Job-search and foreign capital inflow — A two sector general equilibrium analysis☆

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A B S T R A C T

The purpose of this paper is to extend the Fields’ (1989) multi sector job-search model by introducing international trade and capital. Two types of capital are considered: fixed capital and mobile capital. The effects of search intensity and the inflow of foreign capital on the volume and the rate of urban unemployment and on the social welfare are also examined in both of the two cases. The main finding is: more efficient on-the-job search from the rural sector raises unemployment rate when capital is mobile between the two sectors. This is counterproductive to the standard result.

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1. Introduction

Job search is an integral part of the labor market. The idea of job search was first introduced by Burdett and Mortensen (1978). Originally, the search theory was formulated to analyze unemployment. The idea of job search has been incorporated in the models of McCall (1970), Fields (1975, 1989), Majumder (1975), Stark (1982), Adam and Cletus (1995), Postel-Vinay and Robin (2002), Dolado et al. (2009), Hussey (2005), Sheng and Xu (2007), Flinn and Mabli (2008), Arseneau and Chugh (2009), Macit (2010).


Another important concept in job search is the ‘graduation theory’, according to which, it is beneficial to remain in the urban informal sector and search part time for a highly paid job in the urban formal sector.
However, this theory fails in the following circumstances: if the urban formal sector directly recruits from the rural sector (see Majumder, 1975), if urban informal sector workers prefer self employment to an urban formal sector job (see Squire, 1981) or if urban informal sector workers think of an urban informal sector job as a permanent source of income (see Sethuraman, 1981). Moreover, most of the theoretical models on the graduation theory adopts partial equilibrium analysis. Yet there are many factors, such as an imbalance of supply and demand in the analysis of the development of a Less Developed Country (LDC), intersectoral linkages etc., that partial equilibrium analysis cannot address. So, it is desirable to conduct a more general equilibrium analysis of job-search in order to highlight the process of job searching.

This paper builds on the two-sector labor market model of Fields (1975, 1989), by introducing capital and international trade into Fields’ framework. Fields (1989) argues that distinguishing between ex-ante and ex-post allocation of the labor force is important for understanding the effects on the unemployment rate. He finds that as long as rural migrants have a positive probability of finding a job in the urban sector, ex-ante and ex-post labor forces will differ, affecting the unemployment rate. In particular, Fields (1989) argues that in this setup, “given a constant agricultural wage, a more efficient on-the-job search from agriculture lowers the urban unemployment rate in equilibrium”. However, unlike Fields (1989), we assume a flexible and market determined rural sector wage. The present paper examines the role of search intensity and the inflow of foreign capital on unemployment and on social welfare. In particular, it attempts to show that in a job-search model for a small open economy with two factors of production, labor and capital, some of the results obtained in Fields are altered dramatically if capital is mobile across the sectors.

2. The model

The paper builds a two-sector job-search model for a small open economy. The two sectors are the rural sector (sector 1) and the urban sector (sector 2). $X_1$ is the export good which is produced in sector 1 and $X_2$ is the import good, produced in sector 2. The assumption of small open economy gives constant product prices in each sector. In the existing theoretical literature on trade and development the developing countries are considered as capital scarce and abundant in the supply of labor. Naturally, these economies are considered to be the exporters of labor-intensive (agricultural) commodities and importers of capital-intensive manufacturing commodities.

The two sectors use both labor and capital as inputs. The production function of all the sectors are subject to the Law of Equilibrium, product price is matched exactly by the unit cost of production function of all the sectors.

In the case of job-search, a person may get job in the sector where $\phi$ probability of getting urban formal sector job and earns zero, as unemployed if he becomes unsuccessful. The number of people searching urban formal sector jobs from the rural sector and earn rural wage.

The general equilibrium structure of the model is as follows.

The competitive profit conditions are given by the price unit cost equality:

$$W_1 a_{11} + R_1 a_{k1} = 1$$

(1)

$$W_2 a_{12} + R_2 a_{k2} = (1 + \tau)P_2 = P'_2.$$ 

(2)

The probability of getting urban formal sector job is:

$$\rho = a_{12}X_2 / \left( \phi_1 L_1^1 + L_2^2 \right)$$

(3)

where $(L_1^1 + L_2^2)$ is the total number of job seekers.

It is assumed that each worker searches for urban formal sector jobs, perhaps, because of its highest paying potentials. We consider two different job-search strategies: The first strategy describes full time jobs search as remaining unemployed at the beginning. We find this type of job search in Harris and Todaro (1970), Harberger (1971), Mincer (1976), Gramlich (1976), Stiglitz (1982) and McDonald and Solow (1985) and Fields (1989). If a person, searching full time for urban formal sector jobs, becomes successful, he can earn high urban formal wage with a specific probability of getting urban formal sector job and earns zero, as unemployed if he becomes unsuccessful. The second strategy is to remain in the rural sector and search part time for urban formal sector jobs. In this strategy, the success gives high paid urban formal sector jobs, while failure means to remain in the rural sector and earn rural wage.

In the case of job-search, a person may get job in the sector where he does not stay at the beginning. Thus, the number of ex-ante job seekers differs from the ex-post labor force. For this reason, Fields (1989) distinguishes between the ex-ante allocation of labor among different search strategies and the ex-post allocation of labor among different sectors. Each search strategy has expected income. In equilibrium, the expected income from the two strategies would be equal. Thus, the allocation of labor force among the two strategies is given by:

$$\rho W'_2 = \phi_1 W_2 + (1 - \rho_2)W_1.$$ 

(4)

The number of people searching urban formal sector jobs from the rural sector is $L_1^1$. Out of $L_1^1$, $\phi_1 L_1^1$ people get employment in the urban formal sector. Thus, the ex-post number of workers in the rural sector is:

$$a_{11} X_1 = L_1^1 (1 - \phi).$$

(5)

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$^2$ In this model we assume away the other factors like educational skills and innovation activities. These factors lead to externality.
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