

## Job and Worker Flows: Evidence from New York State Counties

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### Abstract

The purpose of the paper is to understand the behavior of the labor market variables, especially job and worker flows in the New York State counties. The paper identifies some strong regional trends in the data. Geography plays an important role in the behavior of these variables. Especially, counties surrounding big cities have generally not so favorable labor market outcomes. This finding can have very strong implication in terms of how the policy makers implement the labor market policies. Labor market policies taken at the national or the state level may not be that efficient or effective in delivering these policies. Policy makers need to take a more localized view of the labor market problems.

### INTRODUCTION

Do labor market policies need to be more local? This question plagued the policy makers for longtime. Views varied widely across the spectrum of academic and policy making. With the advent of current recession, this issue again becomes a major contention in the delivery of policy goals.

Aggregate labor market data at the national or state level can give a broad overview of the state of labor market at a particular point in time. Breaking the data at the county or the regional level may give a very different understanding of an event. In standard economic theory, general assumption is perfect labor mobility. In reality, economic and social barriers may separate local labor markets. If these barriers restrict the mobility of labor, then weak labor market demand in particular geographical area or region may increase unemployment rate there above its level in the areas with strong labor demand

Most studies used unemployment as the primary variable to understand labor market behavior. This is understandable given the fact that this is the key variable in understanding the performance of a region and as a measure of the wellbeing of the labor force. At the same time, for the United States and for most of the countries, this is the only variable which available at more localized level. But modern economies are characterized by extremely dynamic labor markets. Each month thousands of workers get separated from their current employment, either to move into unemployment or take up a new job. At the same time, each month firms destroy thousands of existing jobs and create new jobs. For example, in the New York State, during the period between 2001 and 2009, in a typical month on average 0.49 million people were unemployed and actively looking for jobs. In the same time period, about 0.18 million vacancies were posted every month and about 0.4 million workers hired per month. To complement these labor market flows, average 0.53 million workers have been separated every quarter. All these flows are significant, when compare with the average 9.4 million labor force in the New York State. Though, the unemployment

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behavior has caught the interest of the economists for a long time, understanding the important labor market dynamics related to hiring, separations and vacancies are fairly new in the profession. These job and worker flows entail a very interesting dynamics about the labor market reallocation.

In this study, I have used Local Employment Dynamics data to study the job and worker flows across the counties in New York State (NYS). The study finds that job and worker flows along with wages and unemployment have a strong regional character in NYS. The counties with a big city of population 90,000 or more typically have substantially higher vacancy and lower unemployment and separation rate than the counties surrounding the big city counties. Also, average and new hire wage much higher in the counties with big cities.

The paper is divided as follows: section 2 give a short literature review. Section 3 and 4 describe the data and the descriptive statistics. Section 5 gives the spatial patterns in data and finally section 6 and 7 analyze policy implications and conclusions.

## **LITERATURE REVIEW**

Empirical literature on local labor market dynamics primarily focused on understanding unemployment behavior. The magnitude of unemployment disparities among regions within countries is almost as large as the magnitude of unemployment disparities among countries themselves (see Taylor and Bradley, 1997; European Commission, 1999). Interestingly, macroeconomics gives no explanation for the existence of this regional disparity in unemployment. Many macroeconomic studies have attempted to explain unemployment disparities between countries (OECD, 1994; Phelps, 1994; Scarpetta, 1996). From these studies it emerged that the major explanation of unemployment disparities between countries is found in differences in labor market institutions, such as the wage bargaining, social security, retirement and tax systems. However in many countries labor market institutions do not differ to any great extent between regions, therefore other explanatory variables of regional unemployment disparities must be found (Elhorst, 2005). Clearly broad economic and social factors can explain the persistence of unemployment in geographical areas. For example, studies found that high unemployment tends to be in areas with attractive climates and amenities, high wages and high unemployment insurance (Marston, 1985). To complement the unemployment, there is a literature on labor flows. Recently, understanding labor flows caught the interest of the economists more (Pissarides, 2000). The empirical literature on jobs and worker flows primarily focused on the flows at the national level. Lack of data is the primary reason for lack of empirical studies at the regional level. Lack of studies does not mean that understanding regional labor flows is not important.

