Business Valuation Australia

(1Q2016 Issue - January 2016)
How Top M&A Practitioners Are Using DCF Techniques

Major investment banks routinely use discounted cash flow techniques to determine company value in mergers and acquisitions. However, the actual application of the methods is “far from routine,” say the authors of a study published in the *Journal of Applied Finance*.

The study’s results “serve as yet another reminder that analytic techniques such as DCF do not make decisions but only inform them.”

Interestingly, the study reveals a lack of consensus on certain issues among the brightest minds in the business. For example, there is a wide variation among banks in the steps they take to value synergies. Also, there are considerable differences in dealing with the issue of adjusting discount rates to take into account a firm’s size. The study’s authors cite these two areas in particular as ripe for further research.

The authors interviewed 11 major investment banks for the study: Bank of America Merrill Lynch, Barclays Capital, Credit Suisse, Deutsche Bank AG, Evercore Partners, Goldman Sachs & Co., Greenhill & Co. LLC, JP Morgan, Lazard, Morgan Stanley, and UBS. True, these banks are doing deals with very large companies—not the typical size firm the average valuer has for a client. But the insights into certain areas of valuation are interesting nevertheless. Here are the main conclusions of the study:

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New Degree Program at Macquarie U. Connects Corporate Finance and Valuation Professions

Macquarie University’s Applied Finance Centre is launching a Graduate Diploma of Applied Finance for Business Valuation program in Sydney and Melbourne in 2016. The program, which will take students 12 to 15 months to complete, combines classroom teaching from leading valuation experts with hands-on and real-world-based valuation exercises. The program is a specialised offering for practitioners who wish to develop their valuation skills for finance careers.

*Business Valuation Australia* spoke with Tony Carlton, the program director for corporate finance at the Applied Finance Centre. Carlton, who has extensive corporate-sector experience, discussed what makes Macquarie’s program unique and how it will help students build expertise in a wide array of business valuation applications.

*BVA: Tell us about the new Graduate Diploma of Applied Finance (Business Valuation).

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continued on page 6...
Macquarie University

CARLTON: Our goal is to provide students with the opportunity to develop their valuation skills over a 12- to 15-month period and have a recognised specialist postgraduate qualification. Subjects offered in the diploma are part of the master’s program, so students can continue on to complete the full master’s if they wish.

The program is quite tailored. Students take units in corporate finance and investment management. These subjects introduce key skills and also provide an understanding of the decision-making situations where valuations are needed.

Students then take three valuation-specific subjects, which address issues confronted by practitioners. The diploma is completed with an elective where they get to see valuation in action, whether it’s mergers and acquisitions, private equity, resource industry analysis, or a portfolio restructuring elective.

Practical skills, such as financial modelling and the use of software packages such as S&P’s Capital IQ and the @Risk Monte Carlo simulation software are integrated into the subjects. Graduates will gain good practical experience in technologies that are widely used in the industry.

While we cover all the technical skills required, the program also emphasises that valuation is not a mechanical exercise. Practitioners need to understand the decision-making purpose of the valuation, as well as concentrating on the robustness of the valuation.

**BVA:** Tell us more about the context and development of the program. How did you identify the need for this diploma?

**TC:** The Applied Finance Centre has been operating in Australia and Asia for over 35 years and covers the whole discipline of applied finance, from markets, risk management to portfolio and funds management and, of course, corporate finance. About three years ago, we identified opportunities to further develop the valuation part of the corporate finance portion of the program.
Valuation is such an integral part to so much of what we do in business. The accounting profession is devoting considerable effort to accreditation of valuation professionals, and that’s happening internationally. Also, professional valuation bodies in the U.S. and Europe are trying to develop accreditation standards, so, on the financial reporting side and in the valuation industry, there is a lot of effort going on to improve valuation practices. But we can see there’s an interest in improved valuation skills across a range of areas. From regulatory price setting to fundamental stock analysis to the range of corporate finance transactions, to even things such as setting value-based management performance targets for senior management, these are all applications of valuation skills.

Additionally, there is a wide variety in the practice and application of many valuation models. For example, while textbooks all have a very similar description of how to develop a discounted cash flow model, the practice and application varies widely. So, we aim to equip students to address many of these practical issues and conduct reliable and robust valuations. My own personal interest is how to better incorporate risk into valuations because I don’t think we do that well. So the idea was that we wanted to contribute to an improvement in valuation practices for financial professionals. Over the last three years, we’ve introduced a number of valuation-oriented subjects into the applied finance program. Those subjects are functioning smoothly, so we’re now in a position to put together this package of studies in valuation.

**BVA: How did you develop the curriculum?**

**TC:** There are many different areas where valuation is used, including financial reporting, corporate finance transactions such as M&A and IPOs, by fundamental stock analysts, by corporate strategists, business development work such as project evaluations, and in litigation and regulatory applications. We tried to develop a program that gives people the skills to move into any of these areas.

In relation to curriculum content, the Applied Finance Centre’s model is to use qualified industry professionals to develop and present our courses. In developing our valuation courses, we have used practitioners with experience in a wide range of valuation applications.

Some of the industry professionals involved include Steven Bishop, a strategy and valuation consultant; Roger Casey, who has an investment banking and private equity background; Steven Reid, who heads the valuation practice for Deloitte in Australia; Manda Trautwein, a director in the corporate advisory area for William Buck in Sydney; Paul Brunker, formerly head of equity research for JP Morgan; and Roland Winn, a fund manager for the NZSuperFund. So, between us, we’ve covered a lot of the application areas of corporate finance. All of these people are involved in the development and presentation of the units we teach.

We’ve also just appointed an advisory panel of business valuation industry practitioners, and they will review the content of the material to ensure we’re keeping up-to-date and addressing all of the issues. The panel currently includes John-Henry Eversgerd, partner and leader of PPB Advisory’s valuation and disputes team in Sydney; Eric Teo, executive director of EY Transaction Advisory Services Group in Singapore; and Caleena Stilwell, director of corporate advisory at Grant Samuel, one of the leading specialists in independent expert reports.

Over the next few weeks, we’ll also announce the involvement of more professionals who come from the corporate finance and equity research area. It’s an impressive group of people.

Many people in applied finance careers doing valuations don’t have an accounting background. Our program caters to people with a wide variety
of backgrounds. If you have an undergraduate degree in finance plus the required work experience, you can go right into the program. If you don’t have a relevant undergraduate degree, we provide gateway units covering financial statement analysis, Excel modelling, economics and quant methods, and finance principles, equipping you to start a genuine postgraduate qualification.

**BVA:** Are you finding it difficult to recruit students because they don’t understand how valuation interplays with their career path?

**TC:** The first subjects students have to take in our program are a corporate finance core unit and an investment management core unit. In those subjects, they study M&A transactions, financial transactions, project evaluations, and fundamental stock analysis. They look at financial statements and the impact of the need to do impairment reviews, etc. So we’re hopefully engaging them in the types of decisions that a corporate finance practitioner needs to make. Then, out of that, the need for valuation knowledge becomes patently obvious.

For example, one of the elective units is Managing Shareholder Value. Part of that subject looks at how you determine performance targets for business units within a company. We start with what their market value is and work out what sort of implied residual income targets are needed to perform in line with the market expectations of the value. It’s an application of the value-based management approach. By establishing the needs of the practitioner and looking at the types of decisions they make, the need for valuation skills to support the analysis will be recognised.

The other thing we emphasise is that valuation is a process, not a number. Robust valuations require you to understand the strategic and commercial dynamics of a project or a business that you might be looking to acquire. Understanding these aspects is critical to getting a good quality decision. That’s parallel to the conclusion in an independent expert report or fairness opinion; at the end of the day, the analysis helps determine whether a transaction is in the interests of shareholders. They don’t necessarily come up with one “right” value, but rather the result is a judgment of whether a transaction is fair. So I think that looking at that broader decision context is helpful to students; hopefully it makes them more marketable from a career perspective.

