



# TRANSFER PRICING

**REPORT**

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## The Rise of Intangibles: Applying Rules of Thumb to Profit Splits

By ANDREW PARSONS\*

### Rules of Thumb: An Example

The relationship between a licensor and a licensee is an oft-analyzed topic in both U.S. and international transfer pricing. Commonly at issue is the appropriate split of profits between two related entities engaged in a license agreement for a set of intangibles such as manufacturing know-how, brand names, and patents. As arm's-length benchmarks are frequently difficult to find, many practitioners have relied on rules of thumb based on historical studies and industry averages to determine these splits.

One of the more common of these rules of thumb is the "25 percent rule."<sup>1</sup> This rule dictates that a licensee will pay a royalty of 25 percent of profits<sup>2</sup> back to the licensor. This article briefly examines the origins of this rule and its applicability today. Given the significant rise of intangibles over the past few decades and the unique circumstances surrounding each license agreement, the author finds these rules of thumb are likely to be less relevant than other options to determine arm's-length royalties in the current transfer pricing environment.

<sup>1</sup> Many other rules of thumb exist, such as the "5 percent rule," which states that a licensee should pay the licensor 5 percent of sales. Clarkson, Gavin, "Avoiding Suboptimal Behavior in Intellectual Asset Transactions: Economic and Organizational Perspectives on the Sale of Knowledge," Discussion Paper No. 330, pp. 9-10 (June 2001).

<sup>2</sup> This rule is based on operating profits earned on the products using the intangible.

\*Andrew Parsons is vice president of Precision Economics LLC in Washington, D.C.

A commonly cited source for the split of licensor-licensee profits is an analysis by Robert Goldscheider. In an empirical study performed in the 1950s, Goldscheider looked at a Swiss subsidiary of a U.S. company that engaged in 18 exclusive territory license agreements. The licenses were for a variety of intangibles that included know-how, patents, trademarks and copyrights. Goldscheider found that:

- licensees generally obtained a 20 percent operating profit margin;
- licensees paid to licensors approximately 5 percent of sales in royalties;
- therefore, on average, licensees earned net operating margins of 15 percent; and
- the royalty payment was approximately 25 percent of operating profits earned on licensed products.<sup>3</sup>

In applying the 25 percent rule of thumb, transfer pricing practitioners tend not to explicitly use the first three parts of Goldscheider's analysis but instead focus only on the fourth point as the traditional profit split rule of thumb.<sup>4</sup>

Even before Goldscheider performed his analysis, valuation experts such as Albert S. Davis, the general

<sup>3</sup> A 5 percent royalty divided by the 20 percent operating margin equals the 25 percent calculation. Goldscheider, Robert; Jarosz, John, and Mulhern, Carla, "Use of the 25 Per Cent Rule in Valuing IP," *les Nouvelles*, Volume XXXVII, No. 4 (December 2002), p. 123.

<sup>4</sup> Goldscheider et al. claim that certain key assumptions must be made to correctly apply this rule of thumb including: (1) additional intangibles held by the licensee; (2) the use of expected, long-run profits; and (3) the profit measure being at the operating level, utilizing fully loaded costs. *Ibid.*, pp. 124-125.

counsel of Research Corp., had already been using this 25 percent rule.<sup>5</sup> Goldscheider introduced his rule of thumb as an expert in 1974 when testifying on oil-drilling technologies. This rule of thumb has continued to be used by valuation practitioners including in a case between SmithKline Diagnostic Inc. and Helena Laboratories Corp. in 1991.<sup>6</sup>

## Literature Critique

Rules of thumb for splitting profits between a licensor and licensee have been criticized for a wide range of reasons including their failure to account for:

- the functions and risks of the parties;
- the intangibles at issue in the agreement; and
- the alternatives/options available to each party.

