RESEARCH BRIEF

Is Urban Cool Cooling New Jersey's Job Market?

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Since 2000, employment in New Jersey has slowed considerably compared with its relatively steady growth in the late 1980s through the 1990s. As of the second quarter of 2015, New Jersey's total payroll employment was less than 1 percent greater than it was in the first quarter of 2000.

Moreover, New Jersey is underperforming the country as a whole in terms of employment growth. While New Jersey employment had tracked that of the U.S. in the lead–up to the 2001 recession and outperformed the nation in that recovery, it soon fell behind leading up to the global Great Recession of 2007–2009.

Additionally, while the U.S. has more than surpassed its business cycle peak from 2008, New Jersey has yet to fully recover to its prerecession employment level (Figure 1).

FIGURE 1
New Jersey vs. U.S. Payroll Employment, 1990 Q1–2015 Q2
Index: 2000 Q1=100
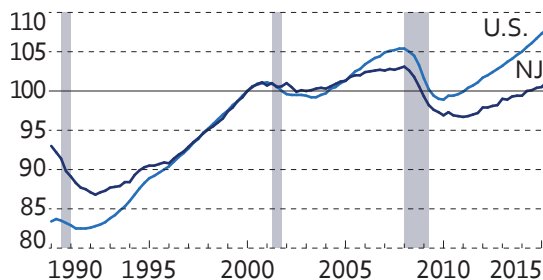
Source: Bureau of Labor Statistics, seasonally adjusted by authors.

New Jersey has had an unusually poor performance in its recovery from the Great Recession compared with nearly all other states. Ranking U.S. states by their relative recession recovery statuses as of 2015, New Jersey falls toward the bottom of the list at 46 (Table 1).

TABLE 1
State Recession Recovery Ranking
State employment growth rates, January 2008–August 2015.

	10 Highest			10 Lowest	
1	ND	26.6%	41	IL	−1.2%
2	TX	11.8	42	MO	−1.3
3	UT	9.8	43	ME	−1.4
4	CO	7.2	44	NV	−2.0
5	WA	6.1	45	AZ	−2.1
6	MA	5.5	46	NJ	−2.2
7	NY	5.2	47	MS	−2.6
8	CA	5.2	48	NM	−2.6
9	AK	4.7	49	AL	−2.8
10	SD	4.7	50	WV	−3.0

Sources: Bureau of Labor Statistics and authors' calculations.

Employment in the state is still 2.2 percent below its January 2008 level. If one compares absolute job growth in the 15 most populous states in the country, New Jersey comes in last place, still 89,500 jobs short of its employment totals on the cusp of the recession (Table 2).

The effects of New Jersey's weak employment[1] growth extend to the state government's fiscal well-being. Deitz et al. (2010) note that New Jersey's heavy reliance on personal income taxes has exacerbated state revenue shortfalls since the 2008 recession. While the state could once rely on its robust employment growth to ensure fiscal soundness, it may be finding that its employment base is not strong enough to keep the state's public finances in the black.

This weak job growth is particularly interesting because it diverges notably from the trends in New York and Philadelphia, to which New Jersey's economy has traditionally been strongly linked. Much of New Jersey is essentially a series of suburbs for these two cities. Nevertheless, while job growth in these cities has recovered strongly since the recession, this growth does not seem to have spilled over into New Jersey (Table 3).

Why has a large and prosperous state struggled to gain jobs despite the momentum of the country? In particular, why has strength in the labor markets of New York and Philadelphia not extended to their respective bedroom communities in New Jersey? What are the cyclical and structural factors that have contributed to this recent anemic growth record? While it is true that New Jersey has had a weak recovery from the 2008 recession, there have been longer-term trends at work in the state. These underlying factors become more apparent if one looks at specific industries. An industry analysis offers insight into the anatomy of New Jersey's weak employment situation and can help to identify those long-term structural shifts in the state's economy. Our analysis will show that New Jersey has many industries that fail to compete effectively against the rest of the country and that these industries employ a significant percentage of the state's workers.

