

Econ 270C: Analytics of Economic Development
Problem Set 2 (Due Tuesday April 24, 2007)

Modeling Rural-Urban Migration

Imagine an individual choosing between living in her current rural location versus moving to her country's capital city. Individuals move to maximize expected earnings.

Production in rural areas is represented by the concave production function $g(L_R)$, where L_R denotes the amount of rural labor. For concreteness, let $g(L_R) = (1-a)^{-1}L_R^{1-a}$, where $a \in (0,1)$. The wage in the rural sector is denoted w_R . Assume that workers are paid the marginal product of their labor in this sector.

There are two urban economic sectors: (1) the formal manufacturing sector with concave production $f(L_M) = Z^*(1-b)^{-1}L_M^{1-b}$, where $b \in (0,1)$ and $Z > 1$, and (2) the informal sector, where the wage is set at the subsistence level, normalized to $w_I = 0$ for simplicity. The wage in the formal manufacturing sector is denoted w_M .

Let migration to urban areas be an irreversible decision, and for simplicity allow it to be costless here. Once one moves to the city, the odds of securing a manufacturing job are modeled as the ratio of manufacturing jobs to total urban employment, formally $L_M / (L_M + L_I)$. Total population is normalized to unity, $L_R + L_M + L_I = 1$.

The society is a small open economy, with prices for both the agricultural product and the manufactured product set at world prices (these are already captured in the production functions above). There is no labor mobility across countries.

a) Assume that workers in the manufacturing sector are paid the marginal product of their labor. In the absence of any labor market regulations, what is the equilibrium urban manufacturing wage w_M^* and the equilibrium number of manufacturing workers L_M^* ? How does this depend on model parameters a , b , and Z ?

[3 points] (Hint: Start with the equilibrium condition that denotes individual indifference between staying in rural areas and migrating to the city. A graphical approach may be useful)

b) Now imagine that the formal manufacturing wage is exogenously set at a level higher than the free market level, $w_M^{**} > w_M^*$. What is the impact of this change on the extent of rural-urban migration, and on rural wages?

[4 points] (Hint: This is in the spirit of the Harris-Todaro 1970 model.)

c) Discuss a political economy explanation for why urban wages might be set systematically above the free market level in less developed societies. How empirically plausible do you find this assumption?

[3 points] (Hint: You could refer to the argument in Bates 1981.)