Since the Applied Finance Centre started in 1980, the flagship product has been the Master of Applied Finance that gives broad coverage to students of all areas of applied finance. Students can specialise if they want to, in corporate finance, risk, or funds management. Starting
in 2016, we’re offering three specialist graduate diplomas, one in business valuation, one in risk management, and one in retirement outcomes. It’s the first time we’ve offered a named specialisation in a particular area.

We see the market as a segment of students who want focused study over a shorter time frame. We’ve designed it so they can take this qualification and then continue on to finish the master’s if they want.

_BVA:_ **In terms of the design of the program, how have you made it accessible to working professionals?**

**TC:** Our programs are designed for part-time students. We generally teach subjects in an intensive block mode. Lectures generally take place on Thursday and Friday nights and all weekend. Lectures are face-to-face with teaching supported by an online support system. Weeknight lectures are held in Sydney and Melbourne CBDs [central business districts]. For our graduate diploma and master’s programs, we see that a key part of our business model is the fact that we’ve got experienced industry professionals in front of the students. Everyone teaching this program has at least 15 years of business experience, and we see that face-to-face teaching by industry experts is an important part of the program.

In addition to the appropriate undergraduate degree, to get into the program, students have to have at least two years of work experience, though we find it is typically five to six years of work experience. In the classroom, they are usually sitting with other experienced professionals, and we see this as an important part of the degree we offer.

We want our program to give participants the opportunity to develop a network of fellow professionals. We will provide networking functions with people from industry, so students can meet each other and industry professionals at least on an annual basis. We also offer through the existing program an active alumni group, and one thing we do in Sydney and Melbourne is to get industry professionals in to talk about industry issues across the whole range of finance.

**BVA:** _When can students start?_

**TC:** In Sydney, the program will commence in term two, which means students can start their studies in late March, and in Melbourne term three, which means students will start in June. The closing date for applications for Sydney is 28 February 2016. Anyone interested should go to our website at www.mafc.mq.edu.au.

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**INTERNATIONAL COST OF CAPITAL**


The new Handbook, by Duff & Phelps, is a must-have publication that includes data through December 2014 and March 2015 and builds on the same rigorous country-level cost of capital analysis previously published in the Morningstar/Ibbotson “international” reports.

It includes country-level country risk premia (CRPs) and country-level equity risk premia (ERPs) which can be used to estimate country-level cost of equity capital globally, from the perspective of investors based in 55 different countries. Optional semi-annual PDF update with data through June and September 2015 is available for an additional fee.

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DCF Techniques
... continued from front page

1. All use DCF. All of the investment banks interviewed use the DCF framework for estimating the enterprise value of a company involved in an M&A transaction. This “comports with standard finance theory and academic advice.”

2. Discount rates are derived from comparable firms. All of the banks base their discount rates on assessments of risk using data from financial markets and on comparable companies. However, what to do about the “size effect” is a big challenge. “An area of considerable variation is in deciding when and how discount rates should be adjusted for a firm’s size,” the authors write. “This suggests fruitful opportunities for research on how company size affects practitioners’ valuation policies.”

3. Art and judgment are required. There is a great deal of complexity in dealing with the “inevitable gaps between theoretical constructs and actual information that is available and quantifiable.” To grapple with this uncertainty, some practitioners “triangulate” among differing valuations while some others use one approach or input as a “sanity check” on another.

4. All consider sum of the parts. When assessing a multibusiness company, all of the banks consider sum-of-the-parts valuation and use it when size, risk, or other factors merit the extra analysis.

5. Most take extra steps with synergy. Ten out of the 11 banks take extra steps in valuing synergies as opposed to merely folding them into a company’s cash flows and discounting everything at the same rate. However, all of the banks do this differently. The authors say, “Research to understand the risk profiles of different types of synergies and to provide benchmarks (e.g., derived from certain types of traded companies and securities) to value those synergies can benefit both academic and practitioner audiences.”

On the other hand … Valuation experts spend too much time developing the cost of capital, observes Aswath Damodaran (New York University Stern School of Business), speaking at a recent conference. “Why is there so much time spent on the discount rate when all of the mistakes are made on the cash flows?” he says.

Damodaran recently valued a public company and spent almost all of his time on factors that affect cash flow, such as market share, margins, and so on. A much smaller amount of time was spent on the discount rate he used, which was 7%. He pointed out that public companies have a cost of capital that varies in a tight range of about 6% to 12% (if you use the 10th and 90th percentiles).

The cost of capital has become a complex topic with a huge amount of related research and data. While this is a good thing, valuers should not get lost in the cost of capital analysis at the expense of the analysis of cash flow.◆

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Seven Models for Estimating the Cost of Equity in a Global Setting: The Pros and Cons

What is a good method for developing the equity component of international cost of capital using the capital asset pricing model (CAPM)? Jim Harrington, director at Duff & Phelps (U.S.) and co-author of the 2015 International Valuation Handbook – Guide to Cost of Capital, explains that you can use a number of models to estimate the cost of equity capital in a global environment, but there is no consensus among academics and practitioners as to the “best” model to use.

Harrington advises that, when choosing a model, the goal is to balance several objectives: (i) acceptance and use; (ii) data availability; and (iii) simplicity. He gives a rundown of seven of the commonly used models and their potential strengths and weaknesses.

1. Global CAPM Model

*Summary:* The global CAPM model recognises cross-border diversification opportunities and prices securities accordingly. The following equation is expressed in U.S. dollars (i.e., from the perspective of a U.S. dollar investor):

\[ k_e = R_{f,U.S.} + (\beta_w \times RP_w) \]

Where:

- \( k_e \) = Cost of equity capital
- \( R_{f,U.S.} \) = U.S. risk-free rate
- \( \beta_w \) = Market risk measured with respect to a world portfolio of stocks (i.e., beta)
- \( RP_w \) = Equity risk premium (ERP) (rate of return expressed in terms of U.S. dollar returns) on a world diversified portfolio

*Strengths:* This model works well where markets are integrated and/or when a subject company operates in many countries.

*Weaknesses:* It assumes away meaningful differences across countries and generally requires robust historical bond and stock market return data to be available for the “local” country.

2. Single-Country CAPM Model

*Summary:* The single-country CAPM model works best for developed economies. If you estimate all expected terms of rates of return in local currency (e.g., Brazilian real), then you can use the resulting cost of equity capital estimate to discount expected net cash flows expressed in local currency. If you estimate all expected return in terms of rates of return in U.S. dollars, then the resulting cost of equity capital is used to discount expected cash flows expressed in U.S. dollars (with the exchange risk treated in either the expected cash flows or as an adjustment to the discount rate). The formula is:

\[ k_{local} = R_{f,local} + [\beta_{local} \times RP_{local}] \]

Where:

- \( k_{local} \) = Cost of equity capital in local country
- \( R_{f,local} \) = Return on the local country government’s (default-risk-free) debt
- \( \beta_{local} \) = Market risk of the subject company measured with respect to the local securities market
- \( RP_{local} \) = Equity risk premium in local country’s stock market

*Strengths:* This model allows more local factors to be introduced, so the output is specific to the country.

*Weaknesses:* As with the global CAPM, this method generally requires robust historical bond and stock market return data to be available for the “local” country.
3. Nested Global CAPM Model

**Summary:** This variation of the global CAPM model introduces a measure of a country’s covariance with its region (in addition to a measure of a country’s covariance with the world). The formula is:

\[ k_{e,\text{local}} = R_{f,U.S.} + (\beta_{cw} \times RP_w) + (\beta_{cr} \times \delta_r) \]

Where:

- \( k_{e,\text{local}} \) = Cost of equity capital in local country
- \( R_{f,U.S.} \) = U.S. risk-free rate
- \( \beta_{cw} \) = Country covariance with world
- \( RP_w \) = World equity risk premium (rate of return expected in terms of U.S. dollar returns)
- \( \beta_{cr} \) = Country covariance with region
- \( \delta_r \) = Regional risk not included in \( RP_w \)

**Strengths:** This model introduces a measure of a country’s covariance with its region.

**Weaknesses:** The model is complex and requires proxies to measure covariances. It requires you to perform a statistical analysis of representative economies, data for the country, region, and world to estimate the respective covariances.