The first reason is based on the objection that these rules of thumb do not consider either the functions or the risks of the transaction or agreement between the two parties. As stated by Robert Reilly and Robert Schweihs, rules of thumb “fail to account for how differences in either operating characteristics or assets from one company to another affect the valuation.”<sup>7</sup>

As an intangible is further developed by the licensor, the licensee takes on less of the functions and risks associated with the creation of the intangible. For example, a licensee would pay, all else being equal, a lower royalty for a pharmaceutical still in basic research than for a pharmaceutical that has passed clinical trials and is ready for commercial launch.

Not only are the functions and risks of the parties involved in the transaction not accounted for, these rules of thumb also do not consider the specific intangible being licensed, as pointed out by Gavin Clarkson:

Both the 25 percent of profits and 5 percent of sales methods are obvious oversimplifications and do not take into account variations in industry and relative contributions to profit by different types of intellectual assets.<sup>8</sup>

Critical to any royalty rate is the expected profit to be gained by acquiring a specific intangible. This expected profit can vary widely among intangibles, making rules of thumb and industry averages less relevant when determining the royalty for an individual intangible. Obviously, a licensee would be willing to pay a higher royalty rate for an intangible that is expected to increase profits by 30 percentage points than one that is expected to increase profits by 5 percentage points.

Finally, these rules of thumb do not take into consideration the alternative opportunities available to either the licensor or licensee. As discussed by Mark Berkman:

No consideration is given to the number or value of economic alternatives or the incremental value

of using the patented technology over other viable alternatives.<sup>9</sup>

If a licensee has proposals from multiple potential licensors for intangibles offering a similar expected increase in profits, the licensee would generally pay a lower royalty rate than a licensee that can only obtain the required intangible from one party.

All of these reasons show that these rules of thumb may be applicable only by chance.<sup>10</sup> Another dynamic not considered in these rules of thumb is the evolution of intangibles in the marketplace.

## Rise of Intangibles

One of the potentially larger impacts on the split of profits between licensor and licensee is the increase in the level or percentage of intangibles in the marketplace. As the value of intangibles has risen over time, they would account for a larger percentage of the profits being earned. That is, as intangibles become a larger percentage of the total assets creating profits, the profits or royalty associated with intangibles also would be expected to increase. To show this rise in intangibles, one may consider the market-to-book (MB) ratio.

The numerator of the MB ratio—a firm’s market capitalization—is derived from multiplying a company’s stock price by the number of its outstanding shares. This represents the total value of the company, both tangible and intangible assets. The denominator—the book value of a company—is defined as a company’s total assets less its total liabilities, or simply its total stockholder’s equity or tangible value.<sup>11</sup> Thus, an MB ratio greater than one implies that a firm has some intangible value.

Around 1980, the MB ratio for Standard & Poor’s 500 companies was slightly above one. Since then the MB ratio for S&P 500 companies has increased to approximately six in March 2001.<sup>12</sup> Others have studied the MB ratio trends and found a similar increase. For example, Famma and French collected MB ratio data for the years 1926 to 2007. The data were broken into 20 segments by market capitalization—every fifth percentile—for all stocks on the New York Stock Exchange whose data were available. The top segment’s MB ratio dropped significantly during the oil crises in the 1970s before the ratio trended upward from lows of 2.3 in

<sup>9</sup> Berkman, Mark, “Valuing Intellectual Property Assets for Licensing Transactions,” *The Licensing Journal* (April 2002), p. 16.

<sup>10</sup> “Rules of thumb for a royalty such as 25% of profits or 5% of revenue will be appropriate only by happenstance; more likely, they will differ substantially from the appropriate values.” Epstein, Roy J., and Marcus, Alan J., “Economic Analysis of Reasonable Royalty: Simplification and Extension of the Georgia-Pacific Factors (revised),” *Journal of Patent and Trademark Office Society* (July 2003), p. 564.

