

Hiring and Job Posting Trends

2nd phase research findings for Metro Detroit

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Analysis Overview/Project Update

During fall 2013, the WIN team gathered data from Burning Glass Technologies and the Bureau of Labor Statistics and attempted to find a connection between online job postings and net employment change. If such a connection indeed existed the team would then try to identify an approach to use online job postings for workforce planning. The analysis proved fruitful and showed that in the state of Michigan from 2010 through 2013 each online job posting resulted in half of a new job. Or, put more simply, each new job in the state had an associated two online job postings. The graphic analysis was also compelling highlighting how both employment changes and job postings moved in similar patterns. These findings emphasized that there is a true connection between online job postings and employment/hiring and the need for more research to identify a method for utilizing postings in a strategic manner.

The 2nd phase of this research is by no means complete but the initial findings shed additional light on the connection between postings and hiring. During this phase the WIN team focused efforts on hiring data rather than aggregate employment changes. While this nuance may seem trivial, hiring data allowed the team to identify churn in the economy versus true new job creation. One road block to continuing the analysis was that Burning Glass had a large retroactive system update that shifted their de-deduplication model and changed posting levels for all past data. This update rendered the data collected by WIN unusable and the team had to start from the beginning to re-gather all posting data for the project.

WIN had the opportunity to work closely with the Council for Economic Development (CED) and a group of graduate students at The George Washington University (GWU) completing their end of program capstone project. The partnership with CED and GWU allowed WIN to expand upon the 1st phase of research in several ways. First, the students were able to update the Burning Glass data in WIN's database as it had been retroactively updated by the company since WIN's initial analysis. Second, the students focused their efforts on the three counties surrounding metro Detroit and gathered information for individual industries as well as the economy as a whole and focused their efforts not on job growth but on hiring specifically. Finally, the GWU students were able to take the WIN econometric model and put it into play. With WIN's guidance the GWU students created several economic models that teased out the connection between postings and hiring while holding other factors constant.

The following summary is a review of the 2nd phase analysis.

Hypothesis

The 2nd phase analysis has several associated hypotheses.

1. By looking more closely at the Detroit region, the findings from the state-level analysis in phase 1 will prove not to carry over but instead will show increased hiring/employment activity in relation to postings, or more hires per posting. WIN projects that because the labor market in the metro Detroit area is more active more fluctuation will occur in hiring, and in the relationship between hiring and postings, than was found in the state-level analysis.
2. Postings and hiring will follow reverse trends with postings increasing when hires decline and postings dropping as hiring increases. This follows general logic that postings must precede hires.

- Each industry analyzed will follow a different trend with retail experiencing the most construction experiencing the highest number of hires per posting (due to low posting trends) and retail experiencing the least hires per posting (due to high posting trends) and professional services having nearly equal hires and postings.

Scope

The scope of this phase looks at the tri-county area surrounding the City of Detroit, Macomb, Oakland, and Wayne counties. This summary focuses on all postings and hires in aggregate and several select industries. The variables focused on during this phase include: total hires per job posting, total new hires per posting, net new jobs per posting, and churn per posting. The data used for this analysis is monthly and ranges from January 2010 to June 2014.

Phase 2 Preliminary Findings

- On average, from January 2010 to June 2014, each online job posting was associated with nine total hires in the metro Detroit economy. Two of those hires represent replacement jobs or recalled hires¹ and seven are new hires². There is, on average each month, a one to one relationship for postings to net new jobs in metro Detroit in this time period. Subtracting net new jobs from total hires provides the number of hires that represent churn or turnover in the labor market. The data from metro Detroit indicate that eight hires per posting are churn-related. Churn or turnover, are individuals who are not increasing total employment statistics but rather those who are already employed and moving from one job to another in a given time-period.
- The median values for the five metrics analyzed are not far from the average. This is a good sign. When the median values are close to or equal to the average the data has a relatively normal distribution. This makes analysis simpler without as much need for manipulation to make inferences.
- The data range is broad. The maximum numbers of hires per posting, new hires per postings, and churn per posting are quite high at 30, 25, and 31, respectively. At its highest, net new jobs per posting in a given month was 16. The only data point without an “outlier” worthy maximum is replacement/recalls hires per posting with its maximum value of six. This is the most stable of the variables as its minimum and maximum are both only a few values away from each other. Minimums are less drastic for all of the metrics. As net employment change in a given month may be positive or negative as the economy shifts, the minimum for net employment change per posting is negative six. Churn per posting has a minimum of negative 0.4, but rounds to zero. During the analysis time-frame, there were a minimum of four hires per posting in a given month, with three of those being new hires. Even at minimum levels, hiring activity is still strong in the Detroit area.