Hughes and Seneca (2015) note that New Jersey's suburban-centric, auto-dependent office corridors were a key factor in its advantage for adding knowledge-based service jobs in the 1980s and 1990s but that since 2000, corporate and employee office location preferences have shifted toward denser, more rail accessible areas including neighboring Philadelphia and New York City. This shift in preferences is an example of what might cause a shift in employment for many knowledge-dependent service sectors, and we will use this aspect of New Jersey's economy to frame our discussion. We will suggest that the highly suburban-centric nature of the state economy may at least partly explain its struggle in recent years to generate jobs.

Industry Analysis

To take a closer look at how certain industries' job growth performs in the state compared with the nation, we look at long-term employment trends in New Jersey and U.S. payroll employment for selected industries (Figures 2A–F). Assessing differences in employment growth across industries between the nation and state allows for a more nuanced discussion of the overall employment growth outlook for the state. We plot three industries that have expanded in New Jersey since 1990: Management of companies and enterprises (Figure 2A) tracked the nation in job growth through most of the 1990s, then broke away in the late 1990s and outstripped the nation until just the past few years. Employment growth in the arts, entertainment, and recreation services (Figure 2B) in New Jersey lagged the nation in the 1990s before catching up in recent years. Health care and social services employment (Figure 2C) tracked the U.S. very closely in the 1990s but has fallen off since 2007.

We then plot three industries that have contracted in New Jersey since 1990: Manufacturing and information services employment (Figures 2D and 2F) followed similar patterns in the U.S. and New Jersey, with New Jersey lagging the nation. Mining and logging employment (Figure 2E) underwent a major divergence, plummeting in New Jersey but rising nationally.

State employment at the industry level can change due to trends at the national level or due to regional-specific factors that affect industry employment. For example, while New Jersey manufacturing employment has decreased significantly since 2000, this is at least partly a factor of the nationwide decrease in the competitiveness of the manufacturing sector that has shifted manufacturing jobs overseas. Conversely, weaker employment growth in health care and social services in New Jersey in recent years does not reflect the national employment dynamic in those fields. In the next section, we quantify these employment effects for separate sectors to highlight New Jersey's most promising industries for growth.

