Super-multiplier

- Developed by Hicks

- Hicks combined the effect of multiplier and accelerator on the economy

- Combined effect of the multiplier and the accelerator is also called the leverage effect which may lead the economy to very high or low level of income propagation.
Working of Super-multiplier

\[ Y = C + I \]
Where,
\[ Y = \text{income} \]
\[ C = \text{consumption} \]
\[ I = \text{investment} \]

\[ \Delta Y = \Delta C + \Delta I \]
\[ \Delta C = b \Delta Y \]
\[ \Delta I = v \Delta Y + \Delta I_a \]
\[ \Delta Y = b \Delta Y + v \Delta Y + \Delta I_a \]
\[ \Delta Y - b \Delta Y - v \Delta Y = \Delta I_a \]
\[ \Delta Y (1 - b - v) = \Delta I_a \]
\[ \Delta Y / \Delta I_a = 1 / (1 - b - v) \]
Working of Super-multiplier

\[ K_s = \frac{1}{1-b-v} = \frac{1}{mps-v} \]

Where,

\( K_s \) is a value of super multiplier.

So,

Increase in autonomous investment i.e. \( I_a \) will lead to increase in income by \( K_s \) times.

So,

\[ \Delta Y = K_s \Delta I_a \]
Numerical example-

\[ b = 0.5 \]
\[ v = 0.4 \]
\[ \Delta I_a = Rs. 100 \text{ crore} \]

\[ \Delta Y = \frac{1}{1-0.5-0.4} \times 100 \]
\[ = \frac{1}{0.1} \times 100 \]
\[ = 10 \times 100 \]
\[ = Rs. 1000 \text{ crore (super multiplier is 10)} \]

Multiplier \[ = \frac{1}{1-0.5} \times 100 \]
\[ = Rs. 200 \text{ crore (because multiplier is 2)} \]
### Table -

<table>
<thead>
<tr>
<th>Period (t)</th>
<th>Initial Investment</th>
<th>b = 0.5</th>
<th>v = 0.4</th>
<th>$\Delta Y = C+V$</th>
<th>Total Increase in Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>t + 1</td>
<td>100</td>
<td>.</td>
<td>.</td>
<td>100</td>
<td>100</td>
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<tr>
<td>t + 2</td>
<td>100</td>
<td>50</td>
<td>40</td>
<td>90</td>
<td>190</td>
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<tr>
<td>t + 3</td>
<td>100</td>
<td>45</td>
<td>36</td>
<td>81</td>
<td>271</td>
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<tr>
<td>t + 4</td>
<td>100</td>
<td>40.50</td>
<td>32.40</td>
<td>72.90</td>
<td>343.90</td>
</tr>
<tr>
<td>t + n</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1000</td>
</tr>
</tbody>
</table>

Total increase in income is in multiple amounts as compared to initial investment.