
Economics is a science of thinking in terms of models joined to the art of choosing models, which are relevant to the contemporary world. It is compelled to be this, because, unlike the typical natural science, the material to which it is applied is, in too many respects, not homogeneous through time... Progress in economics consists almost entirely in a progressive improvement in the choice of model (Keynes, 1938).

Simple Keynesian Model (SKM) is also known as Keynesian Cross Diagram. It was developed by Meade (1937), Samuelson (1948, 1965/1948), Hansen (1953), et al. The appraisal and reappraisal of SKM was executed by Fusfeld (1985), Patinkin (1989), Davidson (1989), et al. The sole objective of SKM is to explore the causes, consequences and cures of the “secular economic stagnation” in the capitalist world. This model suggests that deficiency of effective demand or excessive saving over investment is the only cause of secular economic stagnation in the capitalist world. As policy prescription, the SKM offers the solution that the increase in effective demand or the excessive investment over saving can cure such stagnation. If the effective demand is not increased by the increase in private consumption and/or investment, government should adopt adequate fiscal policy to stimulate effective demand by the “socialization of investment” (Keynes, 1936) to reduce or rule out such stagnation. Noteworthy that the equilibrium income of SKM does not necessarily indicate a full employment level of equilibrium income, rather it generates involuntary unemployment equilibrium income as opposed to Classical full employment level of equilibrium income. As Keynes (1936) said, “The outstanding faults of the economic society, in which we live, are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes”. This occurs because “there has been a chronic tendency throughout
human history for the propensity to save to be stronger than the inducement to invest. The weakness of the inducement to invest has been all times the key to the economic problem” (Keynes, 1936).

The salient features of the SKM can be summarized in terms of the points indicated by (3.1 – 3.6).

### 3.1. Classification of Simple Keynesian Model (SKM)

SKM can be classified into the three categories depending upon the nature of the economy as follows. Such classification will also be evident from Table 3.1.

1. **SKM for Two-Sector Closed Economy** consisting of household sector and firm/business sector.

2. **SKM for Three-Sector Closed Economy** consisting of household sector, firm/business sector and government sector.

3. **SKM for Four-Sector Open Economy** consisting of household sector, firm/business sector, government sector and foreign sector.

### 3.2. Approaches to SKM

SKM has two approaches: (i) Income-Expenditure Approach and (ii) Saving-Investment Approach. Each approach is basically characterized by the nature of its “equilibrium equations” as shown in Table 3.1.

#### Table 3.1: Equilibrium Equations of SKM

<table>
<thead>
<tr>
<th>Nature of Economy</th>
<th>Saving-Investment Approach</th>
<th>Income-Expenditure Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-Sector Closed Economy</td>
<td>( S(Y) = I ) (3.1a)  ( Y = C(Y) + I ) (3.1b)</td>
<td></td>
</tr>
<tr>
<td>Three-Sector Closed Economy</td>
<td>( S(Y_d) + T = I + G ) (3.2a) ( Y = C(Y_d) + I + G ) (3.2b)</td>
<td></td>
</tr>
<tr>
<td>Four-Sector Open Economy</td>
<td>( S(Y_d) + T + M = I + G + X ) (3.3a) ( Y = C(Y_d) + I + G + (X - M) ) (3.3b)</td>
<td></td>
</tr>
</tbody>
</table>
The notions of the notations/variables used in Table 3.1 are as follows:

\[ C \equiv \text{Consumption expenditure by household sector} \]
\[ G \equiv \text{Government expenditure (consumption-oriented)} \]
\[ I \equiv \text{Private investment expenditure in manufactured capital} \]
\[ M \equiv \text{Import by foreign sector} \]
\[ S \equiv \text{Saving by household sector} \]
\[ T \equiv \text{Net tax} = (\text{Tax} - \text{Transfer payment}) \text{ collected by government sector} \]
\[ X \equiv \text{Export by foreign sector} \]
\[ Y \equiv \text{Net domestic product (NDP)} = (GDP - D^m) = \text{National income (NI)}, \]
where \( GDP \equiv \text{Gross domestic product} \), and \( D^m \equiv \text{Depreciation, depletion or degradation of manufactured capital} \)
\[ Y_d \equiv \text{Disposable NI} = (Y - T) \]

3.3. Composition of Equilibrium Equations in SKM

The composition of equilibrium equations of the income-expenditure approach and the saving-investment approach in the SKM depends on the nature of the economy as shown in Table 3.1 (Konar, 2010).