New Jersey vs. U.S. Employment for Selected Industries, 1990–2014

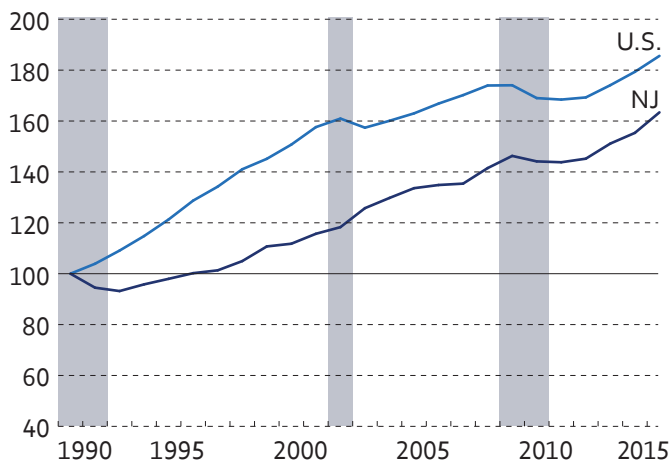2A: Management of Companies & Enterprises
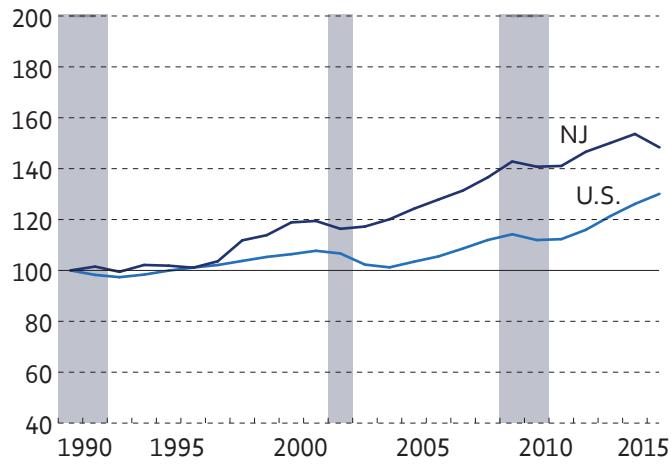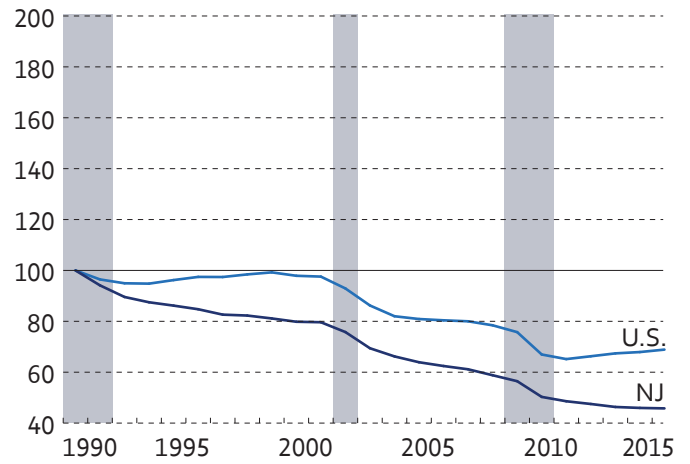
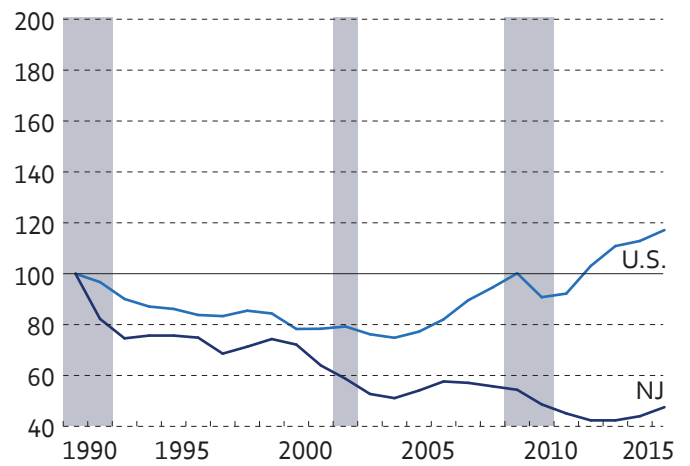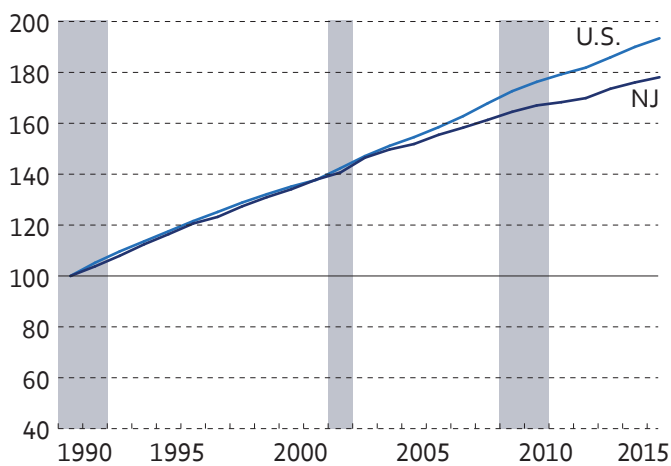2B: Arts, Entertainment & Recreation Services

