

# When You're Not Preaching to the Choir

## Presenting DFA Analysis Results

Imagine that you're close to concluding a three-month modeling assignment. You've compiled your working papers, passed through the peer review process with flying colors, and feel confident that the results answer the questions originally posed by the management team that commissioned the study. All that's left is to give a one-hour presentation to the management team summarizing three months' worth of detailed analysis using techniques that are unfamiliar to many actuaries, let alone general managers.

Contemplating that presentation, you realize that three months of work could very well be dismissed, unless you can convey the heart of that analysis in the one hour you've been granted. Where would you begin?

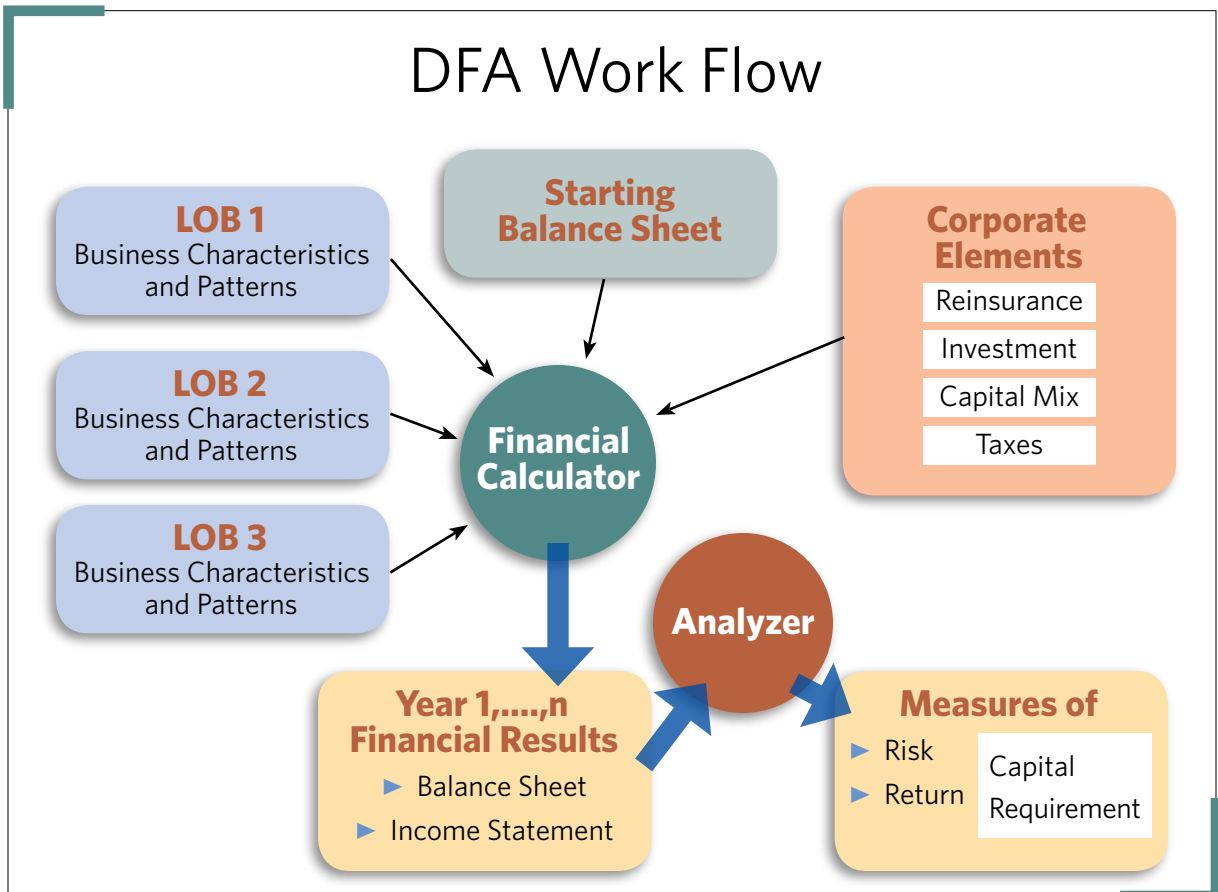
A good question. Too often, project results aren't used or DFA analysis projects aren't even commissioned because those who complete such projects—actuaries in many cas-

es—fail to translate the results of the modeling work into a useful end product.

