

A Comprehensive Look at the Berry Ratio in Transfer Pricing

by Martin Przysuski and Srinil Lalapet

Reprinted from *Tax Notes Int'l*, November 21, 2005, p. 759

A Comprehensive Look at the Berry Ratio In Transfer Pricing

by Martin Przysuski and Srini Lalapet

Martin Przysuski is a partner with BDO Dunwoody's Transfer Pricing and Competent Authority Services Team in Toronto, and a part-time student in the Master of Taxation program at the University of Waterloo in Waterloo, Canada. Srini Lalapet is a transfer pricing economist with a diversified multinational in the greater Toronto area.

The authors would like to thank Prof. Alan Macnaughton of the School of Accountancy at the University of Waterloo in Waterloo, Canada, and Prof. (emeritus) Charles Berry at Princeton University for their valuable time, comments, and guidance, which have greatly assisted in the writing of this article.

The theoretical basis for most transfer pricing analyses performed in the world's major economies is the arm's-length principle, which stipulates that related parties should transact with each other as if they were dealing with independent third parties. In theory, the principle is almost intuitive, although it is debatable whether it is reasonable to apply the arm's-length principle to multinational enterprises that often derive their competitive advantage based on the level of integration among their operating entities. Furthermore, in practice, the application of the arm's-length principle is fraught with difficulty, particularly because of the enormous challenges associated with identifying arm's-length transactions between independent third parties that might be comparable to the transactions between two related parties within a multinational enterprise.

In many transfer pricing analyses, practitioners have to resort to the so-called profit-based methods to prove the arm's-length principle due to the lack of adequate comparable transactional data. In many such analyses, some type of ratio analysis is undertaken to prove, albeit indirectly, that the entity in question has transacted at arm's length with its related companies. In this context, therefore, the ratios that are used (or, in transfer pricing parlance, profit indicators) are vital to an economically sound transfer pricing analysis. The choice of such ratios is usually governed by the activity an entity is engaged

in, that is, manufacturing, distribution, or service provision, as well as the economic drivers that govern its profitability. For instance, a manufacturer's profitability is governed by how efficiently it employs its operating assets, whereas a distributor's profitability is governed by how successful its sales, marketing, and distribution efforts are in generating sales to end-customers.

Indeed, choosing a wrong profit indicator ratio or a misapplication of one would not only taint the entire transfer pricing analysis, but also mislead a company into assuming that they are transacting at arm's length while in actuality they may be falling well short of the arm's-length standard. Unfortunately, one ratio that has particularly suffered by such misapplication is the Berry ratio. The purpose of this article, therefore, is to reexamine the use of profit indicators in transfer pricing analyses with a particular emphasis on the use and misuse of the Berry ratio, one of the more interesting and unique ratios used in transfer pricing analyses. However, any such examination will not be complete without an understanding of the context underlying the use of profit indicators in transfer pricing analyses in the first place. Therefore, we shall first briefly discuss the evolution of transfer pricing methods in the United States and in the OECD and in particular investigate the use of profit-based methods, whose application, as the name suggests, is based on the use of profit indicators. In addition, we shall discuss the various profit indicators that are typically used in a transfer pricing context, then examine in detail the Berry ratio to illustrate how it should be ideally applied to yield the best possible results and consequently also provide the best possible defense in the face of a transfer pricing audit by the tax authorities.

The Evolution of Transfer Pricing Methods

Given the difficulty of applying the arm's-length principle, both the United States and the OECD have attempted, in radically different ways, to address the issue and offer guidance on transfer pricing methods that can be used to prove that related parties have transacted at arm's length. The United States was first off the mark with its 1968 transfer

pricing regulations governing the application of Internal Revenue Code section 482. The OECD followed in 1979 with its own report containing comprehensive guidelines on transfer pricing.¹

At that early stage, the emphasis in both the U.S. regulations and the OECD guidelines was on transactional methods such as the comparable uncontrolled price, the cost-plus, and the resale price methods, which required transactional comparability. After a number of iterations, the final revised IRC section 482 transfer pricing regulations² and the draft OECD guidelines,³ both issued in June 1994, acknowledged the use of profit-based methods, which — rather than using transactional data — allow the comparison of profits between related entities and independent third parties to establish, albeit in a roundabout manner, whether related parties had transacted at arm's length.

