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The accumulation of human capital and the sectoral shifts hypothesis for different age groups

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Abstract

This paper examine Lilien's sectoral shifts hypothesis for Japan for different age cohorts. Previous studies of the sectoral shifts hypothesis for Japan have for the most part concentrated on the relationship between aggregate unemployment and sectoral shifts, and are typically not supportive of the hypothesis. However, recent increases in the unemployment rates of the young and the aged suggest a need to reexamine the hypothesis for different age groups. It is found that sectoral shifts have a short-term positive effect on the unemployment of aged male workers, and that the effects increase in times of recession.

Keywords: Unemployment; Sectoral shifts hypothesis; Age cohort effects; Time series analysis; Generated regressors

1. Introduction

The purpose of this paper is to test the sectoral shifts hypothesis for the unemployment rate of males aged 15–24 and 55–64 years in Japan. Lilien's sectoral shifts hypothesis asserts that sectoral shifts of demand affect unemployment because labour reallocation across sectors is a time consuming process [9]. The focus on the impact of sectoral shifts on unemployment in different age groups is the major novelty of this paper.

Using annual post-war data for the United States, Lilien [9] estimated a reduced form unemployment equation that included current and lagged values of a cross-sectoral dispersion measure (Lilien's sigma) and a monetary disturbance measure. Following Lilien's [9] finding of a statistically significant positive relationship between the dispersion measure and the unemployment rate, the debate on this issue in the United States has concentrated on the appropriate way to measure sectoral shifts and the importance of stage-of-business cycle effects [1,2,5,10].

Abraham and Katz [1,2] argue that aggregate demand disturbances can induce countercyclical movements in Lilien's dispersion measure. When Lilien's sigma is purged of the influence of aggregate demand

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shocks, Abraham and Katz [1] find that this purged proxy variable can explain only a small fraction of unemployment fluctuations in the United States. In contrast, Davis [5] suggests that Lilien's sigma fails to take into account the possibility of stage-of-business-cycle effects on the sectoral shifts hypothesis. If the value of foregone production associated with unemployment is procyclical, then there will be incentives for unemployment spells to be shorter during expansions and longer during recessions. Therefore, a given amount of labour reallocation may lead to underestimating unemployment when aggregate macroeconomic conditions are improving and vice versa. Taking these suggestions into consideration, Mills et al. [10] provide evidence to support the sectoral shifts hypothesis for the United States.

In contrast, the evidence for Japan does not support the sectoral shifts hypothesis for the aggregate unemployment rate [4,12]. However, Sakata [12] finds that sectoral shifts affect male unemployment, but not female unemployment, and speculates that gender differences in the accumulation of human capital may play a crucial part in explaining these differences. Sakata's [12] findings suggest that it is important to examine Lilien's hypothesis for different cohorts, and that the findings for the aggregate unemployment rate can be deceptive.

If as Sakata [12] speculates the effects of sectoral shifts on unemployment depend on the accumulation of industry-specific human capital by workers, then sectoral shocks may have a large impact on older workers who have accumulated large amounts of human capital. In contrast, sectoral shocks may have a small (or no) impact on young workers who have yet to accumulate very much human capital. Sakata [12] indicates that there are gender differences in the effects of sectoral shocks on unemployment, and therefore, the analysis will focus on male unemployment. Unemployment rates of male workers in the age groups 15–24, U15, and 55–64, U55, are significantly higher than the aggregate unemployment rate, U, and this difference seems to be widening recently (Fig. 1). In the context of the aging population and casualisation of the youth workforce, it is important to scrutinize the effects of sectoral shifts on these two groups.

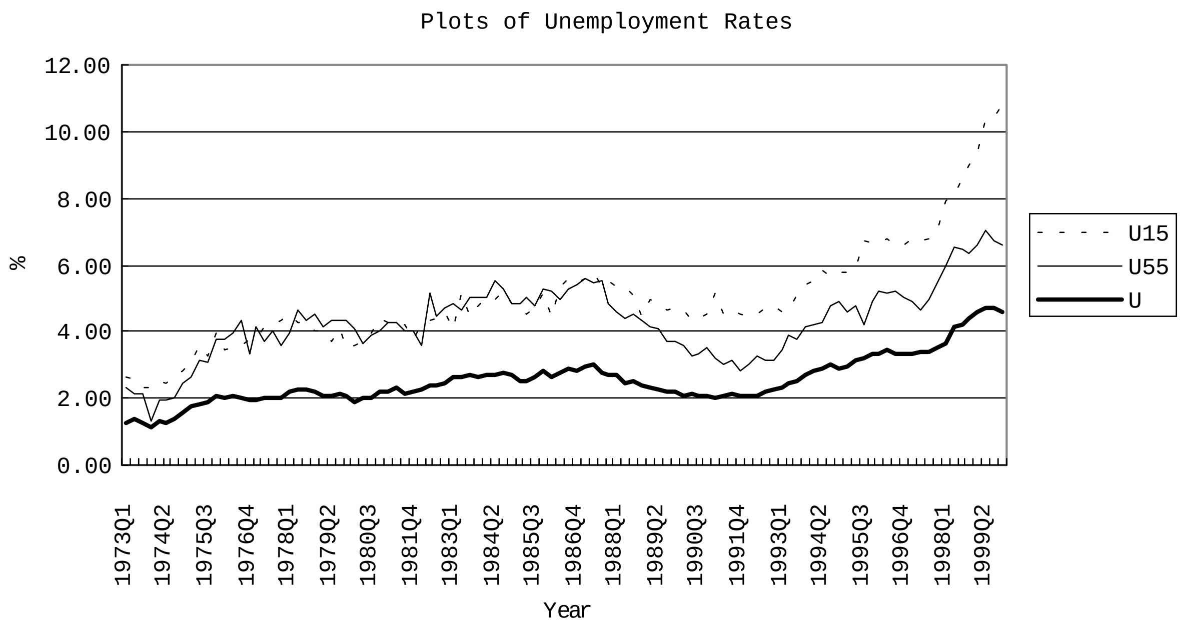

Fig. 1. Plots of unemployment rates.