In July of 2003, volunteers from the Dynamic Risk Management (DRM) Committee of the Casualty Actuarial Society (CAS) tried to answer that question: Where would you begin? The report of the Working Party was presented at the 2004 spring CAS meeting in Colorado Springs, Colo., and subsequently published in the fall 2004 edition of the *CAS Forum*. The Working Party also created a PowerPoint template that can be used as a source for presentation slides.

A successful DFA presentation includes three processes:

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orienting the audience, summarizing the analytical results, and stating the conclusion. While those items are common to other presentations, there are two features of DFA modeling that uniquely shape the content of those phases.

First, DFA models are computer simulations that incorporate a high level of technical sophistication. Second, these simulation models are driven by probability distribution functions, so a DFA or DRM project won't produce simply a single result, or even a small collection of results, but rather a distribution of potential results. The DFA presentations that don't work well tend to be overly focused on the technical modeling issues, thereby losing sight of the questions that initiated the project.

### Orient the Audience

The orientation phase provides the foundation for the slides in the results phase. An effective DFA presentation covers the goals of the model without getting lost in the details of how the model operates. An example of such a slide, one that uses a flow chart of the modeling process, is shown left.

The audience picks up a sense that the modeling process captures the interconnections among the company's operations, yet the slide doesn't dwell on how the programming operates to make that happen. Ideally, you'll leave the viewers with a sense that this model isn't a black box, but that you've taken care of the appropriate details to accomplish their goals.

Two other items to cover are identification of the risk and return metrics used in the study and an explanation of how they'll be used to answer the questions that led to the study. A review of the questions to be answered can be useful as a background to describe the options reviewed.

Typically, a DFA study is performed to evaluate different options or actions the management team can take, couched in terms of risk and return. Those metrics should have been agreed on early in the life of the project, with the orientation phase of the presentation serving to remind the

management team of those earlier decisions and to set the groundwork for the slides in the results section that will use those terms.

### Present the Results

A simulation program can generate reams of statistics. Your task in presenting the results is to translate that mountain of data into useful information. We found that graphs provide ample means to transform the thousands of simulation runs into a few slides that fit into a one-hour presentation, which will summarize the modeled financial measures of interest.

We'll discuss two common types of slides: slides that illustrate the likely range of results for a given metric, and slides that are a variation of the efficient-frontier graphs frequently seen in a finance textbook.

One illustration of how to present the likely range of financial results appears on Page 76, a diagram of cash flow distributions over time.

The traditional option to give a point estimate, such as expected value as a means to summarize the data, along with statistics such as the variance or the measures of skewness or kurtosis, loses information on the likely range of results. The following graph conveys more information while summarizing the data in a palatable form.

The efficient-frontier-type graphs give a visual representation of the risk-vs.-reward trade-offs present in most cases. While that information could be summarized in a table, we believe that a graph like the one pictured is easier than a table to view at a glance and process in a presentation setting.



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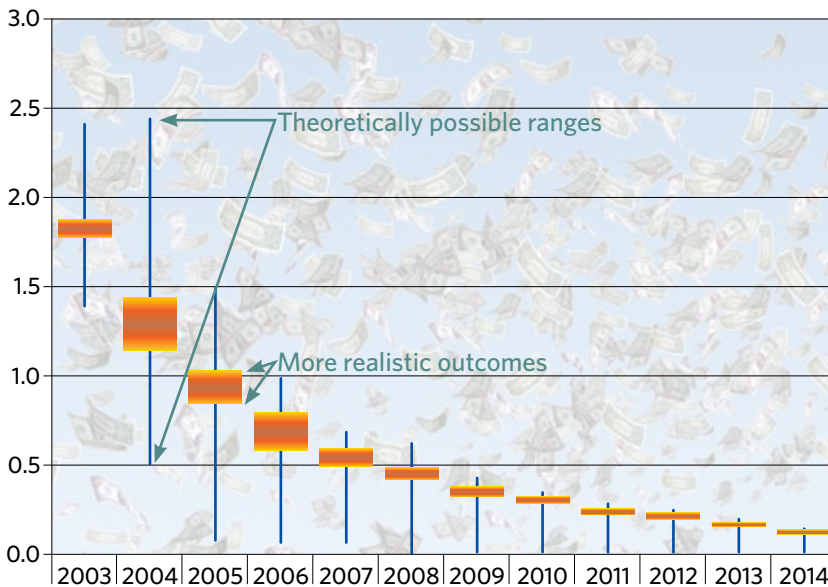
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# Cash Flow Over Time

