Chapter 7
Modeling Labor Market Flows on the Basis of Sectoral Employment in Europe

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ABSTRACT

By tracking the cross-sectoral distribution of employment growth, it is possible to significantly improve the ability to understand aggregate fluctuations of labor force. Adequate model can provide information which sectors have stronger impact on unemployment-to-employment transitional probability. The main goal of this research is modeling the influence of sectoral employment on outflow rate across Europe during economic crisis. Authors argue that shifts in sectoral demand have strong influence on cyclical variation in unemployment-to-employment transition. Study also uncovers highly linear relationships of outflow rate from unemployment to employment and job flows at sectoral level. Empirical data proved a strong positive correlation between dispersion of employment growth across sectors and outflow rate in Europe. Shifts in demand from some sectors to the others are responsible for significant fraction of unemployment-to-employment transition probability. Reallocation shocks accounted for about 70 to 80 percent variability of outflow rates across Europe, during the 2008-2012.

INTRODUCTION

The importance of sectoral reallocation as a source of labor market flows is well known fact and it is often cited in scientific literature. Sector specific shocks are changing the pattern of labor market demand among sectors. On the basis of relation between different sectors and indicators of unemployment flows it is possible to discover which sectors are more correlated with creation of jobs and leaving the unemployment status during the recent years. By tracking the cross-sectoral distribution of employment growth, and through implementation of robust models of sectoral behavior, it is possible to significantly

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improve the ability to understand aggregate fluctuations of labor force. This information is very significant for policy makers in order to create labor market policies in efficient way. The econometrical model will provide us with information which sectors have stronger impact on reduction of unemployment throughout Europe in the last several years.

In scientific literature significant number of theoretical models of labor market are trying to explain labor market flows (hires and separations) and job gains and losses at the individual level. Authors are trying different approach, starting from sectoral-level and cross-sectional data to study the relationship between unemployment-to-employment transitional probability and job flows over five years, from 2008 to 2012. The similar approach is possible to find in Davis, Faberman, and Haltiwanger (2011). The five year period is in focus because it covers the period of "great recession" as it was named in the paper from Christiano et al. (2014).

The main goal of the research is to analyze the influence of employment shares across industrial sectors on outflow rate in European countries. Authors argue that shifts in labor demand among sectors, rather than changes in the level of aggregate demand, are the cause of cyclical variation in unemployment-to-employment transition in Europe. This study also uncovers highly linear relationships of outflow rate from unemployment to employment and job flows at sectoral level. Specific implications of the findings will be better policy measures in the field of labour market across different sectors. If we understand how different sectors behave during economic crisis in terms of employment and unemployment, it is possible to develop specific policy measures targeting sectors with greater impact on outflow rates in order to mitigate the negative effects of economic crisis on labor force.

Outflow rate is the measure of how fast an unemployed person can find a payed work (unemployment-to-employment transition). This is actually a probability of unemployed person to find a job, and it corresponds to instantaneous rates of transition on a monthly basis. There is also the inflow rate as a probability for employed person to become unemployed. Both indicators were calculated on the basis of ILO methodology. More on indicators of labor market flows can be found in Elsby et al. (2013), Shimer (2007), or Shimer (2012).

Inflow and outflow rates were designed to overcome simple stock approach and to help in more detailed analysis of labor market fluctuations and to understand the variation of unemployment from two aspects:

1. Employment-to-unemployment (separations); and
2. Unemployment-to-employment (job findings).

These measures of transition from one state to another are useful tool for targeting labor market policies in a specific way at certain subgroups of labor force or tool for adjusting the same policies and recommendations in accordance with domination of one kind of transition over another. Inflow and outflow rates are especially informative when they are analyzed in the context of economic cycles to better understand labor market upturns and downturns.

When it comes to the unemployment dynamics, there are differences in the scientific literature what leads cyclical changes in unemployment: inflows or job findings (outflows). One part of the researchers is claiming that unemployment-to-employment transition dominates and employment-to-unemployment transition has no cyclical impact. These findings were given by King (2011), Hall (2005), Shimer (2007), Shimer (2007), Gali and Blanchard (2008), Gertler and Trigari (2009), etc. According to King, the importance of unemployment-to-employment is very significant: "In summary, the results show that, while vacancies and separations both account for significant fractions of the cyclical fluctuations in