## **DATA DESCRIPTION**

Quarterly Workforce Indicators (QWI) provides detailed local estimates of variety of employment and earnings indicators based upon information from Local Employment Dynamics (LED). Employment, earnings, gross job creation and destruction, and worker turnover is available at different levels of

geography, typically down to the county or metro area. Detailed information regarding the data is available in Stevens (2007). The definition of the measures in QWI is as follows: -

- **Total Employment:** Total number of workers who were employed by the same employer in both the current and previous quarter.
- **Job Creation:** The number of new jobs that are created by either new area businesses or the expansion of employment by existing firms.
- **New Hires:** Total number of accessions that were also not employed by that employer during the previous four quarters.
- **Separations:** Total number of workers who were employed by a business in the current quarter, but not in the subsequent quarter.
- **Average Monthly Earnings:** Total quarterly earnings of all full-quarter employees divided by the number of full-quarter employees, divided by 3.
- **Average New Hire Earnings:** Total quarterly earnings of all full-quarter new hires divided by the number of full-quarter new hires, divided by 3.

The county level data on employment, unemployment and labor force is collected from the Local Area Unemployment Statistics (LAUS) as provided by the Bureau of Labor Statistics (BLS).

## DESCRIPTIVE STATISTICS

We have a panel of sixty two counties of New York State for the time period 2001 Q1 to 2009 Q2. The primary variables of interest are job creation rate (Vacancy rate now onwards), separation rate, new hire rate, unemployment rate, average monthly earnings and average new hire earnings. The data on average new hire earnings and average monthly earnings obtained from LED, whereas separation rate, new hire rate, job creation rate (vacancy rate) and unemployment rate are calculated from LED and LAUS. Separation rate and new hire rate is calculated as the proportion of separations and new hires to total employment as defined in LED. Vacancy rate is obtained by dividing job creations by sum of employed and job creation. The panel allows us to analyze variations both across time and across cross sections. To do cross section analysis, we took the average for each county over the time period 2001 Q1 to 2009 Q2.

Table 1 provides the summary statistics for the cross section data. Vacancy rate varied substantially across counties with 12.79% in New York County to 2.63% in Richmond County, with standard deviation of 1.5. New Hire Rate varied between 22.73% in Hamilton County to 11.49% in Kings County, with standard deviation of 1.8. Separation varied between 36.15% in Hamilton County to 15.55% in Kings County with standard deviation of 2.9. Wage varied more across counties. For example average new hire wage varied from \$4,509 to \$1,331 in New York County and Yates County respectively, with standard deviation of 454.01. Similarly, average monthly earnings varied between \$7,575 to \$2,140 in New York County and Hamilton County with standard deviation of 761.33.

Average New Hire Earnings varied between \$4,509 and \$1,331 in New York County and Yates County respectively. Similarly, average monthly earnings varied between \$7,575 in New York County to \$2,140 in the Hamilton County.

**Table 1: Descriptive Statistics for Cross Section Data**

	<b>Unemployment Rate</b>	<b>Vacancy Rate</b>	<b>Hire Rate</b>	<b>Separation Rate</b>	<b>Average New Hire Earnings</b>	<b>Average Monthly Earnings</b>
<b>New York State</b>						
<b>Average</b>	5.39%	4.96%	14.98%	19.88%	\$1,821	\$3,087
<b>Max</b>	8.30%	12.79%	22.73%	36.15%	\$4,509	\$7,575
<b>Min</b>	3.88%	2.63%	11.49%	15.55%	\$1,331	\$2,140
<b>Standard Deviation</b>	0.83	1.5	1.8	2.9	454.01	761.33
<b>Correlations</b>						
<b>with...</b>						
<b>Unemployment Rate</b>	1					
<b>Vacancy Rate</b>	-0.1521	1				
<b>Hire Rate</b>	-0.0944	0.3522	1			
<b>Separation Rate</b>	-0.0145	0.3354	0.9217	1		
<b>Average New Hire Earnings</b>	-0.1541	0.4661	-0.0534	-0.1705	1	
<b>Average Monthly Earnings</b>	-0.1689	0.4609	-0.1589	-0.2693	0.9746	1

Source: Author's calculation based upon LED

There is strong positive correlation between average new hire earnings and average monthly earnings. This is because counties with higher average earnings also typically have higher average new hire earnings and vice versa. The correlations between unemployment rate and earnings are negative. This alludes to the fact that tight labor market often leads to lower earnings. The strong positive correlation among hire rate, separation rate and vacancy rate confirms the fact that there is substantial labor market churning.