4. Damodaran Model

**Summary:** This model from Aswath Damodaran (New York University Stern School of Business) compares the volatility of the local country’s stock market returns and bond returns (i.e., a proxy for the relative risk between debt and equity for investors in that country to estimate a country risk premium, or CRP). Damodaran also calls this the lambda (\( \lambda \)) approach. The Damodaran model is expressed in U.S. dollars as follows:

\[ k_{local} = R_{f,U.S.} + [\beta_{u.s.} \times RP_{u.s.}] + \lambda \times (CRP) \]

Where:

- \( k_{local} \) = Discount rate for equity capital in local country
- \( R_{f,U.S.} \) = U.S. risk-free rate adjusted if necessary for currency risk
- \( \beta_{u.s.} \times RP_{u.s.} \) = Risk premium (in U.S. dollars terms) appropriate for a U.S. company in a similar industry as the subject company in the local country
- \( \lambda \) = Company’s exposure to the local country risk
- \( CRP \) = \( \left( R_{local \text{Eurodollarissue}} - R_{f,u.s.}\right) \times \left( \frac{\sigma_{stock}}{\sigma_{bond}} \right) \)

**Strengths:** This method introduces a measure of economic integration at the company level.

**Weaknesses:** The model is also complex and generally requires robust historical bond and stock market return data to be available for the “local” country.

5. Yield Spread Model

**Summary:** This model may be used for a subject company in a specific country but not a multinational subject company. The model is also useful if local country government debt is issued in U.S. dollars (Venezuela is an example of a country that issues government debt in U.S. dollars rather than local currency). The formula for this model is expressed as:

\[ k_{local} = R_{f,u.s.} + (R_{local \text{Eurodollarissue}} - R_{f,u.s.}) + [\beta_{u.s.} \times RP_{u.s.}] \]
SEVEN MODELS FOR ESTIMATING THE COST OF EQUITY IN A GLOBAL SETTING

Where:

\[ k_{\text{local}} = \text{Cost of equity capital in local currency} \]

\[ R_{\text{f,U.S.}} = \text{Current market interest rate of debt issued by U.S. government with the same maturity as debt issued by the local country government denominated in U.S. dollars} \]

\[ R_{\text{local euro $issue}} = \text{Current market interest rate on debt issued by the local country government denominated in U.S. dollars (eurodollar debt represents debt issued by local country in U.S. dollars and repaid in U.S. dollars)} \]

\[ \beta_{\text{U.S.}} \times R_{\text{PU.S.}} = \text{Risk premium (expressed in terms of U.S. dollar returns) appropriate for a U.S. company in a similar industry as the subject company in the local country} \]

\[ \sigma_{\text{local}} = \text{Volatility of returns in the local country's stock market index} \]

\[ \sigma_{\text{U.S.}} = \text{Volatility of U.S. stock market} \]

**Strengths:**

This model is intuitive and easily implemented. It has appeal where non-U.S. debt issued by the local country government can be observed.

**Weaknesses:**

It requires that the “local” government issue debt denominated in the “home” government’s currency. It also uses less country-specific inputs.

6. Relative Volatility Model

**Summary:** Practitioners should consider this model for a country-specific subject company valuation, not a multinational subject company. The model is useful if the stock market in the local country is diversified and has historical returns. The formula is:

\[
k_{\text{local}} = R_{\text{f,U.S.}} + (\beta_{\text{U.S.}} \times R_{\text{PU.S.}}) \left( \frac{\sigma_{\text{local}}}{\sigma_{\text{U.S.}}} \right) + \varepsilon
\]

Where:

\[ k_{\text{local}} = \text{Cost of equity capital in local country} \]

\[ R_{\text{f,U.S.}} = \text{U.S. risk-free rate, adjusted if necessary for currency risk} \]

\[ \beta_{\text{U.S.}} \times R_{\text{PU.S.}} = \text{Risk premium (rates of return expressed in U.S. dollar returns) appropriate for a U.S.-based company in similar industry as the subject company in the local country} \]

\[ \sigma_{\text{local}} = \text{Volatility of returns in the local country's stock market index} \]

\[ \sigma_{\text{U.S.}} = \text{Volatility of U.S. stock market} \]

**Strengths:** This model is intuitive and easily implemented.

**Weaknesses:** It does not work well in countries that do not have a well-diversified stock market and generally requires the “local” country to have historical equity market returns. At times, it does not work well for even the most developed countries, resulting in implied adjustments in excess of what would be expected.

7. Country Credit Rating Model

**Summary:** Whereas a single-country version of the CAPM or a relative volatility model require that a country has observed equity returns, the Erb-Harvey-Viskanta country credit rating (CCR) model\(^1\) allows for the calculation of estimated country-level cost of equity for countries that have a CCR, even if they do not have a developed equity returns equity history (or even no equity return data at all).

The formula for this model is:

\[
k_{\text{local}} = \alpha + \beta \times \log(CCR_{\text{local}}) + \varepsilon
\]

Where:

\[ k_{\text{local}} = \text{Cost of equity capital in local country} \]

\[ \alpha = \text{Regression constant} \]

\[ \beta = \text{Regression coefficient} \]

\[ 1 \text{ Claude Erb, Campbell Harvey, and Tadas Viskanta, “Expected Returns and Volatility in 135 Countries,” Journal of Portfolio Management, Spring 1996, 46-58.} \]
**How Far Is BV in Global Alignment?**

How Far is BV in Global Alignment?

A “Lively Debate” panel hosted by the International Institute of Business Valuers (IIBV) discussed the considerations of new valuation professional organisations (VPOs) about appropriate levels of professional standards. The panel, which covered education standards and quality initiatives, was held during the annual meeting of the International Valuation Standards Council (IVSC) in Paris. Here is what you need to know about some of the insights and perceptions from valuators from around the globe.

**Significant differences.** “Each country, and each VPO, presents a different valuation situation and user group,” says Karin Lusnic, representing the Slovenian Institute of Auditors. “We are not valuing on the same benchmarks currently.” Unlike the many real estate appraisers who came together in Paris for the meeting, Lusnic began her career in business valuation with KPMG, and she now has her own firm. Ben Elder, the international director of valuation for RICS in London, agrees. He points to the differences in regulation.

Bill Beauclerk, who has worked in real estate valuation in the U.K. and France for 30 years, but who also does select business valuations, sees competition as the biggest issue. A “cartel” of large real estate firms—CBRE for instance—dominates the real estate market, and the court system often empanels valuators.

Valuators (mostly real estate) are, in fact, more collaborative in the EU, Beauclerk claims. This is perhaps because individuals move from firm to firm regularly. There is also less litigation and a separation, at least in France, between the “first class” that works with investment-level commercial property and everyone else.

Elder points out that there is no consensus on standards (he represents RICS and wants the RICS “Red Book” to be the common guide, “even if the name of a non-U.K. country is on the front cover”). He recognises that this approach is not working because whether you’re talking to real estate, business, or arts and antiques, everyone always says, “We’re different.”

**Head start.** Business valuation is ahead of the curve because many countries, such as Slovenia, which adopted IVS in 2004, had no other rules when they started. For them, IVS made the most
sense. “Whenever you’re valuing for financial reporting in Slovenia you have to follow IVS, plus some national practice guides as the first step,” said Lusnic. “We still lack an international benchmark for quality work,” and it will be hard to defend your adherence to meaningful standards until such a “certification” exists.

