Economic Analysis Results

Contents

Summary Statistics

Table 1: State Summary Statistics

State	Avg Employment	Avg Wage	N Industries	Wage Inequality
California	7668.04	57175.89	22	6.89
Texas	5236.86	51473.31	22	7.14
New York	4127.09	56180.00	22	10.94
Florida	3856.16	49961.29	22	6.50
Pennsylvania	2750.83	48151.59	22	7.41
Illinois	2749.72	52662.52	22	6.41
Ohio	2489.80	45752.85	22	7.83
North Carolina	2016.18	47139.16	22	6.98
Michigan	2003.73	45524.29	22	7.74
Georgia	1970.59	49887.27	22	6.49
New Jersey	1944.26	63127.32	22	7.19
Virginia	1842.35	56735.86	22	6.76
Massachusetts	1576.84	59204.80	22	8.39
Washington	1529.82	56146.79	22	10.46
Indiana	1404.92	43787.28	22	8.25
Maryland	1348.49	59782.41	22	8.74
Wisconsin	1343.74	43631.13	22	7.90
Tennessee	1326.04	44991.17	22	8.44
Missouri	1289.97	44573.92	22	8.06
Arizona	1286.39	48093.62	22	5.62
Minnesota	1277.77	48584.11	22	8.46

Colorado	1221.92	54220.22	22	7.36
South Carolina	959.02	43406.21	22	7.86
Alabama	912.06	44807.04	22	8.62
Kentucky	878.79	43459.22	22	13.09
Louisiana	850.09	45991.25	22	8.56
Oregon	827.41	47465.65	22	7.80
Connecticut	805.65	64486.36	22	12.28
Oklahoma	740.63	41714.74	22	11.75
Iowa	725.96	41313.01	22	13.41
Kansas	640.82	43661.49	22	10.66
Utah	632.65	46362.48	22	7.13
Nevada	571.84	50973.65	22	7.21
Arkansas	558.45	41523.67	22	9.82
Mississippi	528.29	41355.05	22	11.19
Nebraska	442.18	41983.83	22	7.07
New Mexico	363.88	41993.05	22	66.37
Idaho	329.57	41310.17	22	15.09
West Virginia	329.07	41168.94	22	9.30
Hawaii	321.86	47535.00	22	41.04
New Hampshire	321.24	51718.14	22	14.41
Maine	280.85	43236.03	22	16.24
Rhode Island	238.08	50333.57	22	20.11
Montana	215.75	39864.67	22	12.50
South Dakota	199.50	37919.99	22	14.66
Delaware	189.16	51617.12	22	15.68
North Dakota	177.84	42521.57	22	8.29
District of Columbia	162.64	75300.17	22	33.00
Vermont	152.13	41557.21	22	Inf
Alaska	137.75	48098.43	22	10.54
Wyoming	133.17	42006.56	22	8.29

Regression Models

COVID Impact Models

1. Employment COVID Impact:

$$\log(Employment_{ist}) = \beta_0 + \beta_1 COVID_t + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows how employment levels changed during COVID (2020 onwards)
2. Wage COVID Impact:

$$\log(Wage_{ist}) = \beta_0 + \beta_1 COVID_t + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows how wages changed during COVID (2020 onwards)
3. Industry Share and Wages:

$$\log(Wage_{ist}) = \beta_0 + \beta_1 Share_{ist} + \alpha_s + \gamma_i + \delta_t + \epsilon_{ist}$$

   - Tests if industries with larger employment shares pay higher wages
4. Wage Premium Persistence:

$$Premium_{ist} = \beta_0 + \beta_1 Premium_{is,t-1} + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Examines if industries that paid above-average wages continue to do so
5. Industry Size and Growth:

$$\Delta Employment_{ist} = \beta_0 + \beta_1 \Delta Employment_{is,t-1} + \beta_2 \log(Size_{ist}) + \alpha_s + \gamma_i + \delta_t + \epsilon_{ist}$$

   - Tests if larger industries have different employment growth patterns
6. Employment Concentration and Inequality:

$$\log(WageRatio_{st}) = \beta_0 + \beta_1 \log(Concentration_{st}) + \beta_2 \log(TotalEmp_{st}) + \alpha_s + \delta_t + \epsilon_{st}$$

   - Examines if states with more concentrated employment have higher wage inequality

Long-term Growth Models

7. Employment Trends:

$$\log(Employment_{ist}) = \beta_0 + \beta_1 (Year_t - 2007) + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows long-term employment growth trends since 2007
8. Wage Trends:

$$\log(Wage_{ist}) = \beta_0 + \beta_1 (Year_t - 2007) + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows long-term wage growth trends since 2007

Financial Crisis Models

9. Crisis Employment Impact:

$$\log(Employment_{ist}) = \beta_0 + \beta_1 PostCrisis_t + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows employment changes after 2008-09 financial crisis
10. Crisis Wage Impact:

$$\log(Wage_{ist}) = \beta_0 + \beta_1 PostCrisis_t + \alpha_s + \gamma_i + \epsilon_{ist}$$

   - Shows wage changes after 2008-09 financial crisis

Industry Structure Models

11. Industry Concentration Trends:

$$Share_{ist} = \beta_0 + \beta_1(Year_t - 2007) + \alpha_s + \gamma_i + \epsilon_{ist}$$

- Shows if industries are becoming more or less concentrated

12. Wage Inequality Trends:

$$\log(WageRatio_{st}) = \beta_0 + \beta_1(Year_t - 2007) + \beta_2 \log(TotalEmp_{st}) + \alpha_s + \epsilon_{st}$$