3.4. Determination of Equilibrium in SKM for Two-Sector Closed Economy by Saving-Investment Approach with Autonomous Investment \((I = I_a)\)

The determination of equilibrium income in SKM for two-sector closed economy by saving-investment approach with autonomous investment can be represented in terms of Figure 3.1. To do this, let us reconsider the equation (3.1a) in Table 3.1. The explicit form of such equation can be given by equation (3.4).
Figure 3.1: Equilibrium in SKM for Two-Sector Closed Economy by Saving-Investment Approach with Autonomous Investment

\[ S = [-S_a + S(Y)] \]

\[ I = S \]

\[ I > S \]

\[ I = I_a \]

\[ I < S \]

Figure 3.2: Equilibrium in SKM for Two-Sector Closed Economy by Saving-Investment Approach with Induced Investment

\[ S = [-S_a + sY] \]

\[ I = S \]

\[ I > S \]

\[ I = I_a + iY \]

\[ I < S \]
\[-S_a + sY = I_a \] \hspace{5cm} (3.4)

where \( S_a \equiv \text{autonomous saving}, \ I_a \equiv \text{autonomous investment}, \ s \equiv S'(Y) = MPS \)

Rearranging equation (3.4), we get equilibrium income \((Y_E)\) by equation (3.5).

\[ Y_E = (I_a + S_a)/s \] \hspace{5cm} (3.5)

The equilibrium income denoted by \( Y_E \) in Figure 3.1 is statically stable, because the condition for static stability of equilibrium income requires that the slope of the excess investment (EI) curve will be negative, which implies that \( MPS > 0 \). This is evident from equation (3.6).

\[ dEI/dY = d[I_a + S_a - sY]/dY < 0, \text{ or } s = S'(Y) = MPS > 0 \] \hspace{5cm} (3.6)

Thus, the point of intersection between \( S = [-S_a + sY] \) curve and \( I = I_a \) curve in Figure 3.1 indicates the existence, uniqueness and static stability of \( Y_E \).

**3.5. Determination of Equilibrium in SKM for Two-Sector Closed Economy by Saving-Investment Approach with Induced Investment \([I = I_a + I(Y)]\)**

The determination of equilibrium income in SKM for two-sector closed economy by saving-investment approach with induced investment can be represented in terms of Figure 3.2. To do this, let us reconsider the equation (3.1a) in Table 3.1. The explicit form of such equation can be given by equation (3.7).

\[-S_a + sY = I_a + iY \] \hspace{5cm} (3.7)

where \( S_a \equiv \text{autonomous saving}, \ I_a \equiv \text{autonomous investment}, \ s \equiv S'(Y) = MPS, \ i \equiv I'(Y) = MPI \)

Rearranging equation (3.7), we get equilibrium income \((Y_E)\) by equation (3.8).
\[ Y_E = (I_a + S_a)/(s - i) \]  \hspace{1cm} (3.8)

The equilibrium income denoted by \( Y_E \) in Figure 3.2 is statically stable, because the condition for static stability of equilibrium income requires that the slope of the excess investment (EI) curve will be negative, which implies that \( MPS > MPI \), or \( s > i \). This is evident from equation (3.9).

\[
dEI/dY = d(I_a + iY + S_a - sY)/dY < 0, \text{ or } s = S'(Y) > i = I'(Y) \tag{3.9}
\]

Thus, the point of intersection between \( S = [- S_a + sY] \) curve and \( I = [I_a + iY] \) curve in Figure 3.2 indicates the existence, uniqueness and static stability of \( Y_E \).

The condition for static stability or instability of \( Y_E \) depends on the slope of the excess investment (EI) curve. If the EI curve is negatively (or positively) sloping, \( Y_E \) will be statically stable (or instable), as shown in Figure 3.3.

**Figure 3.3: Static Stability of Equilibrium in SKM**