2C: Health Care & Social Assistance

2D: Manufacturing

2E: Mining & Logging

2F: Information
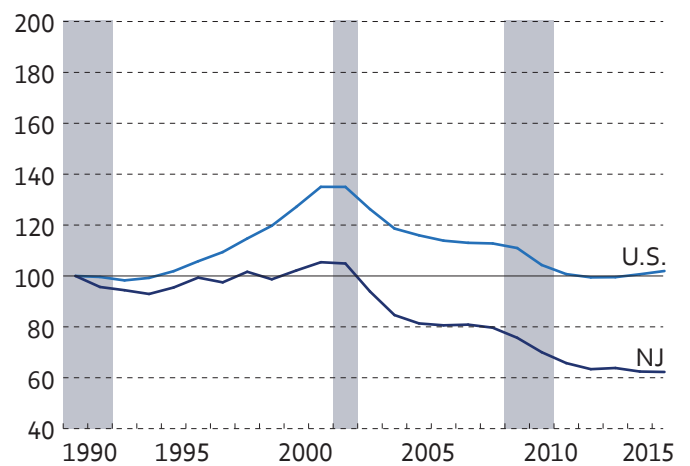
Sources: Bureau of Labor Statistics and authors' calculations

Identifying Regional Competitiveness

We quantify the competitiveness of different industries in New Jersey with respect to employment by measuring the divergence in industry employment growth between the U.S. and New Jersey. Therefore, it is important to note that when we refer to an industry as being "competitive" throughout this paper, we mean that state employment is growing faster than national employment in that industry, whereas "uncompetitive" means that state employment is growing more slowly than national employment in that industry. While a variety of factors could lead to faster employment growth in an industry, a competitive regional industry suggests high productivity relative to the nation. A state that experiences extreme industry productivity growth rarely lags the nation in employment growth.

The methodology we use is based on a model developed by Esteban–Marquillas (1972) that seeks to isolate the effect of regional competitiveness on employment growth.[2] We identify national trends and assess their effects on regional employment growth. Additionally, we have to take into account the fact that employment in New Jersey may be allocated differently among industries than it is at the national level. We could imagine that employment is actually heavily concentrated in the most competitive industries; in that scenario, while we may identify several uncompetitive industries, the state benefits from having few jobs in those industries. It could likewise be possible that many uncompetitive industries account for a large percentage of payroll employment, an allocation that would have a negative effect on employment growth. Once we have isolated the effects of national trends and industry employment allocation on employment growth, we attribute the remainder to the competitiveness of each industry in New Jersey.[3]

We illustrate this concept using the example of professional, science, and technical services employment, an industry that is growing more slowly in New Jersey than in the U.S., yet one in which a higher percentage of people work in New Jersey than nationally. Now consider Figure 3A. Clearly, growth in these jobs in the U.S. has outstripped their growth in New Jersey since 1990. The NJ Alternate series presents an alternative scenario, most easily thought of as one in which New Jersey has not overallocated employment to this relatively uncompetitive industry. This chart illustrates the idea that employment grows more slowly when jobs are concentrated in uncompetitive industries and grows faster when the converse is true. When employment in an industry grows at a different rate nationally than regionally, this gap is due to both regional competitiveness and the allocation of employment among different industries, and we want to separate these two effects in our analysis.

Figure 3B illustrates these two effects for professional, science, and technology services. The effect due to regional competitiveness is called the "regional effect," while the effect of New Jersey's industry employment breakdown is called the "allocation effect." Figure 3B shows that New Jersey is relatively uncompetitive in this sector via the regional effect. It also shows that New Jersey's relatively high employment in professional,

science, and technical services has significant and consistently negative effects on industry employment via the allocation effect.

FIGURE 3A
Professional, Science & Technology Employment
Index: 1990=100
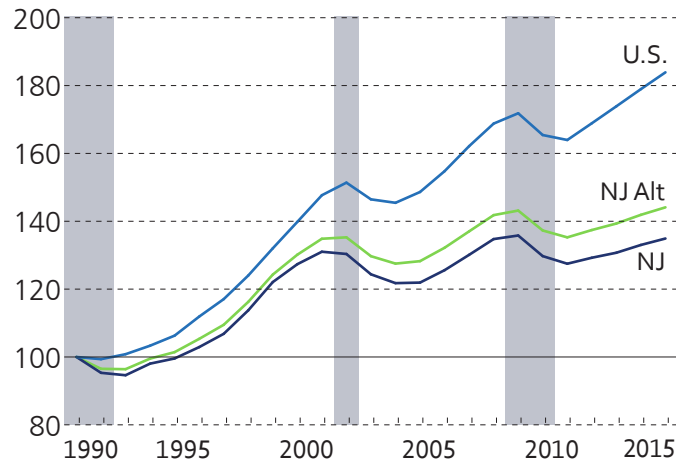
Sources: Bureau of Labor Statistics and authors' calculations.