### **SPATIAL PATTERNS IN LABOR FLOWS**

The descriptive statistics above shows lot of variation in all the labor market variables across counties and within counties. In this part, we will analyze if there are any regional or geographical patterns in these variations. We will primarily focus on the effect of big cities on the movement of labor market variables.

Historically, cities being the hub of economic activities, it is expected that labor market behavior will be substantially different from areas surrounding them. For the analysis purpose, we considered the cities with population of 90,000 or more. According to the latest census data, Albany, Rochester, Syracuse, Buffalo and New York City are the cities in NYS with population of more than 90,000. To understand the regional effects, we analyzed the counties adjoining the county in which the selected city is situated. For example, the city of Rochester is situated in Monroe County; hence it is compared with the adjoining Livingston, Genesee, Ontario, Orleans and Wayne County.

Typically, unemployment rate and the separation rates are much lower in counties with a big city than its level in adjoining counties. On the other hand vacancy rate, average new hires wage and average monthly wage is much higher. Fig. 1-5 and Table 2-6 show the behavior of unemployment and vacancy rate in the counties surrounding Albany, Rochester, Syracuse, Buffalo and New York City. In all the cases, unemployment rate is lower than average in the big city counties. This is expected given the fact that often big cities are the hub economic activities. Vacancy rate is higher than the adjoining counties for all the cities except for Rochester, where Ontario and Genesee counties have higher vacancy rate. NYS do not have any big city or metropolitan area in the northern part of the state. These upstate counties are Clinton, Essex, Franklin, Jefferson and St. Lawrence. Fig 6 and Table 8 show the behavior of unemployment and vacancy rate in the upstate NYS counties. Both vacancies and unemployment rates along with average new hire earnings and average monthly earnings are very similar across these counties. This confirms the fact that big cities have impact on the behavior of labor market variables.

Fig 7-12 and Table 2-6 show the behavior of hiring rate and separation rate. Separation rates are typically lower in the counties with a big city, on the other hand hiring rate do not show any persistent trends based upon geography. Fig 13-18 shows the behavior of average new hire wage and the average monthly wage. Typically, big city counties have substantially higher new hire wage and average monthly wage. Only exception is the Albany County, where average monthly earnings are highest in the Schenectady County. This can be explained by the existence of GE in Schenectady.

