**Asset / Equity Input and Model Comparison[[1]](#footnote-1)
Quick Sheet[[2]](#footnote-2)**

Certain firms, such as banks, generate cash flow as a function of the firm’s equity, while most others rely on the productive use of assets for their cash flows. The following presents various derived inputs and model forms in both “asset” and “equity“ terms.

|  |  |
| --- | --- |
| **Commonly applied valuation metric (asset based)** | **Metric as applied to banks and financial firms** |
| NOPLAT = EBIT (1-T) | Net Income (NI) = EBIT – Interest - Tax |
| FCF = $NOPLAT+Dep- ∆NWC- NCS$ | $CFE\_{t}= NI\_{t}- ∆TE\_{t} + OCI\_{t}$ ([[3]](#footnote-3)) |
| Invested Capital (IC) = FA + NWC | Total Equity (TE) = Total Assets – Total Liabilities |
| Net Investment = ∆ IC = IC1 – IC0 + Dep1 | Net Investment = ∆ TE = TE1 – TE0 |
| Investment Rate (IR) = Net Invest/NOPLAT | IR = Net Invest/NI |
| Enterprise Value (EV) = Mkt Cap Eqty + Mkt Val Debt - Cash | Enterprise Value (EV) = Mkt Cap Equities - Cash |
| ROIC = $\frac{NOPLAT}{IC}$ | ROE = $\frac{NI}{TE}$ |
| WACC = $\left(\frac{E}{V} x R\_{E}\right) + \left(\frac{P}{V} x R\_{P}\right) + \left(\frac{D}{V} x R\_{D}\right)\left(1-T\_{C}\right)$ | COE = RE = RF + β(RM-RF) *CAPM construction*  = $\frac{D\_{1}}{PPS\_{0}}+g$ *Modigliani & Miller corollary* |
| PVDCF (NOPLAT) =$\sum\_{}^{}\frac{NOPLAT\_{t}}{\left(1+WACC\right)^{t}}$ | PVDCF (NI) = $\sum\_{}^{}\frac{NI\_{t}}{\left(1+ke\right)^{t}}$ |
| PVDCF (FCF) =$\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ | PVDCF (CFE) =$\sum\_{}^{}\frac{CFE\_{t}}{\left(1+k\_{e}\right)^{t}}$ |
| CVKVD = $\frac{NOPLAT\_{1}\left(1-\frac{g}{ROIC}\right)}{WACC-g}$ | CVKVD = $\frac{NI\_{1}\left(1-\frac{g}{ROE}\right)}{k\_{e}-g}$ |
| CVDG = $\frac{NOPLAT\_{1}}{WACC-g}$ | CVDG = $\frac{NI\_{1}}{k\_{e}-g}$ |
| PVCV = $\frac{CV}{\left(1+WACC\right)^{t}}$ | PVCV = $\frac{CV}{\left(1+k\_{e}\right)^{t}}$ |
| ValueKVD) =$\sum\_{}^{}\frac{NOPLAT\_{t}}{\left(1+WACC\right)^{t}}+ \frac{\frac{NOPLAT\_{1}\left(1-\frac{g}{ROIC}\right)}{WACC-g}}{\left(1+WACC\right)^{t}}$  | ValueKVD =$\sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}+ \frac{\frac{NI\_{1}\left(1-\frac{g}{ROE}\right)}{COE-g}}{\left(1+COE\right)^{t}}$ |
| ValueDCF/FCF = $\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ + $\frac{ \frac{FCF\_{1}}{WACC-g}}{\left(1+WACC\right)^{t}}$ | ValueDCF/CFE =$ \sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}$ *+* $\frac{ \frac{CFE\_{1}}{COE-g}}{\left(1+COE\right)^{t}}$ |
| ValEπ = IC0 + $\sum\_{}^{}\frac{IC\_{t-1}\left(ROIC-WACC\right)}{(1+WACC)^{t}}$ + $\frac{ \frac{IC\_{0} x (ROIC\_{1}-WACC\_{1})}{WACC\_{1} - g}}{(1+WACC)^{t}}$  | ValueEπ $=TE\_{0}+ \sum\_{}^{}\frac{TE\_{t}\left(ROE-COE\right)}{\left(1+COE\right)^{t}}+\frac{\frac{TCE\_{0} x \left(ROE-COE\right)}{COE - g}}{\left(1+COE\right)^{t}}$ |
| VALFMM = $\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ + $\frac{ EBIT\_{1} x FMM}{\left(1+WACC\right)^{t}}$ | ValueFMM =$ \sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}$ *+* $\frac{ EBIT\_{1} x FMM}{\left(1+COE\right)^{t}}$ |
| VALAPV - The APV Model isn’t relevant with respect to Banks and Financials as these firms do not use debt as a part of their capital structure. |

1. This primer is intended to present an abbreviated discussion of the included financial economic concepts and is not intended to be a full or complete representation of them or the underlying finance or economic foundations from which they are built. [↑](#footnote-ref-1)
2. This material was developed by Richard Haskell, PhD (rhaskell@westmisntercollege.edu), Assistant Professor of Finance, Gore School of Business, Westminster College, Salt Lake City, Utah (2016). [↑](#footnote-ref-2)
3. OCI = other comprehensive income such as unrealized gains or losses on certain equity and debt investments. [↑](#footnote-ref-3)