

# Relationship between Accounting Statements and Their Use in the Income Approach

---

## Introduction

A question that often arises is how to interpret the information contained in a company's balance sheet and income statements prepared for financial reporting when applying the data in the valuation of a business using the Income Approach, either the Discounted Economic Income method<sup>1</sup> or the Capitalized Economic Income method.<sup>2</sup> The preferred and most commonly used measure of economic income used in valuation of businesses and interest in businesses is net cash flow.<sup>3</sup>

How does one incorporate assets and liabilities from the balance sheet and income and expense items from the income statement in measuring net cash flows within the structure of doing a valuation?

## Classifying the Balance Sheet:

The information contained in the balance sheet prepared for financial reporting of a typical Subject Company is interpreted for applying the Discounted Economic Income method where economic income is defined as net cash flow (i.e., the discounted cash flow or "DCF" method) is displayed in Exhibit A9-1.

---

<sup>1</sup> Chapter 9, "Income Approach: Discounted Economic Income Method" of Shannon Pratt's *Valuing a Business: The Analysis and Appraisal of Closely Held Businesses* 6th ed. (New York: McGraw-Hill, 2022), pp. 156–158 for a discussion of economic income and pp. 161–162 for the formulas defining various measures of economic income.

<sup>2</sup> Ibid, Chapter 10, "Income Approach: Capitalized Economic Income Method."

<sup>3</sup> See Chapter 3, Shannon P. Pratt and Roger J. Grabowski, *Cost of Capital: Applications and Examples* 5th ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2014).

**Exhibit A9-1**

	<b>Assets</b>	<b>Liabilities &amp; Equity</b>	
	<b>Current Assets:</b> Cash Accounts Receivable Inventory Other Assets	<b>Current Liabilities:</b> Accounts Payable Accrued Expenses Income Taxes Payable Other Current Liabilities	
Net Working Capital	= Current Assets minus Current Liabilities	<b>Interest-Bearing Debt</b> (includes current portion and short-term notes payable that may be listed as a current liability on the balance sheet)	Invested Capital
	<b>Fixed Assets:</b> Equipment Buildings Land		
	<b>Other Assets:</b> Investments Life Insurance	<b>Stockholders' Equity:</b> Preferred Stock Common Stock (including Retained Earnings)	
	<b>Intangible Assets:</b> Identifiable Non-identifiable		

Net working capital is defined as the difference between the total amount of current assets and current liabilities (after reclassifying the current portion of long-term, interest-bearing debt and short-term notes from current liabilities and including them as long-term debt capital). Net working capital used in applying the Income Approach in valuing a business represents the operating current assets minus operating current liabilities.

This distinction between operating current assets and liabilities and total current assets and liabilities is important. In applying the DCF method, for example, the analyst focuses on valuing the operating business. In the ordinary course of business, cash amounts and marketable securities typically are used to pay for inventory in excess of the financing provided by accounts payable and to finance accounts receivable until collected, particularly in seasonal businesses.

But, if the financial statements include amounts of cash and marketable securities above the amount needed to operate the business (that is, excess cash and excess marketable securities could be paid out to the owners of the business without injuring the ability to operate the business), that excess cash and marketable securities should be segregated and valued separately from the operating business.

Similarly, Other Assets may include investments that are not needed in the ordinary course of business. To the extent that the financial statements include investments that are not needed to operate the business, those investments should be segregated and valued separately from the operating business.

Invested capital is defined as the sum of the stockholder's equity (or capital in a non-incorporated business entity) plus the interest-bearing debt. Alternatively, invested capital equals: net working capital plus fixed assets plus other assets plus intangible assets.

Again, there is the distinction between invested capital needed to support the operations of the business and any invested capital represented by excess cash and marketable securities and investments not needed to support the operating business.

Invested capital represents the financing (through the use of both equity and debt) of the non-working capital assets of the company.

- a) Interest-bearing debt is referred to as the debt capital of the business. The economic return to debt holders is interest.
- b) The stockholder's equity section of the balance sheet is referred to as the equity capital of the business. The economic return to equity holders is profit.
- c) Equity capital and debt capital enjoy different rights and risks and therefore generally have very different rates of expected returns.

Liabilities on the balance sheet are presented differently for financial reporting and invested capital analysis purposes.

- a) For financial reporting purposes, liabilities are separated into current liabilities (payable in next 12 months) and long-term liabilities. The short-term portions of long-term debts (e.g., real property mortgages) are recorded in the current liability section along with non-interest-bearing debts like accounts payable and accrued payroll expense.
- b) For analyzing a company's invested capital, the liabilities are separated into two categories: current portion of long-term interest-bearing debt plus interest-bearing debt and long-term debt without current interest obligations (where a portion of the debt

repayment being interest expense). The fair market value of such debt may differ from amount reported on the balance sheet of the Subject Company.<sup>4</sup>

To the extent that operating current assets exceed operating current liabilities, invested capital is financing the investment in net working capital. That is, if the financing of operating current assets exceeds the financing provided by operating current liabilities, invested capital supports the investment in net working capital.

Another liability that often appears on the financial reporting balance sheet are lines of credit— from a valuation perspective, are they part of working capital or invested capital (financing) debt?