On a pragmatic level, the CUP is the best possible transfer pricing method, as it requires the highest degree of transactional and product comparability.

In the end, the United States settled on the use of transactional methods such as the CUP, cost-plus, and resale price methods, as well as profit-based methods such as the comparable profit method and the profit-split method. The 1995 OECD guidelines⁴ enshrined the transactional CUP, cost-plus, and resale price methods, as well as the profit-based transactional net margin method (TNMM) and profit-split methods. Among the profit-based methods, the CPM in the United States and the TNMM elsewhere in the OECD generally are used to test the routine returns of a related entity, whereas the profit-split methods are used to test nonroutine contributions in which intangibles are present and are used by both parties to the transaction.

However, the crucial difference between the application of those methods in the U.S. and OECD

contexts is that the United States accepts the best method rule, which allows the use of any method — transactional or otherwise — as long as it produces the best measure of arm's-length results under the circumstances. On the other hand, the OECD guidelines emphasize the use of transactional methods before the use of profit-based methods, imposing an implicit hierarchy of methods that has sometimes been made explicit by the administrative positions of certain tax administrators, most notably the Canada Revenue Agency (CRA).

On a pragmatic level, the CUP is the best possible transfer pricing method, as it requires the highest degree of transactional and product comparability. In that context, one could conceive of two types of CUPs: an internal CUP and an external CUP. An internal CUP exists when a related party is involved in a transaction with an independent third party involving the same or very similar products under the same terms and conditions as the transaction between itself and another related party. An external CUP exists when two independent third parties are involved in a transaction that mirrors the transaction between two related parties. In the absence of such CUPs, which are invariably rather difficult to find, taxpayers — whether in the United States or any of the other OECD countries — often are forced to use profit-based methods such as the CPM or TNMM when testing routine margins, and the profit-split methods when testing margins derived from the use of shared intangibles.

The Use of Profit-Based Transfer Pricing Methods

The use of profit-based transfer pricing methods is driven mainly by the lack of adequate transactional data to apply any of the preferred transactional transfer pricing methods. Because profit-based methods can be applied on aggregate-level data using third-party comparables, and that comparable company data can be acquired from publicly available company databases, the availability of data generally is not a serious concern. Nonetheless, in order to select the best possible comparables (that is, those that have the highest degree of functional comparability), it is imperative that a systematic comparable search process be undertaken. In many instances, it is the economic integrity of the comparable screening process that determines the quality of the third-party comparables in the final sample. Equally important is the choice of profit indicators (also called profit-level indicators in U.S. parlance) used to derive the arm's-length range of profits against which the profits of the related party are compared.

This section focuses mainly on the CPM and TNMM, as they often are the methods of choice, in the United States and by the OECD, respectively, for

¹Organization for Economic Cooperation and Development, "Transfer Pricing and Multinational Enterprises — Report of the OECD Committee on Fiscal Affairs," 1979 (Paris: OECD).

²U.S. Treas. reg. sections 1.482-1 through -8.

³Organization for Economic Cooperation and Development, "Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations," (Discussion Draft) June 1994 (Paris: OECD).

⁴Organization for Economic Cooperation and Development "Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations," 1995 (Paris: OECD), hereinafter referred to as the OECD guidelines.

determining routine returns of entities engaged in related-party transactions. Routine returns generally refer to returns earned by a related party solely by virtue of the functions it performs, the risks it assumes, and the assets it employs, assuming that those assets do not include any valuable intangibles. In that context, it may be worthwhile to point out that both the CPM and the TNMM are one-sided methods, meaning that they are applied to only one side of a transaction. Therefore, practitioners generally apply the CPM or TNMM to the least complex entity (that is, the entity that does not employ any valuable intangibles and whose results can be verified using the most reliable data and the fewest adjustments), which is also called the “tested party.”

When intangibles are shared between two related entities engaged in a transaction, profit-split methods are more appropriate to determine the arm’s-length returns attributable to the related entities. In that event, the application of the profit-split methods is done in two primary ways: first, by reference to comparable profits earned by third parties that perform broadly similar functions (and incur associated risks) and employ similar types of intangibles (the comparable profit-split method); and second, by determining the routine returns attributable to the related entities through the application of either the CPM or the TNMM and then splitting the residual profit between the related entities based on the extent of their contribution to earning the residual nonroutine returns (the residual profit-split method).

