

Occupational Choice and the Process of Development

Benerjee and Newman, JPE 1993
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1 Dynamics of occupational choices and development process

The motivational question -

- Reasons behind the evolution of different economics institutions (form of organization of production)

The paper connects occupational choices and income/wealth distribution, which in turn determines economic growth in this framework.

How occupational choice may affect process of development?

- Occupational choice, as defined here, refers to a contractual arrangement rather than a specific activity. e.g., self employment, factory workers, entrepreneurs.
- Development - a broad concept -
 - Economic growth (affected by economic variables such as savings, investment, risk bearing)
 - Transformation/evolution of economic institutions (form of organizational production)

The effect is not necessarily unidirectional.

Effect of developmental process on occupational choice may come through various channels

- Demand and supply of labour changes
- Demand for entrepreneurship evolves

This paper connects the two aspects through the intermediary roles of wealth/income distribution.

Implicit assumptions in the analysis

- An imperfect credit market, as we have seen in BU, access to credit is constrained by wealth (ability of provide collateral).
- Given the imperfect credit market and an initial wealth distribution, we will derive a pattern of occupational choice behavior.
- Occupational choice determines current period income, and through savings (of a part of income), we get the next period wealth distribution.

First part

Building a model that characterizes the effect of income distribution on occupational choice

A continuum of agents, and time is continuous.

In an interval of time dt , a measure $\lambda G_t(w) dt$ are active agents with wealth below w .

Agents are risk neutral with preferences

$$c^\gamma b^{1-\gamma} - z$$

It is easy to see that with $c + b = y$ (income), the maximum utility can simply be expressed as the following expression of income

$$\delta y - z, \text{ where } \delta = \gamma^\gamma (1 - \gamma)^{1-\gamma}.$$

Choice of occupation

There is a fixed safe asset, yielding a return \hat{r} .

1. (subsistence): Not working but investing wealth w on the safe asset.
2. (working labour): working at a wage rate, say v . It is easy to see that

$$v > \frac{1}{\delta} = \underline{v}$$

in order to induce choice of working.

Entrepreneurial projects are risky. It needs I amount of capital and one unit of labour and yields return

$$r = \begin{cases} r_0 & \text{with probability } q \\ r_1 & \text{with probability } 1 - q \end{cases} \text{ expected value } \bar{r}.$$

3. (Self-employment): Taking up an entrepreneurial project and use own labour in order to make it a success. When would that be feasible?

$$I\bar{r} \geq \frac{1}{\delta} + I\hat{r} \text{ and } I\bar{r} \geq \frac{1}{\delta} + Ir_0$$

Rearranging terms, we get the 'net effective return from investing effort in self-employment' must satisfy the following condition:

$$I(\bar{r} - \hat{r}) - \frac{1}{\delta} \geq \max\{0, I(r_0 - \hat{r})\}$$

Finally,

4. (Entrepreneurship): Employ μ individuals, use their labour to take up μ projects, pay them a salary v , and use your own labour to monitor them. We assume risky returns

$$r = \begin{cases} r'_0 & \text{with probability } q \\ r'_1 & \text{with probability } 1 - q \end{cases}$$

but with the same expected value \bar{r} .

In order to have it sustainable, we need the following:

$$\mu \left[I(\bar{r} - \hat{r}) - \frac{1}{\delta} \right] - \frac{1}{\delta} \geq \max \left\{ I(\bar{r} - \hat{r}) - \frac{1}{\delta}, \mu \left[I(r'_0 - \hat{r}) - \frac{1}{\delta} \right] \right\}$$

Markets

Labour market through wage contract

Capital market (assumed to be imperfect)

Suppose w amount of collateral is needed to borrow L . What should be the minimum value of w needed to borrow L ?

