Non-Bank Valuation Model

VELA Investment Management

Overview

Every stock has an intrinsic value that exists independently of its market price. However, while the two often align, there may be periods where the stock price is significantly above or below its estimate of intrinsic value, which can create attractive investment opportunities.

The VELA Summary Valuation Models estimate the intrinsic value of publicly traded companies. There are two versions: a standard model for most businesses and a financial company model that accounts for the distinct structure of banks. We focus on the standard, non-bank version of the model in this document. While VELA analysts use more detailed internal models, these summary versions provide quick, high-level value estimates.

The model estimates intrinsic value as the present value of expected future cash flows over five years — including dividends paid during that period and an estimated sale value at the end of year five. The main inputs are:

- Normalized earnings and expected growth
- Dividend payout ratio
- Terminal earnings multiple
- Required rate of return

When reasonable assumptions are applied, the model offers a useful guide for assessing intrinsic value and potential returns. However, results are only as reliable as the assumptions behind them.

The Intrinsic Value Estimator is for educational and illustrative purposes only. Its results depend entirely on user inputs and do not constitute investment advice. VELA Investment Management accepts no responsibility for investment decisions made using this model. By using the model, you acknowledge its purpose, assumptions, and limitations.

1 Definitions

This section lists the key terms and inputs used throughout the Non-Bank Valuation Model. Each definition provides a quick reference to what the variable means and, when helpful, a short note

on how it is used. Details on how these inputs interact within the model are explained later in the *Methodology* section.

Core Inputs

- Rev_0: Base-year revenue — represents the company's total sales for the most recent year.
- SC_0: Share count at the start of the period.
- $TBVPS_0$: Tangible book value per share — the company's net worth per share after excluding intangible assets.
- NI_0: Net income for the base year.
- c: Five-year compound annual growth rate (CAGR) of revenue.
- OM_0, OM_5: Operating margins at the beginning and end of the five-year forecast.
- TR_0, TR_5: Tax rates at the beginning and end of the forecast period.
- r_r: Required rate of return (also called the discount rate) — the investor's minimum acceptable return.
- P_0: Current stock price.
- D: Trailing twelve-month dividends.

Derived Terms

- DPR: Dividend payout ratio — the percentage of earnings paid out as dividends. It is typically calculated as dividends divided by net income.
- CAGR: Compound annual growth rate — the constant annual rate of growth over a specific time period.
- NOPAT: Net operating profit after tax — calculated as operating income less taxes.
- $adjPE$: Adjusted price-to-earnings ratio — modifies the current P/E ratio by removing tangible book value from the price.
- TV_5: Terminal value — the estimated value of the company at the end of the five-year projection.
- IV: Intrinsic value — the present value of all projected dividends plus the discounted terminal value.
- $TBVPS_5$: Tangible book value per share at the end of the five-year period.
- PV: Present value — the value today of a future amount of cash.
- r^*: Expected return — discount rate when the net present value of all cash flows is zero.

2 Methodology

This section gives a quick overview of how the model works. The goal is to estimate a company's intrinsic value by projecting future cash flows, estimating what the company might be worth in five years, and discounting those amounts back to today.

We use time steps $t = 0, 1, 2, 3, 4, 5$, where $t = 0$ is the base year (trailing 1 year) and $t = 5$ is five years out.

1. Revenue Growth

Revenue is assumed to grow at a constant compound annual rate for five years:

$$Rev_t = Rev_0(1 + c/100)^t.$$

2. Margins and Taxes

Operating margins and tax rates scale linearly from today's levels to their year-five targets:

$$OM_t = OM_0 + \frac{t}{5}(OM_5 - OM_0), \quad TR_t = TR_0 + \frac{t}{5}(TR_5 - TR_0).$$

3. Earnings and Dividends

After-tax operating profit per share (NPS_t) represents the income available to shareholders each year:

$$NPS_t = \frac{Rev_t \cdot (OM_t/100) \cdot (1 - TR_t/100)}{SC_0/10^3}.$$

Dividends per share (DPS_t) are based on the payout ratio DPR, and retained earnings grow tangible book value over time:

$$DPS_t = NPS_t \cdot DPR/100, \qquad TBVPS_5 = TBVPS_0 + \sum_{t=0}^{5} NPS_t \cdot (1 - DPR/100).$$

4. Terminal Value

At the end of the forecast, the model estimates a reasonable terminal multiple to reflect how the market might value the company:

$$adjPE_0 = \frac{P_0 - TBVPS_0}{NPS_5}, \quad adjPE_5 = \frac{adjPE_0 + 10}{2}.$$

$$TV_5 = TBVPS_5 + NPS_5 \times adjPE_5.$$

5. Intrinsic Value

The intrinsic value (IV) is the present value of all expected dividends plus the discounted terminal value:

$$IV = \sum_{t=1}^{5} \frac{DPS_t}{(1+r)^t} + \frac{TV_5}{(1+r)^5},$$

where $r = r_r/100$ is the required return.

6. Price vs. Value

We compare the current market price to the intrinsic value:

$$\text{Price / IV} = \frac{P_0}{IV}.$$

A ratio above 1 means the stock trades above its estimated value; below 1 suggests it might be undervalued.

7. Expected Return

The expected return is defined as the internal rate of return (IRR) that equates the current stock price with the present value of all future dividends and the terminal value.

We construct the following cash flow stream:

$$\begin{aligned} CF_0 &= -P_0, \\ CF_t &= DPS_t \quad \text{for } t = 1, 2, 3, 4, \\ CF_5 &= DPS_5 + TV_5. \end{aligned}$$

The expected return r^* is the discount rate that satisfies:

$$0 = -P_0 + \sum_{t=1}^{4} \frac{DPS_t}{(1+r^*)^t} + \frac{DPS_5 + TV_5}{(1+r^*)^5}.$$

This rate represents the annualized return you would earn if the projected cash flows and terminal value are realized, and the stock is purchased at the current market price.

Summary

In short:

1. Project revenue, margins, and taxes for five years.
2. Estimate earnings, dividends, and tangible book value growth.
3. Calculate a terminal value.
4. Discount everything back to today.
5. Compare intrinsic value to market price.
6. Derive expected return.