0.0293	22.30	0.000***
In (Nominal GDP lagged 1 period)	0.0569	0.0393	1.45	0.148
In (Nominal GDP lagged 2 period)	0.0304	0.0284	1.07	0.285
Small (fewer than 5)	0.0253	0.0031	8.19	0.000***
Mid (100 to 249)	0.0022	0.0065	0.33	0.740
Large (over 500)	0.0201	0.0045	4.48	0.000***
Construction	-0.0011	0.0015	-0.74	0.458
Manufacturing	-0.0016	0.0020	-0.78	0.437
Trade, Transportation & Utilities	-0.0004	0.0017	-0.25	0.803
Information	-0.0006	0.0019	-0.31	0.759
Financial Activities	-0.0029	0.0016	-1.80	0.072*
Professional & Business Services	-0.0029	0.0017	-1.49	0.137
Education & Health Services	-0.0038	0.0020	-1.85	0.065*
Leisure & Hospitality	0.0011	0.0016	0.70	0.483
Indiana	1.14	0.01	151.71	0.000***
Alabama	0.86	0.01	134.51	0.000***
Alaska	(omitted)			
Arizona	0.84	0.01	114.50	0.000***
Arkansas	0.78	0.01	146.60	0.000***
California	1.13	0.01	89.70	0.000***
Colorado	0.76	0.01	104.06	0.000***
Connecticut	0.54	0.01	77.32	0.000***
Delaware	0.17	0.00	39.39	0.000***
District of Columbia	0.05	0.01	9.85	0.000***
Florida	1.18	0.01	116.59	0.000***
Georgia	1.14	0.00	131.72	0.000***
Hawaii	0.66	0.00	146.37	0.000***
Idaho	0.77	0.00	190.20	0.000***
Illinois	1.19	0.01	121.83	0.000***
Iowa	0.97	0.01	166.14	0.000***
Kansas	0.95	0.01	168.58	0.000***
Kentucky	1.06	0.01	171.98	0.000***
Louisiana	0.91	0.01	132.55	0.000***
Maine	0.80	0.00	203.93	0.000***
Maryland	0.97	0.01	128.79	0.000***
Massachusetts	1.01	0.01	121.02	0.000***
Michigan	1.20	0.01	139.95	0.000***
Minnesota	1.08	0.01	144.04	0.000***
Mississippi	0.97	0.01	187.18	0.000***
Missouri	1.14	0.01	156.34	0.000***
Montana	0.74	0.00	212.72	0.000***
Nebraska	0.87	0.00	178.08	0.000***
Nevada	0.80	0.01	143.04	0.000***
New Hampshire	0.72	0.00	172.81	0.000***
New Jersey	1.01	0.01	112.88	0.000***
New Mexico	0.79	0.00	173.60	0.000***
New York	1.18	0.01	105.79	0.000***
North Carolina	1.14	0.01	134.60	0.000***
North Dakota	0.67	0.00	191.81	0.000***
Ohio	1.14	0.01	125.50	0.000***
Oklahoma	0.74	0.01	125.72	0.000***
Oregon	0.73	0.01	116.73	0.000***
Pennsylvania	1.14	0.01	122.05	0.000***
Rhode Island	0.45	0.00	116.58	0.000***
South Carolina	0.87	0.01	139.05	0.000***
South Dakota	0.40	0.00	105.85	0.000***
Tennessee	0.95	0.01	129.48	0.000***
Texas	1.12	0.01	100.44	0.000***
Utah	0.72	0.01	135.80	0.000***
Vermont	0.43	0.00	125.86	0.000***
Virginia	0.87	0.01	102.24	0.000***
Washington	0.75	0.01	94.24	0.000***
West Virginia	0.68	0.00	164.07	0.000***
Wisconsin	1.01	0.01	139.11	0.000***
Wyoming	0.07	0.00	20.07	0.000***
