

PSAB/Asset Management

NEWSLETTER NO. 36

INFLATING AND DEFLATING

- THE MFOA/AMCTO DEFLATOR STUDY
- AND THE BOOK VALUE CALCULATOR

By Bruce E. Ratford, CMA

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The reporting on tangible capital assets requires the use of historical cost for asset valuations (PS3150.09). Going forward, and for recent acquisitions, this is not an issue, as you do or will have cost data readily available.

There will be cases where historical costs are not available or, in the case of contributed assets, never existed. PS 3150.47 provides that “When a government does not have historical cost accounting records for its tangible capital assets, it will need to use other methods to estimate the cost and accumulated amortization of the assets.” With regard to contributed assets, PS 3150.14 states that “the cost of a contributed asset is considered equal to its fair value at the date of contribution. Fair value of a contributed tangible capital asset may be estimated using market or appraisal values. In unusual circumstances, where an estimate of fair value cannot be made, the tangible capital asset would be recognized at nominal value.” In either case, you might be involved in estimating prior costs by deflating more current costs that you consider to be good proxies for the assets in question.

But what about those assets that were transferred to you by whomever, which we discussed in Newsletter No 29? You certainly do not have historical cost data, but does the other party have it either? Similarly, what about that lovely building on your main street that you own and operate? You may know that you bought or built it way back when, but where will you find the records if you built it? If you bought it as a completed building, the purchase price will be on the registered deed, but how much of that was for the building, and how much was the land worth?

As suggested in earlier newsletters, you will have to use current pricing, and work the values back. This is a transitional provision only (PS3150.47)

What will you use to deflate (or inflate) such costs to the time of acquisition, to give you a reasonable proxy for historical cost? This newsletter will look at two major approaches available to you, and then discuss some general considerations with respect to using deflators.

Historical Cost Indices for PS 3150 Purposes

This report was prepared by Watson and Associates under the sponsorship of the Municipal Finance Officers' Association of Ontario and the Association of Municipal Managers, Clerks and Treasurers of Ontario. The purpose was to identify an appropriate approach for deflating current replacement cost, current reproduction cost and current appraisal values to derive an acceptable and justifiable surrogate for historical cost, when historical cost figures are not available.

Cost indices were evaluated on the basis of accuracy and applicability, reliability, longevity, and completeness. The report recommends the use of the Statistics Canada Non-Residential Building Construction Price Index (NRBCPI) for all constructed assets that a municipality may have. If these represent over 90% of the municipality's assets, it is recommended that this index be used for everything, to have a single, consistent basis for estimating historical costs.

For other assets, such as land and equipment, the report recommends using the "all-in" Consumer Price Index (CPI) published by Statistics Canada, if non-constructed assets represent more than five to ten percent of the total. NRBCPI only goes back to 1927, and CPI to 1914. It is suggested that you use two percent as an annual deflation rate, for assets dating from the 19th century.

The methodology is a simple 5-step process, outlined in Section 6.2. You value the asset as though acquiring it new today, then apply a deflation factor to obtain an estimate of the cost in the actual or estimated year of acquisition. The approach does not really take betterments into the equation, except to the extent that current estimates reflect the asset as it is, not necessarily as it was. For example, a 19th century building would not have had wiring, sprinkler system and central HVAC, which the current structure does.

The calculation of amortization, which will be a separate and distinct process, may well take into account the different life expectancies of the various components of the asset, such as the foundation lasting forever (usually), whereas floor and wall treatments may last only 10 to 15 years.

The Book Value Calculator (BVC)

The Book Value Calculator is a copyrighted tool developed by Public Works and Government Services Canada (PWGSC), specifically the Appraisals Directorate, Office Accommodation/Real Estate Sector, of the Real Property Services Branch. It is designed to use readily available data to estimate the gross and net book values of land and buildings (or infrastructure); the remaining life for amortization; and the effective year built (to support systems that must calculate NBV rather than accept it as an input item).

PWGSC developed and updated costing indices for the BVC from 1867 to the present, for residential and non-residential property types. There are built in betterment rates which are based on the currently observed general condition of the asset, and its expected remaining useful life. The BVC is the only tool that will capture assumed betterment rates in calculating net book values.