FIGURE 3B
Regional vs. Allocation Effects in Professional, Science & Technology Employment
Percent
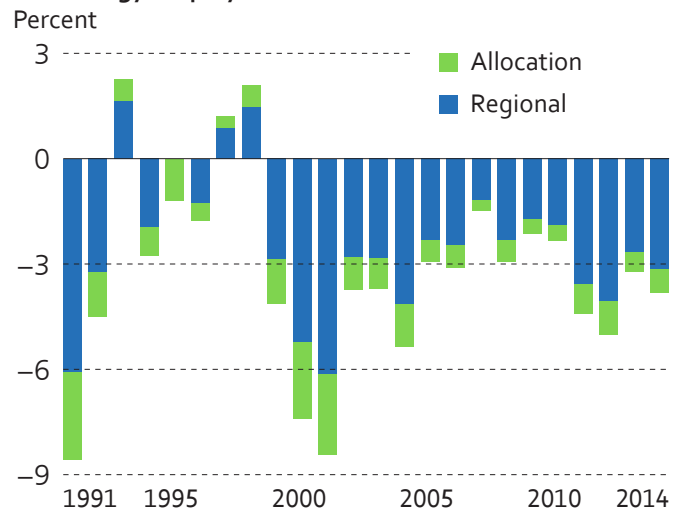
Sources: Bureau of Labor Statistics and authors' calculations.

Shift–Share Analysis Results

The results of our analysis, summarized in Table 4, show that industries that tend to cluster in cities had negative regional competitiveness effects in New Jersey and that industries that tend to be found in suburbs were more likely to have positive or at least less negative regional competitiveness effects.[4] Industries that cluster in cities include transport, warehousing, and utilities; information, finance and insurance; professional, scientific, and technical services; health care and social assistance; and educational services (Kneebone, 2009). Each of these industries had a negative regional effect over the 2000–

2007 period, suggesting that they were uncompetitive in New Jersey relative to the nation. This was a period in which the extensive suburbanization of New Jersey was perhaps not to its advantage. Overall, largely urban–based industries had a significant negative regional effect, equal to almost half the effect of national trends.

TABLE 4
Shift–Share Analysis for Selected Industries,
2000–2007 and 2008–2014
Change in employment, thousands of jobs

	2000–2007			2008–2014		
	National trends	Allocation effect	Regional effect	National trends	Allocation effect	Regional effect
Industries clustered in city centers	**186.00**	**−20.21**	**−77.20**	**111.66**	**−12.73**	**−87.04**
Transport/ware–housing/ utilities	7.30	−4.67	−16.64	3.19	−1.51	−9.05
Information	−13.92	−2.13	−11.04	−9.22	−0.79	−10.97
Finance & insurance	14.79	−1.21	−6.15	−8.59	−2.35	−12.90
Professional, scientific & technical services	56.25	−11.91	−28.56	25.71	−5.37	−19.98
Management of companies/enterprises	3.33	0.98	5.16	11.87	−1.36	−4.17
Educational services	19.68	−0.25	−5.22	14.15	−0.05	−7.62
Health care & social assistance	98.57	−1.02	−14.75	74.55	−1.30	−22.35
Industries clustered in suburbs	**−38.52**	**11.13**	**−32.47**	**−79.18**	**16.49**	**−52.33**
Mining & logging	0.46	6.92	−7.87	0.41	7.58	−8.24
Construction	23.75	−1.89	6.91	−33.65	−0.96	4.08
Manufacturing	−84.04	6.47	−33.72	−37.90	9.86	−40.91
Retail trade	16.40	0.00	−0.77	−4.63	−0.09	−5.67
Real estate/rental & leasing	4.91	−0.37	2.98	−3.41	0.10	−1.59
All other industries	139.03	−2.68	9.98	21.45	4.46	−36.55

This result means that New Jersey job growth in these industries would have been almost 50 percent greater if they had been as competitive as they are nationally. That the sum of these industries also had a negative allocation effect means that, despite having relatively uncompetitive labor markets in each of these industries, employment has been overallocated to these urban–based sectors.