- Shows if wage inequality within states is changing over time

13. Size-Premium Relationship:

$$Premium_{ist} = \beta_0 + \beta_1 \log(Size_{ist}) + \beta_2(Year_t - 2007) + \beta_3[\log(Size_{ist}) \times (Year_t - 2007)] + \alpha_s + \gamma_i + \epsilon_{ist}$$

- Tests if larger industries wage premiums evolve differently

Productivity Models (Four-State Analysis: CA, NY, MI, TX)

14. Long-term Productivity Trends:

$$\log(Productivity_{st}) = \beta_0 + \beta_1(Year_t - 2007) + \alpha_s + \epsilon_{st}$$

- Shows long-term productivity growth trends since 2007 for major states
- Captures state-specific productivity trajectories

15. COVID Impact on Productivity:

$$\log(Productivity_{st}) = \beta_0 + \beta_1 COVID_t + \alpha_s + \epsilon_{st}$$

- Shows productivity changes during COVID period across major states
- Identifies differential impacts across the four largest state economies

16. Productivity Growth Dynamics:

$$\Delta Productivity_{st} = \beta_0 + \beta_1 \Delta Productivity_{s,t-1} + \beta_2 \log(Productivity_{st}) + \alpha_s + \epsilon_{st}$$

- Tests for persistence in productivity growth in major state economies
- Examines convergence patterns across states

17. Industry Structure and Productivity:

$$\log(Productivity_{st}) = \beta_0 + \beta_1 \log(Concentration_{st}) + \beta_2 \log(Wage_{st}) + \alpha_s + \delta_t + \epsilon_{st}$$

- Examines if industry concentration affects productivity in major states
- Controls for wage levels and state-specific factors

18. Wage Bill Determinants (Four-State Analysis):

$$\Delta WageBill_{st} = \beta_0 + \beta_1 Productivity_{st} + \beta_2 Employment_{ist} + \beta_3 ValueAdded_{ist} + \beta_4 \Delta Employment_{st} + \alpha_s + \delta_t + \epsilon_{ist}$$

- Examines determinants of changes in state-level wage bills
- Tests relationships between productivity, employment levels, employment growth, and value added
- Includes average employment changes across industries
- Focuses on the four major state economies

Where: - α_s represents state fixed effects - γ_i represents industry fixed effects - δ_t represents year fixed effects - ϵ_{ist} is the error term - Subscripts: i = industry, s = state, t = year

Regression Results

Table 2: COVID Impact Results

	Employment (COVID)	Wages (COVID)	Wages (Concentration)
COVID Period	0.071***	0.224***	
	(0.009)	(0.005)	
Industry Share			1.676***
			(0.245)
Num.Obs.	17643	17641	17641
R2	0.899	0.829	0.867

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 3: Industry Structure Results

	Wage Premium	Employment Growth	Wage Inequality
Lagged Premium	-0.034**		
	(0.012)		
Lagged % Change		-0.129***	
		(0.011)	
Industry Size		-0.148***	
		(0.019)	
Log Emp Concentration			0.370*
			(0.172)
Log Total Employment			0.043
			(0.167)
Num.Obs.	16827	15399	814
R2	0.729	0.147	0.253

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 4: Long-term Growth Results

	Employment Growth	Wage Growth	Employment (Crisis)	Wages (Crisis)
Year Trend	0.011***	0.026***		
	(0.001)	(0.001)		
Post-Crisis Period			0.019*	0.167***
			(0.007)	(0.005)
Num.Obs.	17643	17641	17643	17641
R2	0.900	0.861	0.899	0.807

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 5: Industry Evolution Results

	Industry Concentration	Wage Inequality	Wage Premium
Year Trend	0.000***	-0.002	-0.006**
	(0.000)	(0.002)	(0.002)
Industry Size			0.054***
			(0.012)
Industry Size × Year Trend			0.001*
			(0.000)
Log Total Employment		-0.078	
		(0.103)	
Num.Obs.	17643	814	17643
R2	0.847	0.199	0.763

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 6: Productivity Trends

	(1)
Year Trend	0.014*
	(0.003)
Num.Obs.	68
R2	0.781

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 7: COVID Productivity Impact

	(1)
COVID Period	0.140*
	(0.031)
Num.Obs.	68
R2	0.606

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 8: Productivity Growth Determinants

	(1)
Lagged % Change	1.000***
	(0.000)
Log Labor Productivity	-0.000+
	(0.000)
Num.Obs.	64
R2	1.000

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 9: Industry Composition Effect on Productivity

	(1)
Log Emp Concentration	0.114
	(0.130)
Log Avg Wage	1.062+
	(0.365)
Num.Obs.	64
R2	0.927

Significance levels: * p<0.1, ** p<0.05, *** p<0.01
Standard errors in parentheses

Table 10: Wage Bill Determinants (Four Major States)

	(1)
Log Productivity	-0.404
	(12.654)
Log Employment	54.374+
	(17.111)
Log Value Added	-14.626
	(11.711)
Avg Employment Change	0.727+
	(0.267)
Num.Obs.	60
R2	0.945

Analysis covers California, New York, Michigan, and Texas
Standard errors in parentheses

Table 11: Productivity Analysis Results (Four Major States)

	Productivity Trend	COVID Impact	Growth Dynamics	Industry Composition	Wage Bill
Year Trend	0.014*				
	(0.003)				
COVID Period		0.140*			
		(0.031)			
Lagged % Change			1.000***		
			(0.000)		
Log Productivity			-0.000+		-(
			(0.000)		(1
Log Emp Concentration				0.114	
				(0.130)	
Log Average Wage				1.062+	
				(0.365)	
Log Employment					54
					(1
Log Value Added					-1
					(1
Num.Obs.	68	68	64	64	
R2	0.781	0.606	1.000	0.927	0

Analysis covers California, New York, Michigan, and Texas
Standard errors in parentheses