By repaying one gets,

$$V(L) - L\hat{r} + (w - w) = V(L) - L\hat{r}$$

By defaulting one gets

$$V(L) - \pi F - w\hat{r}$$

Comparing, we see that

$$L \leq w + \left(\frac{\pi F}{\hat{r}} \right)$$

Define:

$$w^* = I - \left(\frac{\pi F}{\hat{r}} \right)$$
$$w^{**} = \mu I - \left(\frac{\pi F}{\hat{r}} \right)$$

Demand for labour

returns from different occupation with an initial wealth w

1. Subsistence

$$\delta w \hat{r}$$

2. Wage labours

$$\delta (w \hat{r} + v) - 1$$

3. Self-employment

$$\delta (w \hat{r} + I (\bar{r} - \hat{r})) - 1$$

4. Entrepreneurship

$$\delta (w\hat{r} + \mu I (\bar{r} - \hat{r}) - \mu v) - 1$$

Compare return from Entrepreneurship and Self employment to see that labour demand is given by

$$\begin{array}{ll} 0 & \text{if } v > \bar{v}, \\ [0, \mu\lambda[1 - G_t(w^{**})]] & \text{if } v = \bar{v}, \\ \mu\lambda[1 - G_t(w^{**})] & \text{if } v < \bar{v}. \end{array}$$

Supply of labour

Compare returns from subsistence and wage labours

$$\begin{aligned} 0 & \quad \text{if } v < \underline{v}, \\ [0, \lambda G_t(w^*)] & \quad \text{if } v = \underline{v}, \\ \lambda G_t(w^*) & \quad \text{if } \underline{v} < v < I(\bar{r} - \hat{r}), \\ [\lambda G_t(w^*), \lambda] & \quad \text{if } v = I(\bar{r} - \hat{r}), \\ \lambda & \quad \text{if } v > I(\bar{r} - \hat{r}). \end{aligned}$$

The equilibrium is at the intersection of the demand and supply curves.

Define $p_L = G_t(w^*)$, and $p_U = 1 - G_t(w^{**})$

Two types of equilibrium.

If $\lambda p_L > \mu \lambda p_U$, then low wage equilibrium $v = \underline{v}$.

Characteristics: Everyone below w^* wants to work as wage labor, everyone above either self-employed or entrepreneur, depending on initial wealth. Only a fraction of low-wealth individual absorbed in the wage market.

If $\lambda p_L < \mu \lambda p_U$, then high wage equilibrium $v = \bar{v}$.

Characteristics: Everyone above w^* are indifferent from being self-employed and being entrepreneur. A fraction of population above w^{**} remains self-employed.

Also note that if $p_L = 0$ or $p_U = 0$, then no one works as wage labour.

Second stage: from occupational choice to next period wealth.

Bequest:

1. Subsistence

$$(1 - \gamma) w \hat{r}$$

2. Wage labours

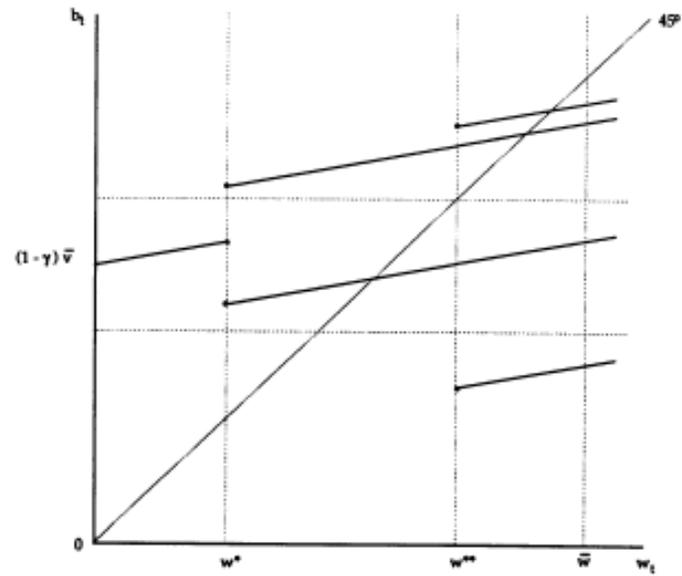
$$(1 - \gamma) (w \hat{r} + v)$$

3. Self-employment

$$(1 - \gamma) (w \hat{r} + I (\bar{r} - \hat{r}))$$

4. Entrepreneurship

$$(1 - \gamma) (w\hat{r} + \mu I (\bar{r} - \hat{r}) - \mu v)$$



recursion diagram with $v = \bar{v}$.

recursion diagram with $v = \underline{v}$.