The industries that tend to require more space and therefore locate in suburban areas also had an overall negative regional effect, though a far smaller one. However, this negative effect stems entirely from manufacturing and mining and logging — two industries that are uncompetitive throughout the Northeast. The urban–suburban divide, therefore, is not the only significant factor in determining a regional industry's competitiveness. (Consider the number of oil mining companies based in Houston, for example.) Excluding those two industries, the suburban–based industries overall had a positive regional effect. However, overall they did not have a positive allocation effect, which means that the state could benefit from having a higher proportion of its employment in them.

If anything changed during and after the crisis (the 2008–2014 period), it is that New Jersey looks even less competitive relative to the nation. The sum of all urban–based industries continued to have a negative regional effect after the crisis, which was large enough to nearly wipe out the positive impact of national trends. Manufacturing and mining and logging had even larger negative regional effects in this period, reflecting both the battering that these industries underwent during the recession and continued further weakness in the Northeast. The aggregate of the other three suburban–based sectors, which had a positive regional effect in 2000–2007 (Table 5), had a negative regional effect in 2008–2014 (Table 6).

TABLE 5
New Jersey Industry Analysis, 2000–2007
Industries that cluster in cities; industries that cluster in suburbs.

	Underallocated	Overallocated
Competitive	*Construction*	Management of companies/enterprises
	Real estate/rental & leasing	
	Arts, entertainment/recreation	
	State & local government	
	Other services	
Uncompetitive	*Mining & logging*	Wholesale trade
	Manufacturing	Transport/warehousing/utilities
	Retail trade	Information
	Accommodation & food services	Finance & insurance
	Federal government	Administration/waste management/remediation services
		Educational services
		Health care & social assistance
		Professional, scientific & technical services

TABLE 6
New Jersey Industry Analysis, 2008–2014
Industries that cluster in cities; industries that cluster in suburbs.

	Underallocated	Overallocated
Competitive	*Construction*	Other services
	Administration/waste management/remediation services	
	Arts, entertainment/recreation	
Uncompetitive	*Mining & logging*	Wholesale trade
	Manufacturing	*Retail trade*
	Accommodation & food services	Educational services
	Federal government	Health care & social assistance
	Real estate/rental & leasing	Management of companies/enterprises
		State & local government
		Transport/warehousing/utilities
		Information
		Finance & insurance
		Professional, scientific & technical services

The allocation effects for both the total of all urban-based industries and for the suburban-based industries excluding manufacturing and natural resources were negative but had a smaller magnitude than in 2000–2007, suggesting that some realignment may be occurring. All of this points to a temporary stalling of the geographic decentralization of employment, a phenomenon that would have an outsize negative impact on New Jersey's highly suburban labor market.

One final sector of interest is the management of companies and enterprises. New Jersey had a positive regional effect in this industry before the crisis, but in 2008–2014 the regional effect turned negative. Anecdotally, we know that many enterprises are in fact moving their headquarters out of state, and it seems that New Jersey has indeed lost some of its ability to compete for these jobs. This shift seems particularly worrying, as it costs the state not only high-paying jobs but also tax revenue on the businesses domiciled there.

It is important to note that each industry does not exist in a vacuum. The negative regional effects in one industry may help explain the negative regional effects in other industries. For instance, a lack of competitiveness in New Jersey manufacturing may partly explain the negative regional effect, before and after the crisis, in transportation, warehousing, and utilities. Accommodation jobs may be linked to the management of companies, as hotels are sustained through much of the year by business travelers This may explain why the regional effect for accommodation and food services became more negative after the crisis, when the regional effect for the management of companies became negative.

