



## Canada Revenue Agency

[Home](#) [Businesses](#) [International and non-resident taxes](#) [Transfer pricing](#)

TPM-16 - Role of Multiple Year Data in Transfer Pricing Analyses

# TPM-16

## Role of Multiple Year Data in Transfer Pricing Analyses

January 29, 2015

### Legislative and policy changes

Please note that the following Transfer Pricing Memorandum, although correct at the time of issue, has not been updated to reflect subsequent legislative changes since the date of issue. As a result, some information may no longer be valid.

### References and other information

This memorandum does not replace the law found in the *Income Tax Act* and its Regulations. Since this memorandum may not address your particular situation, you should refer to the *Income Tax Act*, any applicable Regulation, and relevant case law. For more information, you can contact a Canada Revenue Agency tax services office.

## Introduction

1. The purpose of this memorandum is to provide guidance and direction on the use of multiple year data in determining the arm's length price in transfer pricing cases.

2. This memorandum will elaborate on paragraph 51 of Information Circular IC87-2R, *International Transfer Pricing*, which states:

“Taxpayers, in applying the recommended methods and taking into account the effects on profits due to product life cycles and short-term economic conditions, should consider multiple year data for:

- the taxpayer; and
- the arm's length party as a comparable.”

## Background

3. Auditors may encounter the use of multiple year data when reviewing the contemporaneous documentation or representations provided by a taxpayer. Taxpayers often provide the Canada Revenue Agency (CRA) with reports that rely on observed outcomes from comparable transactions that are then averaged over several years. Inappropriate use of multiple year data can lead to erroneous conclusions both with respect to the suitability of comparable transactions and the resulting transfer price.
4. It is important to know how to address the issues that surround the treatment of multiple year data, such as the reasons for its use, when its use is appropriate, and on what basis to challenge its use.
5. The use of multiple years of data may be appropriate and beneficial during the comparability analysis stage of a transfer pricing analysis. However, inappropriate uses of multiple years of data are often encountered in the determination of the point or parts of a range to be used.
6. A comparability analysis must consider all of the relevant economic characteristics of the transaction under review in order to determine whether the potential comparable transactions are suitable or not. The numerical value (as measured by a relevant profit level indicator) of the financial outcome of a comparable transaction is not relevant to the determination of its comparability. Rather, the observed outcome of the profit level indicator only becomes relevant to the analysis once the transaction has first been accepted as comparable.
7. Multiple years of data may be useful in determining the impact that relevant economic characteristics of a transaction have on its degree of comparability to the controlled transaction under review. However, statistical tools should not be applied to profit level indicators until after comparability has been established.
8. The principal use of statistical analyses is only to apply descriptive statistical tools, such as the range of values derived from acceptably comparable transactions, and appropriate measures of central tendency, such as the mean or median. Additional information regarding appropriate and inappropriate uses of statistical tools in transfer pricing can be found in the appendix of this memorandum.

## Policy

9. It is the CRA's policy that the determination of arm's length prices used in related party transactions for Canadian taxpayers should be established for each individual tax year using the results obtained from comparable transactions in the relevant tax year. The

relevant tax year of comparison is generally expected to be the year in which the controlled transactions were undertaken. Accordingly, the taxable income, and adjustments thereto, arising from a transfer pricing analysis, should be calculated on a year-by-year basis in accordance with the arm's length principle. Therefore, taxpayers should not average results over multiple years for the purpose of substantiating their transfer prices. In an audit context, the CRA will look at the results for comparable data and apply them on a year-by-year basis.

10. Note that in an advance pricing arrangement (APA) context, the averaging of historical outcomes of comparable transactions over multiple years may form part of the analysis with respect to establishing reasonable expectations of outcomes in future years for the application of a transfer pricing methodology or development of critical assumptions. However, even in this context, taxpayers should expect that transfer prices used will be verified against the terms of the arrangement on a year-by-year basis.

## Rationale

11. The above-noted policy is centred on two main issues related to the use of multiple year data in a transfer pricing context. These issues are:

- the proper application of multiple year data in a transfer pricing comparability analysis; and
- the difference between the use of multiple year data and the use of statistical tools.

