The Treatment of Management Projections That Require Analyst Input

Kevin P. Carey

Management-prepared financial statement projections are an important component of the income approach to business valuation, specifically the discounted cash flow valuation method. And, the discounted cash flow valuation method is frequently used and assigned material weighting in the business valuation performed for gift tax, estate tax, and generation-skipping tax purposes. This discussion considers how to approach management-prepared projections when the valuation analyst considers them to be of low quality—or not reflective of the subject company’s true risk profile.

INTRODUCTION

When valuing a business entity for gift, estate, or generation-skipping tax planning purposes, it is common for a valuation analyst to ask management of the subject entity for projected financial statements. This specific request is a standard component of the due diligence for the valuation analyst.

Projected financial statements give the valuation analyst the ability to utilize the income approach—specifically the discounted cash flow (DCF) valuation method—in his or her fair market value analysis of the subject company.

Furthermore, a valuation analyst will typically receive a set of projected financial statements without any resistance from company management, usually in the form of projected income statements and projected cash flow statements (or rather projected cash inflow or outflow that affect operations) for a discrete number of fiscal years.

When selecting the length of the discrete projection period, it is important to note that the period should at least include the number of years in which the subject company’s growth rate is projected to be significantly different from a normal, long-term growth rate. This long-term growth rate could be (1) the typical growth rate of a mature company in the subject entity’s industry or (2) an inflationary rate for the overall economy.

An appropriate projection period accounts for any abnormal growth the subject company is expected to realize until it reaches a stable, long-term growth rate. An inappropriate projection period for the subject company leaves the DCF method open to criticism. This is because the terminal value would be based on a long-term growth rate that is not considered stable.

The discrete projection period becomes less of a concern when valuing a mature company, since it is already considered to be operating at its long-term growth rate. In this case, a five-year discrete projection period is considered the typical length when using the DCF method.

When incorporating management projections into the fair market value analysis, the process as it has been discussed thus far is not typically controversial. As a due diligence exercise, it is important for a valuation analyst to ask for and, if available, consider management projections in the valuation of the subject entity.

Where a valuation analyst typically runs into controversy with respect to management projections is when considering the quality of the projections. That is, when the DCF method is used in a fair
market value analysis of a company, any valuation analyst should apply his or her own judgment in assessing the riskiness of achieving the projected financial performance.

And, an analyst should provide defensible support when assessing the inherent risk in management projections.1

Even by concluding that the management projections are reasonable and do not require any further input, an analyst has applied judgment to the management projections and, to a larger extent, the DCF method, which in turn affects the fair market value of the subject company.

When an analyst considers the management projections to be unreasonable, the analyst is claiming that the subject entity cost of capital does not reflect the true nature of the risk of achieving the projected cash flow. Therefore, the analyst has to apply judgment at this point in the DCF method in order for the subject entity cost of capital to reflect the true risk of achieving the projected cash flow.

The analyst has three options in order to strike this balance between the cost of capital and the projected cash flow: (1) modify the cost of capital, (2) modify the management-prepared projections, or (3) modify both.

The purpose of this discussion is to describe the various ways to treat management projections that are considered by the valuation analyst to be either too risky or too conservative. These options that an analyst has at his or her disposal range from the commonly used to the rarely used.

At any rate, striking a balance between the projected cash flow and the cost of capital will give a more appropriate fair market value conclusion—based on the DCF method—for the subject entity.

While cost of capital modifications are described in this discussion, the goal is to give the reader further insight into less common approaches to modifying the relationship between management projections and the cost of capital.

**Cost of Capital Modifications**

To account for the low quality of management-provided projections for a subject company, the most common input a valuation analyst can modify is the company-specific equity risk premium. The company-specific equity risk premium is a variable included in the various models that estimate the cost of equity capital for a subject entity.