Conclusion
New Jersey has struggled with low employment growth since 2000 as a result of structural and cyclical factors. By examining the structural makeup of industry employment in the state, we identified which sectors were large contributors to this anemic employment growth. Using a shift-share model for New Jersey, we were able to identify whether employment in different industries has been competitive and how prominent each sector is given its level of competitiveness. Our shift-share analysis allowed us to identify industries that have been problematic for New Jersey in the past 15 years, many of which tend to cluster in urban centers, such as information, professional, scientific, and technical services, and health care and social assistance. The state was further hurt by the recession, which tended to affect the outlying parts of metro areas more than the urban cores, as even industries that had grown strongly before the recession began to underperform the nation.

One of the main challenges for New Jersey may be that its economy is very much services-based, but many services jobs are now clustering in cities, especially higher-paying knowledge-intensive services jobs that require more human capital. The recession caused a small reversal in the decentralization of employment in many U.S. cities, as the suburbs generally fared worse than city centers, and it remains to be seen whether this

trend will continue. If it does, it could cause the weakness in New Jersey's labor market to persist into the medium or long term. Knowledge–intensive service jobs tend to cluster even when they locate outside of city centers, so New Jersey might look into ways to nurture existing clusters of white–collar service jobs, such as those in Princeton and Jersey City. Nevertheless, if larger forces of desuburbanization continue, they may overwhelm any such efforts. ∎

Notes

1 Employment throughout this paper refers to Bureau of Labor Statistics payroll employment, defined as "the total number of persons on establishment payrolls employed full or part time who received pay for any part of the pay period which includes the 12th day of the month." Therefore, employment is counted where the job is located, not where the employee lives.

2 For a more detailed explanation of this model, see the appendix.

3 This procedure does not control for differing demographic trends. The shift–share model compares employment composition and sector employment growth rates at the state level with employment composition and sector employment growth rates at the national level.

4 Full results can be found in Tables 7 and 8 in the appendix.

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Appendix

The Esteban–Marquillas model separates regional industry indicator changes, in this case New Jersey industry employment growth, into four parts. The national effect takes account of national employment trends; the industry effect includes the additional effect of national employment trends in the industry of interest. The allocation effect accounts for differences in regional and national industry employment composition, and suggests how efficiently regional employment is distributed among industries. The regional effect, the variable of most interest, is growth not explained by these other three factors: the regional anomaly, which we talk of as being the effect of regional industry competitiveness.

If $e^{t+n}_i - e^t_i$ is the change in employment in New Jersey in industry i from period t to period $t+n$, N_i is the national effect, I_i is the industry effect, A_i is the allocation effect, and R_i is the regional effect, and

$$e^{t+n}_i - e^t_i = N_i + I_i + A_i + R_i$$

N_i and I_i are defined as growth relative to the level of the variable of interest — industry employment — in period t. A_i and R_i are based in part on the theoretical value of the variable of interest under the assumption that the industry mix of employment is the same in the region as in the nation, written as $h^t_i = e^t * (E^t_i / E^t)$, where e^t is regional employment in period t, and E^t_i / E^t is the fraction of national employment in industry i in period t. The four components of the change in the variable of interest are defined thus:

$$N_i = e^t_i (G)$$

$$I_i = e^t_i (G_i - G)$$

$$A_i = (e^t_i - h^t_i) * (g_i - G_i)$$

$$R_i = h^t_i (g_i - G_i)$$

Where e^t_i is regional employment in industry i in period t, G is the employment growth rate in the nation as a whole, and G_i and g_i are the employment growth rates in industry i in the nation as a whole and in the region, respectively.