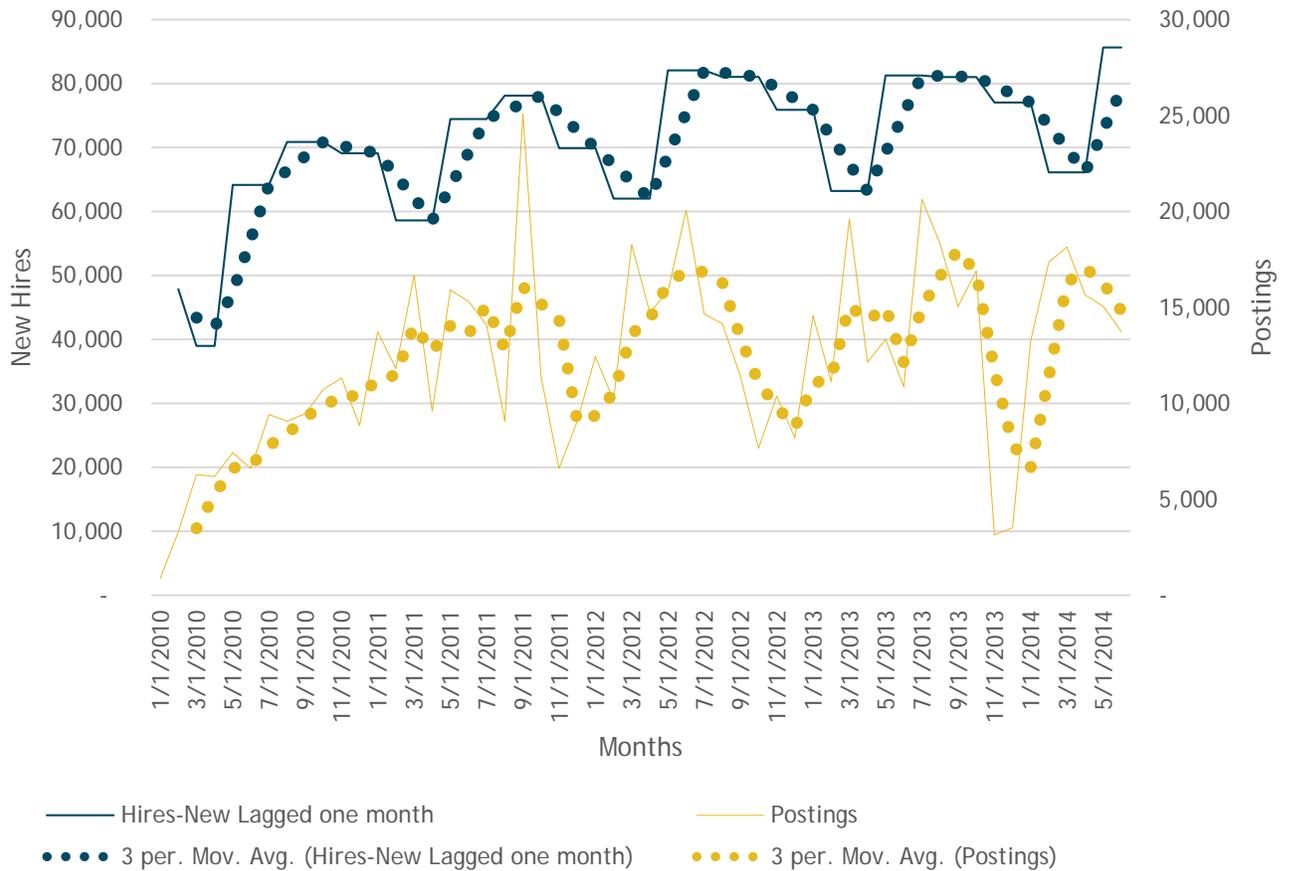
Jan/2010-June/2014 HIPO Stats	Average	Max	Min	Median
Hires per Posting	9	30	4	8
Replacement/Recall Hires per Posting	2	6	1	1
New Hires per Posting	7	25	3	6
Net Employment change per Posting	1	16	(6)	0
Churn per Posting	8	31	(0)	7

