Texas Instruments BAII PLUS

COMPUTING NPV AND IRR:

Consider a project with the following characteristics:

<table>
<thead>
<tr>
<th>Year</th>
<th>CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>($7,750)</td>
</tr>
<tr>
<td>1</td>
<td>4,000</td>
</tr>
<tr>
<td>2</td>
<td>3,000</td>
</tr>
<tr>
<td>3</td>
<td>1,000</td>
</tr>
<tr>
<td>4</td>
<td>2,000</td>
</tr>
</tbody>
</table>

If the firm’s required rate of return is 14 percent, the cash flow time line for this project is:

To solve for the net present value (NPV), follow these steps:

Press \[ \text{CF} \] \[ \text{This} \] opens the cash flow register.

Press \[ \text{2ND} \ \text{CLR WORK} \] \[ \text{This clears any numbers that might be in the CF register from previous work. CFo = 0 should be displayed.} \]

Enter 7,750, press \[ +|\text{-} \] \[ \text{then press} \] \[ \text{ENTER} \] \[ \text{CFO =} \] \[ -7,750 \text{ should be displayed} \]

Press \[ \downarrow \] \[ \text{; Enter 4,000 and press} \] \[ \text{ENTER} \] \[ \text{C01 =} \] \[ 4,000 \text{ should be displayed} \]

Press \[ \downarrow \] \[ \text{; F01 =} \] \[ 1 \text{ should be displayed; this indicates the frequency, or number of times, the C01 value occurs in consecutive years. Because 4,000 is received in Year 1 but not in Year 2, F01 = 1. If 4,000 is receive in Year 1 and Year 2, you could change F01 to 2.} \]

Press \[ \downarrow \] \[ \text{; Enter 3,000 and press} \] \[ \text{ENTER} \] \[ \text{C02 =} \] \[ 3,000 \text{ should be displayed} \]

Press \[ \downarrow \] \[ \text{; F02 =} \] \[ 1 \text{ should be displayed; the interpretation of this number is the same as for F01.} \]
Press \( \downarrow \); Enter 1,000 and press \( \text{ENTER} \) \quad C03 = 1,000 should be displayed

Press \( \downarrow \); \quad F03 = 1 should be displayed; the interpretation of this number is the same as for F01.

Press \( \downarrow \); Enter 2,000 and press \( \text{ENTER} \) \quad C04 = 2,000 should be displayed

Press \( \text{NPV} \); \quad I = 0 should be displayed; this indicates that you must enter the interest rate, which is the required rate of return before the NPV can be computed.

Enter 14 and press \( \text{ENTER} \) \quad I = 14 should be displayed

Press \( \downarrow \); \quad NPV = 0 should be displayed; the NPV has not been computed yet.

Press \( \text{CPT} \); \quad NPV = -73.69341382 should be displayed

Press \( \downarrow \); \quad F02 = 1 should be displayed; the interpretation of this number is the same as for F01.

To solve for the project’s internal rate of return (IRR), enter the cash flows as describe earlier, and then:

Press \( \text{IRR} \); then press \( \text{CPT} \) \quad IRR = 13.44 should be displayed; the

The project is not acceptable, because NPV \( < 0 \) and IRR \( < r = 14\% \)