TABLE 7
New Jersey Shift–Share Analysis, 2000–2007
Change in employment, thousands of jobs

	Growth	National effect	Industry effect	National trends	Allocation effect	Regional effect	Regional trends
Mining & logging	−0.50	0.15	0.31	0.46	6.92	−7.87	−0.96
Construction	28.78	9.66	14.09	23.75	−1.89	6.91	5.02
Manufacturing	−111.29	28.43	−112.47	−84.04	6.47	−33.72	−27.25
Wholesale trade	−2.79	15.75	−10.87	4.88	−1.84	−5.83	−7.67
Retail trade	15.63	30.28	−13.88	16.40	0.00	−0.77	−0.77
Transport/warehousing/ utilities	−14.02	12.76	−5.46	7.30	−4.67	−16.64	−21.32
Information	−27.08	8.28	−22.20	−13.92	−2.13	−11.04	−13.16
Finance & insurance	7.43	14.02	0.76	14.79	−1.21	−6.15	−7.36
Real estate/rental & leasing	7.52	3.52	1.39	4.91	−0.37	2.98	2.61
Professional, scientific & technology services	15.78	18.26	37.99	56.25	−11.91	−28.56	−40.47
Management of companies/ enterprises	9.47	4.29	−0.96	3.33	0.98	5.16	6.15
Administration/waste management/ remediation services	11.90	16.41	1.79	18.20	−0.19	−6.11	−6.30
Educational services	14.21	4.94	14.74	19.68	−0.25	−5.22	−5.47
Health care & social assistance	82.79	27.40	71.17	98.57	−1.02	−14.75	−15.77
Arts, entertainment/ recreation	10.92	2.76	3.56	6.32	−1.18	5.77	4.59
Accommodation & food services	29.02	17.42	25.26	42.68	2.00	−15.67	−13.66
Other services	25.63	9.27	1.73	11.00	−1.67	16.30	14.63
Federal government	−4.49	4.45	−5.27	−0.82	0.97	−4.64	−3.67
State government	19.05	8.98	2.76	11.74	−0.47	7.78	7.31
Local government	57.10	25.45	19.57	45.02	−0.29	12.38	12.08
New Jersey total	**175.05**			**286.50**			**−111.45**

TABLE 8
New Jersey Shift-Share Analysis, 2008–2014
Change in employment, thousands of jobs

	Growth	National effect	Industry effect	National trends	Allocation effect	Regional effect	Regional trends
Mining & logging	−0.25	0.01	0.39	0.41	7.58	−8.24	−0.66
Construction	−30.53	1.36	−35.02	−33.65	−0.96	4.08	3.12
Manufacturing	−68.96	2.46	−40.36	−37.90	9.86	−40.91	−31.05
Wholesale trade	−17.51	1.82	−9.09	−7.27	−2.37	−7.87	−10.24
Retail trade	−10.39	3.67	−8.30	−4.63	−0.09	−5.67	−5.76
Transport/warehousing/ utilities	−7.37	1.39	1.80	3.19	−1.51	−9.05	−10.56
Information	−20.98	0.76	−9.98	−9.22	−0.79	−10.97	−11.76
Finance & insurance	−23.83	1.70	−10.29	−8.59	−2.35	−12.90	−15.24
Real estate/rental & leasing	−4.89	0.47	−3.88	−3.41	0.10	−1.59	−1.48
Professional, scientific & technology services	0.35	2.27	23.44	25.71	−5.37	−19.98	−25.36
Management of companies/ enterprises	6.33	0.58	11.29	11.87	−1.36	−4.17	−5.54
Administration/waste management/ remediation services	12.66	2.02	2.84	4.86	0.21	7.59	7.80
Educational services	6.47	0.69	13.45	14.15	−0.05	−7.62	−7.67
Health care & social assistance	50.91	3.87	70.68	74.55	−1.30	−22.35	−23.64
Arts, entertainment/ recreation	8.04	0.41	3.06	3.48	−0.55	5.12	4.57
Accommodation & food services	10.08	2.27	26.62	28.89	3.31	−22.12	−18.81
Other services	5.28	1.29	1.10	2.39	0.02	2.87	2.89
Federal government	−12.77	0.49	−0.68	−0.19	3.91	−16.49	−12.58
State government	−6.00	1.20	−3.07	−1.86	−0.03	−4.11	−4.14
Local government	−10.43	3.44	−12.27	−8.84	−0.04	−1.55	−1.59
New Jersey total	**−113.78**			**53.91**			**−167.69**