<sup>11</sup> Some intangible value may be included as part of book value of a company (for example, goodwill), but this amount is generally relatively small. Boulton, Richard E.S., Libert, Barry D., and Samek, Steve M., *Cracking the Value Code: How Successful Businesses Are Creating Wealth in the New Economy*, HarperCollins Publishers Inc. (2000), p. 252.

<sup>12</sup> Lev, Baruch, *Intangibles*, Brookings Institution Press: Washington, D.C. (2001), pp. 8-9.

<sup>5</sup> *Ibid.*, p. 124

<sup>6</sup> Retrieved 5/8/08 from <http://www.ipww.com/display.php?file=/texts/0804/goldscheider0804>.

<sup>7</sup> Reilly, Robert F., and Schweihs, Robert P., *Valuing Intangible Assets*, Irwin Library of Investment & Finance, McGraw-Hill: New York (1999), p. 154.

<sup>8</sup> Clarkson, p. 10.

1975 to 7.1 in 2007. Similar trends are repeated in almost every other segment.<sup>13</sup>

As rules of thumb tend to be based on decades-old data, the historic increase in total intangibles shown above would imply an increase in profits or royalties to the holder of intangible property. That is, as intangibles shifted from comprising only a small portion of the total assets in the 1970s to approximately 83 percent of total assets by 2001,<sup>14</sup> profits associated with intangibles would also be expected to rise significantly.

When attempting to value intangibles, historical industry conditions must always be taken into consideration. Traditional rules of thumb based on older data may ignore the changing dynamic of intangibles in the marketplace. As stated generally by Robert Reilly and Robert Schweihs, rules of thumb “fail to differentiate changes in conditions for companies in various industries from one time period to another.”<sup>15</sup>

Specifically, as shown by the increase in the MB ratio since the 1970s, these traditional (old data) rules of thumb have not changed with the significant rise in intangibles in the marketplace. This lack of consideration of the increased role of intangibles creates another significant difference between the data inherent in traditional rules of thumb and today’s license agreements.

### Rules of Thumb Today

Generally, all else being equal, contemporaneous benchmarks provide better evidence for transfer pricing practitioners in establishing arm’s-length royalties than older benchmarks. Transfer pricing practitioners would rarely use agreements or benchmarks from 20 years ago, much less 50 years ago, as arm’s-length benchmarks.<sup>16</sup> Because these rules of thumb were originally established using older data, their applicability to today’s related party license agreements is potentially limited.

Attempts have been made to show that traditional (old data) rules of thumb are still applicable today. For example, Goldscheider co-authored an article that uses industry averages and license agreements to try to update and corroborate the 25 percent rule.<sup>17</sup> However, a variety of problems exist with the authors’ updated analysis other than those mentioned above, including:

■ **Description of Licenses.** The authors provide little description of the licenses used in their analysis. Some

<sup>13</sup> Famma and French calculated the MB ratio breakpoints at the end of each June. The book value of equity used in June of year t is the book equity for the last fiscal year end in t-1. Market capitalization is price times shares outstanding at the end of December of t-1. Retrieved 5/8/08 from [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html#BookEquity](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#BookEquity).

<sup>14</sup> An MB ratio of approximately six would imply that \$5 out of every \$6, or approximately 83.3 percent, of all assets are intangible.

<sup>15</sup> Reilly, Robert F., and Schweihs, Robert P., *Valuing Intangible Assets*, Irwin Library of Investment & Finance, McGraw-Hill: New York (1999), p. 154.

<sup>16</sup> For example, agreements in the comparable uncontrolled transaction method or benchmark companies in the comparable profits method should be as contemporaneous with the period at issue as possible to avoid changes in industry or economic conditions that may affect an arm’s-length transaction.

