As developed in chapter 6 (volume 1), sigma society is an overpopulated and socially heterogeneous capitalist society. People are endowed with unequal amounts of economic assets and also unequal entitlements of political assets. Capitalists own the entire capital stock of society. Workers are endowed with unequal levels of human capital: high and low. Those who have low levels of education are also second-rate citizens; they are called Z-workers. The rest are called X-workers.

How does the economic growth process operate in such a society? What does happen to the initial income inequality in the growth process? Such are the questions that this chapter will seek to answer.

**Economic Structure of Sigma Society**

The dynamic model presented in this chapter will differ in one aspect from the static model constructed in chapter 6 (volume 1). This model will have just one labor market, that for X-workers. These workers are endowed with the human capital necessary to operate the modern technology utilized in the capitalist sector. In contrast, Z-workers are not endowed with human capital necessary to operate the modern technology in the capitalist sector; thus, they are forced to become self-employed in the Z-subsistence sector. Including another labor market for Z-workers (as we did in static model) will not alter the basic results of the dynamic model, but it would make it more complicated to operate.
As to the X-labor market, it operates like the omega model. Therefore, the
dynamic sigma model will include the following assumptions: the analysis
starts at effective full employment equilibrium situation, in which the excess
labor supply will take the form of self-employment in the X-subsistence sec-
tor; money supply will be neutral in the economic process; and the X-labor
market will constitute the core of the general equilibrium in the capitalist
sector.

The equations representing production functions in the three sectors of
sigma society are:

Capitalist sector:

\[ Q = K^\alpha (AD_{hx})^{1-\alpha}, \quad 0<\alpha<1 \]  (5.1a)

X-subsistence sector:

\[ V_x = F (h_x, L_x) = h_x^\beta L_x^{1-\beta}, \quad 0<\beta<1 \]  (5.1b)

Z-subsistence sector:

\[ V_z = F (h_z, L_z) = h_z^\gamma L_z^{1-\gamma}, \quad 0<\gamma<1 \]  (5.1c)

Aggregate:

\[ Y = Q + V_x + V_z \]  (5.1d)

\[ L_x = D_{hx} + L_{sx} \]  (5.1e)

The sigma economy is thus composed of the omega sector and the
Z-subsistence sector. In this model, the Z-subsistence sector is not con-
ected to the capitalist sector, whereas the X-subsistence sector is, via the
labor market. As the capitalist sector expands, the X-subsistence sector will
contract.

The initial labor productivity level of the Z-subsistence sector is lower
than that of the X-subsistence sector because it is endowed with lower
human capital level and, consequently, lower technological level. Actually,
the Z-subsistence sector uses mostly traditional technology, together with
some of the technology used in the capitalist sector. The labor productiv-
ity level of the X-subsistence sector is in turn lower than that of the capi-
talist sector because of its low endowment of physical capital. Hence, the
Z-subsistence sector has the lowest labor productivity level among the three
sectors.