

Zyla Offers a Model PWERM Analysis

There's no better teacher on the use of option pricing models in valuation than **Mark Zyla** (Acuitas, Inc.), and his session at the ASA/CICBV conference in Miami last month was no exception. (Mark also does most of the fair value training for the AICPA FVS.)

He reminds all appraisers that Topic 805 requires the measurement of contingencies in business combinations. There are two categories of these contingencies that are generally identified:

- Contractual contingencies: Recognize all assets and liabilities that arise from contractual contingencies. Measure at fair value as of the acquisition date.
- Non-contractual contingencies: Test for recognition of whether it is "more likely than not" that a contingency gives rise to an asset or liability. If so, measure at fair value as of the acquisition date. If not, do not recognize and apply Topic 405, *Contingencies*.

What types of acquired contingencies will most appraisers face? Mark lists the following examples:

- Warranties
- Environmental liabilities
- Litigation
- In-process research and development
- Unfunded pensions
- Certain financial liabilities

- Income tax issues
- Indemnification issues

Measuring the fair value of these contingencies often scares the uninitiated away, but in fact, Mark points out, there are only three common methods for doing these calculations—"the probability weighted method, option pricing methodologies, and Monte Carlo simulations."

Here's an example Mark provided to the attendees at the Miami meeting for applying the first of these methods, PWERM, in a situation where the number of outcomes is reasonably small, but there is relative complexity in anticipating the most reasonable outcome (like most analysts, Mark prefers the Monte Carlo method when there are large numbers of possible outcomes).

1. Assume Acquirer Corp. purchases Target Corp. on 1/1/x1 for \$500 million.
2. Target has just introduced a new product line that is expected to generate significant sales.
3. **Contingency 1:** If Target achieves target EBIT of \$125 million in year 1, Acquirer will pay an additional \$15 million to the previous owners.
4. Target also intends to spin off a division in year 1, and expects to receive \$10 million.
5. **Contingency 2:** If proceeds exceed \$15 million, Acquirer will pay an additional \$3 million to the previous owners
6. The discount rate is 10%.

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How does PWERM solve for the second contingency? In Mark's example, the first level of variable is ranking the likelihood of one of the three outcomes occurring.

- Division is not sold: 35%
- Division is sold for <\$15 million: 50%
- Division is sold for >\$15 million: 15%

Each of these three outcomes has two possible outcomes, as well: EBITDA is either above or below \$125 million. This means that Mark uses PWERM to effectively do six values, each outcome weighted according to combined probability. The average result of these weighted values comes out to an expected earnout of \$4.875, or after net present value at 10% of \$4.432.

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