# Chapter 8
# Valuation of Deferred Tax Assets Using a Closed Form Solution

**Joao Carlos Silva**
*ISCTE, University Institute of Lisbon, Portugal*

**Nuno Souto**
https://orcid.org/0000-0003-3823-4470
*ISCTE, University Institute of Lisbon, Portugal*

**José Pereira**
*ISEG, Universidade de Lisboa, Portugal*

## ABSTRACT

*Deferred tax asset (DTA) is a tax/accounting concept that refers to an asset that may be used to reduce future tax liabilities of the holder. It usually refers to situations where a company has either overpaid taxes, paid taxes in advance, or has carry-over of losses (the latter being the most common situation). DTAs are thus contingent claims, whose underlying assets are the company's future profits. Consequently, the correct approach to value such rights implies the use of a contingent claim valuation framework. The purpose of this chapter is to propose a precise and conceptually sound mathematical approach to value DTAs, considering future projections of earnings and rates, alongside the DTA's legal time limit. The authors show that with the proposed evaluation techniques, the DTA's expected value will be much lower than the values normally used in today's practice, and the company's financial analysis will lead to much more sound and realistic results.*

DOI: 10.4018/978-1-7998-7716-5.ch008

## I - INTRODUCTION - THE DEFERRAL OF TAXES

There have been many attempts to reach a conformity about the way income tax is treated, that is, to uniformize tax rates and regulations across international entities, but the complexity of this topic has raised some issues and critics; Hanlon, et al (2005) and Atwood, et al (2010) stated that earnings persistence and the association between current earnings and future cash flows are lower when the level of required book-tax conformity is higher. The potential benefits would include lower compliance costs for reporting income and the potential lowering of incentives to mislead the IRS (Internal Revenue Service) and capital markets (basically deterring entities from engaging into tax shelters and schemes).

The tax return of a company is based on its accounting financial statements. To provide comparable information, financial statements are prepared according to the International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB). The IASB was formed in 2001 to replace the International Accounting Standards Committee that issued International Accounting Standards (IAS). Since the previously issued IASs remain effective, we have that the main body of standards that are used worldwide by several countries are comprised of IFRSs and IASs. The companies' income, depicted by the IFRSs and IASs (refereed to simply by the Generally Accepted Accounting Principles GAAP) are their accounting profits, but these may be (and are) different from the taxable profit, since the taxable profit is calculated as a function of the tax law inherent to each country. The number of factors that lead to differences between tax and accounting returns is huge and varies from country to country. One of those factors is of relevance to the present work – the deferral of taxes.

### Remove DTAs From the Balance Sheet?

Laux (2013) conducted a study to analyse the relationship between the information content of financial statements and the net deferred taxes account. Naturally, as we evaluate deferred taxes, we may find both deferred tax assets and deferred tax liabilities; the difference will result in net deferred taxes (we will henceforth refer to these net deferred taxes simply as deferred tax assets, or DTAs). The main conclusion was that the exclusion of DTAs from the results helped access the main differences from the different company's performance. This is highly related to the cost/benefit of disclosing information on DTAs since that the cost of acquiring and utilizing this information seems to nullify the benefits. Also, on the same topic, Burgstahler, et al (2002), concluded that in some occasions, managers tend to manipulate the net deferred tax asset account to increase earnings and avoid losses. This possible