Other countries as wide-ranging as Holland and Indonesia have active groups of generally Big Four appraisers working with their respective finance ministries along the lines of the IVS in an attempt to create what one attendee from Hong Kong called “a robust valuation ecosystem within the local economies.”

A recent Dutch meeting, for instance, focused on the relevance of scenario analysis. The Dutch regulators wanted to know the basis for appraisal reports that discussed ranges from optimistic to pessimistic. The auditors, being conservative, suggested that the low end of the valuation range should carry additional weight.

The Indonesian Ministry of Finance demanded two years ago that a group of Singapore valuers create a certification program in compliance with the IVS. The group is working with Indonesian universities to develop the initial training programs so that the first generation of “certified” appraisers can be initiated this year.

The more advanced economies are often working with two sets of standards: the global IVS, which will be updated extensively in 2016, and their own national standards. So, for instance, due to changes in commercial banking and other regulations, the U.K. updated its valuation standards in April 2015. BV must pay attention to both sets, despite the fact that most of the changes are being driven by real property issues related to commercial lending (in this case, both within the U.K. and at the European Commission).

Lack of professional review. However, everyone agreed that the rules are in flux and there’s no solid professional review procedure. “We don’t speed on the highways because there might be a police car around the corner,” said Beaucerl. “There is currently no police car on the valuation highway in the EU” or most other countries.

An IVSC delegate who once worked at the U.S. Securities and Exchange Commission agreed that the U.S. has similar issues. “The pressure was on the auditor to validate the business valuation in the U.S., but there was no pressure on the public company registrant,” he said. While this is changing, he felt the U.S. had the same situation: no sign of law enforcement in the future to the “drivers.”

Financial reporting creates particular problems for business valuers because few of their professional judgments are reported in financial statements—an obvious red flag for auditors working in any part of the globe. One IVSC Professional Board member with past audit experience complained that “disclosures often present a number, but none of the work done by the professional, which leads to the natural assumption that the conclusion is suspect.”

Mauro Bini, the Italian finance professor who is now a member of the IVSC Professional Board, described the EU profession as an “end table with two legs.” He said there were the beginnings of professional standards, but there was no sign of performance standards. “End users will not see the value in professionalism now,” said Phillippe Jouan, ex-director of the Canadian Institute of Chartered Business Valuators, who moderated the panel.

An audience participant applauded efforts by FFEE, the French valuation organisation, to bring together all disciplines. “At least we’re all around the same roundtable,” he said.

Still, parties who are involved in transactions control the real estate valuation market, and, to
How Far is BV in Global Alignment?

In some degree, the audit firms control the business valuation market. An auditor and “user” of appraisals commented that “valuation can’t be considered a real profession when the practitioners are also the ones doing the deals.” And Greg Forsythe, chair of the IVSC Professional Board and director of valuation services for Deloitte, commented that “we have 2,000 people working on valuations around the globe. The variance in quality is remarkable. We’re seeing math errors on the first page, in the worst cases, but even some of the better business valuation work is impossible to audit because the judgment process is not disclosed.”

Standardisation goal. “In much of the world, anyone can put up a sign at any time with no review and call themselves a business valuator,” says Adam Smith from PwC (on partial loan to the IVSC Standards Board). “It’s not a surprise that there are calls from outside the profession for standardisation.” He points out that this is the reason the IVSC creates global standards. But the standards are flexible because “there’s no way now to have one size fits all,” he says.

Smith also said that “the intensity of the volunteer work is now supported by the direct financial support of large firms, valuation professional organisations, and others around the world, so we will make it to the finish line eventually.” Others agreed, particularly Doug McPhee, the global valuation director from KPMG. “The mood has changed hugely in the last 12 months. More people are involved, and more people are doing the hard work to take the business valuation profession to the next level.”

Smith pointed to the fact that he, in fact, is paid for his work on behalf of the profession. “It’s PwC who is footing the bill for my work,” he said. And McPhee referred to The Appraisal Foundation’s BV Roundtable held recently in Washington, D.C. (see “Global Cooperation in Valuation Is Becoming a Reality” in this issue). “I travel the globe, and people are working hard at applying standards internationally everywhere I go. It’s exciting and very lively!”

New Version of the International Valuation Standards (IVS) Is Coming

At the recent annual meeting of the International Valuation Standards Council (IVSC) in Paris, the new version of IVS was discussed. The standards were originally released in 2004 as a 400-page set that contained guidance at varying levels of detail. Surprisingly, a variety of national valuation organisations in developing countries quickly adopted them—largely because they were the only international standards available. The first major revision, designed to shorten the document and focus on principles, was released in 2011.

Volunteers and staff (many of them “donated” by the Big Four accounting firms) have worked together via the IVSC Standards Board. A great deal of joint work on the update was accomplished in the public forums conducted the last two days on the outskirts of Paris. “We are very intent to not lose momentum,” said Sir David Tweedie, the IVSC chair of the board, who was re-elected as chair for the next three years. His background in leadership in international accounting standards makes him something of the ideal candidate to continue to advance the cause of global business valuation standards.

The exposure draft of the newest update is planned for as early as January 2016, followed by a three-month review period. Standards Board chair Greg Forsythe says that the updated IVS should be effective by early summer 2016.

This timetable is somewhat more critical for the many emerging valuation professional organisations (VPOs) than it is perhaps in North America, where USPAP, SSVS No. 1, and the CICBV standards are already “competing.” However, the various certifying organisations that currently comply with other established standards (CICBV, AICPA, ASA, NACVA, IACVA, and many more) will obviously benefit by working to maintain and improve alignment, if not coincidence, with the IVS.

In addition, efforts by the joint working group of The Appraisal Foundation to develop a certification in valuation for financial reporting or the IIBV to create an additional certification for cross-border appraisal expertise will obviously rely on close attention to what IVS has to say.

“I’m an optimist,” said one IVSC trustee. “The road to conformance [of international standards] is long and hard, but we’ll get there.”

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Australian Capital Markets Update Q3 2015

Editor’s note: S&P Capital IQ provides these data and statistics from its Australian Q3 2015 Capital Market Update. S&P Capital IQ analyses capital markets, trends, and market performance to provide key insight into Australian and New Zealand market activity. These data are printed with permission from S&P Capital IQ.

Amid the recent concerns over the Chinese market’s impact on Australia, Q3 2015 showed upticks in several market areas for Australia. Along with a record-breaking year for global M&A activity in 2015, the domestic market continued to improve. Here are the major takeaways from S&P Capital IQ’s Q3 2015 report:

- M&A transactions in Australia increased by 24% in value and 26% in volume in Q3 2015 compared to Q3 2014. A record year for global M&A activity is translating to an

Exhibit 1. M&A Breakdown

Exhibit 2. Sectoral M&A Breakdown

Source: S&P Capital IQ as of Sept. 30, 2015

*Data sorted by transaction value from highest (green) to lowest (red) in USD Millions.
increase in both outbound and domestic activity; however, the inbound market is still lagging.

- The domestic market continues to improve as deal volume recovers and deal value jumps significantly from $13.4 billion to $53.3 billion USD, representing a post-global-financial-crisis high.

- The growing focus on the impact of free trade agreements (FTAs) and specifically the TPP bodes well for M&A activity into 2016. This is coupled with a broader market expectation that commodity prices have bottomed out and should begin to recover.

Global stock performance overview (see Exhibit 3)

- S&P/ASX 200 benchmark index experienced a positive start in 2015 but is now negative on a year-to-date basis. Additionally, global markets saw a broad correction going through Q3 2015 and are in bear territory for the year.

Global stock market price-to-earnings (P/E) ratio (see Exhibit 4)

- Forward price-to-earnings valuation at the market level indicates that earning per share is not weakening even as global equity markets recede. The S&P/ASX 200 forward P/E multiple fell from a high of 17.4x to 14.7x for Q3 2015, but it is still above the long-term average.