For example, the following is the formula for a common cost of equity capital model, the modified capital asset pricing model (MCAPM):

\[
Ke = Rf + [\beta * ERP] + SRP + \alpha
\]

where:
- \(Ke\) = Cost of equity capital
- \(Rf\) = Risk-free rate of return
- \(\beta\) = Industry beta
- \(ERP\) = Long-term equity risk premium
- \(SRP\) = Size-related equity risk premium
- \(\alpha\) = Company-specific equity risk premium (or alpha)

Other than the company-specific equity risk premium, every input variable in the MCAPM may be supported by publicly available data related to the national economy, industry in which the subject company operates, and/or size of the subject company.

As a result, with respect to these variables, a valuation analyst’s input is limited to:

1. the various nuances involved in selecting the appropriate variable (i.e., supply side long-term equity risk premium versus historical long-term equity risk premium, size premium decile, raw versus adjusted beta, median versus Standard Industrial Classification (SIC) composite beta, and so on) and
2. selecting the appropriate input sources to reflect these variables.2

Since no publicly available data exist to estimate the company-specific equity risk premium input in the MCAPM (or any other cost of equity capital model for that matter), assigning a value to it is exclusively a function of a valuation analyst’s subjective opinion.

The base value for the company-specific equity risk premium is zero, and the analyst adjusts it (1) upward if the management projections are considered too aggressive or (2) downward (i.e., a negative alpha) if the management projections are considered too conservative.

Because estimating the company-specific equity risk premium is subjective, the company-specific equity risk premium is usually the subject of greater scrutiny by any third-party reviewer, especially in a litigious context. For example, in Hintman v. Fred Weber, Inc., the Delaware Chancery Court (the “Chancery Court”) emphasized the scrutiny placed on the company-specific equity risk premium by claiming that any proponent of this variable “bears the burden of convincing the Court of the premium’s appropriateness.”3

Therefore, the valuation analyst should have a defensible argument for including a company-
specific equity risk premium in the cost of equity capital for a subject company.

When formulating an argument for including a nonzero company-specific equity risk premium in the subject company cost of capital, a valuation analyst should avoid any justification that could be applied to the subject industry as a whole. After all, the company-specific equity risk premium is a risk component unique to the subject company.

Furthermore, a defensible argument would typically include specific financial analysis. Such analysis would allow the court—or any third-party—to (1) verify the appropriateness of including a company-specific equity risk premium and (2) accept the value of such a risk premium.

The company-specific equity risk premium is the most common way for a valuation analyst to deal with management projections that are deemed to be of low quality. However, despite its common use, this risk premium is not universally accepted, with the court stating its uncertainty as to whether the company-specific equity risk premium is “an appropriate response to optimistic management projections.”

Even though this method of treating low quality management projections is common, it has been shown that a sophisticated authoritative trier of facts, such as the Chancery Court, is open to other methods for treating this issue.

MODIFICATIONS TO MANAGEMENT PROJECTIONS

There are two primary components of the DCF method: (1) the cost of capital and (2) the discrete period projected cash flow (including the long-term growth rate for the subject company). Therefore, the alternative to modifying the cost of capital to account for the riskiness in achieving the management-provided projected cash flow (or lack thereof if the projections are deemed too conservative) is to modify the other primary component of the DCF method: projected cash flow.

It is important to note that a valuation analyst should refrain from actually modifying any project-ed financial statements prepared by management of the subject company. With respect to valuation analyses being performed for gift tax or estate tax planning purposes, any third-party reviewer of such analyses typically prefers projections that were prepared solely by company management and not modified by any third-party valuation analyst.

For example, in S. Muoio & Co. LLC vs. Hallmark Entertainment Investments Co., the court rejected a valuation expert’s testimony for reasons that included creating projected cash flow that did not consider the management-prepared projections, finding that it was “unreasonable [for the expert] to substitute [his] personal judgment for ‘the non-litigation business judgment of [the subject] management.”

Any valuation that uses a DCF method becomes significantly influenced by the cash flow projections used in the analysis, and any valuation that does not incorporate management-prepared projections runs the risk of being challenged by the opposing expert or a third-party trier of facts.