The comparable profit-split method is considerably more difficult to apply than the residual profit-split method, mainly because of the difficulty of finding comparable third parties, both of which engage in transactions similar to the related parties and employ intangibles similar to those of the related parties. Therefore, the residual profit-split often is the method of choice when intangibles are involved in the course of a related-party transaction. Nonetheless, the ratio of the split of the residual profit between the related entities must be determined very carefully by taking into account the relative contributions of the parties to the development of whatever intangible is shared between them.

However, in almost all cases in which intangibles are not shared, the method of choice is the CPM or TNMM, which is applied to determine the routine returns attributable to the least complex entity in a related-party transaction. The CPM and TNMM are based on the economic concept that returns earned by firms operating in the same or a similar industry, and under similar economic conditions, tend toward equality over a reasonably long period of time.

At this juncture, it may be worthwhile to reiterate that despite the fact that the TNMM contains the

word “transactional,” it is a profit-based method, the application of which is broadly (but not exactly) similar to the application of the CPM. As pointed out by many eminent commentators, the degree of difference between the two methods often can be traced to certain nuances in their practical application, rather than to dramatic differences in the underlying theory of application, as some would have us believe.

The residual profit-split often is the method of choice when intangibles are involved in the course of a related-party transaction.

Indeed, there are possibly more similarities between the two methods than differences, and some of those similarities are worth pointing out here. For example, both methods use aggregate-level data from third-party comparable companies selected on the basis of their functional similarity to the tested party to derive the final arm’s-length range of profits against which the results of the tested party are evaluated. To select the closest functionally similar third-party comparables, a variety of quantitative and qualitative screens are employed in both instances. An appropriate profit indicator — usually a profitability ratio of some sort, using either income or balance sheet account items — is selected under both methods. At the end of the comparables screening process, an arm’s-length range of the selected profit indicator is derived from the ratios of the comparable companies, and that range is then compared to the results of the tested party, after making the necessary comparability adjustments to level the playing field between the comparable companies and the tested party. Some of those comparability adjustments relate to differences in working capital (adjustments for accounts receivable, accounts payable, and inventory) as well as differences in inventory valuation methods (LIFO, or last-in, first-out, to FIFO, or first-in, first-out), and a whole array of other differences.

The differences between the two methods stem mainly in how the application of the TNMM is interpreted vis-à-vis the CPM, mainly because the OECD wants taxpayers to preserve the spirit of the transactional methods even when applying the TNMM, although that is not always possible. It may be argued, for example, that the TNMM emphasizes the identification of tested-party profits related solely to the relevant related-party transactions, rather than the whole entity. However, that argument can hold only if such detailed data is available, and the profits associated with the related- and

unrelated-party transactions within the tested entity are clearly demarcated in the company's financial statements. Often, taxpayers have to settle for testing the profits of the entire entity rather than just the transactional profits associated with particular related-party transactions. Other differences relate to how comparables are selected, how many are selected, and how the arm's-length range is derived.

In Canada, the CRA strictly opposes the use of statistical methods to narrow the range, as is done in the United States with the interquartile range, opting instead for an approach that emphasizes more functional screening that is also inevitably more subjective than standard statistical measures. Advocates of that approach point out that the use of statistics does not inherently add any value when small sample sizes of somewhat functionally comparable companies are considered, especially when those companies have already been selected using qualitative measures. At the other extreme, some commentators would like to dispense with the use of qualitative screens altogether and rely on statistical methods to narrow the ranges of a large number of comparable companies. Notwithstanding the idiosyncrasies associated with their application in different jurisdictions, the critical factors that determine the integrity of such profit-based methods is undoubtedly the quality of comparables in the final sample, and the choice of the profit indicator.