Asia Pacific IPO trends (see Exhibit 5)

- IPO activity in Australia was outstanding in 2014. IPOs through Q3 2015 boasted a solid pipeline, and they are expected to continue to outperform the broader market.

Asia Pacific M&A landscape (see Exhibit 6)

- China was the most active M&A market in the Asia Pacific region, accounting for two-thirds of total transaction value. Australia now represents the fourth largest market, behind China, Japan, and Singapore.
Exhibit 4. Global Stock Market P/E Ratio

Source: S&P Capital IQ as of Sept. 30, 2015, forward P/E calculated on a rolling next 12-month basis

Exhibit 5. Asia Pacific IPO Trends

Source: S&P Capital IQ as of Sept. 30, 2015. China, Hong Kong, Macau, and Taiwan are included in this study.
2015 Australia cross-border M&A deals (see Exhibit 7)

- Asia, North America, and EMEA all experienced solid growth in both inbound and outbound deal flow with Australia. Aggregate deal value increased by more than $1 billion within the region.

Australia M&A breakdown (see Exhibit 8)

- M&A deal flow during Q3 was defined by activity within the domestic market as deal volume reached a post-global-financial-crisis high of 1,365 announced transactions. Expect domestic activity to close 2015 strongly.

Australian M&A sector breakdown (see Exhibits 9 and 10)

- Outbound M&A activity remains strong and continues to be led by deals within the industrial and financial sectors. The healthcare sector is one to watch as deal volume is close to a seven-year high.

- Inbound activity mirrors the outbound market with significant large deals taking place in the financials, industrials, and consumer discretionary sectors. The value of deals within the industrial sector is at a seven-year high, driven by deals.


Source: S&P Capital IQ as of Sept. 30, 2015, percentages are based on transaction value.

China, Hong Kong, Macau, and Taiwan are included in this study.

Exhibit 7. Cross-Border M&A Deals

Source: S&P Capital IQ as of Sept. 30, 2015, percentages are based on transaction value.

*Outbound represents deal flow from Australia to other regions, and inbound represents external deal flow into Australia.
Exhibit 8. Australia M&A Breakdown

Source: S&P Capital IQ as of September 30, 2015.

Exhibit 9. Australian Outbound M&A

Data sorted by transaction value from highest (green) to lowest (red) in USD Millions.

Exhibit 10. Australian Inbound M&A

Data sorted by transaction value from highest (green) to lowest (red) in USD Millions.
Global Cooperation in Valuation Is Becoming a Reality

The importance of international cooperation around standards and practices was addressed for the first time as more than a remote concept when The Appraisal Foundation (TAF) held its Business Valuation Roundtable in Washington, D.C. In fact, based on input from international regulators, there has been a palpable change of tone from “exploration” to “mandate.” The most tangible evidence is the joint effort to move ahead quickly on a new certification for valuation for financial reporting that will potentially be more robust than the current certifications.

Other highlights from the third annual roundtable include:

- Various practice aids, particularly from the AICPA and TAF working groups, that have begun to add practical guidance to the “30,000-foot view” provided by USPAP, SSVS No. 1, IVS, and other sets of standards;
- More international and common ground training and discussion at all levels aimed at reducing diversity of practice; and
- A general feeling that the guidance focus has aligned with the biggest problems auditors face when reviewing valuation work.

S&P Capital IQ is a global provider of multiasset class data delivered in real time through innovative platforms and analysis. It has transaction data on over 490,000 global M&A deals, 220,000 private placements, and 186,000 public offerings.

Paul Beswick, former chief accountant at the U.S. Securities and Exchange Commission and now in the private sector, applauds the efforts and advised that attempts be made to get buy-in from the marketplace (investors, users, etc.) along the way. When Beswick was with the SEC, he was critical of the fragmented nature of the profession and made a public call for unification.
Monte Carlo in BV: A Valuable Tool … in the Right Circumstances

More and more, valuators are asking how and when to use Monte Carlo to analyse how uncertainties influence value conclusions. Yet, despite the increasing attention, is anyone using it in business valuation? If so, in what circumstances?

Business Valuation Resources recently surveyed business appraisers about their use of Monte Carlo. We received a relatively small number of responses (110), suggesting that use of the method is still on the fringes of the BV community. This is the case even though it was introduced in 1964 and has been widely accepted in finance at least since a 1977 article in the *Journal of Financial Economics* by Phelim Boyle.

**Most use it.** The majority of our respondents (58%) have used Monte Carlo analyses in a valuation report. As shown in Exhibit 1, 53% of those who use Monte Carlo do so “selectively.” A growing 15% use them in nearly every valuation.

The most common applications of this method are for fair value financial reporting and the valuation of complex securities. Valuations of early-stage entities are another common application. Interestingly, as shown in Exhibit 2, over a quarter of those who use the method now use it in valuations having to do with business disputes.

**The naysayers.** Those who don’t use this method say the reason is that they don’t feel comfortable enough to use it correctly—or to defend the algorithm if someone challenges them, as shown in Exhibit 3. So, clearly, there’s a need for further education before Monte Carlo becomes more widespread in business valuation.

The negative comments about this method are pretty strong. One valuator said, “This is not relevant, and in fact can be off-putting, to 95% of small and mid-sized company valuations.” Another worried that “Monte Carlo can result in cost overruns and bad valuation results.” She said, “I’ve been using this method for over 10 years and am very concerned that this tool is now being used and reviewed by unqualified providers.”

**Users are strong believers.** Interestingly, not a single respondent claimed he or she use these analyses to back up conclusions derived from

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<table>
<thead>
<tr>
<th>Exhibit 1. How Frequently Do You Apply a Monte Carlo Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In nearly every valuation</td>
</tr>
<tr>
<td>As required by circumstances</td>
</tr>
<tr>
<td>Infrequently</td>
</tr>
</tbody>
</table>

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John Land (KPMG) also applauded the progress but reminded participants that “we need to stay focused on the implications on the audit and elsewhere to make sure that we don’t cause negative consequences…. There are a lot of changes, and they can’t all be implemented at once.”

Steve Sherman, the chair of the IVSC Standards Board, noted that business valuation has been a focus only for about the last 10 years and the IVSC standards continue to be revised “every two years or so.” He admits that “we don’t see a lot of valuation reports prepared in North America that say they’re compliant with the IVSC standards.”

In 2014, 20 valuation professional organisations signed a letter of understanding to comply with IVS, but it doesn’t have a history of supporting audits of fair value measurements. Sherman sees IVSC moving to “fill the gap in 15 or so technical issues where we need to go deeper.”

All of this can take a long time, but Adam Smith, at IVSC on loan from PwC, reminded everyone that it took the U.S. Financial Accounting Standards Board 10 years to get out its revenue recognition standards, “and that’s with a full-time board of seven people. We’ve had to get out our guidance with volunteers.”

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January 2016, 1 Qtr.
other business valuation methods. “I use Monte Carlo when the work calls for it because it is simply the best,” one respondent said.

“More of our clients want visibility into the uncertainties and expected outcomes of their business,” he argued. “This is one of the easiest ways to demonstrate the range of plausible future outcomes. I feel like our more sophisticated BV clients understand and appreciate the extra analysis.” This appraiser also uses Black-Scholes and other option modelling methods as needed (as do many other respondents in the survey).

Another appraiser agreed: “For certain securities and issues like earnouts, simulations are the best, and sometimes the only, valuation method that will work.” Several others referred to Monte Carlo as the only viable method in certain circumstances. “When I need to account for uncertainty in the input variables and when there is insufficient past history, no other method is sufficient,” one respondent said.

“A Monte Carlo simulation is used when path dependency needs to be modeled,” said another. “This is most commonly needed for various stock compensation engagements and contingent consideration analyses.” But, echoing other comments, he pointed out that Monte Carlo often gives him “a better understanding of the valuation process”—and helps him explain the sensitivities that result from uncertainties and judgments in his models.