### **The proper application of multiple year data in a transfer pricing comparability analysis**

12. The arm's length principle is the principle that underlies Canada's transfer pricing legislation as found in section 247 of the *Income Tax Act*. This principle is articulated by the Organisation for Economic Co-operation and Development (OECD) in Article IX of the *OECD Model Convention on Income and Capital* and is the international consensus approach to transfer pricing determination for member countries of the OECD. The arm's length principle requires that, for tax purposes, the terms and conditions agreed to between non-arm's length parties in their commercial or financial relations be those that one would have expected had the parties been dealing with each other at arm's length.

13. The relevant economic characteristics of the transaction under review play a fundamental role in determining both the transfer pricing method (TPM) and the choice of comparables to be used in applying the arm's length principle. The relevant economic characteristics pertinent to the transfer pricing analysis will be determined through the functional analysis of the parties to the controlled transaction under review. The comparability analysis then takes these relevant economic characteristics and uses them to

find comparable uncontrolled transactions.

14. Comparable arm's length transactions undertaken in the same tax year as the controlled transaction are expected to provide the most pertinent data for use in a comparability analysis. These transactions will embody the economic circumstances that were identified as the relevant economic characteristics of the controlled transaction.

15. The OECD guidance on use of multiple year data is found in paragraphs 3.75 to 3.79 of the OECD *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (the *Guidelines*). It is important to note that in the *Guidelines*, the OECD discusses the use of multiple years of data in the form of information relevant to a comparability analysis. The OECD does not promote averaging multiple years of numerical data to establish comparability. <sup>1</sup> Paragraph 3.74 notes that data from years subsequent to the current year that describes or relates to product cycles or actual business conduct might assist in accepting or rejecting a potential comparable transaction. Paragraph 3.76 discusses the importance of considering both current and prior-year data in examining a given tax year. In doing so, one might distinguish a history of business losses from a loss arising because of a one-time cost increase or one occurring because the product is at the end of its life cycle. Paragraph 3.77 indicates that prior-year data could be helpful in determining whether potential uncontrolled comparable transactions are subject to similar business and product cycles as the transaction under review.

16. Multiple year data should be used in those circumstances where the additional information will improve the accuracy or reliability of the transfer pricing analysis. In this respect, data that helps to increase the breadth or depth of the understanding of the characteristics of the controlled transaction and any potential comparable transactions will generally be of value in a transfer pricing analysis. The term **data** in this context is more than the observed financial outcomes as reflected in the income statements or selected profit level indicators. The data to be used include:

- information relating to the transactions being reviewed;
- information from companies engaged in potentially comparable transactions;
- information showing how the transactions may have evolved over time;
- information demonstrating how unrelated parties involved in similar transactions interact in the industry;
- information on the factors that arm's length parties would take into account in conducting their transactions; and
- information on the impact of changes or movements in the industry and the wider economy on the results of the transactions.

17. Many factors having a significant impact on the economic characteristics of transactions are only observable over multiple years. These factors include business

cycles, product life cycles, the useful life of capital, and business strategies. Understanding these factors is helpful in establishing the comparability of arm's length transactions. As an example, knowing where the transaction falls within a business cycle may impact the selection of comparable transactions and the type of adjustments that could be made to improve the reliability of the transfer pricing analysis. If only one year's data were examined, the impact of such issues may not be fully discernible.

18. A comparability analysis requires the use of such data that will assist in determining how potentially comparable transactions relate to the transaction under review. **Use** in the context of a comparability analysis refers to the evaluation of the relevance and impact of all available data in establishing the comparability of uncontrolled transactions.

19. However, it will be the data observed in each individual year (which are derived from comparable transactions undertaken in that year) that will be of the greatest value when determining the result that most closely reflects arm's length results in comparable situations.