Choosing an Appropriate Profit Level Indicator

Profit indicators or profit level indicators (PLIs) are ratios that measure relationships between the profits earned by a tested party and the costs incurred or resources employed. Generally speaking, the choice of a PLI should be determined by the type of activity performed by the tested party and the economic circumstances of the related-party transaction, as well as the reliability of the available data for the third-party comparables. The U.S. Treasury regulations offer some guidance on the type of PLIs that should be used in various circumstances when applying the CPM, while the OECD guidelines are vague, except to indicate that net margins should be used in the application of the TNMM. Specifically, the OECD guidelines recommend that the "net profit margin relative to an appropriate base (e.g. costs, sales, assets) that a taxpayer realizes from a controlled transaction" be examined.⁵

The PLIs outlined in the more explicit guidance in the U.S. Treasury regulations have become the stan-

dard ratios in most, if not all, OECD countries. The U.S. regulations outline three primary PLIs:⁶

- return on capital employed (ROCE);
- return on sales (ROS); and
- return on operating costs (the Berry ratio).

Other PLIs, such as return on total costs (ROTC) and other asset-based PLIs, also can be used to test entities. It is important to keep in mind that the profit margins are always determined relative to a base that can be either a balance sheet item, such as assets, or an income statement item, such as costs or sales. Generally, the choice of the base depends on how an entity earns its returns. For example, for an entity that employs significant assets in its operations, measuring operating profit relative to assets may be most prudent. For entities that do not employ significant assets in their operations, a base such as costs or sales may be more appropriate.

In that context, it may be useful to examine each of these PLIs in turn to determine their usefulness in specific situations.

Return on Assets (ROA) and ROCE

The ROA is the ratio of operating profit to operating assets (OP/OA),⁷ while the ROCE is a specialized application of the ROA whereby the operating assets are defined as capital employed, which usually computes as the total assets minus cash and investments.

Of the various net profit margins that can be examined, the ROA and ROCE (which is defined in the U.S. Treasury regulations) are most firmly grounded in economic theory. That is because competitive firms in a perfectly competitive marketplace grow or decline by gaining or losing capital investment. Therefore, the return on assets for firms operating in a perfectly competitive market should be equal.

However, the use of an ROA measure may not always yield reliable results in certain situations, including:

- when substantially fixed assets are not used to generate operating profit;
- when there are significant differences in the age and condition of assets;

⁶U.S. Treas. reg. section 1.482-5.

⁷Operating profit is defined as profit from the relevant operating activities before interest, tax, and extraordinary items. Operating assets can be defined in a variety of ways, including but not limited to: capital employed, which is defined as total assets less excess cash and investments in subsidiaries; gross assets; gross assets minus current liabilities; assets minus liabilities; and so forth.

⁵OECD guidelines, section B, para. 3.26.

- when not all assets can be accounted for accurately on the balance sheet; and
- when asset usage is significantly different for companies operating within the same industry.

Therefore, the ROA and ROCE generally are considered the preferred profit indicators for the application of the CPM/TNMM only when the tested party has substantial fixed assets that can be accurately accounted in terms of age, condition, and usage, and that play a significant role in generating operating profit. That means that the ROA and ROCE generally are used to test manufacturing entities that employ significant assets in their operations.

Although the U.S. Treasury regulations do not exclude intangibles from the ROCE calculation, as part of its advance pricing agreement program, the U.S. IRS recommends that the ROCE be calculated as total assets minus intangible assets such as goodwill, minus investments in subsidiaries, minus excess cash and equivalents (except those used as working capital).⁸ The reason given for excluding intangibles from the ROCE calculation is the inherent difficulty in including the tested party and comparable companies' intangibles on a consistent basis.⁹

The Berry ratio is the ratio of gross profit to operating expenses.

If this formula for the ROCE is used, care should be taken to exclude any intangible-related amortization expense incurred by both the tested party and comparables from the operating profit used to calculate the ROCE ratios. In addition, other asset-based ratios — such as return on invested capital, return on total assets, return on fixed assets, return on current assets, as well as a combination of those ratios — also can be used, as long as the economic rationale underlying their use is clearly explained.

When testing entities such as distributors or service providers, which do not employ significant assets, PLIs using income statement items as the base might be more appropriate. Typically, the income-statement-based PLIs used for distributors and service providers are the ROS and ROTC, respectively. One of the principal advantages of net margins such as the ROS and ROTC is that they are less affected by differences in functions or accounting classifications between the cost of sales and

operating expenses than gross margins, even if they are measured relative to sales or the cost of goods sold.¹⁰

Return on Sales (Operating Margin)

The ROS is the ratio of operating profit to sales (OP/sales).¹¹ It measures profit after the cost of sales and operating expenses, and is a well-understood measure of profitability. It typically is used in the case of distributors and, occasionally, as a corroboratory indicator for other types of entities.