## **POLICY IMPLICATIONS**

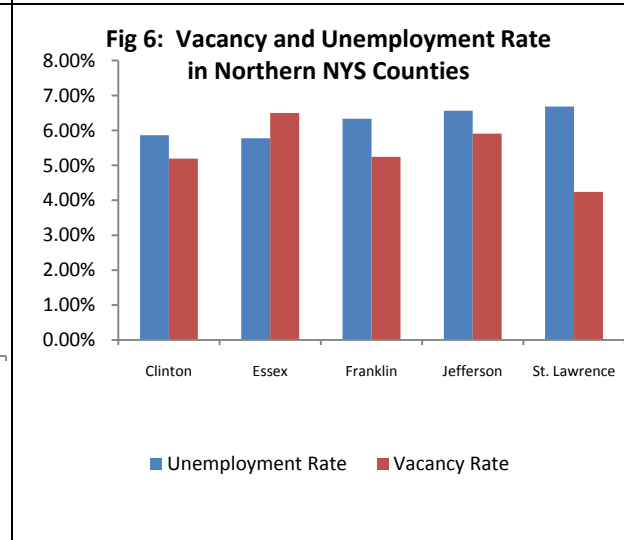
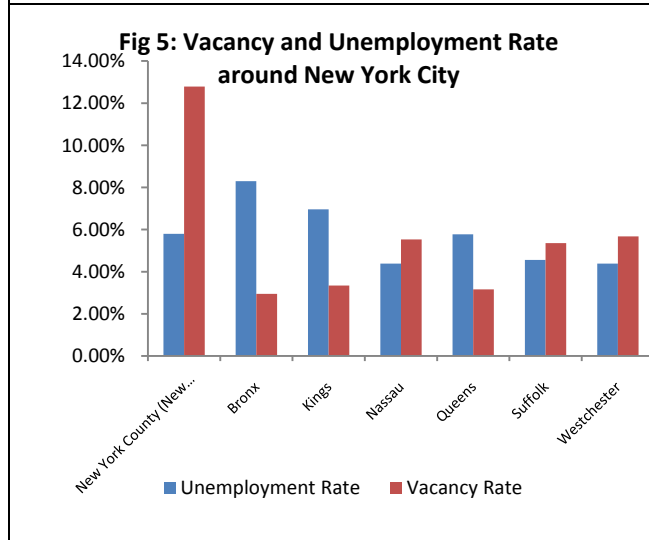
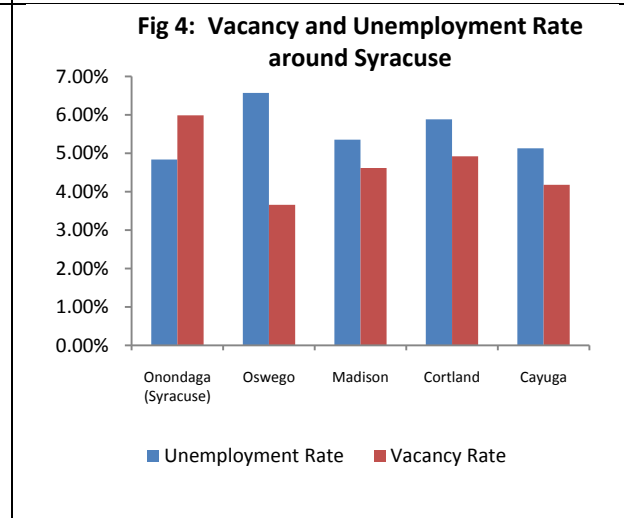
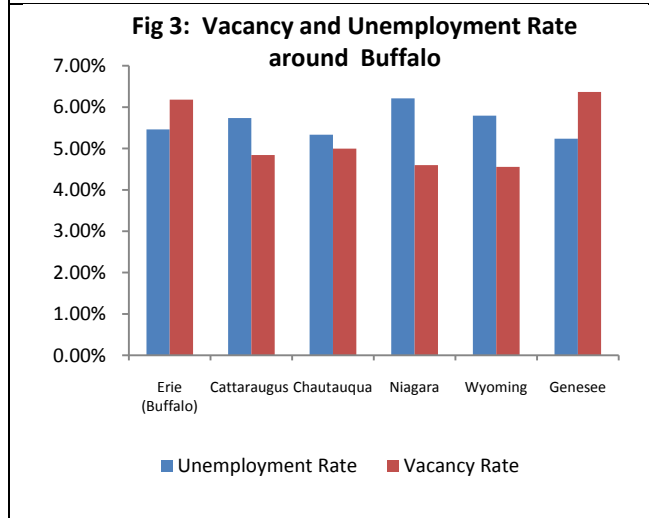
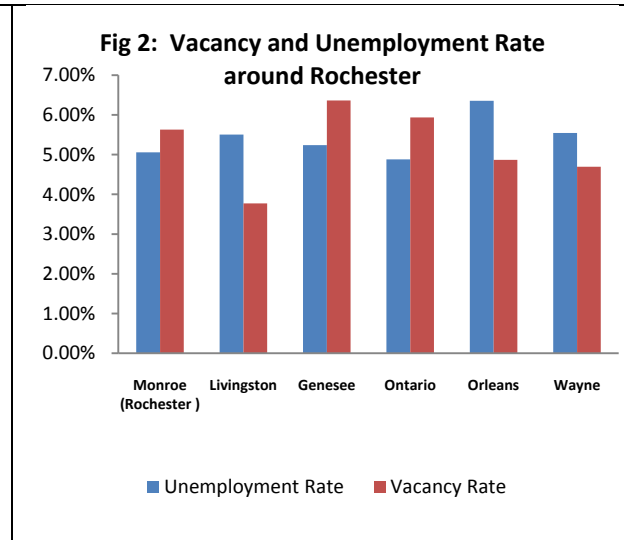
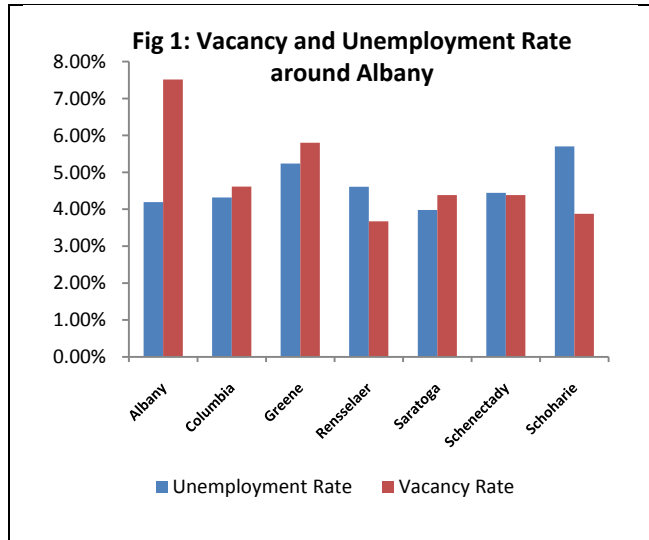
Above analysis of data clearly points to the fact that geography plays an important role in the labor market. Tackling the unemployment or any other labor market issues needs to have a strong local component. Often policies taken at the national or state level may not be appropriate or efficient in tackling the labor market issues. Recently policy makers with the help of LED data started understanding this issue. For example, LED has been used for the targeted response to economic shocks (Saleh, 2009). In the state of New Jersey, information from LED has been used to provide relief to dislocated workers in the wake of financial crisis. LED data can also be used for economic assessment and industry targeting. The gender and age specific information can be used for better targeting of the groups in need.