20. Statistical tools can only be applied to numbers. Since comparability cannot be expressed in numbers, it is not possible to apply a statistical tool to arm's length data to improve the comparability of the underlying transactions or to improve our understanding of the comparability. [2](#)

21. Although the above discussion explains that using multiple years of data can increase knowledge about the relevant economic characteristics of transactions being considered as comparable, averaging the observed outcomes reduces the amount of information available to be used in an analysis. For example, when looking at five years of observed outcomes, we will at least be able to determine that the outcomes varied from year to year. If instead, we looked at an average of the five years of outcomes, we would have lost potentially valuable information about how the transaction evolved over time.

### **The difference between the use of multiple year data and the use of statistical tools**

22. The proper use of multiple year data and the application of statistical tools are different issues. Given the discussion in the previous section on the terms **data** and **use**, it is clear that statistical tools do not meet the necessary criteria to be able to improve a comparability analysis. The use of multiple year data is often confused with the use of averages over multiple years of outcomes, and sometimes the pooling of outcomes from both multiple years and multiple comparable transactions.

23. Statistical tools, such as averages, applied to observed historical outcomes from comparables may be useful as they may provide a single-point descriptor when setting or testing prices for the transaction under review. The average and median are descriptive statistical tools [3](#) that reduce quantitative observations of one characteristic of a sample

group to a single point. For example, taking the average of all observed outcomes from transactions accepted as comparable to the transaction under review can provide a single point description of the information that has been observed. Within a single year, averaging comparable outcomes can therefore be helpful if a single point is required to describe the observed outcomes in order to select a representative point of the range.

24. A single point description may be necessary when determining the price that is most appropriate to be used. In this case, using the average allows all of the information determined to relate to comparable transactions to be incorporated into the single data point.

25. However, when the observations are taken from different years, at least some of the relevant economic characteristics that are expected to have an impact on comparability are expected to be different as these characteristics change over time. As a result, the data points will not represent comparable economic outcomes from year to year because the relevant economic characteristics that relate to comparability change over time. 4

26. Another statistical tool that describes a large set of numbers in a simplified way is the range. A range describes the highest and lowest point within a set of numbers. The use of a range to describe the set of observed outcomes from arm's length transactions is an acceptable use of a statistical tool. However, for the reasons given above, determining a range across multiple years (often referred to as pooling) is not an acceptable use of statistical tools.

27. Both the OECD and the CRA's existing guidance, described above, discuss appropriate uses of multiple years of data, and neither suggest or imply that averages or other statistical tools should be used to improve a comparability analysis. 5 In the absence of the proper use of multiple years of data, the use of statistical tools may actually result in the loss of information and a reduction in comparability. As comparability is the cornerstone of transfer pricing, measures that reduce opportunities to consider information pertaining to the relevant comparability factors of the transactions under review are likely to reduce rather than enhance the reliability of the transfer pricing analysis.

### **Selecting the most appropriate point in the range**

28. When several comparable transactions or results are acceptable, an arm's length range will usually be established by the CRA. In accordance with paragraph 3.60 of the *Guidelines*, the CRA will not make a transfer pricing adjustment if the price or margin of a transaction is within the arm's length range. If, however, the price or margin falls outside the established range, the CRA will determine the most appropriate point within the range using the most suitable measure of central tendency under the circumstances. Where no further distinction can be made on the basis of comparability, the most appropriate point

may usually be determined by using the average. The average gives equal weight to each observation being considered, while the use of the range minimizes the potential impact of any unknown or unquantifiable comparability defects.

## Conclusion

29. While multiple years of data may be useful to select, reject, or determine the degree of comparability of potentially comparable transactions, transfer prices for a given year should be determined based on the results of a single year of data from each of the comparable transactions. Therefore, taxpayers should not average results over multiple years for the purpose of substantiating their transfer prices in an audit context. The CRA will look at the results for comparable data and apply them on a year-by-year basis. Multiple year averages may, however, play a role in an APA context.

## Appendix A

### A Discussion of Statistical Tools: Appropriate and Inappropriate Uses in Transfer Pricing

A.1 Statistical tools can be described in two broad categories: descriptive and inferential. **Descriptive statistical tools** are used to describe a set of numerical data in one or a few data points. For example, a median describes in one data point the middle observation of a set of numbers. The top and bottom valued observations describe in two data points the range of numbers in the entire set. Descriptive statistical tools incorporate limited amounts of information about the set of numbers they are describing in order to simplify the description. As a result, information is lost when comparing the information available by reviewing all of the data in a set to the single point descriptor such as the median.

A.2 It is important to recognize that statistical tools are not capable of describing non-numerical characteristics and cannot, therefore, be used to determine whether an individual potential comparable transaction is comparable or not to the transaction under review. Statistics only work where the characteristics being described by the statistics can be reduced to numerical form. Statistics simply provide a numerical representation of a certain characteristic of the subject under review. What we are trying to determine is comparable arm's length observations. However, in a transfer pricing situation, as there is no scale of comparability, it is not possible to use statistics to describe the relative comparability of different observations.

A.3 **Inferential statistical tools** are used to infer or predict the future value of observations. For example, given a normal probability distribution (which looks like a bell

curve) and a large enough set of observations (usually more than 30), the mean of the current set of observations is found to give the best prediction of the numerical value of the next observation taken from an unknown population. Various tests can be applied to the numerical value actually observed in relation to the set of observations already made to determine the probability that the new observation is actually from the same population.

A.4 In the context of using statistical tools in a comparability analysis, it would be very helpful if it were possible to apply statistical tools to the numerical values related to a set of observations, such as profit level indicators; from that, one could determine whether the transactions that led to those observations are actually comparable to each other. However, as discussed above under descriptive tools, this is not possible. There is no numerical value or scale for comparability; therefore there are no direct numerical indicators of comparability. Instead, a comparability analysis is undertaken to determine which transactions are comparable to the related party transaction under review, including looking at the functions performed by the parties to the transactions, taking account of assets used and risks assumed. After determining which transactions are comparable enough to rely on, the outcomes from those transactions are applied to the related party transaction under review. There is no opportunity for inferential statistical tools to be used in determining comparability of an individual observation or improving the comparability of a set of observations.

A.5 As an example, transfer pricing studies frequently reject potential comparable transactions on the basis that they are outliers. Indeed, the use of inter-quartile ranges <sup>6</sup> is based on the assumption that the comparable transactions, whose observed financial outcomes are outside this range, are not comparable, simply on the basis of these observed outcomes rather than any consideration of the other economic characteristics of the transactions. Again, it is imperative to note that such uses of statistical tools do not measure the comparability of transactions, simply the outcomes of those transactions. Therefore, rejection of data on the basis of statistical analysis alone is not appropriate.

A6. In addition, the use of averages across multiple years of data may also reduce the ability to determine arm's length results in any given year. As an example, assume that five comparable transactions have been identified from which to determine the arm's length transfer price of the controlled transaction under review. Taking the average of the observed outcomes from the five transactions in each year and further averaging them across three years will lead to the loss of information describing the changing economic circumstances from year to year that were experienced by the arm's length parties engaged in the comparable transactions.

---

1

Paragraph 3.79 refers the reader to paragraphs 3.57 through 3.62 for a



discussion of statistical tools. However, those paragraphs on statistical tools do not suggest that averages should be appropriate across multiple years. Rather, they discuss how to select a point in the range once the highest possible degree of comparability has been established.

2

A discussion of statistical tools is provided in the appendix of this memorandum.

3

Refer to the appendix of this memorandum for a discussion on statistical tools.

4

See paragraph 19 of this memorandum.

5

Paragraph 3.79 of the OECD *Guidelines* makes reference to paragraphs 3.57-3.62 for a discussion of statistical tools. However, none of these paragraphs discuss using statistical tools to improve comparability. Rather they discuss which statistical tools may be useful in selecting a point in the range of observed outcomes produced by the comparable transaction selected.

6

An inter-quartile range is defined as being the part of the range found between the first and third quartiles, or the middle 50% of the full range. It is a descriptive statistic defined entirely by the values observed in the range and has no relationship to the provenance of those numbers

---

Date modified: 2014-02-26