Return on Total Cost

The ROTC is the ratio of operating profit to total cost (OP/TC).¹² It is a net profit margin that uses costs as its base instead of assets. The ROTC is commonly used for contract and low-risk manufacturers and service providers, as it generally provides the most reliable measure of profitability for those entities.

Return on Operating Expenses (Berry Ratio)

The Berry ratio is the ratio of gross profit to operating expenses (GP/OE).¹³ It is used for service providers and for routine or “pure” distributors, and may be thought of as a markup on operating expenses. Applying precisely the same logic, it also may be used to test whether service providers have earned enough of a markup on their operating expenses. In many cases, when it is possible to clearly demarcate costs unrelated to service provision (that is, when such costs are classified in the costs of sales of a service provider's income statement), the Berry ratio may actually be a better measure of performance than the ROTC, which includes all the costs incurred by a service provider.

In essence, the Berry ratio implicitly assumes that there is a relationship between the level of operating expenses and the level of gross profits earned by routine distributors and service providers. Consequently, it is appropriate to use the Berry ratio if the selling or marketing entity is a routine distributor and is entitled to a return on its operating expenses alone, or if it is a service provider entitled to a return on its costs of provision of its services.

¹⁰OECD guidelines, para. 3.27: “The net margins also may be more tolerant to some functional differences between the controlled and uncontrolled transactions than gross profit margins.”

¹¹Operating profit is defined as above.

¹²Operating profit is defined as above. Total cost is defined as the cost of sales plus operating expenses.

¹³Gross profit is defined as sales less the cost of sales. Operating expenses are defined as expenses related to business operations other than the cost of sales, interest, taxes, and extraordinary items.

⁸APA Study Guide, p. 14, available as of Nov. 4, 2005, at http://www.irs.gov/pub/irs-apa/apa_study_guide.pdf.

⁹*Id.*

The next section is devoted to an examination of the Berry ratio, which is exceptionally useful when applied correctly, but also is by far the most misunderstood of any PLI used in transfer pricing analyses.

The Berry Ratio — A Historical Overview

The Berry ratio has its origins in a case from the late 1960s, when Charles Berry, then-professor of economics at Princeton University, was consulted by the U.S. IRS and Justice Department to evaluate the economic circumstances underlying a dispute between the IRS and the E.I. DuPont de Nemours Co. of Wilmington, Delaware (DuPont). The case was filed in the U.S. Claims Court by DuPont to recover assessments by the IRS during the tax years 1959 and 1960 under the provisions of IRC section 482.

The case was important for two reasons: It involved a challenge by the IRS concerning the margins earned by a wholly owned related-party distributor of DuPont, and it was the first major case to follow on the heels of the newly released U.S. Treasury regulations in 1968.¹⁴

The facts of the case were relatively simple. In essence, in 1958 DuPont established a new, wholly owned subsidiary in Switzerland, DuPont de Nemours International S.A. (DISA), which acted as a “super distributor” in Europe on behalf of its U.S. parent, DuPont.¹⁵ The functions performed by DISA included marketing and advertising in Europe to establish a European presence for DuPont, as well as distribution functions, which included purchasing products for resale to other affiliates in Europe. All products sold in Europe were routed through DISA, which acted as the intermediary between its parent company, DuPont, and other related European distributors. DISA was afforded a margin of approximately 20 percent on the selling price of the products it purchased from DuPont. That margin was considered too high by the IRS, which issued a deficiency notice in that regard.¹⁶

Berry was asked to determine whether DuPont transacted at arm’s length with its related-party distributor, DISA. More specifically, he was asked to determine whether the resale margin (the discount from the final European selling price) afforded to DISA by DuPont could be considered to be commensurate with the services performed by DISA if it had

acted as an independent third party. However, DISA was not a “typical” distributor and performed a combination of functions, including market research, marketing consulting, and advertising. In addition, DISA performed logistics and accounting functions for some product shipments that were shipped directly by DuPont, while in other cases, it took possession of the inventory and undertook full-fledged distribution functions. Therefore, Berry characterized DISA as providing services analogous to those provided by a combination of a market research and management consultant, an advertiser, and a distributor.¹⁷