Intercept (_cons)	-2.34			

Variable	Coef.	Std Error	t	p value
In (Nominal GDP)	0.9270	0.0133	69.76	0.000***
In (Nominal GDP lagged 1 period)	0.0657	0.0133	4.95	0.000***
In (Nominal GDP lagged 2 period)	0.0000	0.0014	-0.02	0.984
Small (fewer than 5)	0.0008	0.0030	0.26	0.798
Mid (100 to 249)	-0.0007	0.0021	-0.33	0.743
Large (over 500)	0.0012	0.0007	1.17	0.088*
Construction	-0.0006	0.0009	-0.61	0.544
Manufacturing	-0.0001	0.0008	-0.17	0.867
Trade, Transportation & Utilities	0.0021	0.0009	2.38	0.017**
Information	0.0000	0.0007	-0.02	0.986
Financial Activities	-0.0001	0.0008	-0.16	0.874
Professional & Business Services	0.0003	0.0010	0.34	0.734
Education & Health Services	0.0000	0.0007	0.06	0.961
Leisure & Hospitality	0.02	0.00	4.56	0.000***
Indiana	0.01	0.00	4.10	0.000***
Alabama	(omitted)			
Alaska	0.02	0.00	4.48	0.000***
Arizona	0.01	0.00	4.05	0.000***
Arkansas	0.03	0.01	4.96	0.000***
California	0.02	0.00	4.58	0.000***
Colorado	0.01	0.00	4.21	0.000***
Connecticut	0.01	0.00	2.94	0.003***
Delaware	0.01	0.00	4.40	0.000***
District of Columbia	0.02	0.00	4.62	0.000***
Florida	0.02	0.00	4.47	0.000***
Georgia	0.01	0.00	3.12	0.002***
Hawaii	0.01	0.00	2.93	0.003***
Idaho	0.02	0.00	4.68	0.000***
Illinois	0.01	0.00	4.45	0.000***
Iowa	0.01	0.00	3.14	0.002***
Kansas	0.01	0.00	4.02	0.000***
Kentucky	0.01	0.00	4.43	0.000***
Louisiana	0.00	0.00	2.15	0.032**
Maine	0.02	0.00	4.56	0.000***
Maryland	0.02	0.00	4.61	0.000***
Massachusetts	0.02	0.00	4.27	0.000***
Michigan	0.01	0.00	4.22	0.000***
Minnesota	0.01	0.00	2.91	0.004***
Mississippi	0.01	0.00	4.06	0.000***
Missouri	0.00	0.00	1.18	0.239
Montana	0.01	0.00	3.37	0.001***
Nebraska	0.01	0.00	4.16	0.000***
Nevada	0.00	0.00	2.37	0.018**
New Hampshire	0.02	0.00	4.70	0.000***
New Jersey	0.01	0.00	3.53	0.000***
New Mexico	0.03	0.01	5.06	0.000***
New York	0.02	0.00	4.90	0.000***
North Carolina	0.00	0.00	0.41	0.679
North Dakota	0.02	0.00	4.55	0.000***
Ohio	0.01	0.00	4.25	0.000***
Oklahoma	0.01	0.00	4.18	0.000***
Oregon	0.02	0.00	4.75	0.000***
Pennsylvania	0.00	0.00	1.77	0.077*
Rhode Island	0.01	0.00	4.04	0.000***
South Carolina	0.00	0.00	1.15	0.248
South Dakota	0.01	0.00	4.27	0.000***
Tennessee	0.03	0.01	5.23	0.000***
Texas	0.01	0.00	4.21	0.000***
Utah	0.00	0.00	-1.44	0.149
Vermont	0.02	0.00	4.69	0.000***
Virginia	0.02	0.00	4.72	0.000***
Washington	0.01	0.00	2.89	0.004***
West Virginia	0.01	0.00	4.40	0.000***
Wisconsin	0.00	0.00	1.64	0.101
Wyoming	0.08			

Statistical Significance: 1% ***, 5% **, 10% *