1. **Appendix 13C: Income taxes and the net present value method (Slide #1 is the title slide for this appendix)**

*Learning Objective 8: Include income taxes in a net present value analysis.*

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#### Six simplifying assumptions

* + 1. A company’s **net income for financial reporting purposes equals its taxable income**.

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* + 1. The tax rate is a **flat percentage** of taxable income.
    2. A noncurrent asset’s useful life is **the same** for financial reporting and tax purposes.
    3. **Straight-line depreciation** is always used for financial reporting and tax purposes.
    4. Noncurrent assets always have a **salvage value of zero** for financial reporting and tax purposes.

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* + 1. There are **no gains or losses** on the sale of noncurrent assets.

#### Key concepts

* + 1. To calculate the amount of income tax expense associated with a capital budgeting project, we’ll be using a **two-step process**:

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1. The first step is to **calculate the incremental net income** earned during each year of the project.

2. The second step is to multiply each year’s incremental net income by the tax rate to **determine the income tax expense**.

* + 1. A capital budgeting project’s incremental net income computations **include**:

1. Annual revenues.

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2. Annual cash operating expenses.

3. Annual depreciation expense.

4. One-time expenses related to repairs and maintenance.

* + 1. A capital budgeting project’s incremental net income computations **exclude**:

1. Immediate investments in equipment, other assets, and installation costs.

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2. Investments in working capital.

3. The release of working capital.

4. The proceeds from selling a noncurrent asset when no gain or loss is realized on the sale.

C. **Income taxes and net present value analysis: an example**

1. **Holland Company** owns the mineral rights to land that has a deposit of ore. The company is deciding whether to purchase equipment and open a mine on the property. The mine would be depleted and closed in **5 years** at which time the working capital would be released and redeployed by the company.

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1. Pertinent financial information is as shown. In addition to this information, the company uses **straight-line depreciation** for financial reporting and tax purposes.

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* + - 1. **Should Holland open a mine on the property**?

1. The incremental net income computations include the annual sales (**$250,000**), the annual cash operating expenses (**$150,000**), the road repairs in year three (**$30,000**), and the annual depreciation expense of $55,000 (**$275,000 ÷ 5 years = $55,000**).

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1. The incremental net income in years 1, 2, 4, and 5 is **$45,000**, whereas in year 3 it is **$15,000**.
2. Each year’s incremental net income is multiplied by the tax rate of 30% to determine the income tax expense.

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1. The income tax expense in years 1, 2, 4, and 5 is **$13,500**, whereas in year 3 it is **$4,500**.
2. The **net present value computations** include the initial outlays for the purchase of equipment (**$275,000**) and the investment in working capital (**$50,000**), the annual sales (**$250,000**), the annual cash operating expenses (**$150,000**), the road repairs in years three (**$30,000**), the release of working capital in year five (**$50,000**), and the annual income tax expense.

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1. Each year’s total cash flows are multiplied by the appropriate discount factor for 12% to compute their lesser present value. For example:

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1. The total cash flows in **year 3** of **$65,500** are multiplied by the discount factor of **0.712** to obtain their lesser present value of **$46,636**.
2. The present values in cells **B22 through G22** are combined to determine the project’s net present value of **$231**. Because the net present value is positive, it indicates that Holland Company should proceed with the mining project.

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