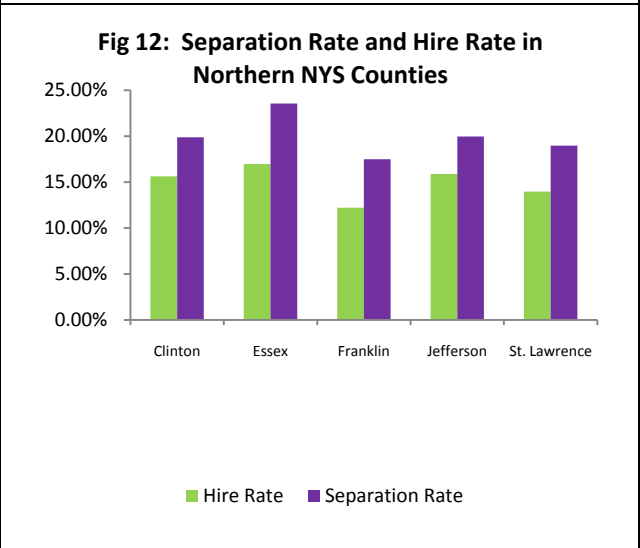
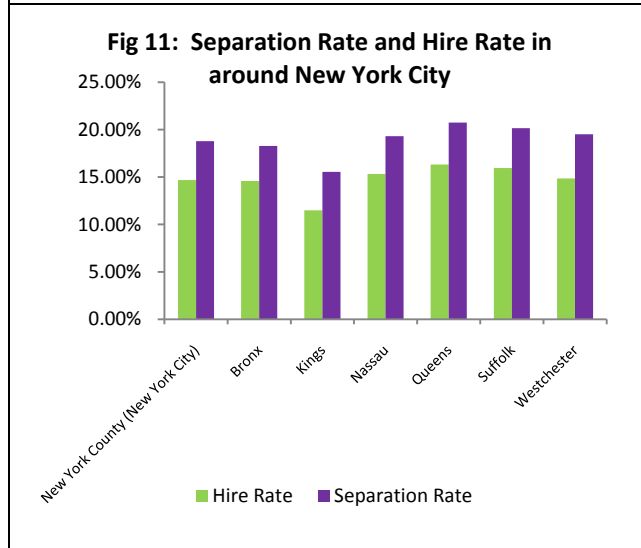
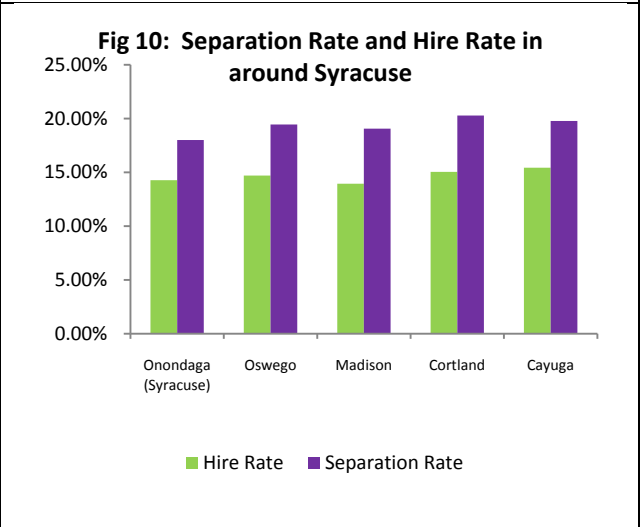
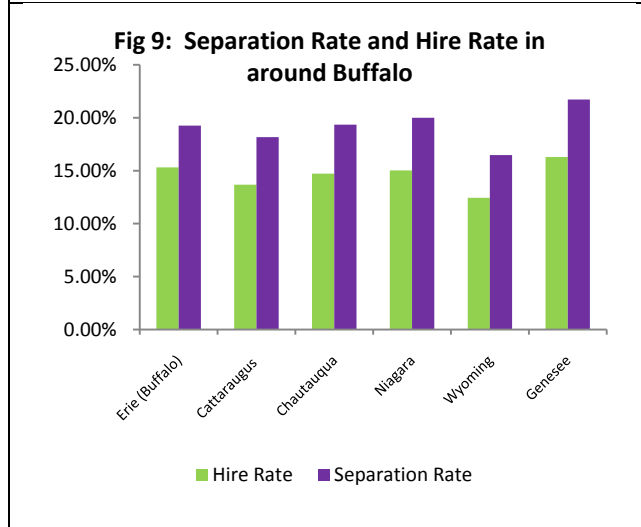
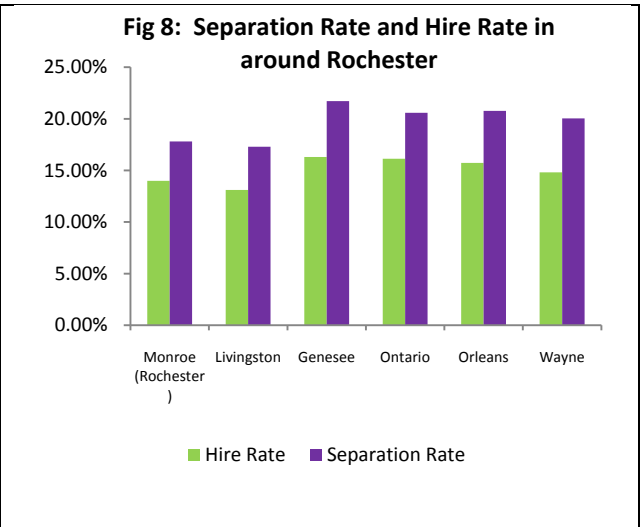
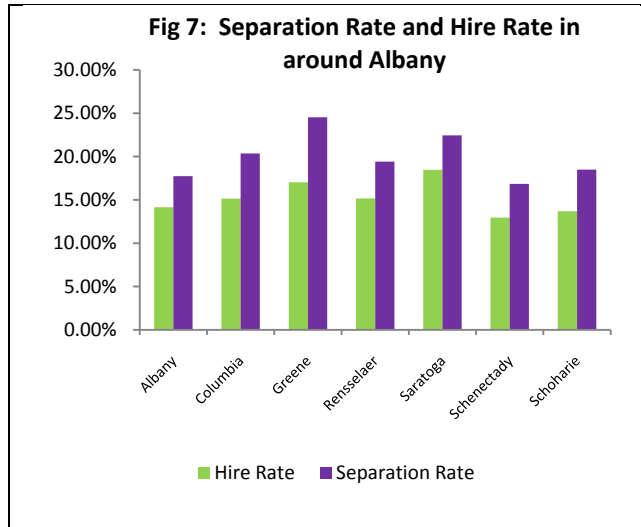
## CONCLUSION