- a) It is not how it is categorized under accounting rules or what it is labeled that determines its function, but how it is used by the Subject Company.
- b) If it is used to finance inventory or receivables and its outstanding balance changes as a function of working capital management, then it is part of the working capital.
- c) If it has become permanent financing (i.e., it is never paid down and appears not to be managed in coordination with working capital) it has likely become structural financing and should be considered part of invested capital.
- d) Regardless, in practice it is often treated as invested capital financing because it is often difficult to separate interest expense paid between that portion of interest paid for financing working capital assets and that portion of interest paid for the invested capital financing expense.

Leases are debt, whether they are operating or capital in nature. Current accounting rules recognize operating leases as debt.<sup>5</sup>

---

<sup>4</sup> Pratt, Chapter 26, “Valuing Debt Securities.”

<sup>5</sup> Ibid, Chapter 7, “Analyzing Financial Statements,” p. 122.

Assets and liabilities are each generally listed on the balance sheet in terms of the order of liquidity (essentially risk). For example, the most liquid assets are listed first (cash, other liquid current liabilities) and then less liquid assets (fixed assets, intangibles, etc.).

Measuring returns to equity and invested capital:

- a) Income differences relate to the return on the difference between equity and debt— interest expense.
- b) Cash flow differences relate to the differences in income plus the differences in cash flow related to asset acquisition and debt acquisition and repayment.

The terminology of adapting the income statement information to for use in valuation is typically as follows<sup>6</sup>:

- a) return on equity capital after paying income taxes is referred to as Net Income (after taxes);
- b) return on invested capital is referred to as Net Operating Profit After Tax (“NOPAT”) or Debt-Free Net Income (“DFNI”).

The calculation of net cash flows to equity capital and net cash flow to the total of invested capital are displayed in Exhibit A9–2.

In calculating the present value of cash flows to equity capital, interest expense paid to providers of debt capital is subtracted. The discount rate used in calculating present values is an equity discount rate.

In arriving at NOPAT, interest expense paid to providers of debt capital is not subtracted from operating income (Earnings Before Interest expense and income Taxes or “EBIT”).

---

<sup>6</sup> Ibid, p. 162.

## Exhibit A9-2

<u>Equity Cash Flow</u>	<u>Invested Capital Cash Flow</u>
Revenue	Revenue
- Cost of sales	- Cost of sales
- Operating Expense	- Operating Expense
= <u>Operating Income (EBIT)</u>	= <u>Operating Income (EBIT)</u>
- Interest Expense	
= Pretax income	
- Income Taxes	- Income Taxes
= <u>Net income</u>	= <u>Net Operating Profit After Tax (NOPAT)</u>
+ Depreciation & Amortization	+ Depreciation & Amortization
= <u>Gross Cash Flow</u>	= <u>Gross Cash Flow</u>
- Increase in Working Capital	- Increase in Working Capital
- Capital Expenditures	- Capital Expenditures
+/- Change in Debt Principal	
= <u>Equity Net Cash Flow</u>	= <u>Invested Capital Net Cash Flow</u>

Rather interest expense is subtracted in calculating the cost of the debt capital component of the weighted average cost of capital (“WACC”) which is the discount rate used in calculating present values of returns to invested capital in the invested capital version of the DCF.<sup>7</sup> To arrive at the value of equity capital after applying the invested capital version of the DCF, the analyst subtracts the amount of interest-bearing debt outstanding at the valuation date (valued at fair market value).

There can be other components of invested capital. For example, interest-bearing debt of the Subject Company may be debt that only pays a return of interest, or it may be convertible into equity capital.<sup>8</sup> Similarly, preferred stock may only pay dividends or it may be convertible into equity capital.<sup>9</sup>

The Subject Company may have issued to employees rights to future ownership of equity or rights to future appreciation in the equity value of the Subject Company as part of their compensation.

<sup>7</sup> Ibid, pp. 166–167.

<sup>8</sup> Ibid, pp. 609–610.

<sup>9</sup> Ibid, Chapter 27, “Valuing Preferred Securities,” pp. 623–624.

These rights are often evidenced by issuance of employee stock options for public companies<sup>10</sup>; for closely held companies, they may take the form of phantom stock or stock appreciation rights. Typically, at the time of issuance of such rights they are a current non-cash expense for the Subject Company; but they are part of compensation and common practice is to recognize their issuance as part of the compensation expense. If the form of compensation will result in added stock being issued upon exercise, then the value of the outstanding rights should be included in the invested capital of the Subject Company.

There can off-balance sheet obligations that get subtracted when applying either the equity or invested capital version of the DCF. For example, unfunded postretirement benefit plans (pension and retiree medical plans) are debt-like in nature. Employees become the equivalent of creditors of the business because they accepted a portion of their compensation as these deferred benefit plans. Amounts not recognized as liabilities on the balance sheet are typically disclosed in footnotes to the balance sheet.

Another off-balance sheet liability that gets subtracted are contingent liabilities while contingent assets get added.<sup>11</sup>

In applying the equity method of valuation, we can represent the relationships as follows:

**Formula A9-5**

Present value of Equity Net Cash Flows of the Operating Business

plus: excess cash and marketable securities

plus: excess Investments

minus: off-balance sheet liabilities.

equals: value of equity capital.

In applying the invested capital method of valuation, we can represent the relationships as follows:

---

<sup>10</sup> Ibid, Chapter 29, “Valuing Employee Stock Options.”

<sup>11</sup> Ibid, p. 127.

**Formula A9-6**

Present value of Invested Capital Net Cash Flows of the Operating Business

minus: interest-bearing debt capital

plus: excess cash and marketable securities

plus: excess Investments

minus: off-balance sheet liabilities

equals: value of equity capital.