2018 BEC Book Update

Page numbers refer to 2018 BEC textbook pages. When new/edited text is shown along with old text, the new/edited text is highlighted in gray, unless noted otherwise. For those who prefer to purchase a new textbook, please visit https://www.rogercpareview.com/cpa-courses/textbooks.

Page 3-12

Depreciation Tax Shield

When determining cash outflows and inflows for payback, NPV, and IRR analysis, the effect of depreciation expense on cash flows must be considered if the given information starts with net income, rather than cash inflows and outflows. (Presumably, income from all projects will be taxed at the same marginal rates.) While depreciation is not a cash expense, it affects the cash paid for taxes (i.e., it produces tax savings).

For example, assume estimated annual net income before taxes from a project is $100,000; the estimated annual depreciation expense is $30,000; and the estimated marginal tax rate is 40%. The estimated annual taxes are 0.40 × $100,000 NI = $40,000. Thus, the estimated annual cash inflow is equal to net income before taxes with the non-cash expense of depreciation added back, less taxes: $100,000 NI + $30,000 dep. - $40,000 taxes = $90,000 inflow. Without the depreciation deduction, annual taxes would be 0.40 × ($100,000 + $30,000) - $52,000 taxes; thus, the cash inflow would be $100,000 NI + $30,000 dep. - $52,000 taxes = $78,000 inflow.

The $12,000 difference between the tax amounts with the depreciation deduction versus without the depreciation deduction is called the depreciation tax shield. In other words, the non-cash expense shields what would otherwise be taxable income, resulting in a reduced cash outflow for taxes. The depreciation tax shield can be simply calculated as the tax rate × depreciation (in our example, 0.40 × $30,000 dep. = $12,000.)

We meet this tax shield concept again when considering the debt/equity mix for a business. Interest expense is tax deductible, but dividends are not.

Mutually Exclusive, Dependent, or Independent

Projects may be classified by whether they are mutually exclusive, dependent, or independent.

- **Mutually exclusive**—the entity can implement only one of two or more projects. For instance, a company owns a restaurant with a kitchen not in compliance with the health code and an outdated, but operable, dining area. The entity can either sell the property or upgrade the kitchen and open the restaurant for business, but not both.

- **Dependent**—a dependent project's cash flows are influenced by another project. For instance, a company owns a restaurant with a kitchen not in compliance with the health code and an outdated, but operable, dining area. Redecorating the dining area of the restaurant is dependent on upgrading the kitchen to meet minimum health and safety standards since without an operable kitchen, the dining area will not have cash flows.
this situation, redecorating the dining area of the restaurant is a project dependent on updating the kitchen.

- **Independent**—the entity can implement an independent project regardless of the status of the other projects. For instance, assuming sufficient resources, opening restaurants in two different cities are independent projects.

In a sense, all projects are mutually exclusive as capital to be invested is limited. The NPV, IRR, and profitability index (a refinement of the NPV method) readily accommodate ranking mutually exclusive projects. When conflicts between NPV and IRR exist, the NPV ranking generally is more reliable as it does not assume that project earnings are reinvested at the same rate that the project earns.

**Project Nature**
Projects also may be classified by the nature of the projects. Entities may require less analysis for projects of some natures than for others. Low-analysis projects typically include mandated projects. High-analysis projects typically include development of a new product with unknown market demand. Categories include: maintenance-of-business replacements, cost reduction replacements, expansion of existing projects or markets, development of new projects or markets, mandated (such as by license, safety, or environment regulations) projects, strategic (providing differentiation from competitors, etc.), and other (mixed-purpose projects for which deciding on a category exceeds any benefit).

**Forecasting**
Businesses use forecasting techniques to develop projections of the environment in which they will operate in the future, including (1) economy-wide conditions such as interest rates, inflation, unemployment, economic growth, retail sales etc., (2) conditions in their sector of the economy such as sector-specific sales and prices, and (3) cash flows specific to the business, to specific subsidiaries, and to existing and proposed projects, etc.
Leasing vs. Buying

Businesses may also finance their operations through leases rather than buying or borrowing to buy assets. From the lessee's point of view, there are generally two types of leases: Operating leases and Finance leases. With the issuance of ASC 842, the accounting for operating and finance leases have become more similar, i.e., they are both recognized on the balance sheet now, but most of the benefits of leasing versus buying remain unchanged:

• Capital that could be used to acquire an asset could be put to another use.
• Businesses unable to obtain credit to purchase an asset may be able to lease it instead.
• A loan may violate a debt covenant while an operating lease should not.
• Leases often do not involve down payments.
• A lease provides an additional source of capital with level payments, sometimes over a longer term.
• Leases are generally less expensive in that the lessee is not paying the entire amount of the asset's cost; thus, payments are generally lower than a loan, meaning lease payments may fit the cash flow budget better than loan payments to purchase the same asset.
• Terms in lease agreements are often less strict than in bond indentures.
• In bankruptcy, creditors have weaker rights over some assets financed by leases (e.g., real estate).
• Leases may transfer the tax benefits of debt financing to lessors, prompting lessors to reduce the cost of leases to lessees.
• Some leases provide maintenance services, making management of the asset easier and possibly less expensive.
• Leasing an asset vs. buying it provides a hedge against obsolescence; that is, a lease provides more flexibility, thus, reducing risk to the lessee.
• Disposal of the asset at the end of its useful life remains with the lessor.