*Data: Burning Glass Technologies, Local Employment Dynamics/Census
Analysis: Workforce Intelligence Network*

¹ Recalled hires are individuals who return to an employer they have previously worked for in the same year.

² New hires are individuals who are hired by an employer for which they have not worked for in the past four quarters.

New Hires versus Postings: Wayne, Oakland, Macomb Counties



4. The graph above highlights several findings:

- As the Detroit economy moved out of the recession, postings and new hires³ have both been an upward trend. During 2010, the trend had no business cycle but instead was a strong linear increase. Hires had the strongest slope in 2010, but postings increased in a strong linear fashion as well.
- After 2010, postings and hires moved in an expected business cycle. As hiring increased, postings declined, then postings increased and hiring would decline but soon peak up again. Following the dates in the graphic it is easy to see the seasonal nature of hiring and postings.
- Hiring peaks in Q4/Q1 of 2012/2013 and 2014/2014 reach similar levels each year topping out at close to 80,000 total hires. While the previous peaks had each increased, the two most recent (given the data available) were did not increase but instead mimicked a stable, steady-state hiring cycle. Postings followed a similar pattern during that time and had less of an upward trend.

³ New hires are used as the benchmark rather than recalls/replacement hires. We do this for two reasons. One, recall/replacement hires is a more stable variable with little fluctuation. As it does not have a pattern it will not likely show much of the relationship between hiring and posting. Also, replacements and recalls are only focused on individuals who have worked for their employer before in a given year while new hires captures all new hires, even employees who may have worked for that same employer in years past.

Preliminary Conclusions and Observations

The findings from this portion of phase 2 in the research bring us to several conclusions.

1. With each posting, on average, bringing in so many hires but only one net new job, churn is one of the most important factors to understand in the Detroit market. The labor force has been stagnant for several years and it follows that employers are going to recycle through many workers rather than increase total employment because they have fewer options of new workers.
2. If churn is represented as eight individuals per posting, in a given month on average, this means that individuals in the labor force are shifting jobs and employers rapidly. Hopefully, these shifts provide upward mobility to many workers. However, the WIN team believes that churn is likely more common in certain industries more than others. This metric will be further analyzed at the industry level.
3. The hiring market is stagnating. The graph on the previous page shows a telling visual of this fact. Hiring is following a standard business cycle but in the two most recent years of data hiring peaks at the same levels. In a growing economy, each peak is slightly higher than the last even though the data follows an annual business cycle. Similar to conclusion number one above, the level-labor force is going to cause employers to cycle through workers year over year as newer individuals are not joining the ranks of workers. A labor market with no growth is a negative sign for the overall economy. More data is needed to further explore this trend.

Next Steps

The data needs more in-depth analysis and phase 2 of this project is continuing. The WIN team is analyzing different industries to better capture the industry by industry nuance in hiring and posting behavior to continue to identify details in the relationship between posting, hiring, and employment change. Also, the team is working closely to fine tune with econometric model that will hopefully we able to help get the team closer to a “causal” answer to the research questions. Finally, as more hiring data becomes available from Local Employment Dynamics (the source lags release of data by about one year), the team will continue to update this analysis.

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