To evaluate the returns that might be earned by third-party comparable companies, Berry evaluated DISA’s performance separately with reference to third-party market research and management consultants, third-party advertisers, and third-party distributors. In the analysis involving market research and management consultants, he compared DISA’s ratio of gross profit to operating expenses to the ratio of total income earned to total costs of service provision (in essence, the markup on total costs). In the analysis involving advertisers, DISA’s ratio of gross profit to operating expenses was compared to the ratio of billed commissions that can be considered analogous to the gross profit (excluding the costs of advertising placement, as such services were performed by the media rather than the advertisers themselves) to total operating costs of the advertising agencies. In the third case (distributors), DISA’s ratio of gross profit to operating expenses was compared to the third-party comparables’ ratios of gross profits less interest and extraneous income to operating costs (excluding interest costs and depreciation).¹⁸ That ratio of gross profit to operating expenses was later named the Berry ratio in honor of Berry, who devised that approach of evaluating distributors.

Berry’s analysis revealed that, regardless of whether one considered the markup on costs realized by third-party management consulting and market research firms, advertising agencies, or independent distributors, DISA’s Berry ratio indicated that DuPont had compensated DISA for its services at a level that was significantly above what could be considered to be arm’s-length terms.¹⁹

¹⁷*Id.*, p. 17.

¹⁸Contrary to the U.S. Treasury regulations, which define operating expenses as including “a reasonable allowance for amortization and depreciation” (Treas. reg. section 1.482-5(d)), Berry’s preference is to exclude depreciation from operating expenses altogether because of the inherent arbitrariness in determining what might constitute this reasonable allowance.

¹⁹*Id.*, p. 18.

¹⁴*E.I. DuPont de Nemours & Co. v. United States*, 608 F.2d 445 (Ct. Cl. 1979).

¹⁵*Id.*, p. 16.

¹⁶*Id.*, pp. 16-17.

Application of the Berry Ratio in Transfer Pricing Analyses

As Berry points out in his article,²⁰ the key insight to be drawn from the *DuPont* case is that the Berry ratio is merely a variant of the cost-plus method. Indeed, if one were to think of the gross margins earned by a distributor as analogous to a firm's total revenues available to a distributor, and the operating expenses incurred to distribute products as analogous to the firm's total costs, then the ratio of gross margin to operating expenses would capture the markup on operating expenses that is afforded to the distributor. Conceptually, the Berry ratio represents a return on a company's value added functions and assumes that those functions are captured in its operating expenses.²¹ In other words, the Berry ratio can be a useful measure of the markup earned on a distributor's distribution activities. In that context, it may be useful to further deconstruct the Berry ratio to understand the implications of its use in specific situations.

When evaluating distributors, given that the ratio has gross profit in the numerator and operating expenses in the denominator, a profitable distributor would invariably show a Berry ratio greater than one, if shown in units, or 100 percent, if shown in percentage. If that is not the case and the Berry ratio is less than one unit or 100 percent, as the case may be, there may be some evidence of excessive operating expenses that need to be curtailed in the long run. In essence, any distributor or service provider with a Berry ratio of less than one unit or 100 percent cannot sustain its operations indefinitely.

As mentioned previously, the Berry ratio also can be applied to service providers, as it can also be conceptualized as the markup earned on the costs of provision. To better understand that relationship, it may be prudent to reduce the Berry ratio in terms of operating profit by subtracting one from the Berry ratio expressed in unit terms as follows:

$$\begin{aligned} \text{Berry ratio} - 1 &= \text{GP/OE} - 1 \\ &= (\text{GP}-\text{OE})/\text{OE} \\ &= \text{OP/OE} \end{aligned}$$

wherein GP = gross profit; OP = operating profit; and OE = operating expenses.