The BVC calculates amortization, and factors betterments based on your estimate of current condition, rather than what actually may have happened in the past. Then again, it assumes that there were betterments, some of which may be unknown for very old assets.

Which approach is better or more accurate? Both provide estimates of costs for which there is no information. The question to be answered is whether the estimation technique seems reasonable and is consistently applied (see PS 3150.47) Let us now look at how and when you may need to use costing indices.

Recent Acquisitions

For anything acquired after December 31, 2001, (6 years prior to the current year, you should have historical cost information available to you, either because of your Records Retention Bylaw, or to satisfy the requirements of the Canada Evidence Act. Going forward, you will always have good historical cost data.

For major acquisitions, especially construction projects, you may be able to access cost records going back 15 to 20 years, through the staff who operate and maintain these assets. Equipment and vehicle prices in this time period can probably be obtained from dealers or the manufacturer. While you may not be told exactly what you paid, the value will likely be closer to reality than estimating based on today's replacement cost.

Ancient History

The MFOA/AMCTO study comments that the major indices reviewed only diverge significantly in the past 20 years (Section 4.1). If you look at Graph 4.1, they are all about equal at 20% of the 2006 value at the end of 1972, 35 years ago. Prior to that, it almost makes no difference what you use. A 10% deviation in your preferred index as opposed to a different one will change your estimated historical cost by 2% of the current replacement cost. Prior to 1940, the difference will be less than one percent.

In short, for assets older than 35 years, it really does not make much difference what index you use, as the valuations will be relatively small compared to recent acquisitions. But again, be consistent.

The Middle Period

That leaves from 1973 to 2001, when you may not have historical costs available, there was significant inflation in Canada, and the most cited cost indices may vary significantly. Select an index like Stats Can's NRBCPI, and apply it to all major assets, where you need to estimate historical cost, or use the "all-in" CPI, or something else that may be more appropriate to the specific asset or asset class. Whatever you select, be able to justify your choice that it is appropriate, and be consistent in applying and using whatever cost indices you select.

The Impact of Deflation and Amortization over time

Mention was made earlier that what cost a dollar in 2006 would have only cost twenty cents in 1973, and about 40 cents in 1981. Inflation means that the gross book value of your older assets will be small, relative to the gross book value of your recent acquisitions. Older assets will be less significant to the overall financial position of the municipality. Nevertheless, all tangible capital assets should be reported, even if they are fully amortized. (Hint: if time is short, leave the older assets till later).

When you look at net book values, the variation is even more extreme. You will be amortizing that 1973 building over 35 years for your initial valuation. If you estimate a 50-year life expectancy for a building, it will be 70% amortized by the end of this year. Compared to a 2006 building, the 1973 structure will have a net book value of 6% of the 2006 cost, whereas the 2006 building will have a net book value of 96% (less two years depreciation @ 2% per annum), or 16 times as much.

The older the asset, the more that deflation and amortization will reduce the gross and net book value of the asset respectively, making the selection of a cost index for deflation less of a critical issue.

Final Note

If you have not already done so, determine how you will go about estimating historical cost, such as using either or both of the recommended cost indices, or the Book Value Calculator. Then discuss your choice with your auditor to confirm that your approach will be acceptable for estimating historical cost for those assets where actual data is not available.

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Our next newsletter will take another look at Public Sector Guideline 7 which deals with rules for the transition to full accrual accounting.

For more information and resources regarding tangible capital asset management, go to [PSAB/Asset Management](#) or contact:

Dan Cowin
Executive Director
MFOA
dan@mfoa.on.ca
Tel: 416-362-9001 x 223

Andy Koopmans
Executive Director
AMCTO
akoopmans@amcto.com
Tel: 905-602-4294 x 26NO

NOTE: This Newsletter is published to assist you with your implementation of tangible capital asset accounting and with related matters. The Public Sector Accounting Handbook is the only authoritative primary source on matters relating to GAAP, and you should consult with your auditor to resolve specific issues that you may have.