Understanding the labor market variables at the local level is the key in understanding the problems related to the labor market. Appreciating the fact that the geography plays an important role in understanding the behavior of labor market variables may help the policy makers to address the labor market issues more effectively. The existence of spatial disparities in the market confirms the markets are not efficient. If markets were efficient, then the equilibrating forces of capital and labor mobility and change in relative prices would eventually eliminate unemployment above frictional levels. With the advent of data sets like LED will help the policy make's to understand the labor market outcomes much better and take the market inefficiencies under consideration before taking any economic policy.

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**Fig 13: Average New Hire and Average Monthly Earnings around Albany**



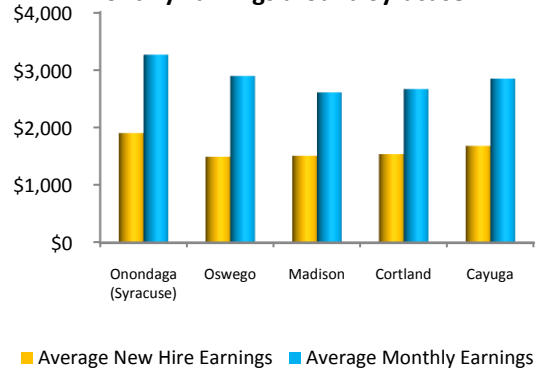
**Fig 14: Average New Hire and Average Monthly Earnings around Rochester**



**Fig 15: Average New Hire and Average Monthly Earnings around Buffalo**



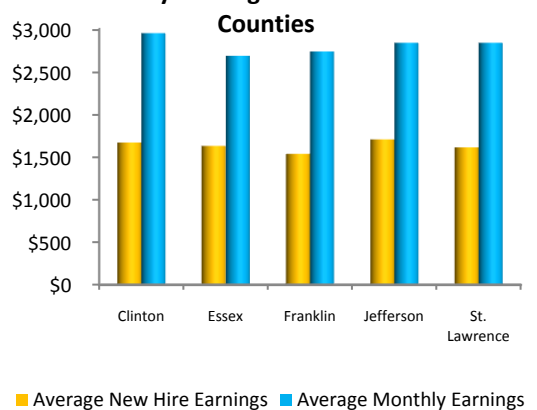
**Fig 16: Average New Hire and Average Monthly Earnings around Syracuse**



**Fig 17: Average New Hire and Average Monthly Earnings around New York City**



**Fig 18: Average New Hire and Average Monthly Earnings in Northern NYS Counties**



**Table 2: Summary Statistics of Counties adjoining Albany**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
Albany	\$2,118	\$3,676	4.19%	7.51%	14.15%	17.73%
Columbia	\$1,669	\$2,737	4.32%	4.61%	15.15%	20.35%
Greene	\$1,683	\$2,889	5.24%	5.80%	17.03%	24.52%
Rensselaer	\$1,852	\$3,030	4.61%	3.67%	15.16%	19.42%
Saratoga	\$1,785	\$3,035	3.98%	4.38%	18.47%	22.44%
Schenectady	\$2,159	\$3,803	4.44%	4.38%	12.95%	16.84%
Schoharie	\$1,549	\$2,733	5.70%	3.88%	13.69%	18.50%
Average	\$1,831	\$3,129	4.64%	4.89%	15.23%	19.97%
Std. Dev	231.12	436.04	0.61	1.34	1.93	2.72
Max – Min	\$610	\$1,071	1.72%	3.84%	5.52%	7.68%

**Table 3: Summary Statistics of Counties adjoining Rochester**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
Monroe (Rochester )	\$1,908	\$3,334	5.06%	5.63%	13.99%	17.80%
Livingston	\$1,533	\$2,758	5.50%	3.77%	13.10%	17.30%
Genesee	\$1,507	\$2,590	5.24%	6.37%	16.30%	21.72%
Ontario	\$1,709	\$2,908	4.88%	5.94%	16.14%	20.58%
Orleans	\$1,563	\$2,680	6.35%	4.87%	15.74%	20.77%
Wayne	\$1,755	\$2,837	5.54%	4.69%	14.82%	20.04%
Average	\$1,662	\$2,851	5.4%	5.2%	15.0%	19.7%
Std. Dev	156.14	261.74	0.52	0.95	1.28	1.76
Max – Min	\$401	\$744	1.47%	2.59%	3.19%	4.43%