“It is an extremely useful tool, especially when the analysis precedes a transaction or strategic decision…. I cannot imagine quantitative risk analysis without using this method,” he concluded.

**Exhibit 2. What Types of Engagements Do They Seem Most Appropriate For? (Select as many as apply.)**

| Valuations of complex financial instruments or securities | 74% |
| Valuations for financial reporting | 61% |
| Valuations for early-stage companies or asset analyses | 57% |
| Valuations for cheap stock or other compensation-based purposes | 35% |
| Valuations for purposes of mergers or acquisitions | 35% |
| Valuations for business disputes | 30% |
| Valuations for litigation | 26% |
| Valuations for tax matters | 13% |

**Exhibit 3. Why Don’t You Use Monte Carlo Analyses in Your Valuation Engagements?**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t understand the method well enough to be comfortable using it</td>
<td>48.6%</td>
</tr>
<tr>
<td>I’m concerned about defending this method if challenged by third parties</td>
<td>34.3%</td>
</tr>
<tr>
<td>It isn’t applicable to my types of engagements</td>
<td>31.4%</td>
</tr>
<tr>
<td>My clients don’t need or want this kind of analysis</td>
<td>28.6%</td>
</tr>
<tr>
<td>It takes too much time</td>
<td>28.6%</td>
</tr>
<tr>
<td>Too expensive</td>
<td>20.0%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>17.1%</td>
</tr>
</tbody>
</table>

**Software of choice.** Crystal Ball is the most commonly used program (38% of those who do Monte Carlo use this software), though several respondents complained about its relatively high price. @Risk is also popular. Other software packages mentioned include:

- Risk Simulator;
- SimulAir;
- XLSim;
- MCSIM; and
- The Vose Model Risk.

**Caution even among heavy users.** “It’s expensive software, and the results need to be weighted against other results and cost-benefit analyses,” one said. Another pointed out that it can simply be too much firepower for many engagements. “We used it when I was at the Big Four, but now I’m in private equity, and frankly we use less mathematical models,” he said. “It’s a very useful tool but care needs to be taken not to crack the walnut with a sledgehammer.”

**What do you think about using Monte Carlo in business valuation?** Email your thoughts to editorau@bvresources.com. ✉️
14 Tips for Valuing Intellectual Property Using the Multiperiod Excess Earnings Method

By John-Henry Eversgerd

Overview. Valuing intellectual property and intangible assets is often a highly technical task. Valuation experts frequently use forms of discounted cash flow (DCF), and more specifically the multiperiod excess earnings method (MEEM¹), to value many intangible assets such as patents, customer relationships, commercial contracts, brands, franchise agreements, and licences.

While a widely accepted method, the MEEM is not always straightforward to apply. This can result in grossly inaccurate valuation conclusions.

One common area where intellectual property valuations can go wrong is in the application of contributory asset charges when using the MEEM.

Fortunately, The Appraisal Foundation (TAF) has invested significant time and resources to clear up a number of common valuation issues. A particularly useful collection of tips is in TAF’s guidance on the MEEM and application of contributory asset charges, titled “Best Practices for Valuations in Financial Reporting: Intangible Assets Working Group—Contributory Assets” (referred to as the “Monograph”).

The Monograph is very detailed and an excellent reference tool for valuation practitioners to use when valuing many forms of intellectual property. This article provides a summary of some useful takeaways from the Monograph and closes with 14 useful tips for valuing intellectual property and intangible assets.

Background on The Appraisal Foundation.² The Appraisal Foundation, established in 1987, is a not-for-profit educational organisation dedicated to the advancement of professional valuation. It is authorised by the U.S. Congress as the source of real estate valuation standards and qualifications, and it provides voluntary guidance on recognised valuation methods and techniques for all valuation professionals. TAF is funded in part by a federal grant from the U.S. government, sales of publications, services, and from its sponsoring organisations.

Introduction to the Monograph. The Monograph outlines the view of TAF’s intangible asset working group regarding best practices for application of contributory asset charges in the multiperiod excess earnings method.

The Monograph’s final version followed the issuance of a discussion draft on 10 June 2008, an exposure draft on 25 February 2009, and a public hearing for oral comments on 12 May 2009. TAF points out that the Monograph reflects full consideration of all comments received.

Included as appendices are the “Comprehensive Example” illustrating the calculations and “Practical Expedients” or short cuts.

A separate and detailed “toolkit” was also developed, which is an expansion of the Comprehensive Example in the Monograph with more detailed calculations.

While there are various references to U.S. accounting requirements and U.S. specific tax issues, the Monograph remains a very useful reference for valuation practitioners in Australia and worldwide since the guidance illustrates universal valuation theory and techniques.

Overview of the MEEM valuation method. The MEEM is a form of the income approach to valuation. The analysis starts with forecasts, or prospective financial information (PFI), for the entity that owns the subject intangible asset. The PFI is then adjusted as summarised below.

Overview of the MEEM valuation method:
A stream of revenue and expenses are identified as those associated with a particular group of assets;

The group of assets includes the intangible asset being valued (the “subject” intangible asset) as well as other assets such as land, buildings, working capital, software, workforce, etc. (“contributory assets”) that are necessary to support the generation of revenue and earnings;

Future earnings of the subject intangible asset are isolated from those of the contributory assets to estimate the “excess earnings” attributable to the subject intangible asset;

To do this, a portion of the earnings are subtracted from the total earnings stream to remove those earnings attributable to the contributory assets, i.e., not attributable to the asset being valued;

This is done through the subtraction of quasi-expenses called contributory asset charges (CACs) that represent returns “on” and returns “of” the contributory assets;

Returns “on” reflect the investment return attributable to the contributory asset, i.e., the return one should receive for owning the asset and using it to generate cash flows for the business;

Returns “of” reflect the return one should receive to cover the wear and tear on the asset and the associated maintenance, repair, or replacement costs;

Once all expenses and contributory asset charges are subtracted from the forecast earnings stream, one should be left with the earnings attributable only to the subject intangible asset; and

Then the present value of the earnings stream is calculated using a discount rate reflecting the risk of the asset and time value of money.

Easy. Joking aside, that is a lot to do, so it is helpful that the Monograph provides a road map.

Exhibit 1 is an illustration provided in the Monograph of an application of the MEEM.

Contributory assets (CA). Contributory assets are a key component in the MEEM. As The Appraisal Foundation explains them:

Contributory assets are defined as assets that are used in conjunction with the subject intangible asset in the realization of prospective cash flows associated with the subject intangible asset. Assets that do not contribute to the prospective cash flows associated with the subject intangible asset are not contributory assets. For example, a certain amount of real property (land and buildings) may be necessary to support the cash flow attributable to a subject intangible asset. Alternatively, land held by an entity for investment (a non-operating asset) would not be appropriate to include as a contributory asset if the land is not necessary for, or expected to contribute to, the generation of the prospective cash flows of the subject intangible asset.

Some examples of common contributory assets are provided in Exhibit 2.

The Monograph summarises several technical issues that often need to be addressed in valuing intellectual property and intangible assets using the MEEM. Below is a summary of some particularly useful technical tips from the Monograph.

**Tip 1: Use the MEEM for only one asset.** A common issue in applying the MEEM is that there is often more than one intangible asset to value. The Monograph warns against applying the MEEM to two assets or more because doing so often results in double counting earnings from the same revenue stream. The MEEM is a residual method i.e. it is the last method that should be used in valuing intangible assets—to avoid the double counting and circular issues that could arise. Therefore, the Monograph recommends

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3 Monograph, page 7.
that “valuation specialists should first consider whether the revenue or profits can be split to allocate the economic earnings stream among intangible assets.”

4 Monograph, page 9.
method, the Monograph recommends using the same royalty rate used in the valuation of the contributory asset as that asset’s contributory asset charge in the valuation using the MEEM.

