



Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Review of Economic Dynamics 8 (2005) 89–105

Review of
Economic
Dynamics

www.elsevier.com/locate/red

Sectoral shocks, human capital, and displaced workers

Richard Rogerson

Department of Economics, University of Pennsylvania, Philadelphia, PA 19104, USA

Received 10 September 1999; revised 29 December 2003

Available online 2 October 2004

Abstract

This paper extends the Lucas–Prescott island economy to allow for finite lived agents and sector specific human capital. Unlike the Lucas–Prescott model in which workers who leave declining sectors find employment in expanding sectors, this model predicts that workers who leave declining sectors may simply become non-employed, whereas increased employment in expanding sectors is accomplished by increasing the rate at which new entrants enter the sector.

© 2004 Elsevier Inc. All rights reserved.

1. Introduction

Change in the sectoral or occupational composition of employment is a phenomenon common to all modern industrialized economies. One theoretical formulation of this phenomenon is the island model of Lucas and Prescott (1974). In their model there are a large number of sectors (or occupations) where output is produced and a large number of infinitely lived workers. Each sector is subject to idiosyncratic productivity shocks and moving workers across sectors requires time. The steady state of their model is characterized by a joint distribution of employment and wages across sectors and a positive level of unemployment. Although the distributions of sectoral variables are constant over time, individual sectors are continually evolving and thus changing places within the aggregate distribution.

E-mail address: rogerson@econ.sas.upenn.edu.

1094-2025/\$ – see front matter © 2004 Elsevier Inc. All rights reserved.
doi:10.1016/j.red.2004.05.004

Unemployment results because workers move from low productivity, contracting sectors to high productivity, expanding sectors, and this movement necessitates unemployment.

While this model captures an important element of the process by which labor is reallocated across sectors, there are some aspects which it does not capture. In particular, a finding that is common to virtually all empirical studies of displaced workers is that older displaced workers suffer very long spells of non-employment and/or substantial losses in earnings. (See, for example, Jacobson et al., 1993.) Outcomes for these workers are apparently not well captured by the Lucas–Prescott model or many of its variants that have appeared in the literature, since these models imply that the workers entering the expanding high productivity sectors are exactly those workers who leave employment in the adversely affected sectors. Also, evidence in Murphy and Topel (1987) and Kim and Topel (1992) suggests that adjustments in sectoral employment tend to be concentrated among new cohorts, with expanding sectors tending to bring in many more young workers, and declining sectors tending to bring in many fewer young workers.

This paper modifies the Lucas–Prescott model along two dimensions in order to address these observations. First, agents are assumed to be finitely-lived. Second, it assumes that human capital is accumulated via a learning by doing technology and that this human capital is sector specific. It is intuitive that these two features make it possible that older workers with specialized skills will suffer most in response to a negative sectoral shock. The model also relaxes the costly mobility assumption of the Lucas–Prescott model: it is assumed that there is no time or resource cost associated with moving labor across sectors. The combination of finite lifetimes and specific human capital will rule out mobility in equilibrium. Lastly, it is assumed that there is some value to not working in the market, corresponding either to leisure or home production. Hence, in this model all non-employment results from market wages being insufficient to compensate workers for their time.

The framework of the model is a two-sector overlapping generations model. Within this structure we analyze shocks that alter relative productivities across sectors, but which in a well defined sense leave the aggregate technology set unchanged. Following Black (1987), the analysis focuses on shocks that affect the match between skills and technology. Several results are obtained. First, individual workers in the model choose “careers,” in the sense that in equilibrium each new generation of workers is split into three groups: those who anticipate working in sector 1 for their entire life, those who anticipate working in sector 2 for their entire life, and those who do not work at all during their life. Second, the model produces an upward sloping wage profile, as measured by age or experience. Third, in response to the shocks described above, and in contrast to the Lucas–Prescott model, it is shown that there is no mobility of workers across sectors. All adjustments in sectoral employment shares come from two margins: changes in the rate at which young workers enter each sector, and “displacement” of old skilled workers in a given sector. In some states of nature, experienced workers end up not working when their sector is hit by a negative shock, i.e., not only do they not work in the sector in which they have accumulated experience, but also they do not move to the sector which has been hit by the positive shock. Lastly, the human capital accumulation process provides a mechanism which may lead to asymmetry in aggregate time series. In some situations, experienced workers in a declining sector are left idle, while the stock of human capital in the expanding sector is

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات