

APA STUDY GUIDE
Lesson One: Major Elements

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INTRODUCTION

An Advance Pricing Agreement (APA) is an agreement between the Service and a taxpayer on transfer pricing methods to allocate income between related parties under Internal Revenue Code (IRC) section 482 and the associated regulations. Revenue Procedure 96-53 sets out procedures for negotiating and administering APAs. This APA Study Guide offers practical advice to APA Program staff on substantive issues in negotiating APAs.

An APA normally requires agreement on these major substantive items:

- choosing a transfer pricing method (TPM)
- selecting comparable uncontrolled companies or transactions (comparables)
- deciding on the years over which comparables' results are analyzed (the "analysis window"), and related matters
- adjusting the comparables' results because of differences with the tested party
- constructing a range of arm's length results
- testing results during the APA period, and consequences of being outside the arm's length range
- critical assumptions

This Lesson addresses these major items. Lesson 2 [not yet written] addresses certain special topics.

Creativity and flexibility often are key to reaching an agreement. The regulations often do not provide clear guidance for special circumstances, and under the "best method" rule discussed below one should fashion special provisions if needed to reach a fair and reliable result. Further, often two or more approaches to certain issues are possible, and there is no clear basis for preferring one approach over another. (This is true about major issues as well as technical details.) In this case, the Service can give the taxpayer its preferred treatment of some issues in return for getting its own preferred treatment of other issues. Also, in this case the Service might (in the interest of efficient tax administration) work with a reasonable approach proposed by the taxpayer rather than independently develop another approach that might be equally reasonable. Finally, since treaty partners are not bound by U.S. regulations, in the bilateral context the Service may deviate from the U.S. regulations. Some possible flexible approaches include:

- combining two different TPMs (discussed below)
- modifying a TPM to address concerns (discussed below)
- creating critical assumptions to address concerns (discussed below)

CHOOSING A TRANSFER PRICING METHOD (TPM)

The following tables, given here for reference, are explained in the text following.

TABLE D1

**TPM's Used for *Transfers of Tangible and Intangible Property*
In APA's Concluded Through December 1999**

TPM	Number of APAs That Involve This TPM
Comparable Uncontrolled Price (CUP) (tangible property only)	7
CUP Based on Reference to Published Market Data	2
Comparable Uncontrolled Transaction (CUT) (intangible property only)	12
Resale Price (tangible property only)	10
Cost Plus (tangible property only)	10
Comparable Profits Method (CPM): PLI is operating margin	57
Comparable Profits Method (CPM): PLI is gross margin	12
Comparable Profits Method (CPM): PLI is return on assets or capital employed	17
Comparable Profits Method (CPM): PLI is Berry ratio (markup on SG&A)	13
Comparable Profits Method (CPM): PLI is a markup on costs (normally total costs)	15
Commission computed as percentage of: sales minus expenses reimbursed by related supplier	1
Operating income point that depends on sales change and on internal management measure of profitability	2
Comparable Profit Split	1
Residual Profit Split	14

For globally integrated commodity trading, profit split by formula based on compensation and commodity positions	2
Other Profit Split	8
Profit set to sum of a certain return on assets and a certain operating margin; this method combined with an other profit split	1
Agreed royalty (fixed rate)	7
Agreed royalty (rate varies with operating margin)	2
Agreed royalty (rate varies with ratio of R&D to sales)	1
Taxpayer's worldwide royalty schedule justified by CPM analysis	1
R&D cost sharing amount plus a percentage of sales	1

TABLE D2**TPM's Used for *Services*
In APA's Concluded Through December 1999**

TPM	Number of APAs That Involve This TPM
Charge-out of cost with no markup	17
Charge-out of cost with markup	41
Commission as percentage of sales	2
Markup on costs, but R&D expenses limited to certain percentage of sales	1
Asset-proportionate share of system-wide return on assets, but limited to certain range of markup on costs	1
Profit is the sum of a markup on costs, a percentage of sales of patented products resulting from contract R&D performed by tested party, and other factors	1
For real estate management, fee is percentage of rents plus percentage of total value of new leases, but not less than a certain markup on costs	1
Dollar cap on management fee	1
Profit split using five-factor formula	1
Profit split, subject to a floor on operating margin	1

TABLE D3

**TPM's Used for *Financial Products*
In APA's Concluded Through December 1999**

TPM	Number of APAs That Involve This TPM
Profit split under Notice 94-40/Prop. Reg. 1.482-8	20
Residual profit split	2
Interbranch allocation (e.g., foreign exchange separate enterprise)	18
Market-based commission	2
Taxpayer's internal allocation system	1

TABLE D4

**TPM's Used for *Contributions to Cost Sharing Arrangements*
In APA's Concluded Through December 1999**

Cost Allocated By	Number of APAs Using This Allocation
Sales	7
Sales and production costs	2
Sales and profit	2
Profit	2
Raw material costs	1

TABLE D5

**TPM's Used for *Cost Sharing Buy-in Payments*
In APA's Concluded Through December 1999**

TPM	Number of APAs That Involve This TPM
Capitalized R&D	2
The sum of the two payments, one based on capitalized R&D and the other based on residual profit split analysis	2
Market capitalization	1
Residual profit split with comparable acquisitions check	1

Specified Methods

Tables D1- D5 above list the transfer pricing methods (TPMs) used in APAs concluded through December 1999. In general, the TPMs shown track the methods specified in the Regulations. Reg. § 1.482-3(a) specifies the following methods to determine income with respect to a transfer of tangible property:

- comparable uncontrolled price (“CUP”) method (Reg. § 1.482-3(b))
- resale price method (Reg. § 1.482-3(c))
- cost plus method (Reg. § 1.482-3(d))
- comparable profits method (“CPM”) (Reg. § 1.482-5)
- profit split method (Reg. § 1.482-6).

Reg. § 1.482-4 specifies the following methods to determine income with respect to a transfer of intangible property:

- comparable uncontrolled transaction (“CUT”) method (Reg. § 1.482-4(c))
- comparable profits method (“CPM”) (Reg. § 1.482-5)
- profit split method (Reg. § 1.482-6)

The Regulations also provide methods applicable to transactions other than the transfer of tangible or intangible property. Reg. § 1.482-2(a) provides rules concerning the proper treatment of loans or advances between controlled taxpayers. Reg. § 1.482-2(b) deals with provision of services, providing that services ordinarily should bear an arm's length charge, and that in certain circumstances an arm's length charge may be deemed to be the cost of providing the services. Finally, Reg. § 1.482-7 provides rules for qualified cost

sharing arrangements under which the parties agree to share the costs of development of intangibles in proportion to their shares of reasonably anticipated benefits from their use of the intangibles assigned to them under the agreement. APAs dealing with such cost sharing agreements can deal with both the method of allocating costs among the parties, and the determination of the amount of the “buy in” payment due when one party to a cost sharing arrangement makes preexisting intangibles available for the benefit of all participants.

Flexible “Best Method” Approach; Unspecified Methods

Under the Regulations, there is no strict hierarchy of methods. Further, particular transaction types are not assigned exclusively to particular methods. Instead, the Regulations prescribe a more flexible “best method” approach. The best method is the method that provides the most reliable measure of an arm’s length result. Reg. § 1.482–1(c)(1). Moreover, methods not specified in these sections may be used if they provide a more reliable result; such methods are referred to as “unspecified methods.”

Usually, data based on results of transactions between unrelated parties provide the most objective basis for determining an arm’s length price. Reg. § 1.482–1(c)(2). In such cases, reliability is a function of the degree of comparability between the controlled transactions or taxpayers and the uncontrolled comparable transactions or parties, the quality of the data and assumptions used in the analysis, and the sensitivity of the results to deficiencies in the data and assumptions. Reg. § 1.482–1(c)(2). Factors affecting comparability include the industry involved, the functions performed, the risks assumed, contractual terms, the relevant market and market level, and other considerations. Reg. § 1.482–1(d)(3). Moreover, “[i]f there are material differences between the controlled and uncontrolled transactions, adjustments must be made if the effect of such differences on prices or profits can be ascertained with sufficient accuracy to improve the reliability of the results.” Reg. § 1.482–1(d)(2).

Thus, one normally cannot say that a TPM in the abstract is the most reliable. Rather, one picks the most reliable combination of TPM, comparables, and adjustments. TPMs are discussed in this section, comparable selection in the next section, and adjustments to the comparables’ data in a later section. However, because these topics are closely linked, concepts about comparables and adjustments will be introduced in this section as needed.

Choosing the best method often requires considerable judgment. The need for judgment results in a large number of controversies between taxpayers and the Service, and is one reason the APA Program was established as an alternative dispute resolution forum. APA cases often are more difficult than a typical transfer pricing case. (If a case is easy to resolve, there is less need to resort to the APA process.) Since the best method is highly fact specific to a particular case, the APA Team must develop a clear, detailed understanding of the taxpayer’s business, including the taxpayer’s functions and risks, the industry involved, market conditions, and contractual terms. This factual development is much easier to accomplish in a cooperative effort with taxpayers than in an adversarial setting such as audit and litigation.

The APA process has proven a valuable way for the Service to learn more about taxpayers' businesses, and their concerns and difficulties in attempting voluntarily to comply with their tax obligations. This experience can enable the Service to provide better and more timely guidance about TPMs to taxpayers in general (not limited to those in the APA Program). A good example concerns "global dealing" cases. In these cases, a global financial institution or affiliated group of companies would continuously trade securities and other financial products on a twenty-four hour basis, with responsibility for the "book" of positions passing from location to location in accordance with the passing of normal business hours in a given location. Existing rules created uncertainty regarding the appropriate treatment of such fact patterns. The Service's early experience with "global dealing" APAs was described in Notice 94-40, 1994-1 C.B. 351. This Notice described the methods that had been used for a particular type of global dealing case. This Notice and further APA experience informed the Service's proposed "global dealing" regulations (63 Fed. Reg. 11177 [REG-208299-90] (March 6, 1998)).

The APA Program's experience also can help the Office of Associate Chief Counsel (International) to provide better advice about TPMs to the field. An example is that the APA Program's experience with cost sharing buy-ins (discussed below) has informed the Service's advice given to the field on some audits of buy-ins.

Some types of TPMs used in APAs are discussed below. First, however, here are some general remarks and concepts.

Creativity

The various TPMs are sometimes used in a creative manner, based on the economic circumstances and the legitimate concerns of both the Service and the taxpayer. For example, if an APA's TPM features a gross margin target for a U.S. distributor that purchases from a related foreign manufacturer, the Service may be concerned about excessive advertising expenses. Indeed, since advertising expenses do not affect gross margin, a taxpayer could, while staying within the prescribed gross margin range, conduct a large advertising campaign that primarily benefits a related foreign manufacturer that owns the brand name. The advertising would reduce U.S. operating profit and taxable income, but the benefits of the advertising would rest largely with the foreign parent. To prevent this situation, an APA could specify that, for purposes of computing the distributor's gross margin, advertising expenses above a certain level will be subtracted from sales (and thus decrease the gross margin). Then the taxpayer could not freely increase advertising expenses while staying within its gross margin range.

As another example, an APA using a CPM might specify a particular gross margin range, but subject to the need to meet a certain operating margin range. (Such a case would have been counted in Table D1 above as one instance of a CPM with an gross margin profit level indicator (PLI), plus one instance of a CPM with an operating margin PLI.)

Tested Party

In reviewing the methods discussed below, bear in mind the concept of “tested party.” Controlled transactions must involve two related parties. With some TPMs, only the results of one of these parties are tested. For instance, consider a parent company that manufactures products that it sells to its subsidiary for wholesale distribution. With the resale price method under Reg. § 1.482–3(c), only the distributor’s gross margin is tested. With the cost plus method under Reg. § 1.482–3(d), only the manufacturer’s markup on cost of goods sold is tested. With the comparable profits method under Reg. § 1.482–5, one party’s profitability (normally that of the simpler party, with no or fewer pertinent intangible assets) is tested. As another example, for provision of services under Reg. § 1.482–2(b), typically only the provider of services is tested.

With some TPMs, the prices or results of both parties are tested. For example, with the comparable uncontrolled price method under Reg. § 1.482–3(b), the price charged between the related parties is tested. Similarly, with the comparable uncontrolled transaction method under Reg. § 1.482–4(c), the compensation for intangibles paid between the related parties is tested. With profit split methods under Reg. § 1.482–6, and for financial products cases under Prop. Reg. § 1.482–8, the split of profits between the related parties is tested in light of each party’s contributions. With cost sharing under Reg. § 482–7, the parties’ sharing of costs is tested in light of the parties’ reasonably anticipated benefits.

The choice of tested party (together with the choice of TPM) can reflect a choice about how to allocate risk. Consider a manufacturer selling to a controlled distributor. Testing only the distributor (for example, using a CPM with an operating margin PLI) assigns the distributor a particular profit range. The distributor must then earn a profit within that range without regard to the system profit (i.e., the combined profit from manufacturing and distribution). Thus, the distributor might be guaranteed a certain positive profit level even when the manufacturer is sustaining substantial losses and the system profit is negative. One treaty partner has called this situation “profit creation” since it assigns profit to one party despite an overall loss. In particular cases this result may be a correct assignment of risk. However, in some cases one could argue for a sharing of risk, for example a profit split approach, in which both parties are tested. A profit split approach would lead to less “profit creation” when the system profit is negative and conversely would give the distributor more profit when the system profit is large.

Transactional Versus Profit-Based Methods

Some TPMs, such as CUP, CUT, resale price, and cost plus, use comparable uncontrolled transactions to determine an arm’s length price or range of prices. For example, the CUP method computes an arm’s length price or range of prices for the transfer of goods based on a comparable uncontrolled price for the same or similar goods. Such methods are called “transactional” methods. Other methods, such as CPM and profit split methods, use comparable uncontrolled companies to determine appropriate aggregate profit levels for the tested party. For example, the CPM method specifies a particular profitability benchmark for the tested party. Such methods are called “profit-based” methods. Sometimes a profit-based method is most reliable because closely comparable

uncontrolled transactional data are not available.

Internal and External Comparables

For transactional methods, one can distinguish “internal” versus “external” comparable uncontrolled transactions. Internal comparables are based on transactions between a member of the controlled group being analyzed and an uncontrolled party. For example, to determine an arm’s length price or range of prices for a manufacturer M to sell a specific good to a related distributor D, one might consider either the price that M charges unrelated distributors for this good, or the price at which D buys this good from unrelated manufacturers. External comparables are based on transactions not involving a member of the controlled group being analyzed. In the scenario just given, an external comparable transaction would be a price charged between a manufacturer and distributor who are not related to each other and are not members of the controlled group under analysis. Internal comparables are sometimes preferable to external comparables because (1) more complete financial data and/or descriptive information may be available, and (2) the internal transactions may involve circumstances that are more similar to the circumstances of the transaction being tested.

CUP

The CUP method has been used when one can identify uncontrolled transactions with the required degree of comparability between products, contractual terms, and economic conditions. See Reg. § 1.482–3(b)(2)(ii). If the covered product is a commodity, then publicly available market data may provide a comparable price that could be used to establish a CUP. In many other cases, however, data concerning external CUPs is difficult to obtain. Unrelated taxpayers dealing in the comparable product ordinarily would also deal in other items as well, and it is sometimes difficult to separate the pricing of the relevant transactions from the other results, based on publicly available data. Thus, in the APA Program’s experience, there has been a tendency to use internal CUPs.

CUT

A CUT is a CUP for transfers of intangible property. As with the CUP method, APAs applying the CUT method have tended to rely on internal transactions between the taxpayer and unrelated parties since it has often been difficult to identify an external CUT. For example, in a case dealing with a royalty for a nonroutine intangible such as a trademark, it can be difficult to identify an unrelated party royalty arrangement that is sufficiently comparable, due to the unique nature of the nonroutine intangibles. (Lesson 2 [not yet written] discusses how to determine arm’s length royalty rates.)

Resale Price and Cost Plus

As of December 31, 1999, ten APAs had used a transactional resale price method, and another ten had used a transactional cost plus method. As with the CUP and CUT

approaches, internal comparables tend to be more reliable than external comparables. However, because product similarity is less important for the resale price and cost plus methods than for the CUP method (see Reg. § 1.482-3(c)(3)(ii)(B), -3(d)(3)(ii)(B)), external comparables in many cases can be used.

It is sometimes hard to distinguish a transactional resale price method from a CPM with a gross margin PLI (discussed below), and to distinguish a transactional cost plus price method from a CPM with a markup on cost of goods as the PLI (discussed below). The difference in both cases is one of degree rather than kind. A transactional method focuses on prices for individual or narrow groups of transactions, while a CPM looks at profits from broader groups of transactions or all of a company's transactions. When dealing with treaty partners that do not favor a CPM approach, it sometimes helps to use the term "resale price" or "cost plus" rather than "CPM".

CPM

The CPM is frequently applied in APAs. Reliable public data on comparable business activities of independent companies is often more readily available than potential CUP data. Also, comparability of resources employed, functions, risks, and other important considerations for the CPM method is more likely to exist than the comparability of product that is important for the CUP method.

The CPM is most commonly used with a profit level indicator, or PLI (defined below), such as operating margin or return on assets, that is based on operating profit. In such cases, the CPM does not require comparability between the tested party and the comparables regarding the classification of expenses as cost of goods sold or operating expenses, since that classification does not affect operating profit. The cost plus and resale price methods, in contrast, depend on such comparability. Reg. §§ 1.482-5(c)(3)(ii), 1.482-3(c)(3)(iii)(B), 1.482-3(d)(3)(iii)(B). Also, in such cases the degree of functional comparability required to obtain a reliable result under the CPM is generally less than that required under the resale price or cost plus methods. Because differences in functions performed often are reflected in operating expenses, taxpayers performing different functions may have very different gross profit margins but earn similar levels of operating profit. Reg. § 1.482-5(c)(2)(ii).

As can be seen from Table D6, several profit level indicators ("PLIs") have been used with the CPM. A PLI is a measure of a company's profitability that is used to compare comparables with the tested party. The regulations specifically mention only return on assets, operating margin, and Berry ratio, but state that other PLIs "may be used if they provide reliable measures" of arm's length results. Reg. 1.482-5(b)(4). The choice of PLI turns on all the factors contained in the Regulations, including availability and reliability of information, and the nature of the tested party's activities.

TABLE D6
Profit Level Indicators (PLIs)

PLI	Definition
return on assets (ROA) ¹	operating profit divided by the value of assets (normally, only tangible assets) actively employed in the business ²
return on invested capital (ROIC)	operating profit divided by the following: the value of assets (normally, only tangible assets) actively employed in the business, minus non-interest bearing liabilities (NIBLs) such as accounts payable
operating margin (OM)	operating profit divided by sales
gross margin (GM)	gross profit divided by sales
Berry ratio ³	gross profit divided by operating expenses ⁴
markup on total costs	operating profit divided by total costs ⁵
markup on cost of goods sold	gross profit divided by cost of goods sold

¹The regulations use the term “return on capital employed” for this PLI. That term can be abbreviated as “ROCE”. The APA Program uses ROCE as a synonym for ROA. However, some practitioners use ROCE as a synonym for ROIC, on the next line of this table.

²The regulations use the term “operating assets,” which is defined in Reg. § 1.482-5(d)(6). This definition does not exclude intangible property. However, the APA Program normally excludes intangible property for reasons discussed below and then, to be consistent, excludes amortization of intangible property from the calculation of operating profit.

³Named after Professor Charles Berry, who used the Berry ratio when serving as an expert witness in *E.I. DuPont de Nemours & Co. v. United States*, 608 F.2d 445 (Ct.Cl. 1979). The regulations do not use the term “Berry ratio,” but the term is widely used in practice.

⁴Operating expenses means selling, general, and administrative, expenses, including depreciation. This is consistent with the definition in Reg. § 1.482-5(d)(4).

Since gross profit equals operating profit plus operating expenses, the definition of Berry ratio given above is equivalent to the sum of operating profit and operating expenses, all divided by operating expenses; this in turn is equivalent to 1 plus the ratio of operating profit to operating expenses. Therefore, if the company has positive profits the Berry ratio is greater than one.

⁵Total costs, which equals cost of goods sold plus operating expenses, is sometimes referred to as “fully loaded costs.”

The first two PLIs listed divide operating profit by a balance sheet figure. The definition of each balance sheet figure is based on tangible assets actively employed in the business. This consists of all assets, minus intangible assets such as goodwill, minus investments (e.g., in subsidiaries), minus excess cash and cash equivalents (e.g., cash and cash equivalents beyond the amount needed for working capital). (Practitioners sometimes use slightly different definitions.) The regulations instead use the term “operating assets” and in turn define that term.⁶ While the regulations allow for measuring all companies’ assets on a consistent basis in terms of either book or fair market value, in the APA Program’s experience one cannot get the fair market value of assets for all companies. Also, while the definition in the regulations may leave intangible assets in the asset base, in the APA Program’s experience it is difficult to include the tested party’s and the comparables’ intangibles on a consistent basis. For example, intangibles acquired through purchase normally are listed on a company’s books but intangibles developed internally are not. Therefore, the APA Program normally leaves intangibles out of the asset base. To be consistent, the APA Program then excludes amortization of intangible property from the calculation of operating profit. (That is, such amortization is not counted as an operating expense.)

This type of PLI may be most reliable if the level of tangible operating assets has a high correlation to profitability. Reg. § 1.482–5(b)(4)(i). For example, a manufacturer’s operating assets such as property, plant, and equipment could have more impact on profitability than a distributor’s operating assets, since often the primary value added by a distributor is based on services it provides, which are often less dependent on the level of operating assets. The reliability of this type of PLI can also depend on the structure of the taxpayer’s tangible assets and their similarity to those of the comparables, since different asset categories can have different rates of return. (For example, fixed assets may be more risky than accounts receivable and thus command a higher return.) The reliability also can be diminished if the comparables vary substantially from the tested party in their relative amounts of tangible and intangible assets, since intangible assets are left out of the asset base but contribute to profitability. Finally, the reliability can be diminished if there are problems in using book values as a proxy for the fair market values of tangible assets. For example, a company may have facilities that show a very low book value because of depreciation but in fact are still substantially productive.

The difference between ROA and ROIC is that ROA focuses on the assets used, while ROIC focuses on the amount of debt and equity capital that is invested in the company. Consider two companies that each have operating assets totaling \$200. Suppose the first company has no non-interest-bearing liabilities (NIBLs), and the second company has \$100 of NIBLs in the form of accounts payable. Both have operating assets (the denominator for

⁶Reg. §§ 1.482-5(b)(4)(1), 1.482-5(d)(6). (This definition applies only to ROA; the regulations do not mention ROIC.) Also, the regulations mandate using the average of the beginning and end of year asset levels “unless substantial fluctuations . . . make this an inaccurate measure of the average value over the year,” in which case a more accurate measure of that average value must be used. Reg. § 1.482-5(d)(6).

the ROA PLI) of \$200. However, when it comes to invested capital (the denominator for the ROIC PLI), the first company has \$200 while the second company has \$100. The first company requires \$200 in debt and equity financing; the second requires only \$100, since its suppliers are providing the other \$100 needed to run the business. As discussed later in connection with asset intensity adjustments, many economists who use ROA make an adjustment for NIBLs such as accounts payable, which narrows the differences in results achieved using ROA and ROIC.

Other PLIs consist of ratios between income statement items. These include operating margin (“OM”), gross margin (“GM”), Berry ratio, markup on total costs, and markup on cost of goods sold. For technical reasons, the denominator in the PLI’s definition generally should be an item that does not reflect controlled transactions. Thus, the operating margin and gross margin PLIs (which have sales in the denominator) generally are used for tested parties (often distributors) that sell to unrelated parties, while the markup on costs PLIs (which have total costs or cost of goods sold in the denominator) generally are used for tested parties (often manufacturers) that buy from unrelated parties. The Berry ratio PLI, which has operating expenses in the denominator, in principle could be used in either case.

PLIs based on income statement items are often used when fixed assets do not play a central role in generating operating profits. This is often the case for wholesale distributors and for service providers. Also, income statement-based PLIs may be more reliable when balance-sheet-based PLIs are unreliable for reasons discussed above. For example, consider a wholesale distributor tested party and wholesale distributor comparables that each perform a significant marketing function and hold significant marketing intangibles. Suppose that compared to the comparables, the tested party holds relatively little inventory and extends relatively little credit to its customers. Then the tested party’s ratio of intangible to tangible assets may be substantially greater than the comparables’ ratios; as discussed above, in such circumstances balance-sheet-based PLIs are less reliable. The tested party’s intangible asset to sales ratio might however be similar to comparables’ ratios. For example, each company may have dealer networks that have value in proportion to sales. Then each company’s intangibles would contribute about the same amount to the operating margin, so that an operating margin PLI might be reliable.

Operating margin has often been used when functions of the tested party are not closely matched with those of the available comparables, since differences in function have less effect on operating profit than on some other measures such as gross profit (see Reg. § 1.482-5(c)(2)(ii)).

Conceptually, the Berry ratio represents a return on a company’s value added functions and assumes that the company’s value added functions are captured in its operating expenses. This assumption is more reliable for distributors than for manufacturers. For manufacturers, much of the value added function is reflected in cost of goods sold. Several empirical studies performed by taxpayers and Service economists suggest that uncontrolled wholesale distributors with relatively low operating expense to sales levels (i.e., below

10 to 15 percent) report much higher Berry ratios than companies with higher operating expense to sales levels. This result suggests caution in using the Berry ratio PLI to compare companies with low operating expense to sales ratios to companies with higher operating expense to sales ratios. On the other hand, the Berry ratio may be preferable to operating margin if variations in sales volume do not involve similar variations in function and risk. The following subsection discusses one such situation involving commission agent activity.

In general, gross margin has not been favored as a PLI because the categorization of expenses as operating expenses or cost of goods sold may be subject to manipulation, so that a taxpayer generating significant operating losses could nevertheless show gross margins within an arm's length range defined by a set of comparables with high operating profits. Further, as mentioned, functional differences can make a gross margin PLI unreliable.

As mentioned above, for technical reasons, the PLI's denominator generally should not reflect controlled transactions. Therefore, one may consider using a markup on total costs rather than an operating margin when total costs reflects controlled transactions but sales do not.⁷ An example is testing a manufacturer that sells to a controlled distributor. Occasionally, a PLI has been used that consists of operating profit divided by some subset of total costs. In one case, for example, product specific taxes reimbursed by the purchaser were excluded from the cost pool considered. Also, occasionally markup on cost of goods sold has been used as the PLI. That PLI shares the disadvantages of the gross margin PLI, discussed in the previous paragraph.

The choice of PLI is often a substantial issue in APA negotiations. The choice of PLI depends on the facts and circumstances of a particular case. The APA Team's analysis often will consider multiple PLIs. If the results tend to converge, that may provide additional assurance that the result is reliable. If there is a broad divergence between the different PLIs, the Team may derive insight into important functional or structural differences between the tested party and the comparables. For example, such divergence may lead to a discovery that the taxpayer's indicated asset values are not reliable or comparable, such as in the case of a largely depreciated but still valuable asset base.

Commission Income

Sometimes taxpayers propose using the CPM when the tested party and the comparables

⁷Operating margin and markup on total costs have a mathematical relationship such that one can compute one from the other. Let OM and MTC denote operating margin and markup on total costs, respectively. Let S, P, and C denote sales, operating profit, and total costs, respectively, so that $S = P + C$. Then OM is defined as P/S and MTC is defined as P/C . Then $MTC = P/C = P/(S - P) = (P/S)/((S/S) - (P/S)) = OM/(1 - OM)$. Similarly, $OM = P/S = P/(C + P) = (P/C)/((C/C) + (P/C)) = MTC/(1 + MTC)$.

have different proportions of commission sales. A Team Leader should exercise due diligence to identify these situations because they may require special treatment. In these situations an operating margin PLI can be problematic. The reason, explained below, is that given the revenues, functions, risks, and assets of commission sales activity, there is no reason to think that commission sales and ordinary distribution of the same products in the same market result in the same arm's length operating margin.

While a distributor buys items from a manufacturer or other supplier and then resells them to the customer, a commission agent⁸ facilitates direct sales from the supplier to the customer and receives a commission payment for its services. (The commission is often computed as a percentage of the price paid by the customer.) Sometimes a party does both distribution and commission sales. While a distributor reports revenue as the dollar amount of the product sold to customers (third-party sales), a commission agent generally reports revenue as the dollar amount of commission received from the supplier, which is often a small fraction of the third party sales.⁹

It is helpful to think of a commission agent as a somewhat stripped-down or reduced distributor. A commission agent normally performs somewhat less functionality than a distributor. For example, a commission agent might not find customers, or might not warehouse goods. A commission agent also typically incurs somewhat less risk than a distributor. For example, since it does not take title to goods, it typically has less inventory risk. A commission agent also typically requires somewhat less assets than a distributor. For example, since it does not take title to the goods, a commission agent would not have an inventory asset for those goods; and it might lack other assets such as warehouses. The extent of these differences can vary. At one extreme, a commission agent might look exactly like a distributor (e.g., finds customers, warehouses goods) except that it does not take title to the goods. At the other extreme, the supplier might find customers and directly ship goods to the customer, with the commission agent performing only some minor functions such as billing or minor customer support. Because of this reduced functionality, risk, and assets, a commission agent typically would expect to earn less operating profit than a distributor per product sold or per dollar of third-party sales.¹⁰

⁸Sometimes one hears the term "commissionaire." Like a commission agent, a commissionaire facilitates direct sales from the supplier to the customer and gets paid a commission by the supplier. However, a commissionaire offers goods under its own name, while a commission agent offers goods under the supplier's name. In common law countries a commissionaire is considered an undisclosed agent and binds the supplier. In civil law countries a commissionaire is not considered the supplier's agent and thus does not bind the supplier. Michael Swanick, Mark Mudrick, and Erik Bouwman, "Tax and Practical Issues in Commissionaire Structures," 97 TNT 17-63 (Tax Analysts). The analysis in this subsection applies to commissionaires as well as commission agents since both in general have less functionality, assets, and/or risk than distributors.

⁹Some companies with mixed activity report commission income as a contra to operating expenses rather than as a revenue item. In such cases, one normally should restate commission income as a revenue item for purposes of the TPM.

¹⁰However, this expectation might not always come true. If a distributor's risks turned out badly and had an adverse effect on its financial results, one might after-the-fact expect the

One might therefore think that a commission agent typically would expect to have a lower operating margin than a distributor for selling the same products in the same market. Actually, the commission agent most often would expect to have a higher operating margin, because of how a commission agent's operating margin is defined. Operating margin is defined as operating profit divided by revenue. For a commission agent, revenue is defined not as third-party sales but as the commission received from the supplier. Suppose that a commission agent's functionality, risk, and assets are sufficiently reduced (compared with a distributor) that it should earn only forty percent as much profit as a distributor per product sold or per third-party sales dollar. Suppose further that a commission agent's commission is ten percent of the third-party sales price. Then the commission agent's operating margin would be four times as much as the distributor's, reflecting that on balance, per dollar of its own revenue, the commission agent has greater functionality, risk, and assets. The following table illustrates this situation:

	Third-Party Sales	Revenue	Operating Profit	Operating Margin
Distributor	100	100	5	5%
Commission Agent	100	10	2	20%

These various percentages are similar to percentages encountered in some APA cases. However, the percentages vary from case to case, and in some cases a commission agent's operating margin might even be less than a distributor's. While one cannot predict the percentages by a general rule, one can say that there is generally no reason to believe that a commission agent and a distributor selling the same goods in the same market should have the same arm's length operating margin. Thus, the reliability of an operating margin PLI is reduced to the extent that a tested party and the comparables have different proportions of distribution and commission activity.

The table below, based on the percentages above, illustrates how operating margin comparisons might be misleading when a tested party has mixed distribution and commission activity but the comparable is a pure distributor. As a distributor, the tested party earns operating profit of \$4 from \$80 of revenue (i.e., sales), for an operating margin of $\$4/\$80 = 5\%$. As a commission agent, it earns operating profit of \$4 from \$20 of revenue (i.e., commission), based on direct sales of \$200 of goods from the supplier to the customer, for an operating margin of $\$4/\$20 = 20\%$. Despite their different operating margins, these two activities have the same Berry ratio of 1.25. (Consistent with the discussion above about functionality, the commission activity involves less operating

commission agent to have more operating profit than a distributor per product sold or per dollar of third-party sales.

expense per third-party sales than the distribution activity, but involves more operating expense per booked revenue than the distribution activity.) For purposes of this example, assume that both activities of the tested party earn an arm's length return.

	Tested Party, Total	Tested Party, Commission Segment	Tested Party, Distributor Segment	Uncontrolled Distributor
Third-Party Sales	280	200	80	80
Revenue	100	20	80	80
Cost of Goods Sold	60	0	60	60
Operating Expense	32	16	16	16
Operating Profit	8	4	4	4
Operating Margin	8%	20%	5%	5%
Berry Ratio	1.25	1.25	1.25	1.25

Suppose next that the taxpayer finds an uncontrolled company that acts only as a distributor (no commission sales), with an income statement identical to that for the tested party's distribution activity. Suppose further that the taxpayer proposes using the CPM with an operating margin PLI to test the tested party's combined activities. The uncontrolled distributor's operating margin is 5%. The tested party's distribution operations also have an operating margin of 5%, but the tested party's combined operations have an operating margin of 8%, which might lead one to erroneously conclude that the tested party has earned too much profit.¹¹

To avoid this situation, one could either (1) use a different PLI such as the Berry ratio, (2) separately test the tested party's distribution and commission operations, or (3) test only the tested party's distribution operations and exclude the commission operations from the APA's covered transactions.¹²

¹¹Asset intensity adjustments probably would narrow this difference. As suggested above, the commission activity likely has a higher asset-to-revenue ratio than the distribution activity. In such cases, asset intensity adjustments would either lower the tested party's operating margin or raise the comparable's operating margin before the two are compared. However, in general it is difficult to determine to what extent asset intensity adjustments correct this difference, so that relying on such adjustments may not be the most reliable method.

¹²A fourth alternative might be to use an operating margin PLI on the tested party's combined operations but to alter the calculation by "grossing up" the commission income to the dollar amount of the third-party sales. However, this alternative is problematic. To follow this

A taxpayer requesting an APA should explain the extent to which the tested party and the comparables have a different mix of distribution and commission income, and should take such differences into account in the proposed TPM. If the Taxpayer's request is not clear, the Team Leader will need to clarify this point before agreeing on a TPM.¹³

Hybrid PLI

In some cases, one PLI can be transformed into another PLI. The result is a hybrid combining some features of each. The most common example is transforming an operating margin into a gross margin. This happens as follows. First, the comparables' operating margins are computed for the analysis window. (Analysis windows are discussed in a later section.) Next, the tested party's operating expenses as a percentage of sales are added to each comparable's operating margin, to compute what the comparable's gross margin would have been if the comparable had had the same level of operating expenses as the tested party. These "constructed" gross margins of the comparables are used to determine a gross margin range for the tested party for the APA years. (In Table D6, this approach would be counted as using a gross margin PLI, since the TPM specifies a gross margin range for the tested party to meet during the APA years.)

alternative in the example above, one would substitute sales of \$200 for the commission income of \$20. The tested party's combined operating margin would then be computed as $8/(80+200) = 8/280 = 2.9\%$, which might suggest that the tested party is earning too little compared to the uncontrolled distributor's operating margin of 5%. However, this suggestion would be flawed. Indeed, as discussed above, one normally would expect a commission agent to earn less operating profit per third-party sales than a distributor because the commission agent normally has less functionality, risk, and assets per dollar of third-party sales. If a gross-up approach is used, one probably should perform a further adjustment to reflect these differences. This further adjustment might in some cases be accomplished in whole or in part through asset intensity adjustments. Because a commission agent typically has less assets than a distributor per dollar of third-party sales, asset intensity adjustments typically would raise the tested party's operating margin or lower the uncontrolled distributor's operating margin before the two are compared. However, in general it is difficult to determine to what extent asset intensity adjustments correct this difference, so that relying on such adjustments may not be the most reliable method.

¹³This subsection has stressed the pitfalls of using an operating margin PLI when commission income is involved. However, some practitioners believe that in most cases testing distribution and commission activity together with an operating margin PLI actually will produce correct results, in light of the rules on aggregation and set-off (Reg. §§ 1.482-1(f)(2)(i), -1(g)(4)), the safe harbor for nonintegral services (Reg. § 1.482-2(b)), the possibility that comparables may have a similar mix of activity, and the business realities of commission income. Henry Birnkrant and Pamela Ammermann, "A Dissenting View on the Proper Application of §482 to a Distributor's Commission Income", 30 Tax Management International Journal 539 (Dec. 7, 2001).

Why is this hybrid approach used? In the example just given, the taxpayer or treaty partner may want to use a gross margin PLI. For example, a taxpayer may want to use a gross margin PLI in order to assign more risk to the tested party than an operating margin PLI would¹⁴ or to give the tested party more incentive to control operating expenses. As another example, a treaty partner might in general object to an operating margin PLI based on its domestic law or on certain philosophical grounds (e.g., objection to guaranteeing one party a particular operating profit even if the other party sustains substantial losses). Yet it may not be reliable to use the comparables' gross margins. For example, there may be questions about whether the comparables categorize expenditures as cost of goods sold versus operating expenses in the same way the tested party does. Also, the tested party may perform greater functions (as reflected in a higher operating expense level) and thus need a greater gross margin than the comparables. Backing into a gross margin avoids these issues. One uses the comparables' operating margin, so that there is no issue about how the comparables classify expenditures between cost of goods sold and operating expenses. Also, adding in the tested party's operating expenses implicitly adjusts the gross margin to take into account different levels of functionality.

One can present the approach in this example as using a "gross margin" PLI to appeal to treaty partners averse to the operating margin PLI. One can even present it as a "modified resale price" method to appeal to treaty partners that prefer transactional methods to profit-based methods such as the CPM. (Recall that, as discussed above, it can be hard to distinguish a transactional resale price method from a CPM method using a gross margin PLI.)

The hybrid approach has variant forms. In the example just discussed, we transformed an operating margin range into a gross margin range by adding the tested party's operating expenses during the analysis window to the comparables' operating margins during the analysis window. What if instead of adding in the tested party's operating expenses during the analysis window, one added in the tested party's operating expenses during each APA year to derive to gross margin range for that APA year? The TPM, while nominally still using a gross margin, would then mathematically amount to just an operating margin range based on the comparables' operating margins. Even if one labeled this approach a "modified resale price" method, it might not be palatable to a treaty partner averse to the CPM or to the operating margin PLI. As an intermediate approach, one could derive a gross margin range for each APA year by adding in the tested party's average operating expenses over the last few years (perhaps three years). The TPM, still nominally using a gross margin, would now in substance use something in between a gross margin and operating margin PLI.

¹⁴A taxpayer's assignment of risks normally should be honored unless it lacks economic substance. Reg. 1.482-1(f)(2)(ii)(A) ("In general, the district director will evaluate the results of a transaction as actually structured by the taxpayer unless its structure lacks economic substance"); Reg. § 1.482-1(d)(3)(iii)(B).

Profit Split

Profit split methods are used most often when both sides of the controlled transactions own valuable “nonroutine intangibles,” meaning intangibles for which there are no reliable comparables. If all valuable nonroutine intangibles were owned by only one side, the other side’s contributions could be reliably benchmarked.

The choice between a profit split approach and an approach that assigns one party only a return for routine functions often represents a choice of how to view the relationship between two related entities. Assigning a party only a routine return implies viewing that party as a mere service provider; a profit split, in contrast, implies viewing that party as a risk-taking entrepreneur or joint venture partner. Normally, the parties’ own definition of their relationship should be accepted unless it is inconsistent with their conduct and the economic substance of the transactions. Reg. § 1.482-1(d)(3)(iii)(B).

In the bilateral context, a profit split approach sometimes makes agreement easier because each country, by sharing in nonroutine profits, can feel that it is getting a “piece of the action.” Also, a treaty partner might favor a profit split approach in order to avoid “profit creation” (see the discussion of Tested Party earlier in this section on TPMs). Sometimes treaty partners seek a profit split when the Service believes that the foreign entity should get only a routine profit. In some of these cases, the Service has accepted a profit split approach as the only way to settle the case.

APAs have used both residual profit splits and (very rarely) comparable profit splits, as described in the Regulations. Under a comparable profit split, the controlled parties’ total profits are split in the same ratio as total profits are split between “uncontrolled parties engaged in similar activities under similar circumstances.” Reg. § 1.482-6(c)(2). Comparable profit splits are generally difficult to apply because of the difficulty of finding uncontrolled parties with sufficiently similar intangibles and circumstances. Only one APA has used a comparable profit split.

Under a residual profit split, the controlled parties are first each assigned a routine return based on a CPM analysis. Any remaining system profit or loss¹⁵ is considered due to nonroutine intangibles (i.e., intangibles beyond those possessed by the comparable companies used in the CPM analysis) and is split between the parties “based upon the relative value of their contributions of intangible property to the relevant business activity that was not accounted for as a routine contribution.” Reg. § 1.482-6(c)(3). These relative values might be computed according to the ratio of each party’s “capitalized cost of developing the intangibles and all related improvements and updates, less an appropriate amount of amortization based on the useful life of each intangible.” *Id.* If these

¹⁵There is some question about how to treat intangible development expenses in this calculation. This issue is developed in the discussion below of the residual profit split method of valuing cost sharing buy-ins.

expenditures of the parties are “relatively constant over time” and the useful life of the intangible property of all parties is “approximately the same,” then the “amount of actual expenditures in recent years may be used to estimate the relative value of intangible contributions.” Id.

In addition, APAs have used as an unspecified method other types of profit splits. Profits have been split using weighted allocation formulas reflecting factors intended to reflect the relative contributions of each party. Some APAs have used factors based on operating assets and certain operating expenses. Some APAs have used factors described in Notice 94-40, discussed below under “TPMs for Financial Products Cases.” (While Notice 94-40 was written to cover certain financial products cases, the factors discussed there have been used in non-financial-products cases as well.)

TPMs for Financial Products Cases

Various TPMs have been used for financial products cases. One type of financial products case involves “global dealing,” in which a global financial institution or affiliated group of companies would continuously trade securities and other financial products on a twenty-four hour basis, with responsibility for the “book” of positions passing from location to location in accordance with the passing of normal business hours in a given location. These cases have been handled as follows:

- As described in Notice 94-40 (1994-1 C.B. 351), many of these APAs have used an overall profit split using a multi-factor formula to represent the contribution of various functions to worldwide profits. The factors used have sometimes been compensation (intended to represent value from highly skilled personnel), trading volume (intended to represent level of activity), and maturity-weighted trading volume (intended to represent investment risk).
- Residual profit splits, as provided in Prop. Reg. § 1.482-8(e)(6), have been applied in two cases where routine functions, such as back office functions, were readily valued. The residual profits were allocated on the basis of a case specific multi-factor formula similar to that discussed in Notice 94-40.
- In one case the APA Team determined that the taxpayer’s internal profit allocation method provided an arm’s length result. In this case, reliability was enhanced because this internal method was used in determining arm’s length payments such as compensation and bonuses. (See Prop. Reg. 1.482-8(e)(5)(iii).)
- In two cases, where all the intangibles were held in one jurisdiction and the other jurisdictions provided routine marketing functions, a market based transactional commission was used as the most reliable measure of an arm’s length return for those routine services. (This approach differs from the ones above in that it is not a profit split. The TPM specifies just a return for routine functions, and one jurisdiction retains all additional profit.)

A separate group of financial products cases involves U.S. or foreign branches of a single taxpayer corporation that operate autonomously with respect to the covered transactions. For example, the different branches might autonomously enter into foreign currency transactions with customers. Pursuant to the business profits articles of the relevant income tax treaties, several APAs determined the appropriate amount of profits attributable to each branch by reference to the branches' internal accounting methods. The branch results took into account all trades, including interbranch and/or inter-desk trades. In order for this method to provide a reliable result, however, it was necessary to ensure that all such controlled trades be priced on the same market basis as uncontrolled trades. To test whether this was so, the branch's controlled trades were matched with that branch's comparable uncontrolled trades made at times close to the controlled trades. A statistical test would then be performed to detect pricing bias, by which the controlled trades might as a whole be priced higher or lower than the uncontrolled trades. See the discussion under "Constructing a Range of Arm's Length Results" below.

Cost Sharing and Buy-Ins

Some APA cases involve a cost sharing arrangement ("CSA") under Reg. § 1.482-7.¹⁶ Under a CSA, a group of related taxpayers can share in the costs of developing intangibles that will be jointly owned. For example, affiliates in the United States, France, and Japan might share in the costs of developing technology that each affiliate will exploit in its respective regional market. A CSA generally obviates the need for royalties for the technology developed under the CSA because generally each member of the CSA will exploit only the interests in that technology that it owns (e.g., intangible rights in its own territory). To receive this treatment the taxpayer needs to have a "qualified" CSA. A taxpayer may claim that it has a "qualified" CSA only if it satisfies various requirements set out in Reg. § 1.482-7(b).¹⁷ An APA Team sometimes can work with a taxpayer to ensure that these requirements are satisfied. One key requirement is that participants share costs of development in proportion to their shares of reasonably anticipated benefits from exploitation of the intangible to be developed. The regulations contain complex provisions on when and how to prospectively or retroactively adjust the cost shares during the life of the CSA based on changed circumstances or incorrect estimation of benefit shares. (The retroactive adjustment provisions of Reg. § 1.482-7(f)(3)(iv) somewhat resemble the periodic adjustment provisions of Reg. § 1.482-4(f)(2).) Table D9 shows the methods of allocating cost sharing payments adopted in APAs completed through December 1999.

¹⁶The OECD Transfer Pricing Guidelines refer to these arrangements as cost contribution arrangements and discuss them in chapter 8.

¹⁷Reg. § 1.482-7(a)(1) states that even if the taxpayer does not comply with the requirements of a qualified CSA then the district director may apply the cost sharing rules to any agreement that in substance constitutes a CSA.

The most difficult CSA cases to resolve are generally those that involve the transfer of existing intangibles. For example, one controlled participant might make its own preexisting intangibles available to the CSA. That participant is then considered to have transferred interests in those intangibles to the other controlled participants, which must pay an arm's length compensation, or "buy-in" payment. Reg. §§ 1.482-7(a)(2), 1.482-7(g)(1),(2).¹⁸ Specifically, each other controlled participant must pay the value of the CSA's use of the intangibles at issue, determined according to the rules of § 1.482-1, -4, -5, and -6, multiplied by that participant's share of reasonably anticipated benefits under the CSA as defined in § 1.482-7(f)(3). See § 1.482-7(g)(2). For the first step in this calculation, the value of the CSA's use of the intangibles, most of the specified methods for valuing intangible transfers normally cannot be applied in a straightforward manner in the buy-in context.¹⁹ Some other methods have been developed specially for buy-ins. In some

¹⁸Exhibit E provides legal background on buy-ins.

¹⁹Reg. § 1.482-4(c) provides for using comparable uncontrolled transactions of intangible property ("CUT"), involving either "the same intangible property" or "comparable intangible property." Typically, all participants in a cost sharing arrangement are controlled, and the intangibles supplied are not made available to any party outside the cost sharing group, so that the "same intangible property" approach cannot be used. Taxpayers sometimes propose CUTs based on "comparable intangible property," but the very existence of the CSA might make the circumstances of proposed CUTs not comparable to the circumstances of the tested transaction. (The "existence and extent of any collateral transactions or ongoing business relationships between the transferee and transferor" can affect comparability. Reg. § 1.482-4(c)(2)(iii)(B)(2)(vii).) While a buy-in should compensate the use of preexisting intangibles for further R&D, it is rare that CUTs confer rights of further development to the licensee. Furthermore, the CUT methods offered by taxpayers often only provide an initial royalty rate. It may be appropriate to decrease this initial royalty rate over time due to the replacement of the preexisting intangibles with the intangibles developed under the CSA. The rate of decline is not addressed in the regulations that deal with CUTs. Also, if the intangible transfer occurs before the technology is commercialized, the "comparable intangible property" approach normally cannot be used. Comparability of intangibles is especially hard to determine at the precommercial stage, and potential comparable transactions likely would be secret. While the CUT method as presented in Reg. § 1.482-4(c) is thus often not applicable to buy-ins, some buy-in methods discussed below are in part based on a CUT approach. Additionally, a CUT analysis forms the foundation for the market capitalization method.

Reg. § 1.482-5 (Comparable Profits Method ("CPM")) applies to intangible transfers as follows. A royalty paid for intangibles is deemed to be arm's length only if the company paying the royalty is left with an after-royalty profit that is arm's length as determined by the CPM. In principle, this approach could apply to determine the buy-in as a royalty stream. However, the company paying the royalties for the preexisting intangibles would also be an owner of intangibles developed under the cost sharing arrangement, and it normally would be difficult to find uncontrolled companies with comparable intangibles upon which to base the CPM analysis. While

cases, these methods are based in part on specified methods such as CUT and CPM. These various methods are discussed later.

Buy-in payments may take the form of a lump sum payment, a series of installment payments based on a lump sum up front value with arm's length interest, or "royalties or other payments contingent on the use of the intangible by the transferee." Reg. § 1.482-7(g)(7). On audit, the taxpayer is normally free to choose the form of payment unless its arrangement lacks economic substance. See Reg. § 1.482-1(f)(2)(ii)(A) ("The district director will evaluate the results of a transaction as actually structured by the taxpayer unless its structure lacks economic substance.") In the APA context, the Service might argue for its preferred form of payment as part of the give-and-take of negotiations. Some of the buy-in methods discussed below naturally yield a lump sum result, while others naturally yield a result as a stream of royalties. If the best method yields a lump sum but the taxpayer has chosen a royalty stream, the lump sum can be converted (with the help of an economist and some assumptions) into a royalty stream. Similarly, if the best method yields a royalty stream but the taxpayer has chosen a lump sum, the royalties can be converted (again with the help of an economist and some assumptions) into a lump sum. In practice, taxpayers tend to choose royalty streams.

Table D5 shows buy-in methods used in APAs completed through December 1999. These methods have been adopted on a case by case basis, depending on the taxpayer's facts and circumstances. Most of these methods, plus some others, are described below in simple form, omitting many possible complicating issues. In reviewing these methods, please bear in mind the following considerations:

- Buy-ins presented in APAs often involve U.S.-owned intangibles being transferred to a low tax jurisdiction. In such cases, U.S. taxpayer normally would prefer a lower buy-in amount.
- For some of these methods, the intangibles' useful life is a key issue. A longer useful life normally increases the buy-in payment. Often all intangibles of a particular type (e.g., basic research, development, marketing intangibles) are assumed to have the same useful life.

the CPM presented in Reg. § 1.482-5 is thus not often applicable to buy-ins, some buy-in methods discussed below are in part based on a CPM approach.

Another specified method is the comparable profit split under Reg. § 1.482-6(c)(3). As discussed above, this method is only rarely useable. Applying a comparable profit split to a cost sharing buy-in would be especially difficult because "comparability under this method also depends particularly on the degree of similarity of the contractual terms of the controlled and uncontrolled taxpayers." One rarely finds uncontrolled taxpayers in a similar cost sharing arrangement.

- Some of these methods consider intangible development expenditures. For example, the residual profit split method compares the relative amounts of expenditures that were made to develop preexisting and cost-shared intangibles, and the capitalized expenditures method considers the expenditures used to develop preexisting intangibles. In order to determine the expected value in Year Y of expenditures made in the past, the following calculations are typically performed. First, the past amounts spent are capitalized. This means that they are increased in value each year to reflect a rate of return on investment that is appropriate for the expenditures' risk. Second, after the intangibles produced by particular expenditures are placed in service,²⁰ the value, while still capitalized, is simultaneously amortized.²¹ This means that the value is decreased each year to reflect an assumption that the intangible's value decreases over time (e.g., over time becomes partially or completely obsolete). The value is amortized according to the intangible's estimated useful life and amortization schedule. In taxpayers' analyses, amortization normally brings the intangible's value down to zero after a number of years; however, in some cases the intangible might retain some value indefinitely.
- The capitalization described in the previous bullet can reflect that an R&D dollar spent at an earlier stage of a successful project contributes more value than an R&D dollar spent at a later stage. However, one might also consider qualitative, case-specific factors that affect the value of certain R&D. Certain R&D might have been especially brilliant, pioneering, or lucky, resulting in unusually high value; and certain R&D might have been especially routine or unlucky, resulting in unusually low value. In such cases, the normal calculations may need to be modified to better reflect absolute or relative intangible values.
- APA requests covering buy-in payments should: (i) present at least two buy-in valuation methods, one of which should be market capitalization if a participant contributes a substantial portion of its pre-existing intangible property, or should be acquisition price if a participant contributes a substantial portion of an acquired target's pre-existing intangible property; (ii) compute the results under each of the methods; (iii) explain why the results do not converge if that is the case; and (iv)

²⁰When expenditures lead to intangibles that can be used to increase profits, the expenditures and associated intangibles are said to be placed "in service". For example, if certain R&D leads to a product that can be made and sold, the R&D might be considered placed in service when commercial-scale production begins.

²¹Taxpayers' analyses sometimes omit capitalization after the intangibles are placed in service, or even omit capitalization entirely. Also, taxpayers sometime propose capitalizing at only the inflation rate instead of at the appropriate rate of return. Those approaches do not appear justified.

support the taxpayer's conclusion that its proposed method is the most reliable one. If an APA request does not include a market capitalization or acquisition price analysis in the circumstances just described, the APA Team should perform such an analysis as part of its due diligence.

- **The results of some of the buy-in methods (as generally applied) can be expected to converge under certain conditions. However, it is not expected that the results of all of the methods (even under favorable conditions) will converge, because they implicitly contain different assumptions regarding the definition of the intangible that is being compensated under the buy-in. There is widespread confusion and disagreement about what, in principle, should be compensated in a buy-in payment. For instance, some taxpayers assume that the cost sharing regulations do not require an arm's length buy-in payment whereas the IRS does not view the cost sharing regulations as a departure from arm's-length principles. Exhibit F discusses these issues. (That exhibit also introduces one method, frozen foregone profits, not discussed below.) Exhibit G provides some computational details for various methods. The descriptions of particular methods are not meant as endorsements of those methods.**

For convenience, we will assume that a CSA has two parties: D (the "donor"), who provides some preexisting intangibles, and R (the "recipient"), who owes D a buy-in payment.

- **Market Capitalization**

The market capitalization method derives a value for the intangibles at issue by starting with the total value of a company's assets, computed as the value of its equity (as measured by its stock price) plus the value of its liabilities. From this total is subtracted the value of the company's tangible assets, plus the value of any intangibles not transferred or not compensable. The result is the value of the intangibles at issue, expressed as a lump sum. This method avoids the issues of cost of capital, useful life, and amortization schedule. This method can be considered as a type of CUT analysis, since the stock price can be considered a price paid by unrelated parties for (among other things) the intangibles at issue.²²

Some practitioners object to this method for several reasons.²³ Some have made the argument that, at least in certain instances, a stock price measures factors other

²²See FSA 200023014, released June 9, 2000, text accompanying footnote 28.

²³Practitioners sometimes focus on the imperfections of this method without considering that other methods may have equally great imperfections.

than expectations about a company's intrinsic value (e.g., future cash flows). For instance, stock prices may reflect expectations about future stock price movements that are unrelated to financial performance. To support their view these practitioners note that stock price fluctuations are more volatile than one would expect if stock prices were solely a reflection of the intrinsic value of firms. Thus, according to this view, picking a stock price from any particular date would not be a reliable measure of the value of the intangibles. However, this issue can be addressed through smoothing the volatility by using an average stock price over a time period near the buy-in date. But some argue that this is not an adequate solution since even over extended periods stock prices may not reflect the intrinsic values of companies. These practitioners point to what may seem to be speculative bubbles in the stock market. For instance, the NASDAQ Composite climbed from 755 in January 1995 to 4697 in February 2000, only to come back down to 1292 by the beginning of September 2002. However, it is not necessarily the case that these movements represent "irrational exuberance". They may, instead, reflect a change in the minds of investors on how to compute the intrinsic value of corporations, particularly in light of new information. This issue may become the subject of negotiations for possible adjustment.

Another concern is that the stock price is determined by outsiders who are not the best judge of a company's worth, especially if the company has valuable intangibles of uncertain value. This argument ignores the fact that the stock price is nevertheless an independent market assessment of value. In particular cases, if stockholders are misinformed, the foregone profits method discussed below might be more reliable; one version of that method relies on the company's own predictions.

Additionally, practitioners sometimes object that one cannot reliably subtract the proper amount from the company's market price. For example, certain tangibles and intangibles may not be included in the buy-in and may be hard to value. Also, some intangibles might be only partly transferred (e.g., a nonexclusive license, perhaps with other limitations), and it may be difficult to determine the difference between the value of those limited rights and the total value of the intangible. Finally, there are arguments that certain items of D's value would need to be subtracted because they are not legally considered to be transferred intangibles; valuing such items could be difficult.²⁴

Exhibit A contains a market capitalization analysis proposed by an APA team. The analysis first computes the company's total market value and then subtracts the

²⁴Such items include workforce in place, goodwill, and going concern. There is confusion about the definition of these items. There are arguments that these items are not subject to allocation under section 482 because they do not meet the definitions of "intangible" in Reg. §§ 1.482-7(a)(2), -4(b). This complex subject is beyond the scope of this Study Guide.

value of both its tangible assets and its routine intangibles; the latter are estimated using the median result of comparable companies' ratios of intangible to tangible assets. This calculation yields the value of the company's nonroutine intangibles. Finally, the analysis apportions that value between those nonroutine intangibles that are the subject of the buy-in and those that are not.

- **Acquisition Price**

Suppose D buys company T's stock or assets and then makes some or all of T's technology available to the CSA. Then the value of T's assets (computed as the purchase price in the case of an assets purchase, or the purchase price plus T's liabilities in the case of a stock purchase), adjusted downward to reflect any value not due to intangibles made available to the CSA, can yield a value for the intangibles made available. This method is most reliable when the values of any downward adjustments are easy to determine. Thus, if D withholds a substantial portion of T's intangibles from the CSA, the method's reliability could be reduced because those withheld intangibles could be hard to value.

This method is sometimes considered a variant of the market capitalization method, since it is based on the value of a whole company. As with the market capitalization method, there are arguments that certain items of T's value would need to be subtracted because they are not legally considered to be transferred intangibles.²⁵

Some taxpayers argue that purchases made using the acquirer's stock are not comparable to those made using cash.²⁶ The APA Program's analysis is that while there may be some effect, the adjustment required would not be so large that difficulty in precisely estimating the adjustment would substantially decrease the method's reliability.

²⁵Sometimes people refer to the "comparable acquisitions" method. That term refers to a method different from the acquisition price method discussed in the text. In general, the comparable acquisitions method uses financial data from uncontrolled acquisitions of comparable companies to derive financial ratios (e.g., intangibles to sales, stock value to sales) that can be used to estimate intangible values. (Actually, one could sometimes just as well derive financial ratios from comparable companies not being acquired.) For example, suppose that D has no market-determined stock price of its own, either because it is privately held or because it is part of a larger entity with a unified stock. Then data from comparable acquisitions can be used to compute a stock price for D (e.g., D's sales times the comparables' ratio of stock price to sales), which could then be used to compute a buy-in under the market capitalization method discussed below. Another application of the comparable acquisitions method is discussed below in connection with the Capitalized Expenditures method.

²⁶See Reg. § 1.482-1(d)(3)(ii)(A) (form of consideration).

- **Foregone Profits (sometimes called Discounted Cash Flow)**

The foregone profits method²⁷ involves the following steps. First, estimate R's revenues and expenses (including cost sharing contributions) for each year during the expected life of the intangible. These estimates could be based on analysis by the company or by outside analysts. Second, estimate an appropriate return each year for R's routine functions. Third, compute an estimated residual profit for R for each year, which equals estimated revenues, minus estimated expenses, minus estimated routine return. One could define the buy-in payment as this stream of residual profits. (If desired, one could divide these amounts by projected sales to derive royalty rates, and specify the buy-in in terms of those rates.) Alternatively, one could derive a lump sum buy-in by computing the present value for the estimated stream of residual profits. (If desired, one could divide that lump sum by the present value of projected sales to derive a royalty rate, and specify the buy-in in terms of that rate.) The discount rate used for the present value calculation should reflect the level of risk associated with the stream of residual profits.²⁸

It is often difficult to project these income flows, especially if the buy-in concerns R&D still in an early stage. This problem can make the discounted cash flow method less reliable. If the buy-in payment is in the form of a lump sum or otherwise depends on a present value analysis, then the amount may be sensitive to the discount rate assumed.

While the foregone profits method is not one of the specified methods under the regulations, Reg. § 1.482-4(d), including the accompanying example, envisions the use of a foregone profits approach in valuing intangibles.

- **Residual Profit Split**

The residual profit split ("RPS") method is described in Reg. § 1.482-6(b)(3) and is a method often proposed by taxpayers for valuing buy-ins. The RPS method yields a stream of royalties from D to R. One calculates the royalty in any year Y based upon D's contribution to R's residual profit (i.e., the profit that remains after a routine return has been subtracted from total profits).

²⁷This method is sometimes called "discounted cash flow," but it normally looks at operating profits rather than cash flows.

²⁸See John Wills, "Valuing Technology: Buy-in Payments for Acquisitions," Journal of Global Transfer Pricing, Feb./Mar. 1999, pp. 28-34, voicing some taxpayers' criticism of this approach, and R. William Morgan, "Buy-in Payments and Market Valuations," Tax Management Transfer Pricing Report (BNA), Sept. 15, 1999, pp. 449-454, defending it.

Generally, taxpayers propose to measure the D's contribution to R's residual profit by reference to relative stocks of intangible development costs.

To calculate D's stock, first compute the total of all of D's expenditures made to create the intangibles at issue, with each year's expenditures capitalized and amortized to Year Y. (These expenditures were incurred before the date of the buy-in.) This total represents the total amount in Year Y of D's stock in the preexisting intangibles. Multiply that total value times R's share of the CSA (i.e., R's estimated share of benefits from the CSA) to get the value in Year Y of D's stock that related to that portion of the intangibles enjoyed by R. (One in effect allocates a portion of D's R&D expenditures to R's operations.)

To calculate R's stock, compute the total of all of R's expenditures under the CSA, with each year's expenditures capitalized and amortized to Year Y.²⁹

Finally, D's relative contribution to R's residual profit in Year Y equals D's stock divided by the sum of D's and R's stocks. That fraction of R's residual profit would be the basis of a buy-in royalty paid by R to D.

Under this approach, R's share of the residual will grow with time. R's share will grow more quickly when short useful lives are used to amortize D's contributions.

Some have criticized the RPS approach because it can yield a buy-in price that is much less than the expected value to R of the transferred interest in intangibles. Taxpayers sometimes propose very short useful lives such that profits resulting from the intangibles ramp up after the end of the proposed useful life. In such cases, one should consider whether (1) the intangibles at issue should have a gestation period with no amortization, and (2) the useful life should reflect adequate time to include profits from improvements to the intangibles at issue. See Exhibit F.

The R&D stock calculation presented above relies on the assumption that each dollar invested in developing intangibles (adjusted for time and risk) is of equal value. Such an assumption may not be true if D contributes some proven intangibles with value far beyond their capitalized development costs, but the cost-shared intangibles develop a value close to their capitalized development costs. In such circumstances the RPS method as presented may not be reliable, though one might be able to adjust for these circumstances by weighting D's expenditures more heavily than R's expenditures. This point is supported by the preamble of the

²⁹We do not need, as we did with C's expenditures, to multiply this total by R's share of the CSA. The reason is that we counted from the beginning only R's own cost contributions, which equals that amount of the CSA's intangible development expenditures that would be allocated to R's use.

section 482 regulations, which states that the reliability of the residual profit split method “could be particularly adversely affected if capitalized costs of development are used to estimate the value of intangible property because such costs may bear no relation to market value” (see also Reg. § 1.482-6(c)(3)(ii)(C)).

Even if one can agree on D’s and R’s relative intangible shares, there is some confusion regarding how to calculate the royalty. An example can help illustrate the issues surrounding this calculation. In this example we assume that the CSA has already commenced. Prior to the execution of the CSA, D bore the costs of R&D. Subsequent to entering into the CSA, R paid for R&D through its ongoing cost-sharing payments. The following table presents D’s R&D expenditures allocated to R’s operation, and R’s R&D expenditures and profits:

		D	R	
(1)	Beginning of Year R&D Stocks	50	50	
(2)	Additions to R&D Stocks	0	15	Equal to prior year R&D expense, by assumption
(3)	R&D Stocks Before Amortization	50	65	= (1) + (2)
(4)	Amortization Rate	10%	20%	
(5)	Amortization of R&D Stocks	5	13	=(3) * (4)
(6)	End of Year R&D Stocks	45	52	=(3) - (5)
(7)	Average R&D Stocks	47.5	51	Average of (1) and (6)
(8)	Share of R&D Stocks	48%	52%	
(9)	Sales		220	
(10)	COGS		120	
(11)	SG&A, excluding R&D		50	
(12)	Routine Profits		4.4	= 2% * (9)
(13)	Residual Op. Profit before R&D		45.6	=(9) - (10) - (11) - (12)
(14)	R&D		25	Current year's R&D, per GAAP
(15)	Residual Op. Profit after R&D		20.6	=(13) - (14)
(16)	Residual Economic Operating Profit		27.6	=(13) - (5) [subtract (5) for both D and R]

The following are four different methods that one might consider for calculating the royalty:

Alternative I				
	Residual Op. Profit after R&D		20.6	=(15)
	Multiplied by: D's Share		48%	=(8)
	Equals: Royalty		9.9	
Alternative II				

Residual Op. Profit before R&D		45.6	=(13)
Multiplied by: D's Share		48%	=(8)
Equals: Royalty		22.0	
Alternative III			
Residual Economic Operating Profit		27.6	=(16)
Multiplied by: D's Share		48%	=(8)
Equals:		13.3	
Plus: D's Amortization		5	=(5)
Equals: Royalty		18.3	
Alternative IV			
Residual Economic Operating Profit		27.6	=(16)
Multiplied by: D's Share		48%	=(8)
Equals: Royalty		13.3	

The APA Program believes that Alternatives II and III make better economic sense.³⁰ In order to understand why it is helpful to consider the R&D function's income statement. From an accounting perspective the R&D function's costs are equal to its period R&D expenses. In this example this amount is 25. From an economic perspective, however, period R&D expenses are often not an accurate measure of the cost of R&D associated with the revenues and profits generated by the intangibles exploited in that period. For instance, R&D expenditures incurred in a particular year may be expected to generate sales only in future periods. In this example the economic cost of R&D is 18, the sum of the amortization of D's R&D and R's R&D (see line 5).

The next item to consider in the R&D function's income statement is profit. In this example there are two types of profit, routine profits and residual profits. The routine profits are associated with the routine functions and the residual profits stem from the R&D function. From an accounting perspective and an economic perspective the routine profits are equal to 4.4. With respect to the residual profits (i.e., the R&D function's profits) the accounting profits are equal to 20.6 (line 15) and the economic profits are equal to 27.6 (line 16). The following table summarizes the costs and profits for the R&D function:

³⁰APA requests typically have proposed Alternative II or III. The language of Reg. § 1.482-6(c)(3)(i) and the Nulon example in Reg. § 1.482-6(c)(3)(iv) arguably favor Alternative I, although they do not explicitly address the point at issue. For bilateral APAs one might look to the OECD Guidelines, which do not have similar language.

	Accounting Based	Economic Based
Costs	25	18
Profits	20.6	27.6

Given these figures and the fact that revenues by definition are equal to costs plus profits, we can calculate the revenues for the R&D function as 45.6 under either method. Since the R&D function receives its revenues in the form of royalties, the 45.6 represents the amount of royalties payable to the R&D function (note that D will only have a claim on a portion of these royalties).

Therefore, Alternative I and Alternative IV make the mistake of confusing profits with revenues. The differences between Alternative II and Alternative III are subtle. As explained above, the revenues (i.e., royalties) for the R&D function are equal to 45.6. Alternative II, therefore, calculates the royalties owed to D as D's share (as measured by R&D stocks) of the total royalty. This alternative seems the most reliable one. Alternative III first calculates the economic residual profits and apportions them between D and R. It then adds back D's costs of R&D to D's share of the residual economic profit to calculate the royalty amount. The royalty is somewhat lower because D is in effect subsidizing R's higher amortization rate.³¹

- **Declining Royalty**

The declining royalty approach computes a royalty stream. As will appear, this approach has several variations.

First, one computes an appropriate royalty rate for immediately after the buy-in, when no cost-shared intangibles are in service. This initial royalty could be based on a CUT analysis if third parties are paying royalties for the same intangibles that are made available to the CSA. Alternatively, the initial royalty could be computed by subtracting a routine profit level (based on a CPM analysis) from the actual profits just before the time of the buy-in to determine the residual profit due to the intangibles.

Next, the initial royalty rate is decreased over time. It could be decreased according to an estimated useful life and amortization schedule (e.g., declining balance or straight line) for the intangible assets transferred to the CSA. Alternatively, it could be decreased by a calculation similar to the calculation

³¹In Harlow Higinbotham, "The Profit Split Method: Effective Application for Precision and Administrability," Tax Management Transfer Pricing Special Report, Report No. 24, Oct. 2, 1996, pp. 16-19, the author advocates Alternative III. Alternatives II and III will yield similar results unless significantly different amortization rates are used in the calculation of D's and R's intangibles stocks.

made for the RPS method discussed above. That is, for any Year Y, the initial royalty will be multiplied by (1) D's pertinent intangible development costs, capitalized and amortized to Year Y, divided by (2) the sum of D's and R's pertinent intangible development costs, each capitalized and amortized to Year Y.

Under the declining royalty approach, the royalty rate does not depend on R's operating profits at all (using the CUT approach) or does not depend on R's profits after the first year (using the CPM approach). In contrast, under the RPS approach the royalty each year is directly tied to R's profitability.

- **Capitalized Expenditures**

The capitalized expenditures method computes the buy-in as the amount of expenditures that generated the intangibles at issue, capitalized and amortized to the buy-in date. Since these expenditures typically are primarily for R&D, this method is sometimes called "capitalized R&D".

Relative to other methods, this method tends to produce a low value for the buy-in. In some cost sharing APAs, the R&D that generated the intangibles in question was quite successful, so that its value as of the buy-in date may be substantially more than the capitalized and amortized values of the R&D expenditures. In such cases, the capitalized expenditures approach provides a figure that is lower than a fair estimate of the intangible's value.

One refinement of this method acknowledges that the value of the R&D may be substantially more than the capitalized and amortized costs. This method uses comparable companies to derive a ratio of intangible asset value to capitalized and amortized expenditures on those intangibles. One might choose comparables that were acquired by other companies, so that one could make use of public financial data relating to the acquisition. (If acquired companies are used, the method is sometimes called "comparable acquisitions".) One then multiplies this ratio by the tested party's capitalized and amortized expenditures related to the intangibles at issue to estimate the value of those intangibles as of the buy-in date.³²

Services

APAs concerning the provision of services have applied Reg. §1.482-2(b)(3) to determine an arm's length charge for such services. In general, services have been charged out at cost when they were not an integral part of the business activity of either the party rendering the services or the recipient of the services. In cases where the services were integral, or where it was otherwise determined that parties dealing at arm's length would

³²See William Finan, "Reliably Determining a Buy-In Payment Under Code Sec. 482," *Journal of Global Transfer Pricing*, February-March 1999, pp. 12-27.

not have charged just the cost of services, the tendency has been to use a CPM with a markup on total costs PLI to determine a specific arm's length compensation rather than a range of compensations. In six cases completed through December 1999, other methods of determining an arm's length compensation have been determined to be the best method, as seen in Table D2.

Services provided should be compensated only if the recipient would have paid for them at arm's length. If a parent provides services for a subsidiary that are duplicative with services that the subsidiary already performs, or are otherwise unnecessary, then the services should not be compensated. For example, suppose a parent audits its subsidiary to satisfy its own investors or legal requirements, but the audit duplicates an audit the subsidiary performed on its own. This type of expense is called "stewardship," since it is performed by the parent as a steward for its own investments rather than to benefit the subsidiary. The parent should bear the cost of this expense.

SELECTING COMPARABLE UNCONTROLLED COMPANIES OR TRANSACTIONS (COMPARABLES)

At the core of most APAs are comparables. The APA program works closely with taxpayers to find the most reliable comparables for each covered transaction. In some cases, CUPs or CUTs can be identified, with the attendant product- or intangible-specific analysis of comparability and reliability. In the APA Program's experience, CUPs and CUTs have been most often derived from internal transactions of the taxpayer. But other cases have used third party CUPs or CUTs from external transactions.

In other cases, comparables can be identified using the cost plus or resale price methods, with the requisite analysis of functional and accounting comparability.

In still other cases, comparable business activities of independent companies are used in applying the CPM or residual profit split methods. For these profit based methods, where comparable business activities or functions of independent companies are sought, the APA Program typically has applied a three part process. First, a pool of potential comparables has been identified through broad searches. Second, companies having transactions that are clearly not comparable to those of the tested party have been eliminated through the use of quantitative and qualitative analyses, i.e., quantitative screens and business descriptions. Then, based on a review of available descriptive and financial data, a set of comparable companies or transactions has been finalized. Third, the comparability of the finalized set has then been enhanced through adjustments (discussed later).

Searching for Potential Comparables

Comparables used in APAs can be U.S. or foreign companies. While it is easier to identify and obtain descriptive information and reliable financial data on U.S. companies, sometimes some or all of the most reliable companies to use are foreign. (For example, to test a controlled foreign distributor, uncontrolled distributors in the same market may be most comparable.) In general, comparables have been located by searching a variety of databases that provide data on U.S. publicly traded companies and on a combination of public and private non-U.S. companies. Table D7 summarizes some of the common databases used for existing APAs. These databases are searched using a combination of industry and keyword identifiers.

TABLE D7

Comparables Databases Used in APA Analyses

VENDOR*	DATABASE^a	COVERAGE
Bureau van Dijk	Amadeus Jade Fame	European companies Japanese companies U.K. companies
Disclosure	SEC CanCorp Worldscope	U.S. public companies (primarily) Canadian companies global companies
Moody's	Domestic International	U.S. public companies non-U.S. companies
Standard & Poor's	Compustat (Research Insight North America) Global Vantage (Research Insight Global)	U.S. & Canadian public companies (primarily) non-U.S. companies

^aMany vendors now package their data with more than one type of access software. For example, Disclosure offers SEC data as Global Researcher and Piranha. This table attempts to show the major databases without regard to the "front-end" software used to access them. In addition, it does not show vendors such as Lotus, who package existing databases together in products such as "One Source." Also, acquisitions and strategic relations among vendors sometimes make it hard to keep track of who owns a particular database.

Although potential comparables were most often identified from the databases listed above, in some cases comparables were found from other sources. Chief among this group are potential comparables derived internally from taxpayer transactions with third parties. In just over 10 percent of all APAs concluded through December 1999, transactions were evaluated using internal potentially comparable uncontrolled transactions. In a few cases

comparables were found based on trade publications in specific industries, proprietary databases maintained by the taxpayer's representative, and the taxpayer's information on competitors.

Taxpayer representatives often have substantial resources for identifying potential comparables. Also, the APA Program prefers when possible to work with reasonable approaches proposed by the taxpayer rather than to start from scratch. For both of these reasons, the APA Program often relies to a large extent on a taxpayer's comparable searches. However, even when working from a taxpayer's search, the Service's APA Team will conduct its own searches when appropriate.

Selecting Comparables

- **Scrutinize Potential Comparables**

The initial list of companies from database searches can yield a number of companies whose business activities may not be remotely comparable to those of the entity being tested. Therefore, so called "comparables" based solely on SIC or keyword searches are almost never used in APAs.

Rather, pools of initially identified companies are accepted or rejected as comparables based on a combination of quantitative and qualitative screens, business descriptions, and other information found in a company's Annual Report to shareholders and filings with the U.S. Securities and Exchange Commission ("SEC").³³ (The application of multiple quantitative screens to select comparables, without also analyzing descriptive information about the companies, generally has not been acceptable APA practice.) Normally, functions, risks, economic conditions, and the property (product or intangible) and services associated with the transaction must be comparable. Determining comparability can be difficult, and is often at the heart of the APA Team's work.³⁴

- **Selecting a Set**

³³Selection criteria are sometimes less specific for non-U.S. companies because there is normally less publicly available descriptive information.

³⁴Companies sometimes have financial data broken down by business line or geographic units. Sometimes omitting one or more business or geographic segments can make a company more comparable to the tested party. Thus, through the use of segmented data, an otherwise unacceptable potential comparable might become acceptable. While such segmented comparables might be used in some cases, segment data is sometimes unreliable; the reliability must be examined on a case-by-case basis.

For selecting a final set of comparables, the standard in the regulations is that one should select the most comparable and reliable potential comparables, and only include potential comparables that are not “significantly” less comparable and reliable than the best ones available.³⁵ However, this standard is susceptible to different interpretations, and choosing a set of comparables is an art rather than a science.

In this regard, we should distinguish two situations. The first is the rare case when some comparables are of high enough quality so that the arm’s length range would include all of their results.³⁶ In such cases one normally should use those comparables to the exclusion of others, which normally would be deemed “significantly” less comparable or reliable. In principle, even just one such comparable would make an acceptable set, although a taxpayer might prefer to have more comparables so as to define a range of arm’s length results instead of a single point.

The second, more normal situation is that no such high quality comparables exist. In such cases, where even the best comparables give one some uneasiness, there can be “strength in numbers.” Thus, including some additional comparables that seem to be somewhat less comparable or reliable than the best ones can yield a larger set of comparables that produces a more reliable final result. When an initial set of quantitative and qualitative screening criteria yielded a small set of comparables, the APA Team would often consider ways to relax the criteria to get a somewhat larger set.

There is no magic number of comparables to include. As a rough guide, having thirteen or more would cause no uneasiness, having eight would cause slight uneasiness, and having only four would cause more substantial uneasiness. But these are just rough guides. Many APAs have used a range based on eight or fewer comparables, and some have used a range based on four or fewer comparables. Sometimes no additional comparables can be found of even roughly the same comparability and reliability as the best ones.

- **Criteria Used**

³⁵“The arm’s length range will be derived only from those uncontrolled comparables that have, or through adjustments can be brought to, a similar level of comparability and reliability, and uncontrolled comparables that have a significantly lower level of comparability and reliability will not be used in establishing the arm’s length range.” Reg. 1.482-1(e)(2)(iii).

³⁶For such comparables, “it is likely that all material differences have been identified” between the uncontrolled comparable and the controlled transaction. Further, each identified difference has “a definite and reasonably ascertainable effect on price or profit, and an adjustment is made to eliminate the effect of each such difference.” Reg. § 1.482-1(e)(2)(iii)(A).

The APA Program has applied a combination of criteria to determine comparability of economic conditions. Specifically, it frequently has combined a “same industry” criterion with criteria focusing on the level of market served, the maturity of the company (minimum or maximum number of years of operation), and/or the market served (minimum or maximum percentage of sales in a geographic area and/or percentage of government sales.)

In addition, the APA Program has generally required the potential comparables to have complete financial data available for a specified period of time. Sometimes this has been three years, but it can be more or less, depending on the circumstances of the controlled transaction and the availability of good comparables. There is a tension here. On the one hand, good comparables are often scarce, and requiring a potential comparable to have complete financial data for several years can eliminate a company that would make a good comparable. On the other hand, data from a very few years might represent atypical years of a company subject to cyclical fluctuations in business conditions. Also, a comparable with data available for only a short period of years might be in a startup or shutdown period (and thus perhaps not sufficiently comparable to the tested party, assuming that the tested party during the APA years is not undergoing startup or shutdown activities).³⁷ Further, allowing comparables that do not have complete data for the whole analysis window presents the issue of how to weight that comparable’s results compared to other comparables’ results (see the next section, on analysis windows).

Many additional criteria and/or screens have been applied in many cases. One is a sales level screen. The rationale is that very different sales levels or transaction sizes might involve fundamentally different economic conditions (e.g. different economies of scale, different negotiating power with suppliers and customers).

Another criterion is product similarity. Transactions involving different types of products can face different economic conditions. The importance of product comparability depends on the transfer pricing method being used (Reg. § 1.482–1(d)(3)(v)). In using methods that rely on the identification of comparable uncontrolled companies, the APA Program has generally required less product comparability than when using methods that rely on comparable uncontrolled transactions. Nonetheless, product comparability, as determined from publicly available corporate information, has often been used as a selection criterion when possible for uncontrolled companies.

³⁷The lack of data does not always indicate startup or shutdown. For example, a company can be acquired, after which there will be no more data available.

Yet another criterion is financial distress. Companies in financial distress often have experienced unusual circumstances that would render them not comparable to the entity being tested. Recent thinking in the APA Program is that an unfavorable auditor's opinion or bankruptcy during a particular year normally would make a company not comparable for that year with a tested party that is not in similar distress. However, operating losses should not eliminate a potential comparable unless some additional factors are present. See Exhibit B.³⁸

An additional important class of selection criteria involves the development and ownership of intangible property. When the tested party does not own significant manufacturing intangibles or conduct significant research and development ("R&D"), several criteria have been used to eliminate potential comparables that have significant manufacturing intangibles or conduct significant R&D. These selection criteria have included determining the importance of patents or screening for R&D expenditures as a percentage of sales or costs. Quantitative screens generally have been used together with publicly available descriptive information on the comparables.

Selection criteria relating to asset comparability and operating expense comparability have sometimes been used. A screen of property, plant, and equipment ("PP&E") as a percentage of sales or assets, combined with a reading of a company's SEC filings, has been used to help ensure that distributors (generally with lower PP&E) were not compared with manufacturers (generally with higher PP&E), regardless of their SIC classification. Similarly, a test involving the ratio of operating expenses to either sales or total costs has helped to determine whether a company undertakes a significant marketing and distribution function. (However, in some cases lower or higher ratios of operating expenses to sales may indicate increasing or decreasing sales, respectively, rather than functional differences.) This test has most often been used when complete descriptive information about a company's functions was not available.

DECIDING ON THE ANALYSIS WINDOW AND RELATED MATTERS

As described in the next three sections, the comparables' results are adjusted as needed; the adjusted results are used to determine an arm's length range; and the taxpayer's results are tested against the arm's length range. Before all that can happen, however, one must

³⁸Memorandum of January 9, 2001, from Robert Weissler to APA Program Professional Staff re: "CPM Comparables' Abnormal Profit Levels: Minutes of Meeting of September 21, 2000".

decide the time period over which to compute the comparables' results, and certain related technical details.

In an audit context, for which the regulations were written, this choice of time period tends to be fairly straightforward. Ordinarily, the comparable results "occurring in the taxable year under review" will be used to test the tested party's results for that year. (By the time a particular year is audited, comparables' data for that year are almost always available.) However, certain circumstances warrant consideration also of data from the comparables or the tested party "for one or more years before or after the year under review." Normally, the same period is used for both the comparable data and the tested party data. Circumstances warranting the use of multiple year data include business cycles, product or intangible life cycles, and data availability issues. Reg. 1.482-1(f)(2)(iii). When a CPM is used, "data from one or more years before or after the taxable year under review must ordinarily be considered." However, "multiple-year data ordinarily will not be considered" when using the CUP method.³⁹

The APA context is more complex, and is not directly addressed in the regulations. The reason is that, because APAs are prospective, there is usually a mismatch between the period for which the comparables' data is used (the "analysis window") and the period during which the tested party's results are evaluated (the "APA period" or "APA years"). For example, suppose that a calendar year taxpayer applies for an APA covering 2000-2004 on the last possible date, approximately September 15, 2001. The comparables' analysis in the taxpayer's application probably would not include comparable data going beyond the year 2000. The taxpayer might propose an analysis based on comparable data for 1998-2000.

In principle, it is possible to reduce this mismatch by updating the comparables' results as the APA period progresses. For administrative simplicity, there might be only one update. Thus, in the example just discussed, the arm's length range applicable to years 2003 and 2004 might be recomputed in 2003 based on the comparables' results for 2000-2002. While this approach has occasionally been used, it is fraught with problems. How can one be sure that the companies selected remain comparable to the tested party? Some might, for example, make major changes to their business. The Service and the taxpayer might disagree about particular companies. What if some or all of the original comparable set do not have data available for the new analysis period because they merged or went out of business? Then one might need to perform a new comparables search.

The APA Program typically has tried to use as late an analysis window as possible, to reduce the mismatch between the analysis window and the APA period. Sometimes, for

³⁹Multiple-year results of a controlled recipient of intangible property are also considered under the periodic adjustment provisions of Reg. § 1.482-4(f)(2). That section is concerned with the statutory requirement under IRC § 482 that the compensation for an intangible be commensurate with the income attributable to the intangible. Lesson 2 will address intangibles.

this reason, the comparable data have been updated with data from more recent years as the negotiations progress. The benefit of doing this must be weighed against the effort required on the taxpayer's and the Service's part to get and use the updated data (and to verify that the companies are still good comparables for the later years).

The APA Program generally has used multiple year comparable data when applying the CPM. Typically at least three years have been used. For industries with long business or product cycles, longer periods such as five years have been used.

There are technical issues about how to use multiple year comparable data. The regulations express a preference for averaging each comparable's results over the analysis window, and then using those average values to construct an arm's length range. Most APAs follow this approach. Normally the averaging is done after asset intensity and other adjustments are performed as described in the next section. That is, first each year's results are adjusted, and then the adjusted results for each year are averaged. It is possible, however, to first average the results (using the weighted average approach described below) and then perform the adjustments.

Different Ways of Averaging

There are different ways to do the averaging. One is a **simple average**. For example, if a comparable had operating margins of 3.0, 3.3, and 3.6 percent during years 1, 2, and 3 of a three year analysis window, a simple average would yield an operating margin of $(3.0+3.3+3.6)/3$, or 3.3 percent.

Another approach is a **weighted average**. This term means different things to different people. The APA Program uses this term to mean weighting each year's result by the denominator used in the PLI. To continue the above example, suppose that sales (the denominator used in the operating margin PLI) were 100 in year 1, 200 in year 2, and 300 in year 3. Then a weighted average operating margin would be:

$$\begin{aligned} & \frac{3.0*100 + 3.3*200 + 3.6*300}{100+200+300} \\ = & \frac{3.0 + 6.6 + 10.8}{600} \\ = & \frac{20.4}{600} \\ = & 3.4 \end{aligned}$$

The result is higher than the simple average (3.3) because the more profitable years have more sales and are thus weighted more heavily. As can be seen below, a sales-weighted

average of the operating margins for each year is mathematically equivalent to dividing the total profits for the period by the total sales for the period.

	Year 1	Year 2	Year 3	Total
Sales	100	200	300	600
Operating Profit	3.0	6.6	10.8	20.4
Operating Margin	3.0	3.3	3.6	3.4

APAs have tended to use weighted rather than simple averages. The philosophy behind a weighted average is that years of greater activity make more contribution to a company’s profit picture. Thus, in the above example, for the analysis window as a whole the company achieved a profit of 3.4 percent of sales. An investor generally would care about this overall figure rather than about individual year results. However, some prefer a simple average for the following reasons. Each year’s result can be considered an observation of the same validity as any other year’s result. Indeed, we weight comparable companies the same even when they have different transaction volumes, so to be consistent arguably one should do the same for individual comparable years. In this regard, some comparables’ sales might jump because of mergers or acquisitions; it is not clear that the results of the new, larger company should be weighted more heavily than the results of the original company.

Some use the term “weighted average” to denote weighting years on other grounds, for example weighting more recent years more heavily because they are closer to the APA period. APAs have not tended to use such weighting, although in particular cases it could be appropriate.

An **alternative to averaging** each comparable’s result over the analysis window is **“pooling”**. Pooling works as follows. Suppose that there is a three-year analysis window, and that there are ten comparables. Then each comparable’s result for each year is treated as a separate result. Assuming that the data were available for each year for each comparable, there would be thirty results. These results are then ranked. One could then use an interquartile range or other appropriate range derived from these thirty results. Pooling can produce somewhat different results from averaging. The differences depend on the profit variations between comparables and between years, and which company-years have missing data. Pooling does not systematically bias the median but tends to yield a wider interquartile range. The wider interquartile range can make pooling appeal to taxpayers.

Pooling is not favored under the regulations. In recent years, pooling has only occasionally been used in APAs. The APA Program’s policy is to generally use averaging, and to use pooling only if special circumstances suggest that it will yield a more reliable result than averaging.

Pooling might be considered in cases in which some of the comparables are missing data for some years in the analysis window. Suppose there is a five-year analysis window, and the selected comparables have data available for three, four, or five of those years. If averaging were used, one comparable's results based on only three years of data would be weighted the same as another comparable's results based on five years of data. One might argue, however, that the results based on three years of data should be given less weight. One way to weight less the comparables with only three years of data is by pooling, since each comparable then contributes as many observations as it has years of data available.⁴⁰

Even in cases of missing data, however, the APA Program will consider pooling only when the taxpayer can make a specific showing that the comparables with less years of data should be weighted less. For example, a taxpayer might show that the comparables are subject to strong cyclical variations, so that results based on fewer years are less reliable. On the other hand, if the major profit variations are between companies, with each comparable's profit level fairly stable over the analysis window, then there would be no need to weight less the comparables with fewer years of data.

Sometimes taxpayers make the following argument for pooling. One cannot expect a tested party's annual results to meet an arm's length range derived from comparables' average results over multiple years, since those average results reflect a smoothing out of year-to-year variations. Thus, if the tested party's results are tested on an annual basis, then the arm's length range should be derived from comparables' annual results (e.g., pooling) rather than comparables' average results over multiple years. If a taxpayer makes such an argument, the APA Program normally would consider testing the tested party's results over a multiple year period rather than using pooling.

ADJUSTING THE COMPARABLES' RESULTS BECAUSE OF DIFFERENCES WITH THE TESTED PARTY

After the comparables have been selected, the regulations require that “[i]f there are material differences between the controlled and uncontrolled transactions, adjustments must be made if the effect of such differences on prices or profits can be ascertained with sufficient accuracy to improve the reliability of the results.” Reg. § 1.482-1(d)(2).

Asset Intensity Adjustments

⁴⁰Since these issues are raised by including comparables that lack data for the whole analysis window, one might consider excluding those comparables in the first place on the ground that the less than complete data makes them unreliable. However, there may be a shortage of good comparables, and certain comparables with some data missing may otherwise appear quite good. The selection of comparables is discussed in the previous section.

One type of adjustment has been variously called an “asset intensity,” “balance sheet,” or “working capital” adjustment. This adjustment is performed when a CPM is used, either by itself or as part of another method such as a residual profit split.

- **Reason for the Adjustments**

Two concepts underlie the need for asset intensity adjustments. The first is that the amount of capital actively employed in a business normally affects a company’s economic profit and expected return. The second is that hidden interest included in a company’s expenses or revenues should be removed. These concepts are explained below.

The PLIs used with the CPM exclude explicit interest paid and received. The reason is that the one is comparing profitability of operations. For example, consider three companies identical in all respects (e.g., working capital requirements, functions performed, sales, products, market, levels of accounts payable) except for capital structure. The first is completely financed by equity that provides for all working capital needs, with enough left over to purchase a certificate of deposit that pays interest equal to one percent of sales. The second is completely financed by equity that provides for all working capital needs, with nothing left over. The third meets its working capital needs partly by equity and partly by taking out a long term loan on which it pays interest amounting to one percent of sales. These companies’ before-interest profits will be the same, while their after-interest profits will be different. For transfer pricing purposes, these companies should be earning the same profit from operations, independent of their capital structure. Therefore, the PLIs used to compare companies are defined to reflect profits before interest.

However, while the amount of money sitting in a long term deposit or owed on a long term loan does not affect the profit earned from operations, the amount of capital actively employed in the business does. Actively employed capital can increase operating profits in various ways. It can let a company:⁴¹

- offer credit to customers, who will then pay imputed interest in the purchase price, which will increase the reported operating profit.
- pay suppliers more promptly, resulting in lower prices, which will increase the reported operating profit.
- hold more inventory, which can mean buying in bigger quantities from suppliers and/or offering quicker response to customers’ needs. Both of

⁴¹For a more complete discussion, Brian Becker, “Capital Adjustments: A Short Overview,” Transfer Pricing (BNA), Jan. 29, 1997, pp. 613-619.

these actions will increase reported operating profit, since the suppliers involved will offer discounts and the customers involved will pay a premium.

- own facilities and equipment that can increase operating profit.

Asset intensity adjustments are designed to adjust nominal profit levels to reflect that companies with higher levels of actively employed capital are expected to have higher profit levels. Typically, when one makes asset intensity adjustments, one assumes that the extra capital in question increases operating profit by an amount equal to the company's cost to carry the extra capital.⁴² The carrying cost has often been defined as a borrowing rate such as the prime rate, but sometimes a higher rate such as the taxpayer's weighted average cost of capital would be more accurate.

The asset levels are compared on a relative basis. For example, for PLIs whose denominator is sales (e.g., operating margin), the APA Program compares companies on the basis of assets per sales. The logic behind this approach is as follows. If each dollar of capital employed increases a company's operating profit by an amount y , then D dollars of capital employed increases the operating profit by Dy , and increases the operating margin (which is operating profit divided by sales) by Dy/S . So it is the ratio of D to S (i.e., assets per sales) that determines the effect of the capital employed on the operating margin. This concept is behind the name "asset intensity": one does not compare companies' absolute asset level, but rather compares their asset ratios or intensities (in this example, the ratio of assets to sales).

In some cases the benefit provided by an asset might be much different from its carrying cost, so that the normal type of adjustment would not be appropriate. For example, a sudden market downturn could result in the buildup of large unproductive inventories; and customers in distress might take a long time to pay but fail to pay the proper imputed interest. For a discussion of this issue and others, see Exhibit C.⁴³

- **Types of Assets Adjusted For**

⁴²According to economic theory, a rational company would carry capital only to the extent that the increased profits at least paid the carrying cost. Under the law of diminishing returns, as the capital carried increases, each additional unit of capital increases profits less than the previous unit. A rational company will keep employing additional capital until, at the margin, the return from the next unit of capital equals the cost to carry the capital.

⁴³Robert Weissler, memorandum to Study Group on Consistency in Asset Intensity Adjustments, re: "Partial Survey of Issues," Sept. 18, 2000.

The types of assets adjusted for depend on whether the PLI has an income statement item in the denominator (e.g., operating margin, Berry ratio, markup on total costs) or a balance sheet item in the denominator (ROA, ROIC).

- **PLIs with an Income Statement Item in the Denominator**

The most common assets adjusted for in APAs include accounts receivable, inventory, and accounts payable (a negative asset, a type of non-interest-bearing liability), corresponding to the first three bullets above. In practice, when data has been available, most APAs have included these adjustments, regardless of whether or not their effect is material.

Another asset adjusted for in APAs is plant, property, and equipment (PP&E), corresponding to the fourth bullet above. While this adjustment has been omitted in many APAs, the current thinking in the APA Program is that in most cases this adjustment is appropriate because additional PP&E normally enables a company to make additional profit. Sometimes the PP&E adjustment is done using a medium term interest rate while short term interest rates are used for accounts receivable, inventory, and accounts payable. This difference reflects that PP&E is a longer-term asset than the others.

Other assets have rarely been adjusted for. However, the current thinking in the APA Program is that in principle, virtually all productive assets actively employed in the business (including negative assets in the form of non-interest-bearing liabilities) should be adjusted for. This would include, for example, cash necessary for working capital purposes, prepaid expenses, and accrued expenses (a non-interest-bearing liability).

Two limitations should be noted. First, interest-bearing assets or liabilities would not be included. Interest-bearing assets normally represent either passive investments, which are not actively employed in the business, or items like receivables with an explicit interest charge. When receivables have an explicit interest charge, the sales price and operating profit are unaffected by the credit extended, since the extra income is recorded as interest income rather than as an increase to the sales price. Similarly, interest-bearing liabilities result in explicit interest payments rather than, for example, an increased price of goods from suppliers. Second, intangible assets typically should not be adjusted for because one typically cannot value intangibles across companies on a consistent basis (see the earlier discussion of the CPM using a return on assets PLI).

- **PLIs with a Balance Sheet Item in the Denominator**

When a return on assets (ROA) PLI is used, an adjustment is normally needed to account for differences in non-interest-bearing liabilities (NIBLs) such as accounts payable. Indeed, a company with more accounts payable will pay more imputed interest as part of its purchase price, which will depress operating profit. This adjustment makes the ROA result closer to the result one would get using a return on invested capital (ROIC) PLI. Typically, the adjustment is made using a debt rate of return, which is normally lower than the weighted average cost of capital that applies to a company as a whole.⁴⁴

Given that the NIBLs adjustment is often performed using a lower rate of return, one could then argue that if accounts payable receive a special lower rate of return then so should accounts receivable, which are similar in nature. If so, an adjustment should be made to reflect a lower return for accounts receivable. (Regulation 1.482-5(e), Example 5, gives an example of an accounts receivable adjustment when using ROA.) One might also argue that in some cases other assets should receive special rates of return, as reflected by an appropriate adjustment. For example, arguably in some cases inventory should earn a different rate of return than plant, property, and equipment.

There is less need for asset intensity adjustments when a return on invested capital (ROIC) PLI is used. This PLI already accounts for differences in NIBLs such as accounts payables, since NIBLs are subtracted from the asset base. More generally, the philosophy behind a return on invested capital PLI is that different asset types are fungible, and that regardless of asset mix, the investors in a company need a certain return on their investment. Following this philosophy, one would not assign different rates of return to different asset types. However, in particular cases one still might argue for different rates of return.

- **Computing the Adjustments**

Conceptually, one can perform adjustments in one of three ways:

- 1) Adjust the comparables to the tested party. Adjust each comparable's result to be the result the comparable would have had if it had had the tested party's asset intensities. Derive an arm's length range from the comparables' adjusted results, and test the tested party's results against that range.

⁴⁴If the interest rate used for calculating the NIBLs adjustment were the same as the company's overall return on assets, then the ROA and ROIC PLIs would yield the same result.

- 2) Adjust the tested party to the comparables. Derive an arm's length range from the comparables' unadjusted results. Before comparing the tested party's results against that range, adjust the tested party's results to be what they would have been if the tested party had the comparables' asset intensities. (If there are more than one comparable, one might use average asset intensity figures across the whole set of comparables.)
- 3) Adjust both the tested party and the comparables to asset intensities of zero. Adjust each comparable's result to be the result the comparable would have had if its pertinent asset intensities were zero. Derive an arm's length range from the comparables' adjusted results. Before comparing the tested party's results against that range, adjust the tested party's results to be what they would have been if the tested party's pertinent asset intensities were zero.

In principle, all three approaches should yield the same results, except that the second approach could yield somewhat different results because one is not separately using each comparable's asset intensities. The first and third approaches are most commonly used. The APA Program typically has used the first approach.

The precise formulas used to perform these adjustments have been the subject of much discussion. Many versions used, differing in various technical details. Unfortunately, there is no good reference discussing the variations and their pros and cons. Fortunately, the different formulas tend to achieve similar results.

The APA Program has generally required that tested party's and comparables' data be compared on a first-in first-out ("FIFO") inventory accounting basis. Although financial statements may be prepared on a last-in first-out ("LIFO") basis, cross company comparisons are less meaningful when one or more companies use LIFO inventory accounting methods. Thus, if the tested party and/or comparables have data stated on a LIFO basis, the data must first be converted to a FIFO basis before any asset intensity adjustments are done. This conversion is straightforward; it makes use of the "LIFO Reserve" accounting item. This conversion directly affects costs of goods sold and inventories. Since it affects cost of good sold, it therefore affects profitability, even before asset intensity adjustments are performed.

To compare the profits of two entities with different relative levels of receivables, inventory, payables, and (in some cases) PP&E, the APA Program has estimated the carrying costs of each item and adjusted profits accordingly. Although somewhat different formulas have been used in specific APA cases, Exhibit D presents one set of formulas used in many APAs. These formulas are used in the

APA Program's "TPTOOL" software,⁴⁵ but they do not represent any official position of the APA Program or the Service.

The software estimates comparables' year-average asset levels by averaging the beginning and end of year levels. This is fairly standard practice in the Service and with practitioners. However, it can lead to inaccuracies. For example, if a distributor has a somewhat seasonal business with inventories elevated in the summer, and has a December fiscal year end, then averaging the levels from two consecutive year ends would underestimate the average inventory during the intervening year. In such a case, one might consider averaging comparables' quarterly data.⁴⁶

The tested party's year-average asset levels are also by common practice computed by averaging the beginning and end of year levels. However, in particular cases a different approach should be used. As with comparables, there may be an issue of seasonal fluctuations. The tested party may have other unusual fluctuations or trends in asset levels that make the normal approach inaccurate. A practical alternative approach is sometimes to take the average of monthly levels.

Another issue sometimes arises concerning the tested party's asset levels. Conceptually, the comparables' results and the comparables' and tested party's asset intensities in the analysis window are used as a proxy for what these results and asset intensities are expected to be during the (usually later) APA years. Typically the assumption that the APA years will be similar to the analysis window in this regard seems reasonable, so that one proceeds on that basis. However, in some cases this assumption is not accurate. In one executed APA, the tested party's receivables intensity climbed substantially between the analysis window and the APA years. Had the asset intensity adjustments been recomputed using actual

⁴⁵TPTOOL consists of a report file and a concepts file, with documentation, that run on Compustat's Research Insight user interface. TPTOOL accesses Compustat's North American database for information on comparables. The user inputs the tested party's asset intensities and inputs appropriate carrying costs. The software then performs asset intensity adjustments (adjusting the comparables to the tested party) and computes interquartile ranges. The software was initially developed in 1997 and 1998 by Robert Weissler of the APA Program, and has been modified some since then. The current documentation consists of the original documentation dated March 5, 1998, and a package of emails and memos describing subsequent changes.

⁴⁶The regulations do not directly address how to compute a yearly average asset level in the context of asset intensity adjustments. However, in defining operating assets for the purpose of a return on assets PLI, the regulations mandate using the average of the beginning and end of year asset levels "unless substantial fluctuations . . . make this an inaccurate measure of the average value over the year," in which case a more accurate measure of that average value must be used. Reg. § 1.482-5(d)(6).

balance sheet amounts, the computed arm's length range of operating margins would have changed significantly in the direction of increased profitability. When that APA came up for renewal, the APA Team and the taxpayer agreed to perform the asset intensity adjustments for receivables differently for each APA year, depending on the tested party's receivables level in that year. In the renewal negotiations, the Service also argued that certain other tested party asset intensities during the analysis window were aberrational and therefore not a good proxy for expected intensities during the APA period. The Service and the taxpayer agreed to substitute other values for some historical asset intensities, based on the intensities in other, more normal years of the analysis window.

- **Regulatory Provisions**

The regulations recognize the need for asset intensity adjustments but do not extensively discuss them. In general, reg. 1.482-1(d)(2) provides that if “there are material differences between the controlled and uncontrolled transactions,” then “adjustments must be made if the effect of such differences on prices or profits can be ascertained with sufficient accuracy to improve the reliability of the results.”

In discussing the CPM, the regulations under 1.482-5 build on this general principle. Reg. 1.482-5(c)(2)(iv) provides:

Adjustments for the differences between the tested party and the uncontrolled taxpayers. If there are differences between the tested party and an uncontrolled comparable that would materially affect the profits determined under the relevant profit level indicator, adjustments should be made according to the comparability provisions of Sec. 1.482-1(d)(2). In some cases, the assets of an uncontrolled comparable may need to be adjusted to achieve greater comparability between the tested party and the uncontrolled comparable. In such cases, the uncontrolled comparable's operating income attributable to those assets must also be adjusted before computing a profit level indicator in order to reflect the income and expense attributable to the adjusted assets. In certain cases it may also be appropriate to adjust the operating profit of the tested party and comparable parties. For example, where there are material differences in accounts payable among the comparable parties and the tested party, it will generally be appropriate to adjust the operating profit of each party by increasing it to reflect an imputed interest charge on each party's accounts payable.

This provision thus recognizes asset level differences as a reason for adjustments and specifically mentions differences in accounts payable. It also recognizes that

one might as a matter of implementation perform adjustments just to the comparables or to the comparables and the tested party.⁴⁷

Two examples in regulation 1.482-5(e) also discuss asset intensity adjustments. Example 5 involves a return on capital employed PLI and an adjustment for accounts receivable. The adjustment is stated as follows:

Each uncontrolled comparable's operating assets is reduced by the amount (relative to sales⁴⁸) by which they exceed [the tested party's] accounts receivable. Each uncontrolled comparable's operating profit is adjusted by deducting imputed interest income on the excess accounts receivable. This imputed interest income is calculated by multiplying the uncontrolled comparable's excess accounts receivable by an interest rate appropriate for short-term debt.

Thus, this example specifically mentions accounts receivable and uses a short-term debt rate to adjust that asset.

Example 6 does not specify the PLI used and assumes differences in accounts payable:

To adjust for these differences, the district director increases the operating profit of the uncontrolled distributors and [the tested party] to reflect interest expense imputed to the accounts payable. The imputed interest expense for each company is calculated by multiplying the company's accounts payable by an interest rate appropriate for its short-term debt.

This example uses a short-term debt rate for accounts payable.

The regulations do not further discuss asset intensity adjustments. While the regulations touch on some of the issues, they do not provide a developed framework for analysis. Economic analysis must take over where the regulations leave off.

⁴⁷The preamble also states that "differences in non-interest-bearing liabilities (such as accounts payable) that would materially affect operating profit generally should be reflected by adjustments to operating profit to reflect an imputed interest charge on each party's liability." The preamble thus recognizes non-interest bearing liabilities as a larger class of assets subject to adjustment, of which accounts payable is one example.

⁴⁸It is not clear why this example compares levels of receivables relative to sales. When using a return on capital employed PLI, most economists would compare levels of receivables relative to capital employed. The drafters of this example likely missed this point.

Other Adjustments

Aside from asset intensity adjustments, other types of adjustments are sometimes performed. Sometimes the adjustments are done on an individual basis to each comparable (as asset intensity adjustments are done), and sometimes the adjustments are done to all comparables in the same way. In the latter case, one is typically adjusting for a special circumstance of the tested party that distinguishes it equally (as far as the available data indicates) from all of the comparables.

- **Accounting Adjustments**

Accounting adjustments are sometimes done to put all companies on a consistent basis. These adjustments normally are done on an individual basis to each comparable. One adjustment normally done, already mentioned above in connection with asset intensity adjustments, is to put all companies on a FIFO basis for inventory accounting. Certain circumstances may warrant other accounting adjustments. For example, companies may differ in how they treat customer rebates (as a deduction from sales or an operating expense) or writeoffs from obsolete inventory (as cost of goods sold, operating expense, or extraordinary expense). Generally, such adjustments are made only if an accounting issue seems important and if it is possible to get sufficient data to perform the adjustment.⁴⁹

- **PLI Adjustments**

The earlier discussion of the CPM method (in the section on TPMs) explained that one can partly or fully transform one PLI into another by adding certain financial results of the tested party to the comparables' results. For example, one might compute an operating margin range for the comparables but then add in the tested party's operating expenses to get a gross margin range. Another way to think of this approach is that one starts with each comparable's gross margin and then adjusts that gross margin by adding the difference between the tested party's operating expenses and the comparable's operating expenses. Adding this difference constitutes an "operating expenses" adjustment, which is done individually for each comparable.

- **Other Adjustments Used**

Sometimes adjustments have been performed to account for differences in currency risk (to be discussed in Lesson 2) or functions such as R&D and manufacturing. Occasionally, there also have been adjustments for startup costs, geographic market

⁴⁹During the APA term, before the tested party's results are tested for compliance with the agreed TPM, those results must be put on the same accounting basis as that used to adjust the comparables (e.g., FIFO inventory accounting, same treatment of inventory writeoffs).

(see Reg. 1.482-1(d)(4)(ii)), cost of capital variations,⁵⁰ nonroutine intangibles, sales shocks (i.e., dramatic unexpected changes in sales levels), and product liability. These adjustments have been evaluated on a case by case basis and made only when doing so improved the reliability of the results. They are sometimes done individually for each comparable, and sometimes done the same way for all comparables.

Sometimes an adjustment applies only to some of the APA years. For example, one case involved a distributor whose business suffered during a particular year because of a recession in its parent's country. The Service and the taxpayer discussed possible adjustments to reflect that the distributor would not be expected to earn a normal profit in that year.

As a matter of computation, when an adjustment applies only to some of the APA years (or applies differently from one APA year to the next) and the tested party's results are tested on a multiple-year basis (as discussed in the section below on testing and adjusting the tested party's results), it is simpler to make an adjustment to the tested party's results before they are compared to the applicable range, rather than making an adjustment to the range for that particular year. For example, suppose that an APA specifies an operating margin of 2.0 percent to 4.0 percent, except that for one year the range would be adjusted downward by 1.0 percent. In that year, one could for computational purposes leave the range at 2.0 to 4.0 percent but increase the tested party's result by 1.0 percent before comparing it to the range. Then it is straightforward to average results from different years, since they all are subject to the same range. If, for example, the taxpayer must in each APA year meet the range on the basis of the average operating margin for that year and the two previous years, then one can simply average the results for a three-year period (including an increase of 1.0 percent for the special year) and compare the average to the range of 2.0 to 4.0 percent.

- **Taxpayers' Proposed Adjustments Supported by Regression Analysis**

⁵⁰ Sometimes taxpayers have proposed a geographic market adjustment that is in effect an adjustment for the different costs of capital to operate in those two markets. If a balance sheet based PLI is used (e.g., return on assets, return on capital employed), then the comparable's returns could be adjusted based on the difference in cost of capital between the two markets. If an income statement based PLI is used (e.g., operating margin, markup on total costs), then the comparable's returns could be adjusted using a variant of the normal asset intensity adjustments, in which the comparable and the tested party each have a different carrying cost for the assets in question. Such a modified asset intensity adjustment, if proposed by the taxpayer, would require careful scrutiny. One concern would be to make sure that the approach is sound in business and economic terms. Another concern is that certain approaches, if accepted in one case, might be improperly extended by treaty partners or taxpayer representatives to other cases.

Taxpayers sometimes propose creative adjustments supported by statistical regression analysis. For example, if the tested party is a Japanese distributor of scientific instruments, a taxpayer might present statistical evidence that in this industry in Japan the distributor's profit level increases with the level of imports. The taxpayer would then propose adjusting each comparable's profit level to what it might have been if the comparable had had the same level of imports as the tested party. Such arguments can be valid. In one bilateral case, the APA Program included in a recommended negotiating position such an adjustment based on the effect of sales fluctuations on profits. However, these arguments from taxpayers require careful scrutiny as follows.

First, does the taxpayer's analysis make economic sense? To continue the above example, suppose the tested party sells only imports because its goods come from its foreign parent, while the comparables all sell between 30 and 70 percent imports. Does the level of imports have the same economic meaning for both the comparables and the tested party? For example, the comparables might tend to import only certain specialty products that have higher margins. Thus, comparables with more imports will have higher margins. However, the tested party may import a full line of instruments, mostly unspecialized, from its foreign parent. Then a high level of imports would not have the same significance. Also, it is in any event questionable that one can reliably extrapolate from comparables with 30 to 70 percent imports to the case of 100 percent of imports.⁵¹ If import level is important, perhaps one should seek comparables closer in this regard to the tested party. (One might still then do the suggested adjustment, but it would be more reliable.)

Second, is the taxpayer's analysis statistically sound? Is the regression omitting other explanatory variables that should be added? Is the regression's sample size large enough? Several other questions could be asked.

Third, even if the taxpayer's analysis makes economic sense and is statistically sound, bear in mind that the taxpayer may have tried many possible adjustments and carefully engineered one that gives a desired result. Does the taxpayer's result seem fair? Also, might the Service propose other adjustments that might seem equally justified but give opposite results?

CONSTRUCTING A RANGE OF ARM'S LENGTH RESULTS

⁵¹Cf. Reg. 1.482-1(d)(3)(ii)(C), Example 2 (when discounts are given to various uncontrolled customers depending on volumes, linear extrapolation is not reliable to determine the discount for a controlled customer with volume much higher than all the uncontrolled customers).

The types of ranges used in APAs completed through December 1999, are set forth in Table D8. The terms used in this table are defined below.

TABLE D8
Types of Ranges
In APAs Concluded Through December 1999

Type of Range	Number of APAs That Involve This Type
Full range	5
Interquartile range	41
Interquartile range recomputed after Tukey filter	5
Agreed range	11
Floor (result must be no less than x)	20
Ceiling (result must be no more than x)	4
Specific result	144
Financial products - statistical confidence interval to test for internal CUP	16

Arm's Length Range

Reg. § 1.482-1(e)(1) states that sometimes a pricing method will yield “a single result that is the most reliable measure of an arm’s length result.” Sometimes, however, a method may yield “a range of reliable results,” called the “arm’s length range.” A taxpayer whose results fall within the arm’s length range will not be subject to adjustment.

Under Reg. § 1.482-1(e)(2)(i), such a range is normally derived by considering a set of two or more uncontrolled transactions⁵² of similar comparability and reliability. If these

⁵²The term “transaction” here can include many transactions by one company, considered on an aggregate basis. See Reg. § 1.482-1(f)(2)(iv) (product lines).

comparables are of very high quality, as defined in the Regulations,⁵³ then under Reg. §1.482-1(e)(2)(iii)(A) the arm's length range includes the results of all of the comparables (from the least to the greatest). However, the APA Program has only rarely identified cases meeting the requirements for the full range. If the comparables are of lesser reliability, then under Reg. § 1.482-1(e)(2)(iii)(B) "the reliability of the analysis must be increased, where it is possible to do so, by adjusting the range through application of a valid statistical method to the results of all of the uncontrolled comparables." The reliability "is increased when statistical methods are used to establish a range of results in which the limits of the range will be determined such that there is a 75 percent probability of a result falling above the lower end of the range and a 75 percent probability of a result falling below the upper end of the range." One such method, the "interquartile range," "ordinarily provides an acceptable measure of this range," although a different statistical method "may be applied if it provides a more reliable measure."⁵⁴ In the case of bilateral APAs, other methods for setting a range have been agreed upon between the Competent Authorities.

Interquartile Range

The "interquartile range" is the range from the 25th to the 75th percentile of the comparables' results. The precise definition in the regulations⁵⁵ is somewhat difficult to understand. Table D9 shows how to compute the interquartile range for comparable sets of

⁵³For such comparables, "it is likely that all material differences have been identified" between the uncontrolled comparable and the controlled transaction. Further, each identified difference has "a definite and reasonably ascertainable effect on price or profit, and an adjustment is made to eliminate the effect of each such difference." Reg. § 1.482-1(e)(2)(iii)(A).

⁵⁴One statistical method occasionally considered with large sets of comparables is to assume that the comparables' results are a random sample of a larger set of results with a normal distribution. One can then use statistical techniques to estimate that larger set's median and standard deviation based on the observed comparables' results. By the definitions of normal distribution and standard deviation, a range extending 0.675 standard deviations in either direction from the median will contain 50% of the members of the assumed larger set of results, with 25% of the members of that set lying above this range and 25% of the members lying below this range.

⁵⁵"For purposes of this section, the interquartile range is the range from the 25th to the 75th percentile of the results derived from the uncontrolled comparables. For this purpose, the 25th percentile is the lowest result derived from an uncontrolled comparable such that at least 25 percent of the results are at or below the value of that result. However, if exactly 25 percent of the results are at or below a result, then the 25th percentile is equal to the average of that result and the next higher result derived from the uncontrolled comparables. The 75th percentile is determined analogously." Reg. § 1.482-1(e)(2)(iii)(C).

different sizes. The table shows a recurring pattern that can be extended indefinitely.⁵⁶ In the table's center and right columns, 1 denotes the lowest comparable result, 2 denotes the next lowest comparable result, and so on.

⁵⁶The table starts with a set of only one comparable and literally follows the definition in the regulations. However, for sets of one to three comparables, one might question how meaningful the definition of the interquartile range is. In those cases, the interquartile range is defined to be the same as the full range.

Table D9

Interquartile Ranges

Number of Comparables	Bottom of Interquartile Range	Top of Interquartile Range
1	1	1
2	1	2
3	1	3
4	average of 1 and 2	average of 3 and 4
5	2	4
6	2	5
7	2	6
8	average of 2 and 3	average of 6 and 7
9	3	7
10	3	8
11	3	9
12	average of 3 and 4	average of 9 and 10
13	4	10
14	4	11
15	4	12
16	average of 4 and 5	average of 12 and 13
17	5	13
18	5	14
19	5	15

A variant on the interquartile range involves a “Tukey filter,” as follows. First, the set of comparables is used to derive a standard interquartile range. Then the difference D between the top and bottom of the interquartile range is computed. Next, all comparables whose results are more than a certain multiple of D (often the multiple 1.5 is used) outside the interquartile range are discarded as “outliers.” Finally, the reduced set of comparables (without the outliers) is used to compute a second interquartile range, which is then used as the arm’s length range. This approach has only occasionally been used for APAs (see

Table D8). The Tukey filter has been used to eliminate companies that were so anomalous that they arguably should not have been included as comparables in the first place. Taxpayers have argued that proper comparable selection plus use of the interquartile range should eliminate anomalous companies, and that adding a Tukey filter is a redundant safeguard that unduly narrows the arm's length range.

Specific Result (“Point”)

Even though a set of comparables could yield a range of results, some APAs have specified a single or specific result, also called a “point.” This approach has been used in some APAs to avoid the possibility of manipulation to produce a result near the bottom of a specified range. For bilateral APAs, each country might be concerned about the potential for such manipulation, making it easier for the two countries to agree on a specific result than on a range. In many APAs, the specific point has been the median point of the set of comparables' results. However, in some APA cases, arguments for a different point have been made and accepted.

APAs also have often used a point in establishing a royalty rate. A set of comparables may yield a range of possible arm's length royalty rates. However, as a matter of business practice, companies typically fix precise royalty rates in advance. Therefore, APAs often require a specific royalty rate. Other methods in which a point rather than a range has been used include CUP, resale price, and cost plus. Sometimes only one comparable transaction is used,⁵⁷ yielding a specific result rather than a range. A point has also been used with CPM and with profits splits (discussed later). A point has commonly been used when applying the CPM to determine an arm's length markup for integral services.

Floors and Ceilings

Some APAs specify not a point or a range, but a “floor” or a “ceiling.” When a floor is used, the tested party's result must be greater than or equal to some particular value. When a ceiling is used, the tested party's result must be less than or equal to some particular value. Such an approach has been used, for example, where the TPM is a CPM with operating margin as the PLI and the comparable transactions reflect certain current business conditions that might improve. The APA required that the tested party's operating margin should always be above the bottom of the interquartile range, but permitted the operating margin to go above the top of the interquartile range in case conditions improved.

Floors and ceilings are normally used only in unilateral APAs, to guarantee at least a certain minimum level of U.S. income or maximum level of foreign income. For bilateral APAs, the treaty partner normally would object to an approach that put a minimum but no

⁵⁷The use of only one comparable transaction is more likely when that transaction is an “internal” comparable uncontrolled transaction, that is, a transaction that involves one of the related parties under evaluation.

maximum on U.S. income. Current APA Program practice does not favor the use of floors or ceilings.

Approaches for Profit Splits

APAs have tended to adopt a point rather than a range when applying profit split methods. In some cases the choice of point or range, or the size of the range, has been an important negotiating point.

- **Comparable Profit Split**

In a comparable profit split under Reg. §1.482-6(c)(2), total profit is split in the same ratio as the profit of comparable uncontrolled parties is split. Typically this method produces a specific ratio of profit split, although if more than one set of comparable parties were used it would be possible to derive a range. (Only one APA has ever used a comparable profit split.)

- **Residual Profit Split**

In a residual profit split under Reg. § 1.482-6(c)(3), each party is first assigned a routine return, and any residual profit or loss is split according to each party's relative contribution of pertinent intangible property. Normally, the proportion in which to split the residual is a specific result that comes from specific values assigned to each party's intangible contribution.

As normally implemented, this method also uses a specific result for the routine returns. This approach is the simplest. Then for each APA year, the total U.S. profit, which consists of the U.S. routine return and the U.S. share of the residual profit or loss, will be a specific result. However, in some APA negotiations, the taxpayer has argued that the regulations entitle it to the interquartile range of each routine return. Under this approach, any total U.S. profit that results from any combination of routine returns within these ranges (and from splitting the residual profit or loss as agreed) is deemed to be arm's length.

The regulations do not give clear guidance on whether taxpayers are entitled to such interquartile ranges. Reg. 1.482-1(e) explains that a taxpayer is permitted an arm's length range, defined by the comparables, which can be either the full range, the interquartile range, or some other suitable range. However, this section of the regulations does not appear to contemplate a TPM in which two sets of ranges would be used to generate a final result. Reg. 1.482-6(c)(3)(iii) gives an example of a residual profit split in which a point value is used for the routine profit.

- **“Profit Creation”**

Another issue bearing on the range used in a residual profit split is what one treaty partner has called “profit creation”. This term refers to the situation in which one party to a controlled transaction earns a profit even though there is a total system loss from the transactions at issue.⁵⁸ This can occur when there is a residual loss after routine profits are taken. For example, suppose the tested party manufacturer’s expected routine profit is \$4M and the tested party distributor’s expected routine profit is \$8M, but there is a system loss of \$2M. There is then a residual loss of \$14M. Suppose that this loss is split 50/50 (\$7M each). Then the manufacturer’s total profit will be \$4M minus \$7M, or -\$3M, while the distributor’s total profit will be \$8M minus \$7M, or \$1M. The distributor thus makes \$1M profit despite a system loss of \$3M.

The Service’s position is normally that if the TPM was properly chosen, such “profit creation” is correct. However, one treaty partner finds such “profit creation” troubling. To accommodate this concern, the Service in some cases has agreed on constraints that minimized the extent of “profit creation.” For example, in some cases involving a profit split range, a constraint was added that each party’s profit could not exceed the greater of (1) zero, (2) the system profit, and (3) the bottom of the range as originally determined. Thus, a party could not earn above the bottom of its range if that would give the party positive profit greater than the system profit.

- **Other Profit Splits**

The various points just discussed concerning ranges under a residual profit split could also apply to an unspecified profit split structured similarly to residual profit splits. Such a TPM would assign a routine profit to each party and then split the residual in some manner other than according to intangible contributions as would be required for a residual profit split under Reg. 1.482-6(c)(3).

Statistical Confidence Intervals

Some APAs involving financial products have employed a “statistical confidence interval” to compare pricing of a large set of controlled transactions with a comparable set of uncontrolled transactions. An example is a financial institution with fairly autonomous branches in several countries. Pursuant to the business profits article of the applicable income tax treaties and Prop. Reg. §1.482-8(b), APAs have been executed allowing the taxpayer to allocate profits between branches with reference to the branches’ internal

⁵⁸The treaty partner has also used the term “loss creation” for the situation in which one party has a loss despite an overall system profit. The treaty partner has similar concerns about “loss creation.” With both “profit creation” and “loss creation,” one party has a profit and the other a loss.

accounting methods, taking into account all trades, including interbranch and/or interdesk trades. In order for this method to provide a reliable result, however, it is necessary to ensure that all such controlled trades be priced on the same market basis as uncontrolled trades. To test whether this is so, a branch's controlled trades are matched with that branch's comparable uncontrolled trades made at times close to the controlled trades. A statistical test is performed to detect pricing bias, by which the controlled trades might as a whole be priced higher or lower than the uncontrolled trades. This has been accomplished by construction of a statistical "confidence interval." Typically a two-tailed 95% confidence interval is used. This means that the controlled trades are accepted as arm's length unless the prices of the controlled trades are so different from the prices of the uncontrolled trades that random variations would have caused differences of that size (or greater) less than 5% of the time.

TESTING RESULTS DURING THE APA PERIOD, AND CONSEQUENCES OF BEING OUTSIDE THE ARM'S LENGTH RANGE

Once an arm's length range is determined, the results of the tested party or parties must be measured against that range. If the results are outside of that range an adjustment to income may be warranted and there may be other consequences.

How To Test the Results (Time Period and Averaging)

A preliminary question is the time period over which to test the tested party's results. The simplest approach is to test each year's results against the arm's length range. Other approaches involve averaging⁵⁹ over a multiple-year period.⁶⁰

⁵⁹Averages can be computed on a simple basis (averaging the numerical results from each year) or on a weighted average basis, which is equivalent to taking total results for the whole period (e.g., total operating profit divided by total sales, to yield a total or a weighted average operating margin). These concepts are discussed above in the section on analysis windows. The weighted average approach is often considered preferable since it reflects the taxpayer's total results.

Averaging can be mathematically tricky if the range is not the same for each APA year. A solution to this problem is to keep the range the same each year and make a special adjustment to the tested party's results in particular years before comparison with the range. This approach is described earlier in the section on adjusting the comparables' results.

⁶⁰In an audit context, if "data relating to uncontrolled comparables from multiple years is used, data relating to the controlled taxpayer for the same years ordinarily must be considered." Reg. 1.482-1(f)(2)(iii)(A). However, as discussed above in the section on analysis windows, in

There are different approaches to averaging. One approach is to require only that the average results within all the APA years in aggregate fall within the arm's length range. Another approach is to use a rolling average over a number of years, for example a three-year rolling average. With a three-year rolling average, in any given APA year the average results for that year and the two previous are tested against the arm's length range. (The testing might start in the first APA year; alternatively, it might start in the third.)

Taxpayers often argue for averaging on the ground that their industry is subject to cyclical or otherwise fluctuating return. See Reg. 1.482-1(f)(2)(iii)(B) ("Circumstances that may warrant consideration of data from multiple years include . . . the effect of business cycles in the controlled taxpayer's industry, or the effects of life cycles of the product or intangible being examined.") However, averaging can permit a taxpayer to defer taxable income by deliberately achieving profits below the range in early years that are averaged with higher profits in later years. With some taxpayers this danger is greater than with others. The APA Program's policy is that averaging should be done only when justified by particular circumstances. These circumstances could include, among others, the nature of the industry, the desire to renew a prior APA on the same basis, and a treaty partner's desire to avoid the need for adjustments. Some circumstances might argue against averaging, such as a taxpayer's apparent manipulation of averaging to defer income in a prior APA.

Sometimes compromise approaches are used. For example, a taxpayer may accept a narrower range in exchange for being tested on an average basis. Or averaging may be used, but a taxpayer still must on a yearly basis meet an expanded range.

Sometimes the possibility of deferral is lessened through the choice of averaging method. For example, for a five-year APA, a three-year rolling average permits less deferral than an average over the whole term. However, rolling averages can pose special problems requiring creative solutions. Suppose a three-year rolling average is used and the testing starts in the first APA year. Then a taxpayer could arbitrarily lower its profits for the first two years of the APA term but still be within the range on a three-year rolling average basis as a result of high profits in the two years prior to the APA term. The Service might consider this non-arm's-length behavior. One compromise is to state that, for purposes of computing a three-year average, the results for the two years right before the APA period will be deemed not to exceed (for example) the top of the arm's length range. As another example, suppose that a three-year rolling average is used, the testing starts in the third APA year, and the APA period is five years. The taxpayer could deliberately report very low profits in the first, second, fourth, and fifth APA years but very high profits in the third APA year. For example, suppose the operating margin range is 2 to 4 percent, the taxpayer's sales are the same each year, and the taxpayer reports the following results:

the APA context the analysis window (that is, the period of the comparables' results) usually cannot match the APA period (during which the APA's TPM applies).

Year	1	2	3	4	5
Operating Margin Percentage	0	0	6	0	0
Three-year rolling average			2	2	2

While all three-year rolling averages are within the range, taxpayer's operating margin over the whole term (1.2 percent, the average of the yearly operating margins) is below the range. The Service might consider this non-arm's-length behavior. One way to address this problem is to add a test that taxpayer must be within the range on an average basis over the whole APA period.

Consequences of Being Outside the Range

APAs differ as to the consequences when the taxpayer's results fall outside the arm's length range. Most APAs permit the taxpayer to make a "compensating adjustment" under section 11.02 of Rev. Proc. 96-53 (discussed further below) to bring the results within the arm's length range. The reason for permitting such adjustments is that it is often difficult for taxpayers to ensure a result within the range during its tax year; only after the year's end, when complete accounting data are available, can taxpayers take final stock of the results.⁶¹ However, the compensating adjustment mechanism can be abused to avoid estimated tax payments (see below for the tax treatment of compensating adjustments).⁶²

A compensating adjustment is a payment between related parties, accomplished for example through actual funds transfer, offset to an existing intercompany account, or a recharacterization of dividends. The payment is made after the tax year ends in order to bring that year's results within the arm's length range. The payment could either increase or decrease U.S. income, depending on whether taxpayer's year-end results showed U.S. results below or above the arm's length range respectively.⁶³ Taxpayers normally must

⁶¹Depending on the particular taxpayer and TPM, there is a wide variation in the precision with which the taxpayer can hit the range and the effort required to do so.

⁶²Some bilateral APAs provided for consultations between the competent authorities as to how to proceed when taxpayer does not meet the range. The APA Program's policy is that, while there is no objection to agreeing to consult with another competent authority, enforcement of an APA's terms (including meeting the range, as well as other provisions such as grounds for revoking and canceling an APA) should not depend on approval of another competent authority.

⁶³Taxpayers occasionally seek to adjust their results after the year end even when the year-end results were within the arm's length range. For example, if the arm's length operating margin is 3 to 5 percent, a taxpayer with year-end results of 5 percent might wish to adjust its results down to 3 or 4 percent. An adjustment under these circumstances is not permitted.

make compensating adjustments within 90 days of the due date of the tax return (with extensions) for the year in question, but an APA can provide for a different deadline. If the deadline is met, then no interest is paid or accrued on the intercompany amount due, and the transfer is deemed for estimated tax purposes to occur on the last day of the tax year. (The favorable estimated tax treatment of compensating adjustments is intended to avoid penalizing taxpayers that despite good faith efforts did not come within the range during the tax year.) However, there is no waiver of any interest due on additional tax owed as a result of the compensating adjustment.

Precisely what adjustment is made? Under Reg. § 1.482-1(e)(3), if a taxpayer's results fall outside the arm's length range, the Service may adjust the result "to any point within the arm's length range." Accordingly, an APA may permit or require a taxpayer and its related parties to make an adjustment after the year's end to put the year's results within the range, or at the point, specified by the APA. Similarly, to enforce the terms of an APA, the Service may make such an adjustment.

Of the APAs that involve a range rather than a point, some provide for adjustment to the closest edge of the range. This approach, normally sought by taxpayers, does not penalize a taxpayer for missing the range. Some APAs provide for adjustment to the median or some other point within the range. An adjustment to the median, for example, can discourage taxpayers from aiming for the very edge of the range, since if they miss the range they will be put at the median. An adjustment to the median also can discourage deliberate missing of the range in an abuse of the compensating adjustment mechanism. Reg. § 1.482-1(e)(3) states that the adjustment is "ordinarily" to the median of the comparables' results when the interquartile range is used, and to the arithmetic mean of the comparables' results when the full range is used.⁶⁴

⁶⁴The rationale for this distinction may be as follows. When the full range is used, the comparables are of high reliability, such that the arithmetic mean of the results is the best point to choose. When the interquartile range is used, the comparables are of lesser reliability, so some comparables may be inappropriate outliers. Using the median instead of the arithmetic mean decreases the effect of those outliers.

Adjustments are more complex when multiple-year averages are used to test results.⁶⁵ One issue is whether to just adjust the results for the last year of the averaged period, or to retroactively adjust prior years as well. For simplicity of administration APAs usually adjust only the last year, although this approach can permit taxpayers some tax deferral. Another issue is what size adjustment to make. Typically, the adjustment will be that which brings the multiple year average to the nearest point, median, or some other suitable point of the range. However, when a rolling average approach is used, some APAs adjust only enough to bring the taxpayer's result for the latest year to a suitable point within the range, which in some cases can leave the rolling average result outside the range.

CRITICAL ASSUMPTIONS

APAs include critical assumptions upon which their respective TPMs depend. Critical assumptions are objective business and economic criteria that form the basis of a taxpayer's proposed TPM. A critical assumption is any fact (whether or not within the control of the taxpayer) related to the taxpayer, a third party, an industry, or business and economic conditions, the continued existence of which is material to the taxpayer's proposed TPM. Critical assumptions might include, for example, a particular mode of conducting business operations, a particular corporate or business structure, or a range of expected business volume. Rev. Proc. 96-53, § 5.07. Failure to meet a critical assumption may render an APA inappropriate or unworkable. As described below, the legal effect of failure to meet a critical assumption is that the APA must be renegotiated or, failing that, canceled.

A critical assumption may become unmet due to uncontrollable changes in economic circumstances, such as a fundamental and dramatic change in the economic conditions of a particular industry. (Such a critical assumption might, for example, specify limits on how far actual sales may deviate from budgeted sales.) In addition, a critical assumption may

⁶⁵Reg. 1.482-1(f)(2)(iii)(D), captioned "Applications of methods using multiple year averages," states that if the tested party's multiple year results fall outside the range, an adjustment ordinarily will be made to the taxpayer's results for the taxable year under review, to bring that year's result within the range defined by the comparables' results for that year. Ordinarily the adjustment will be to the comparables' median result if the interquartile range was used and the comparables' average result if the full range was used. This regulation was written for the audit context and provides limited guidance for the APA context. Specifically, the regulation assumes that the comparables' analysis window and the period for testing the tested party's results are the same, which is rarely true for APAs. Also, the regulation assumes that one is auditing just one year at a time, while APAs with multiple year averaging can treat more than one year in a unified framework. In addition, the fact that the taxpayer knows an APA's TPM in advance might create more opportunity for manipulation of results.

become unmet due to a taxpayer's actions that are initiated for good faith business reasons, such as a change in business strategy, mode of conducting operations, or the cessation or transfer of a business segment or entity covered by the APA.

Guidelines for Avoiding Problems with Critical Assumptions

- 1. Make critical assumptions extreme outer limits.** Then, if they are unmet, things have changed so much that cancellation would be appropriate. Also, taxpayers will be less able to manipulate a failure of the assumption. Finally, with this approach critical assumptions will not fail so much. It is a shame to conclude an APA after much effort, only to be back at the negotiating table after a critical assumption fails.
- 2. When possible, make critical assumptions objective.** Critical assumptions can refer to either subjective conditions (e.g., material changes in a business) or objective (e.g., sales dropping by a certain percentage). The standard critical assumption given below is subjective. However, when possible, make other critical assumptions objective. For example, refer to sales dropping by a definite percentage rather than sales dropping "substantially." This practice will avoid disputes over whether the terms of a critical assumption were met.
- 3. Try to use TPM provisions rather than critical assumptions.** For example, instead of having a critical assumption that sales not fluctuate too much from budgeted amounts, it might be possible instead to provide that such fluctuations will cause certain adjustments to the range.⁶⁶ As another example, suppose that an APA uses a CPM with a gross margin PLI for a U.S. distributor. The Service may be concerned that the distributor will make excessive advertising expenditures without reimbursement from the parent, with the effect of building up the parent's marketing intangibles. (Such expenditures would not affect gross margin, and thus would not cause the distributor to fall outside an agreed gross margin range.) Instead of including a critical assumption that advertising expenses must be within a certain level, one could specify that for purposes of computing the distributor's gross profit level during the APA years, advertising expenses above a certain amount will be subtracted from sales.
- 4. Do not confuse critical assumptions with the scope of the APA.** For example, an APA may specify that new product types will not be covered. This provision should be part of the definition of covered transactions; the APA should not include a critical assumption that new products not be introduced.

⁶⁶Some past APAs took this approach but mislabeled the adjustment to the range as a critical assumption. This practice should be avoided since it can cause confusion and could provide the taxpayer grounds to argue for cancellation.

5. **Do not confuse critical assumptions with obligations of the taxpayer.** For example, an APA may require a taxpayer to record certain information in a regularly compiled database. (This requirement could be put in an additional paragraph in the text of the APA, with language clearly stating that taxpayer was committing to this obligation as an express term of the APA.) If the taxpayer does not do so, the taxpayer has violated the terms and conditions of the APA, which gives the Service the option to either enforce or cancel/revoke the APA. This obligation of the taxpayer is not a critical assumption and should not be so labeled.

Effects of Not Meeting Critical Assumptions

If a critical assumption has not been met, the taxpayer must notify the Service. (However, the Service itself may determine whether a critical assumption is met, perhaps using information gained on examination.) The parties may agree on certain revisions of the APA, or may agree to keep the APA the same despite the failure of the critical assumption. (For bilateral cases, the foreign competent authority will be consulted, but in absence of agreement by the foreign competent authority the Service and the taxpayer can still reach an agreement.) If the parties cannot agree how to handle the failure of the critical assumption, the APA is canceled. Rev. Proc. 96-53, § 11.07.

Standard Critical Assumption

Included in the model APA is the following critical assumption (this language is subject to revision):

The business activities, functions performed, risks assumed, assets employed, and financial [and tax] accounting methods and categories [and estimates] of Taxpayer shall remain materially the same as described in Taxpayer's request for this APA.

Taxpayer Specific Critical Assumptions

The APAs concluded as of December 31, 1999, included approximately 160 different critical assumptions in addition to the model APA critical assumption noted above. Many of these critical assumptions appear in more than one APA. Most of the critical assumptions reflect specific terms and factors of each taxpayer in an elaboration of the general model APA critical assumption. The critical assumptions have not always followed the guidelines given above.

The critical assumptions can be subdivided into the following categories, discussed further below:

- (i) operational
- (ii) legal
- (iii) tax

- (iv) financial
- (v) accounting
- (vi) economic

Operational Critical Assumptions

Over 100 critical assumptions fell into the operational category. Over twenty involved costs or expenses, such as how the taxpayer defines, computes, allocates, and apportions costs and expenses, and limits on the amount and manner by which expenses and costs can vary. An example is that a U.S. subsidiary's deductions for restructuring fees shall not exceed a stated maximum dollar amount.

Six operational critical assumptions involved sales. These concern limits on sales mixes, maximum sales amounts, projections of sales, and permissible sales trends and variations. An example of this type of critical assumption is that the combined sales of covered products for each APA year must be within 20% of the previous year.

Five operational critical assumptions involved permissible variations in items other than sales or expenses. These include how new or disposed of affiliates are treated, to what extent inventories can fluctuate, or to what extent covered purchases can be imported finished products. An example of this type of critical assumption is that the share of covered products that are imported finished goods can vary by X% from the historical baseline share percentage of imported finished goods.

The rest involved other limits on change. These critical assumptions state in a specific way that the following items remain substantially the same: customers, products, risks, functions, business methods, assets, pricing policies, absence of catastrophic events, business structure, presence and effect of a cost sharing agreement, functional currency, operating assets, presence or absence of intangible assets, intangible asset ownership, parties to the agreement, licensee agreements, specific personnel, location of specific personnel, presence or absence of commissions, and royalty amounts and percentages. An example of this type of critical assumption is that the location of a particular key executive may not change.

Legal Critical Assumptions

Fourteen critical assumptions involved legal issues. They include the nature and scope of competent authority agreements. An example is that the competent authorities' mutual agreement, which is conditioned on the system profit remaining above a specified minimum level, will remain in effect (*i.e.*, that such condition will continue to be satisfied).

Other critical assumptions of this nature involved liquidations, dissolutions, customs law changes, major regulatory changes, new import or export barriers, and maintenance of a distributor agreement in a specific form. An example of this type of critical assumption is that customs duties on imported covered products shall not vary beyond certain limits.

Others involved which controlled entity has title to inventory and production equipment, or which controlled entity is required to maintain guarantees, warranties, or product liability. An example of this type of critical assumption is that a parent corporation must maintain existing guarantees for all liabilities of its subsidiary, including its debt and product liability guarantees.

Tax Critical Assumptions

Eleven critical assumptions involved tax issues. These issues include estimated tax liability, period of limitation on assessment, tax effect of specified expenses, sourcing of income, Subpart F income, permanent establishment, foreign tax credit limitation, increasing coverage to other controlled foreign corporations, the ability to change a specified tax election, ability to file for a refund, and a condition of subsequently entering into a closing agreement for rollback years. An example of this type of critical assumption is that the period of limitation on assessments shall be kept open for all APA years until such period expires for the last APA year under U.S. tax law.⁶⁷

Financial Critical Assumptions

Eighteen types of critical assumptions were financial in nature. These involve limitations on system loss, intangible profit projections, buy-in payments, lack of currency risk, and valid business reason for debt. Also included in this category are a number of requirements for maintaining various financial ratios such as profit splits, Berry ratios, operating profit margins, and gross profit margins, within prescribed ranges or within limits. An example of this type of critical assumption is that the TPM may not yield a gross margin outside A% to B% for a controlled subsidiary, nor may the combined operating margins be outside C% to D% for the parent and the subsidiary, unless due to valid business reasons or attributable to economic conditions beyond the parent's control.⁶⁸

Accounting Critical Assumptions

Seven critical assumptions involve accounting methods or practices.⁶⁹ These include assumptions regarding the use of generally accepted accounting principles, favorable certified opinions, mark to market accounting, consistency of accounting computations for

⁶⁷It probably would have been better not to have a critical assumption for this, but instead to state that the taxpayer had an obligation to keep the statute of limitations open. See Guideline 5 above.

⁶⁸It may have been more appropriate to recast some of these critical assumptions as TPM provisions. See Guideline 3 above.

⁶⁹Many of these critical assumptions probably could have been expressed instead as an obligation of the taxpayer. See Guideline 5 above.

all related parties, methods of accounting for foreign currency gains and losses, and unchanged methods for both financial and tax accounting. An example of this type of critical assumption is that manufacturing costs must be computed in the same manner by U.S. and foreign members of an affiliated group.

Economic Critical Assumptions

Eight critical assumptions involve economic and financial conditions. These include assumptions regarding interest rates and changes in interest rates. They also include assumptions that there will not be significant changes in market conditions, technology, product liability, product design, process design, and market share. An example of this type of critical assumption is that there shall not be an unexpected economic development that materially affects a company's market share or market price of a covered product.