

Stochastic Discounted Cash Flow Introduction

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Financial Forecasts

In addition, the management has provided the following forecast of income and expenses. We rely upon this forecast as true and accurate elsewhere in this Report.

Forecast Income/Expense Items	2011	2012	2013	2014	2015
Gross revenues	\$1,027,544	\$1,072,200	\$1,116,857	\$1,161,514	\$1,206,171
Less returns and discounts	\$1,750	\$1,865	\$1,979	\$2,094	\$2,208
	↓	↓	↓	↓	↓
Dividend payouts / Partner Draws	\$207,925	\$214,520	\$221,115	\$227,710	\$234,305
Net Cash Flow	\$270,293	\$280,534	\$290,776	\$301,017	\$311,258

Table 2. Income and Expense Forecast

A typical example taken from the Internet.

Such a method of business valuation is some years old and is still regarded as state of the art: combine a table of **forecast cash flows** with some **cost of capital**—occasionally little more than an educated guess—and produce a business value that, in the worst case, is stated with absurd numerical precision.

I will not talk about multiples here: They have no theoretical background at all.



Let us ask a few questions:

- ① Future cash flows are uncertain. So, instead of plain numbers, we should use **random variables** and their (conditional) expectations.
- ② What exactly is the cost of capital? (Look in any finance textbook: you will **hardly** find a precise definition!)
- ③ We are told that taxes have to be incorporated (usually in the weighted average cost of capital, or WACC). **Which taxes:** personal income tax, corporate income tax, or both? Are the tax rates uncertain?

And there are many more questions one could ask...

⇒ The conceptual foundations of valuation do not always get the attention they deserve.



We are not native speakers, and it can sometimes be difficult for us to judge how terms are used

single value at time t :

- “risk-free at time t ”
- “deterministic at time t ”
- “non-stochastic at time t ”
- “non-random at time t ”
- “fixed at time t ”
- “certain at time t ”

multiple values at time t :

- “risky at time t ”
- “non-deterministic at time t ”
- “stochastic at time t ”
- “random at time t ”
- “non-fixed at time t ”
- “uncertain at time t ”

Riskless/risk-free etc. does not necessarily mean “known at time t ,” because knowing something and it having a unique (non-random) value are not the same.



Too often valuation techniques are like cooking recipes

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That is fine if you use those recipes/formulas/approaches consistently under similar circumstances. But what happens if circumstances change?

As the American psychologist Abraham Maslow (1908–1970, left) said: “If the only tool one has is a hammer, everything begins to look like a nail.”

We need to understand the background of all those recipes/formulas/approaches. We need to understand the limitations of those approaches.

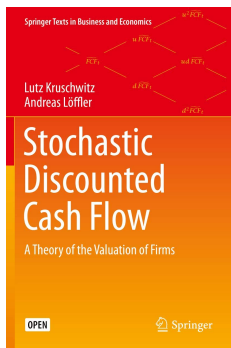
More research is needed on the fundamentals of valuation: this is the aim of our book on Discounted Cash Flow (DCF).





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Dominica with airport at
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- 1 Book “(Stochastic) Discounted Cash Flow” (Kruschwitz/Löffler)^a
- 2 www.wacc.de
- 3 The videos are **organized by content** and sometimes loosely follow the chapters of the book.

^aFirst edition by Wiley, then two editions with a slightly changed title and different enumeration of assumptions, theorems etc. by Springer. With Springer the book became open access.