**Table 4: Summary Statistics of Counties adjoining Buffalo**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
Erie (Buffalo)	\$1,861	\$3,147	5.46%	6.18%	15.32%	19.26%
Cattaraugus	\$1,521	\$2,574	5.73%	4.84%	13.68%	18.18%
Chautauqua	\$1,592	\$2,657	5.33%	5.00%	14.73%	19.35%
Niagara	\$1,622	\$2,719	6.21%	4.60%	15.03%	19.99%
Wyoming	\$1,631	\$2,797	5.80%	4.55%	12.44%	16.48%
Genesee	\$1,507	\$2,590	5.24%	6.37%	16.30%	21.72%
Average	\$1,622	\$2,747	5.63%	5.26%	14.6%	19.16%
Std. Dev	127.57	212.72	0.36	0.81	1.35	1.76
Max – Min	\$354	\$574	0.97%	1.81%	3.86%	5.24%

**Table 5: Summary Statistics of Counties adjoining Syracuse**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
<b>Onondaga</b> (Syracuse)	\$1,903	\$3,264	4.84%	5.99%	14.27%	18.01%
<b>Oswego</b>	\$1,491	\$2,895	6.57%	3.66%	14.70%	19.46%
<b>Madison</b>	\$1,510	\$2,610	5.35%	4.62%	13.94%	19.06%
<b>Cortland</b>	\$1,539	\$2,665	5.88%	4.92%	15.05%	20.29%
<b>Cayuga</b>	\$1,680	\$2,848	5.13%	4.18%	15.44%	19.78%
<b>Average</b>	\$1,625	\$2,856	5.55%	4.67%	14.68%	19.32%
<b>Std. Dev</b>	172.27	257.54	0.69	0.88	0.60	0.86
<b>Max – Min</b>	\$412	\$654	1.74%	2.33%	1.50%	2.28%

**Table 6: Summary Statistics of Counties adjoining Rochester**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
<b>New York</b> <b>County</b>	\$4,509	\$7,575	5.80%	12.79%	14.68%	18.79%
<b>Bronx</b>	\$2,202	\$3,478	8.30%	2.95%	14.58%	18.29%
<b>Kings</b>	\$2,115	\$3,887	6.96%	3.35%	11.49%	15.55%
<b>Nassau</b>	\$2,380	\$4,039	4.39%	5.53%	15.33%	19.32%
<b>Queens</b>	\$2,338	\$3,541	5.77%	3.16%	16.32%	20.75%
<b>Suffolk</b>	\$2,269	\$3,916	4.56%	5.36%	15.96%	20.16%
<b>Westchester</b>	\$2,899	\$4,726	4.39%	5.68%	14.86%	19.52%
<b>Average</b>	\$2,673	\$4,452	5.74%	5.54%	14.75%	18.91%
<b>Std. Dev</b>	848.20	1436.67	1.48	3.41	1.58	1.69
<b>Max – Min</b>	\$2,394	\$4,097	3.91%	9.84%	4.84%	5.20%

**Table 7: Summary Statistics of Counties in Northern NYS**

County	Average New Hire Earnings	Average Monthly Earnings	Unemployment Rate	Vacancy Rate	Hire Rate	Separation Rate
Clinton	\$1,669	\$2,953	5.86%	5.19%	15.63%	19.88%
Essex	\$1,630	\$2,687	5.78%	6.50%	16.97%	23.56%
Franklin	\$1,535	\$2,738	6.33%	5.24%	12.22%	17.49%
Jefferson	\$1,705	\$2,841	6.56%	5.91%	15.90%	19.97%
St. Lawrence	\$1,612	\$2,840	6.68%	4.24%	13.97%	18.98%
<b>Average</b>	\$1,630	\$2,812	6.24%	5.42%	14.94%	19.98%
<b>Std. Dev</b>	64.27	103.00	0.41	0.85	1.86	2.24
<b>Max - Min</b>	\$170	\$266	0.91%	2.26%	4.75%	6.07%

Source: Author's calculation based upon LED