As an example, it is very common to value customer relationship assets using a MEEM while concurrently valuing the brand using the relief from royalty method. Since the brand is typically a contributory asset in the customer relationship valuation, using the same royalty rate in both analyses will improve consistency.

**Tip 3: Apply CACs for the whole life of the asset, except …** Often, contributory assets have short lives and the valuer must decide how long to apply the contributory asset charge in the MEEM analysis. As an example, following an acquisition, it is not uncommon for brands to be replaced by or combined with the acquirer’s brand or phased out slowly over time.

The Monograph recommends in general that CACs be applied for the whole life of the intangible asset being valued. It explains further:

This view is based on the premise that while the specific contributory intangible asset on hand as of the valuation date may diminish over time, it will be supported, maintained, enhanced and/or replaced and, therefore, future levels of the contributory intangible asset will be present to contribute to the generation of cash flows.

So, in the example of a brand being replaced by the acquirer’s brand, the CAC should be maintained to reflect the charge for use of the new brand.

The Monograph does allow for exceptions:

If a contributory intangible asset would not be maintained or replaced upon expiration, for example, in the case of a non-compete agreement arising from a transaction between a buyer and seller, the CAC would only be applied through the economic life of the contributory asset.

**Tip 4: Can goodwill be a CA?** At times valuation practitioners question whether or not elements of goodwill should be included as contributory assets. As an example, monopolistic market power has been raised as a possible contributory asset. A firm with a monopoly in its market may generate excess earnings from setting higher prices since the market lacks competitive pricing pressure. Assume you are valuing a customer relationship of a monopolistic firm. One argument is that an additional CAC should be applied to account for the monopoly power generating excess earnings that shouldn’t be included in the value of the customer relationship intangible asset.

The Monograph states that this shouldn’t be a common issue, however:

If other elements of goodwill are significant contributors to the stream of economic earnings associated with the subject intangible asset, the working group believes that the valuation specialist should:

a. Seek to identify and estimate the fair value of those elements (when reliably measurable) for use in calculating CACs;

b. Make an alternative adjustment to the economic earnings stream in order to compensate for the contribution of the other element or elements of goodwill; or

c. Consider another method (e.g., the Greenfield method) that more accurately isolates the economic earnings stream attributable solely to the subject intangible asset.

In the monopoly example, one solution may be to remove the price premium’s impact on revenue.

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5 A valuation method whereby an asset is valued with reference to an estimate of the royalty rate the owner of the asset could hypothetically charge for the use of the asset.
6 Adjusted for taxes if necessary.
7 Monograph, page 20.
8 Id.
9 Monograph, pages 9 and 10.
from the PFI before applying the MEEM to value its customer relationships if there is sufficient reliable supporting data to make the adjustment.

**Tip 5: Working capital CAC.** The Monograph points out that, contrary to valuing a business as a whole, including the cash flow impact of changes in working capital in intellectual property valuation is an incorrect application of the MEEM and will produce incorrect results.

**Tip 6: Negative working capital.** The Monograph explains that while most companies need to invest in working capital, such as inventory and accounts receivable, some businesses maintain a negative working capital balance as the norm. As an example, a coffee shop that accepts cash and credit card payments receives cash very quickly from its customers. But it may not need to pay its suppliers for 30 days or longer. This situation produces a positive cash flow as effectively the coffee shop’s suppliers are providing a short-term loan by allowing delayed payment terms. While not typical, the Monograph explains that a negative charge from negative working capital may be appropriate in some situations.

**Fixed assets CAC.** There are numerous ways that fixed asset contributory asset charges are calculated in practice, which often produce very different results. The Monograph sets out recommendations of two best practice techniques to calculate fixed asset CACs, referred to as:

- Technique A: average annual balance; and
- Technique B: level payment.

Detailed calculations for these techniques are provided in the Monograph and are summarised below, but the Monograph also points out that the detailed calculations are not necessary in every case and offer practical expedients.

**Tip 7: Fixed asset CAC Technique A: average annual balance.** The first recommended technique for calculating fixed asset contributory asset charges is the average annual balance technique. According to the Monograph, in calculating fixed asset contributory asset charges using this technique:

The CAC is calculated based on two separate charges for the return of and return on the fair value of the fixed assets in each year of the projection. The return of for each year is equivalent to the sum of: a) annual economic depreciation for the fair value of the acquired or current fixed assets (adjusted to market participant levels); and b) annual economic depreciation for the projected market participant levels of capital expenditures required to support the entity’s operations and the subject intangible asset over that asset’s remaining useful life. The return on is derived by applying an appropriate after-tax rate of return consistent with the risk of an investment in the fixed assets. The returns on are calculated for each year of the projection based on the average balance of the required future estimated fixed assets at market participant levels.

More useful detail is provided in the Monograph regarding the application of the average annual balance technique, and Exhibit 3 shows the Monograph’s numerical illustration.

**Tip 8: Fixed asset CAC technique B: level payment.** The second recommended technique for calculating fixed asset contributory asset charges is the level payment technique. According to the Monograph, in calculating fixed asset CACs using this technique:

CACs are combined into one charge that takes into account both return of and return on the fair value of fixed assets. The principle behind this technique is that, in the application of the MEEM, the cash flows associated with the subject intangible asset would need to be assessed a series of level annual payments for the use of the fixed assets required to produce the cash flows associated with the subject intangible asset. The level payment CAC calculation is applied to both the fair value of the acquired or current fixed assets and projected capital expenditures (adjusted to market participant levels).

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10 Monograph, page 15.
11 Monograph, page 16.
Again, more useful detail is provided in the Monograph regarding the application of the level payment technique, and Exhibit 4 shows the Monograph’s numerical illustration.

**Tip 9: Normalised levels of CAs.** The Appraisal Foundation recommends that the contributory assets applied should reflect normal levels, not levels that are unusual due to seasonality or the stage of a company’s life cycle:

For example, a normalized level of fixed assets for an entity in its infancy may be different from the level required once the entity reaches a mature stage in its life cycle.\(^{12}\)

**Tip 10: CACs may change over time.** Back to our coffee example. Let’s assume the café was acquired by a company with a more widely known brand name and the PFI reflects the expectation that it will attract 10% more customers to the café each day. Then due to the stronger brand power in the future the brand CAC may need to increase in the MEEM analysis starting from the date of rebranding. Therefore valuation practitioners should consider whether it is necessary to increase or decrease the CAC over time to reflect its relative contribution to generating earnings.

**Tip 11: More/less assets may be needed.** The Monograph asserts that the assets currently in the business may not always be the same as the assets that should be used as contributory assets.

The contributory assets reflected in the MEEM should include all assets required by market participants\(^{13}\) to realize the cash flows associated with the perspective of an acquiring “market participant”

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12 Monograph, page 8.