The following section discusses the defensible option a valuation analyst has at revising management projections in order to arrive at a version considered to be of high quality by all parties involved.

Management-Revised Projections

The most straightforward way to modify projected cash flow without directly changing any inputs or assumptions used to create those projections is to ask company management to revise their projections. While this is perhaps the most straightforward method, it can be met with criticism not by any third party reviewer but by the subject company management.

The reasons for potential controversy with this option are twofold: (1) pushback by management to make such a revision and (2) difficulty in revising projections as of the subject valuation date.

When a valuation analyst asks company management to revise their projections, the reaction by company management typically ranges from hesitation to outright refusal. Management might refuse to revise their projections because they firmly believe that the initial projections were the most accurate reflection of future performance at that time, or it might be due to external factors.

For example, the subject company lender may have factored those initial projections into their (1) decision to lend to the company or (2) structuring of the loan with respect to covenants.

Should company management refuse to revise their projections, the valuation analyst is left with the options of (1) applying a company-specific equity risk premium, (2) abandoning the DCF method, or (3) a third option discussed below, depending on the severity of the unreliability of the projections.

If management is hesitant in revising their projections, it is important to emphasize that the revision is necessary from a risk-return perspective. In other words, a valuation analyst should refrain from focusing on the quality of the projections but rather explain to management that the subject company
cost of capital does not accurately reflect the risk in achieving the projected cash flow.

The valuation analyst could apply a company-specific equity risk premium; however, revised projections made by company management would likely result in a more accurate fair market value indication based on the DCF method.

Should management agree to revise their projections, the revised projections must remain as of the subject valuation date. This would not be an issue if management had multiple versions of projections created as of the subject valuation date (e.g., an optimistic case, a pessimistic case, and a base case). However, if only one set of projections was available, then company management has the difficult task of making revisions that would have been created on a date that is likely much earlier than the time of the exercise.

At this point, the valuation analyst and management should (1) pinpoint what component(s) is (are) causing the projections to be unreliable and (2) consider the resources available to the subject company at that time. While this exercise is a difficult task, communication between the valuation analyst and company management is crucial in achieving a reliable set of revised projections, for it establishes where the valuation analyst believes the projections went wrong and how management can revisit the projections given this outside perspective.

**Modifications to the Cost of Capital and Management Projections**

When management projections cannot be revised and a defensible financial argument cannot be formulated for applying a nonzero company-specific equity risk premium, then a valuation analyst should see if the management projections could be broken out by cash flow stream. If an analyst can isolate the projected cash flow(s) that is (are) at issue here, then she can apply different costs of capital to each cash flow stream based on its different levels of risk.

As a simple example, the subject company may be comprised of one or more wholly owned subsidiaries. One of those subsidiaries may be newer and operate in an industry different from the parent company. If the analyst determines that this new subsidiary alters the company’s overall risk profile such that its original cost of equity capital is no longer appropriate, the analyst could isolate the projected cash flow generated by this subsidiary from the other subsidiaries (and parent company) and create a cost of capital that captures its relatively greater riskiness.

In this example, company management should be able to break out this riskier cash flow stream if it does not already have a breakout in the consolidated projections. The valuation analyst would then perform a DCF analysis of each cash flow stream, each with corresponding costs of capital, and sum the two fair market value indications to arrive at the value of the subject company.

While the above example illustrates a simple example of separate subsidiaries with management projections already broken out, the same procedure can be applied to a single operating entity, so long as the projected cash flow that requires different costs of capital can be isolated.

For example, a mature company operating in a mature industry could be venturing into a new product line that requires significant capital expenditures over the discrete projection period. This situation is common in mature industries when new technology creates new opportunities for established industry operators, such as broadband technology in the telecommunications industry.

If company management does not have a separate set of projected cash flow for this new product line, the valuation analyst can discuss with management the creation of a set of projections for this product line. Once the projected cash flow has been established, the analyst then estimates a separate cost of capital for the newer, riskier product line.

