

## A TWO-SECTOR ECONOMIC GROWTH MODEL WITH ENDOGENOUS LABOR SHIFT AND ENDOGENOUS GROWTH CYCLES<sup>1</sup>

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**Abstract.** In this paper, a two-sector growth model with endogenous labor shift and endogenous growth cycles is given. Due to the wage difference, there is a flow of labor force from the sector with low wage rate to high wage rate. When the labor shift responds rapidly to the wage rate difference, the economy growth reveals cyclical fluctuations with contraction and the amplitude of fluctuations decays gradually as the economy develops. The economy grows smoothly without cyclical fluctuations when the labor shift responds slightly to the wage rate difference.

**AMS subject classification.** 91B62, 34C35

**Keywords.** Two sectors; economic growth, cycle fluctuation, labor force shift, asymptotic stability.

### 1 Introduction

This paper investigates the dynamic interaction between the labor force mobility among production sectors and aggregate economic growth. Our model consists of two independent production sectors. The sectoral wage rate difference brings about the shift of the labor force.

Several important considerations warrant the analysis of the labor force shift in the growth model. First, the wage difference encourages shifts of sectoral labor supply as workers leave low-wage sector to high-wage sector. The labor reallocation is a continuously dynamic process since the shifts are time consuming<sup>[1]</sup>. Second, the continuous adjustment of labor force has a persistent effect on the growth of aggregate economy. Finally, it has been of concern to us to inquire into the correlation between the growth cycles and the shift of labor.

It is usually believed that exogenous shock is the major source of the economic fluctuations<sup>[2-3]</sup>. The works of Lilien and Abragam et al.<sup>[4]</sup> imply that the shifts of the labor among sectors may be an important source of

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