<sup>17</sup> Goldscheider, Robert; Jarosz, John, and Mulhern, Carla, “Use of the 25 Per Cent Rule in Valuing IP,” *les Nouvelles*, Volume XXXVII, No. 4 (December 2002), pp. 128-133.

of the details missing include: (1) what intangibles were licensed; (2) what stage of development the intangibles were at when licensed; (3) what functions and risks were taken on by the licensor or licensee; (4) what intangibles were held by the licensee prior to the license agreement; and (5) what the terms were in the license agreements. Any differences in the characteristics of a license agreement being evaluated from the agreements examined by the authors may result in different arm’s length royalties.

■ **Industry Averages.** The analysis also does not examine the licensed products’ profit margins. Instead, industry average operating margins are used as a proxy. Applying industry averages to represent expected license products’ profits could dramatically over- or underestimate the value of a royalty as a percentage of operating profits if the licensed products’ expected profits vary greatly from industry averages.<sup>18</sup>

■ **Range of Results.** Using 15 industry classifications, the authors find a range of royalties as a percentage of profits from negative 3 percent (Media & Entertainment) to 492.6 percent (Internet), indicating little significance in these numbers.<sup>19</sup> No range of results was given by industry. Instead, the authors show data only for each of the 15 individual industries they define. Given the wide variety of expected profits to be generated by intangibles, applying industry averages to any individual license agreement would be less appropriate than other potential methods.

■ **Period of Analysis.** The analysis uses industry profit margins from a sub-period (1990-2000) of the period of the license agreements examined (1980-2000). As the value of intangibles in the marketplace rose from 1980 to 1990, royalties also would have been expected to rise as a percentage of expected profits. This mismatch in periods between the license royalties and industry profit margins may cause the royalty rates to be underestimated as a percentage of profits, as intangibles would contribute more to expected profits later in the time period analyzed.

■ **Successful Licensee Agreements.** The authors also limit their examination to those licensees that are in the top quartile for profit rates within their industry, defining these licensees as “successful.” However, they do not comment on or analyze whether the success of any of the companies in this subcategory was a result of the licenses examined. Again, a wide range of results is shown based on this new subcategory of companies, from a negative 66.7 percent to a 48 percent royalty as a percentage of operating profits.<sup>20</sup>

### Conclusion: Applying Rules of Thumb

Rules of thumb, like the 25 percent rule, generally have inherent weaknesses when applied to individual transactions. The data supporting a rule of thumb and an individual transaction can potentially differ in:

- functions and levels of risk;

<sup>18</sup> *Ibid.*, p. 133.

<sup>19</sup> The authors acknowledge this wide range, stating that “there is quite a variation in results for specific industries. As this variation makes clear, the Rule is best used as one pricing tool and should be considered in conjunction with other (quantitative and qualitative) factors that can and do affect royalty rates.” *Ibid.*, pp. 129, 133.

<sup>20</sup> *Ibid.*, pp. 130, 133.

- industry from which the data is obtained;
- time period of the data;
- expected profit margins;
- levels of intangibles held by the licensor or licensee;
- terms in the license agreement; and
- other characteristics.

Examining the origin of a rule of thumb and the data behind it can give transfer pricing practitioners a better sense of whether a given rule of thumb is appropriate for the transaction being examined. Limited public and private data on license agreements in some transfer pricing cases can make rules of thumb appealing to apply, especially as “tests of reasonableness,” because these rules of thumb are simple to understand and easy to implement.

However, if a rule of thumb is based on data that differ significantly from those of the transaction at issue, it would be a rare set of circumstances where this type of indirect approach could be a superior method to CUTs, CPM, other profit split data, or other approaches. Even as a “test of reasonableness” a rule of thumb can be misleading if the characteristics of the transaction differ greatly from those of the data supporting the rule of thumb. In particular, as seen with the 25 percent rule, the data supporting related license agreements today and those of transactions from more than 50 years ago could be significantly different due to a variety of reasons including the increase in intangibles over the past decades. These differences give transfer pricing practitioners even greater reason to try to utilize comparable arm’s-length benchmarks instead of rules of thumb in both U.S. and international transfer pricing.