Range of Liability Cash Flows Over Time  
(10th-90th percentiles)



Attention to detail in formatting the exhibits pays high dividends. The use of color can highlight key results in the study without appearing to belabor a point in the presentation. A well-chosen phrase that reinforces your comments, when placed in a strategic spot on a graph, can help the audience members as they navigate a topic in an hour that you've spent months reviewing. It's important to budget time at the end of a project to format the slides so they'll make your points effectively. Unless your clients understand your work conceptually and feel confident in acting on your recommendations, your work is of limited value.

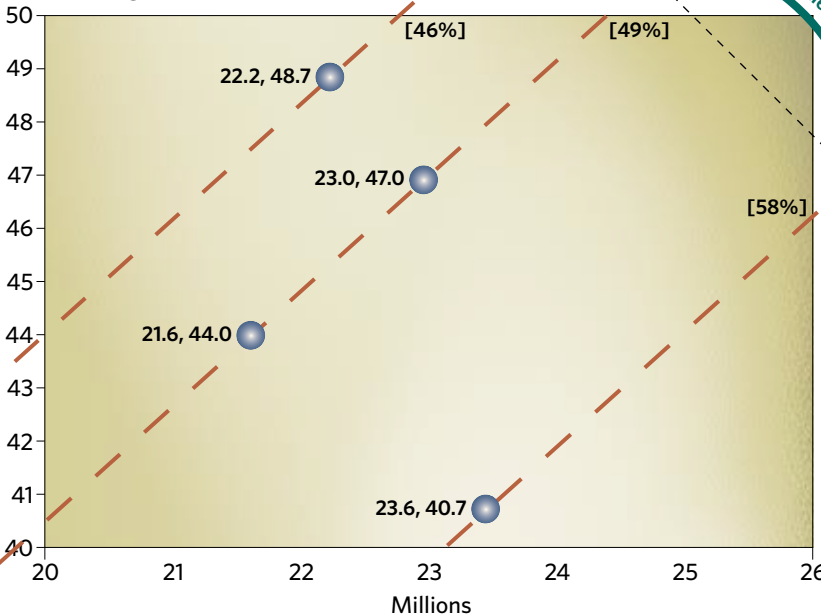
### State the Conclusion

Every presentation should have a conclusion. A DEA study would typically be commissioned to evaluate a set of complex options, given certain financial measures and acceptable ranges of those measures. This is the point in the presentation at which you should summarize what all the statistics mean in terms of meeting those financial goals. If you reach the end of your hour with the people who commissioned the study without tying the exhibits and graphs together and interpreting the results, you've failed to complete the assignment.

# Reinsurance Options

Risk-Reward

Underwriting Result (in Millions)



### Communicating With Clients

Few of our clients have the time or will-power to read our fully detailed reports. The most common medium for communication is in the form of PowerPoint slides containing a few graphs and bullet points. While we still need to write reports to document our work and to provide the technical backup for those cases in which a client feels compelled to dig deeper into a topic, we should expect that relatively few people will take the time to read those reports. Learning to communicate effectively in the presentation medium is a key skill for each actuary to develop. We hope that the report and template generated by the Working Party are useful tools for those seeking to improve communications with management.

To access the live links highlighted in the text above, visit this article on the *Contingencies* website, [www.contingencies.org](http://www.contingencies.org).