When estimating the cost of equity capital for an isolated cash flow stream, it is important to avoid being influenced by any other costs of equity capital being applied to the residual cash flow stream(s). While many of the inputs to build the costs of equity capital will be similar or the same (i.e., risk-free rate and equity risk premium), it may not be appropriate, for example, to apply the same beta to the different cash flow streams.

Beta is a function of the market risks associated with a product or service line being offered; therefore, in order to capture these unique risks, it may be appropriate to estimate a beta using an SIC code for an isolated cash flow stream that is different from the SIC code(s) used for the residual cash flow stream(s).

**Multiple Costs of Capital for a Single Cash Flow Stream**

A valuation analyst may believe it is necessary to apply multiple costs of capital to a single cash flow stream. The reason for doing this is due to the
projected cash flow having two or more distinct time periods.

For example, the subject company may project cash flow characterized by two time periods: (1) a period of significant annual growth (the “start-up period”) followed by (2) a period of steady growth or even gradual decline (the “mature period”).

In the mature period, the new product line or subsidiary would be projected to generate relatively low-risk annual cash flow. The cash flow is considered to have lower risk than the projected cash flow in the start-up period because most or all of the expansionary capital expenditures would have been incurred prior to the start of the mature period. Given this factor, a relatively low present value discount rate could be applied to the projected cash flow in the mature period.

In the start-up period, the new product line or subsidiary would be projected to experience significant annual growth as it establishes its operations. As a result of the start-up nature of this time period—including the significant capital expenditures that are projected to be incurred—the start-up period cash flow is deemed to have more risk than the mature period cash flow.

Based on the risky nature of this cash flow, a relatively high present value discount rate—via the company-specific equity risk premium or any other appropriate variable—could be applied to the projected cash flow in this period.

It is important to note that this hypothetical discount rate range accounts for the risk and uncertainty that the subject company faces in (1) developing its operations and (2) achieving the projected cash flow. Furthermore, while a lower present value discount rate is applied to the mature period cash flow, the rate only brings this cash flow to the start of the mature period (i.e., end of the start-up period).

The analyst should then apply the higher present value discount rate used in the start-up period to bring the mature period cash flow from the end of the start-up period to the beginning of the start-up period (i.e., the valuation date).

Exhibit 1 on the following page presents an example of applying different costs of capital to the same set of projected cash flow, using the parameters discussed above. The weighted average cost of capital for the mature period is 10 percent, and the weighted average cost of capital for the start-up period is 20 percent, implying a 10 percent alpha was used.

Furthermore, constant annual maintenance capital expenditures were used to calculate the excess depreciation and amortization expense in each year of the mature period until the present value (using a 7 percent direct capitalization rate in the mature period) of the excess depreciation and amortization expense was immaterial.

**Summary and Conclusion**

Given its importance in the DCF method, management-provided projected financial statements are a significant component of any valuation for gift tax, estate tax, or generation-skipping tax purposes. Courts have routinely addressed issues related to management-prepared projections in this context.

This discussion provided insight on the number of ways a valuation analyst can treat management-prepared financial projections considered to be of low quality—whether through the cost of equity capital, the management-prepared projections, or both.

An understanding of these treatment options can assist a valuation analyst in developing (1) an appropriate methodology and (2) a defensible argument for accounting for any imbalance between management-prepared projections and the cost of capital.

**Notes:**

1. This is especially true when a fair market value analysis comes under scrutiny from a third-party reviewer. See The Estate of Louise Paxton Gallagher v. CIR, T.C. Memo. 2011-148 (June 28, 2011), in which the U.S. Tax Court disallowed the taxpayer’s adjustment to management projections due to insufficient support.

2. The input sources that reflect the MCAPM variables are commonly found in, but not limited to, the following sources: (1) Ibbotson SBBI Valuation Yearbook (or the 2014 Valuation Handbook by Duff & Phelps, LLC, for data that cover the year 2013 and thereafter); (2) Ibbotson Cost of Capital Yearbook, including quarterly updates; and (3) the Federal Reserve Statistical Release.