The above result — the ratio of operating profit to operating expense — is merely an alternative way to conceptualize the Berry ratio as the markup on

operating expenses, and is analogous to the ROTC used for service providers. That is best illustrated by deconstructing the ROTC as follows:

$$\begin{aligned} \text{ROTC} &= \text{OP/TC} \\ \text{ROTC} &= \text{OP}/(\text{COGS}+\text{OE}) \\ \text{wherein COGS} &= \text{cost of goods sold.} \end{aligned}$$

In the above ratio, the COGS generally can be excluded from the cost base in the denominator, because for distributors COGS indicates the measure of the value of the product distributed, rather than the costs incurred for distribution. In the case of service providers, unlike manufacturers, the COGS may not even be applicable, or may relate to costs other than service provision. In that event, the ratio becomes analogous to the ratio of operating profit to operating expenses, or the markup on operating expenses alone. Therefore, for service providers, assuming that the COGS = 0, ROTC = OP/OE.

The key insight to be drawn from the *DuPont* case is that the Berry ratio is merely a variant of the cost-plus method.

Therefore, as illustrated in the above formulae, the Berry ratio can be applied to both distributors and service providers, as long as the cost categories are demarcated and classified appropriately. In fact, transfer pricing economists with the U.S. IRS and other OECD member tax administrations, such as the CRA, have routinely begun applying the Berry ratio to test the margins of distributors as well as service providers, and to conclude APAs with taxpayers.²²

Revisiting the Misuses of the Berry Ratio

Although the Berry ratio is a conceptually simple profitability measure, it is probably one of the most misused ratios in the context of transfer pricing analyses. Its misuse stems primarily from the failure to understand its limitations when evaluating different types of entities. On a fundamental level,

²²An APA is an arrangement between a taxpayer and a tax administration that confirms the appropriate transfer pricing method to establish an arm's-length price for transactions between related parties. The U.S. IRS has been concluding APAs using the Berry ratio for some time now, and the CRA recently completed one APA using the Berry ratio, with two more in progress. See the CRA's 2003-2004 APA Report, released by the Competent Authority Services Division, International Tax Directorate, Compliance Programs Branch, for additional details.

²⁰Charles H. Berry, "Berry Ratios: Their Use and Misuse," *Journal of Global Transfer Pricing*, April-May 1999, reprinted by CCH Inc.

²¹APA Study Guide, p. 16, available as of Nov. 4, 2005, at http://www.irs.gov/pub/irs-apa/apa_study_guide.pdf.

the Berry ratio relies on the fact that there is some consistency between the level of gross margins and operating expenses (that is, the greater the operating expenses, the greater the gross profit needs to be to sustain a similar level of operating profit). Nonetheless, that consistency can be expected only if the operating expenses capture all of the value added of the functions performed by the distributor. In other words, the Berry ratio simply captures the markup that should be earned on operating expenses, assuming that those expenses reflect all of the value added by a distributor.

For that precise reason, the Berry ratio cannot be applied to integrated distributors (that is, distributors that also perform manufacturing functions), as the Berry ratio would not be able to capture the additional return earned by the manufacturing functions. In addition, when integrated distributors are concerned, given the accounting conventions and flexibility of classifying costs between the costs of goods sold and operating expenses, the cost base used in the Berry ratio (the operating expenses) also may contain costs related to manufacturing, which is certainly a perversion of the original intent of the Berry ratio.

Therefore, when applying the Berry ratio to evaluate distributors, care should be taken to apply the ratio only to distributors that perform only routine distribution functions, and do not engage in any additional value-added assembly or manufacturing functions. Needless to say, that limitation must be kept in mind when considering both the tested party and the third-party comparables to ensure that functionally similar entities are being compared. In essence, the Berry ratio is best applied to test routine distributors, and only when there is a high degree of functional comparability between the tested party and the third-party comparable companies.

In that context, it may be worthwhile to point out that the application of the Berry ratio is not without its problems. For example, many empirical studies have shown that distributors with exceptionally low operating expense intensity (that is, operating expenses relative to sales ratios that are less than 10 percent to 15 percent) show inordinately high Berry ratios when compared with distributors with higher operating expense intensities.²³ Therefore, considerable caution should be exercised when comparing the Berry ratios of distributors with low operating expense intensities and distributors with higher operating expense intensities. That problem can be corrected, however, by ensuring that only distribu-

tors that incur similar selling, general, and administrative expense-to-sales ratios as the tested party are used to develop the arm's-length range of Berry ratios (operating expense intensity screen). That would effectively ensure that any distortions to the Berry ratio analysis caused by radical differences in operating expense intensities among the comparable distributors and between the comparable distributors and the tested party are minimized. Nonetheless, it is also necessary to ensure, to the extent possible, that functional and product comparability is not sacrificed in favor of implementing an operating expense intensity screen, because ignoring the degree of functional or product comparability between the tested party and third-party comparables also could derail the spirit of the analysis.