### Exhibit 3. Average Annual Balance Technique Illustration

<table>
<thead>
<tr>
<th>Year</th>
<th>FV of Acquired or Current Fixed Assets (1)</th>
<th>Capital Expenditures (2):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$250</td>
<td>$214</td>
</tr>
<tr>
<td>Year 1</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Year 2</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Year 3</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>Year 4</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Year 5</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Year 6</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Year 7</td>
<td>70</td>
<td>70</td>
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<tr>
<td>Year 8</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Year 9</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>Year 10</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Residual</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Total Return Of</td>
<td>286</td>
<td>300</td>
</tr>
<tr>
<td>Percent of Revenue</td>
<td>28.6%</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

| Return On: | Beginning Balance | 1,000 | 1,000 | 1,100 | 1,229 | 1,381 | 1,528 | 1,659 | 1,771 | 1,864 | 1,936 | 2,000 |
|           | add: Capital Expenditures | 286 | 400 | 450 | 500 | 525 | 541 | 557 | 574 | 591 | 609 | 627 |
|           | less: Return On | 286 | 300 | 321 | 348 | 378 | 410 | 445 | 481 | 519 | 545 | 567 |
| Ending Balance | 1,000 | 1,100 | 1,229 | 1,381 | 1,528 | 1,659 | 1,771 | 1,864 | 1,936 | 2,000 | 2,060 |
| Average Fixed Assets | 1,000 | 1,050 | 1,165 | 1,305 | 1,455 | 1,594 | 1,715 | 1,818 | 1,900 | 1,968 | 2,030 |
| Mid-period Adjustment Factor | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 | 0.9535 |
| Return On | 5% | 48 | 50 | 56 | 62 | 69 | 76 | 82 | 87 | 91 | 94 | 97 |
| Percent of Revenue | 4.8% | 4.8% | 4.8% | 4.7% | 4.7% | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% |
| Total Return Of & On as Percent of Revenue | 33% | 33% | 32% | 31% | 31% | 30% | 31% | 31% | 32% | 32% | 33% |

Source: Monograph, Exhibit A-5
with the subject intangible asset. An acquired or acquiring entity may already have access to some of these assets, or the acquiring entity may need to gain access to them in some other way if they are necessary to generate the prospective cash flows in the aggregate.  

**Tip 12: Add back growth investments in workforce.** When applying a CAC for workforce, employee recruiting and training expenses captured in the business expenses of the PFI are often assumed to fairly represent the return of workforce. If consistent with many tax and accounting requirements. However, there are some valuation purposes for which the definition of value may not require a market participant perspective.

14 Monograph, page 11.

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**Exhibit 4. Level Payment Illustration**

<table>
<thead>
<tr>
<th>Return On and Of:</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>FV of Acquired or Current Fixed Assets (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-years</td>
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<td>6-years</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Capital Expenditures (3):</td>
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</tr>
<tr>
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<td>42</td>
<td>42</td>
<td>42</td>
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<td>42</td>
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<td>-</td>
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<td></td>
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<tr>
<td>Year 2</td>
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<td>59</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
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<td>66</td>
<td>66</td>
<td>66</td>
<td>66</td>
<td>66</td>
<td>66</td>
<td>66</td>
<td>66</td>
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<tr>
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<td>74</td>
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<tr>
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<td>82</td>
<td>82</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Year 8</td>
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<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
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<td></td>
</tr>
<tr>
<td>Year 9</td>
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<td>87</td>
<td>87</td>
<td>87</td>
<td>87</td>
<td>87</td>
<td>87</td>
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<td></td>
</tr>
<tr>
<td>Year 10</td>
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<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
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<td>90</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total Return On & Of    | 324    | 346    | 373    | 408    | 445    | 483    | 523    | 565    | 610    | 641    | 667      |
| % of Revenue            | 32%    | 33%    | 32%    | 31%    | 31%    | 30%    | 30%    | 31%    | 32%    | 32%    | 33%      |

(1) The level payment related to the acquired or current fixed assets is based on the fair value of the fixed assets of $1,000 with an equal distribution of original cost over the prior 8 years, similar to Exhibit A-5. This waterfall calculation reflects individual level payment calculations for each asset life group.

(2) Sample calculation of the level payment for the acquired fixed assets with a remaining useful life of 4 years is as follows:

\[
CAC = -\text{PMT}(\text{After-Tax Rate of Return, RUL, Fair Value, Type = beginning of period}) \times (1 + \text{Discount Rate})^{0.5} \\
= -\text{PMT}(5\%, 4, 143, 0, 1) \times (1 + 10\%)^{0.5} = 40
\]

(3) Individual level payment calculations for annual capital expenditures.

(4) Sample calculation of the level payment for the $286 of capital expenditures occurring in Year 1 with a remaining useful life of 8 years is as follows:

\[
CAC = -\text{PMT}(\text{After-Tax Rate of Return, RUL, Fair Value, Future Value, Type = beginning of period}) \\
= -\text{PMT}(5\%, 8, 286, 0, 1) = 42
\]

Source: Monograph, Exhibit A-6
would generally require the highest rates of return.

Exhibit 5 is a summary of some of the key points discussed in the Monograph regarding rates of return.

**Tip 14: Apply a WARA analysis to cross-check assumptions.** The Monograph recommends using a weighted average return on assets (WARA) calculation to test the reasonableness of the intangible asset valuation conclusions as well as the rates of return used to calculate CACs.

The WARA calculation is based on the concept that the overall required return of a business (typically its weighted average cost of capital, or WACC) should be equal to the weighted average of the rates of return of all of the assets of the business.\(^{15}\)

Any significant difference between the WARA and WACC suggests an inconsistency in the analysis and potentially incorrect assumptions or calculations in the valuation analyses.

Exhibit 6 shows the Monograph’s numerical illustration of the WARA calculation.

**Practical expedients.** The techniques described in the Monograph can be complex. As a result, some short cuts, or “practical expedients,” are offered including:

\(^{15}\) Net of certain liabilities for consistency with the WACC.

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**Exhibit 5. Rates of Return**

<table>
<thead>
<tr>
<th>Asset</th>
<th>Risk</th>
<th>Required of return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working capital</td>
<td>LOW</td>
<td>The required return on working capital is assumed to be equal to the after-tax rate that would be charged to finance working capital. For example, the bank prime lending rate and government rates on 30-to-90-day bonds are often used as a starting point and adjusted for risk where necessary. In reality, very few companies could borrow 100% of the value of working capital. Best practice is to consider the level of debt and equity financing required to fund working capital. When inventory has a limited specific market or when receivables are in a high default industry, it may be appropriate to adjust rates.</td>
</tr>
<tr>
<td>Fixed (tangible) assets</td>
<td></td>
<td>Costs market participants would incur to finance similar assets of similar risk. Examples include current observed market rates charged by vendor financing or bank debt to finance similar fixed assets blended with the return required for the equity investment when less than 100% of the asset would normally be financed with debt.</td>
</tr>
<tr>
<td>Intangible assets</td>
<td></td>
<td>Facts and circumstances regarding the degree of risk inherent in the specific intangible asset would dictate the appropriate required returns, but the Monograph suggests that they should be selected with reference to the business’s WACC. Typically expected to be higher than the business’ WACC, there are exceptions where the rates of returns for intangible assets may be lower.</td>
</tr>
<tr>
<td>R&amp;D</td>
<td></td>
<td>Determined based on the stage of completion of the R&amp;D project, the riskiness of the project, and the returns of the industry. Certain industries require venture capital returns for early-stage development companies. However, not all projects would yield this level of return.</td>
</tr>
<tr>
<td>Goodwill*</td>
<td>HIGH</td>
<td>Generally expected to be higher than the rates of return of all other assets due to the uncertain nature of the future cash flows generated from “goodwill.” A WARA analysis can be used to sense check the estimated rate of return.</td>
</tr>
</tbody>
</table>

* The term goodwill in practice has many different meanings. Here, it is considered to mean the excess purchase price over the implied value of all other assets and liabilities combined.

Source: Paraphrased from pages 23-26 of the Monograph
return of may not, in every circumstance, produce materially inaccurate results.

- **Assembled workforce.** While it recommends in the calculation of the workforce CAC that the expenses incurred to grow the existing level of employees should be added back year by year, the calculation can be simplified by applying the percentage revenue growth rate to the beginning balance. And, again, it accepts that a constant, fixed percentage may be appropriate for the CAC.

**Conclusion.** Intellectual property and intangible asset valuations have evolved to be very technically challenging exercises. The MEEM is a commonly used valuation method where assumption selection and calculation choices can impact value greatly. The Monograph provides a helpful reference for valuation practitioners to verify they have applied the techniques that will produce the most accurate valuation conclusions. In addition, more exposure to the Monograph will hopefully achieve the goal of reducing the significant divergence in techniques currently being applied in intellectual property and intangible asset valuations.

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