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### Exhibit 1
Hypothetical Discounted Cash Flow Method Using Multiple Present Value Discount Rates

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Debt-Free Net Income</td>
<td>$50,000</td>
<td>$100,000</td>
<td>$150,000</td>
<td>$175,000</td>
<td>$182,000</td>
<td>$182,000</td>
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<tr>
<td>Noncash Charges (i.e., Depreciation and Amortization Expense) [a]</td>
<td>$60,000</td>
<td>$70,000</td>
<td>$75,000</td>
<td>$80,000</td>
<td>$85,000</td>
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<tr>
<td>Capital Expenditures [a]</td>
<td>$(350,000)</td>
<td>$(330,000)</td>
<td>$(285,000)</td>
<td>$(215,000)</td>
<td>$(110,000)</td>
<td>$(110,000)</td>
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<tr>
<td>Additions to Net Working Capital [b]</td>
<td>$10,000</td>
<td>$8,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
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<tr>
<td>Net Cash Flow to Invested Capital</td>
<td>$(230,000)</td>
<td>$(152,000)</td>
<td>$(55,000)</td>
<td>$45,000</td>
<td>$162,000</td>
<td>$187,000</td>
</tr>
<tr>
<td>Discounting Periods [c]</td>
<td>0.5000</td>
<td>1.5000</td>
<td>2.5000</td>
<td>3.5000</td>
<td>4.5000</td>
<td>5.5000</td>
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<tr>
<td>Present Value Factor @ 20 Percent [d]</td>
<td>0.9129</td>
<td>0.7607</td>
<td>0.6339</td>
<td>0.5283</td>
<td>0.4402</td>
<td>0.3683</td>
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<tr>
<td>Present Value Interim Net Cash Flow to Invested Capital</td>
<td>$(209,960)</td>
<td>$(115,630)</td>
<td>$(34,867)</td>
<td>$23,773</td>
<td>$71,318</td>
<td>$71,318</td>
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</table>

<table>
<thead>
<tr>
<th>Present Value of Terminal Period Net Cash Flow to Invested Capital:</th>
<th>2018</th>
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<tbody>
<tr>
<td>Fiscal 2019 Net Cash Flow to Invested Capital [e]</td>
<td>$192,610</td>
</tr>
<tr>
<td>Direct Capitalization Rate [f]</td>
<td>7.0%</td>
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<tr>
<td>Terminal Value</td>
<td>$2,751,571</td>
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<tr>
<td>Depreciation and Amortization Tax Benefit Beyond the Terminal Year [g]</td>
<td>$129,818</td>
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<tr>
<td>Adjusted Terminal Value</td>
<td>$2,881,390</td>
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<tr>
<td>Present Value Factor @ 20 Percent [d]</td>
<td>0.4402</td>
</tr>
<tr>
<td>Present Value of Terminal Cash Flow Value</td>
<td>$1,268,488</td>
</tr>
</tbody>
</table>

Value Summary:

- Discrete Period Cash Flow Value: $(265,367)
- Terminal Period Cash Flow Value: $1,268,488
- Market Value of Invested Capital on a Marketable, Controlling Ownership Interest Basis: $1,003,000

[a] Per company-prepared financial projections. Capital expenditures were estimated to be equal to depreciation expense on a long-term, normalized basis.
[b] Based on the company's historical working capital requirement.
[c] Based on the midyear convention.
[d] Based on the start-up period weighted average cost of capital, including a 10 percent alpha to account for the riskier nature of the projected discrete period cash flow.
[e] Equal to normalized 2018 net cash flow, multiplied by (1 + expected long-term growth rate of 3 percent).
[f] Calculated as the mature period weighted average cost of capital of 10 percent - expected long-term growth rate of 3 percent.
[g] Reflects the present value of the additional depreciation and amortization income tax benefit that the company is expected to receive until capital expenditures and depreciation expense eventually equal each other.