Application of the Berry Ratio — Some Practical Insights

In the authors' experience, the Berry ratio is rarely, if ever, applied in isolation to test routine distributors, especially in the OECD countries. In many cases in which the United States and another OECD jurisdiction are involved, taxpayers often use the "modified" resale price or cost-plus methods to test distributor or service provider margins, respectively, and to corroborate their analysis using the CPM or TNMM, as the case warrants. For example, when transactional data is unavailable for analysis, the OECD guidelines provide the option of using "modified" methods, which use external, potentially comparable companies. The analysis is performed on their aggregate-level data in a manner that is quite similar to the application of the CPM or TNMM.

Specifically, paragraph 3.2 of the OECD guidelines states: "The only profit methods that satisfy the arm's length principle are those that are consistent with the [profit-split method] or the transactional net margin method as described in these Guidelines. . . . In particular, the so-called 'comparable profits methods' or 'modified cost plus/resale price methods' are acceptable only to the extent that they are consistent with these Guidelines."

Therefore, as an example, a tested-party distributor's gross margins first may be evaluated using the "modified" resale price method by deriving the arm's-length range of gross margins of a set of comparable distributors. Subsequently, the TNMM or CPM is applied to compare the Berry ratio and ROS ratios of those comparable distributors with the tested party's Berry ratio and ROS results to corroborate the earlier gross margin analysis. Given the lack of explicit guidance in most OECD countries as to which profit indicators to use in specific cases, performing such corroboratory analyses using multiple PLIs may perhaps be the best approach to

²³APA Study Guide, p. 16, available as of Nov. 4, 2005, at http://www.irs.gov/pub/irs-apa/apa_study_guide.pdf.

ensure that taxpayers' analyses withstand the scrutiny of the various tax administrations.

Conclusion

In sum, PLIs applied in the context of transfer pricing analyses using profit-based methods in the United States or the OECD in general should be chosen with particular reference to the economic rationale underlying their application, and with a clear understanding of the specific facts and circumstances of the related-party transaction being examined. That is especially true when applying PLIs such as the Berry ratio that require an examination of not only the type of functions performed by a distributor or service provider, but also the level of intensity at which those functions are performed. When applying such a PLI, it is also quite important to understand its limitations (which in the case of the Berry ratio is the fact that it categorically cannot be applied to distributors who perform value-added manufacturing or assembly functions).

Furthermore, it is imperative that taxpayers and practitioners carefully evaluate the type of entities chosen as third-party comparables to determine whether the PLI being used may be distorted by issues such as operating expense intensity, asset intensity, or account classification issues. In that context, it is also advisable to keep in mind that whenever possible, taxpayers should use more than one PLI to corroborate their transfer pricing analyses, especially if doing so will strengthen the results of the primary analyses. That may be especially prudent when performing transfer pricing analyses

in non-U.S. jurisdictions, as profit-based methods, including the TNMM, are looked at with some disdain by many tax administrations within the OECD.

Although tax administrations may wish otherwise, taxpayers do have some leeway in their choice of methods and profit indicators to prove the arm's-length nature of their related-party transactions, although that leeway is limited, of course, by the constraints of data availability and the reliability of the data that is available. Nonetheless, such leeway should not be interpreted as *carte blanche* to apply transfer pricing methods, and especially PLIs, in situations where they may not be economically justified or applicable. When in doubt, taxpayers would be well advised to consider the economic fundamentals that may have motivated their choice of PLIs. Ultimately, transfer pricing is more art than science, more judgment than precision, and the final objective of any transfer pricing analysis is to prove the arm's-length principle.

To quote Berry himself, "If we are to be consistent, the ultimate test is the arm's length test, and not the existence of a necessarily incomplete example or some arbitrary rule that gives a mistaken aura of precision to what is inherently an inexact and highly judgmental process."²⁴ ♦

²⁴Charles H. Berry, "Berry Ratios: Their Use and Misuse," *supra* note 20, p. 23.