Depreciation how it should be done

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In our previous column, we stated that asset management and depreciation are not dealing so much with each other. Depreciation refers to neatly process investments from the past in the profit and loss account, while asset management is about deciding what to do now and in the future with the assets. Since you cannot change the past, you do not have to take it too much into account for your future decisions[1].

Yet is that decoupling between asset management and accounting sounds weird for some. Financial asset managers indeed look at the book value (and of course much more) before they decide whether or not to invest. Apparently, that book value says something about the value of an asset. In this column, we therefore look at how you can incorporate the book value in asset management decisions. In order to do that we must first think about what actually determines the asset value. There are several possible views on this subject.

The first view is that the value of an asset is the sales price if that asset would be sold. The book value represents a kind of option value to stop with that asset. This view is used by financial asset managers. In the case of developed markets that price can be fixed pretty easy. The market value of a complete (listed) company is the price per share (market price) times the number of shares. But these assets do not depreciate; it is just expected to be worth more each year. So depreciation and the value of a company have nothing to do with each other.

The view that the asset value is the selling price can also be applied to individual assets within a company, such as cars owned by the company. For such assets depreciation has a meaning. In the course of time the value decreases. For cars there is a well-developed market. If you do not like a particular car, you can sell it almost immediately on the market and buy another asset. What you see is only that the market value does not decrease linearly but rather exponentially.

$$Current\_value = \frac{Purchase\_value}{(1+\%value\_decrease\_per\_annum)^{Age}}$$

Each year the car loses a certain percentage of the value. However, if you depreciate such an asset linearly (from acquisition to disposal at time of sale), then the sales price will always be lower than the book value during the time the asset is held. The book value then says nothing about the value of the option to stop the use of the asset. It is rather that additional costs are required if you stop with the asset (difference between book value and market value) which are not included in the books. But if the actual sales value is recorded in the books (and the depreciation thus the reduced sales value per year) then depreciation has a meaning for asset management. Indeed, it is to turn into a real cash flow.

Unfortunately, not good market exists for every asset. Some assets even cannot be traded. Think of the cables and wires that a system operator has in the ground. These assets cannot be moved in another place, they only have value in the context of the network where they have a function. So already installed individual cables have no commercial sales value[2]. However, the infrastructure manager has to process the depreciation. How should that be in this case?

[1] This of course does not apply to agreements with a long duration. As long as the deal is valid, you have act according to it, even if it is made in the past. But you can always discuss agreements in case of very compelling circumstances.

[2] This does not mean that people are not trading property, but the sale and leaseback agreements actually only involves a kind of financing, the new owner will not use the asset itself.

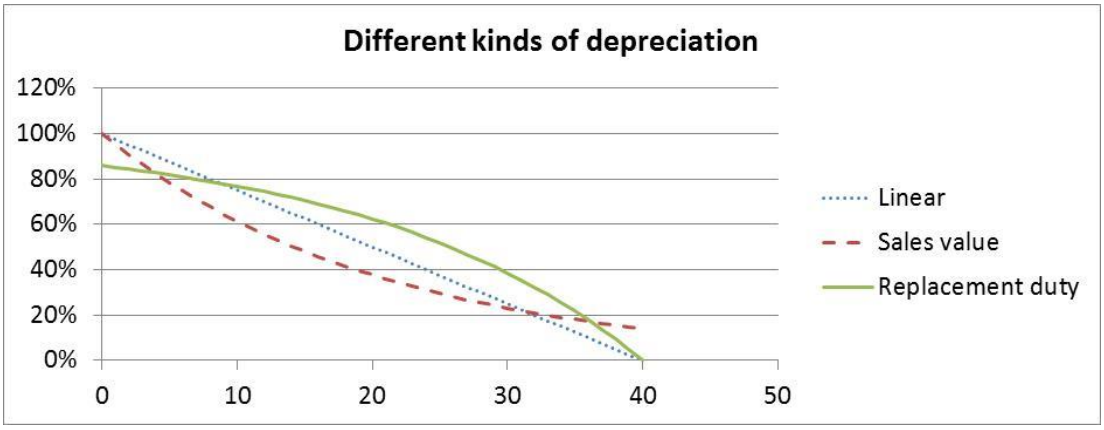
What is important to remember for non tradable assets, is that in one way or another a sort of concession is attached to it. A network operator often has a monopoly on certain services and thus the assets represent a future right to income. This could be discounted but it is very difficult to allocate income to individual parts of a network. This is even more arbitrary than for the linear depreciation. The solution lies in the fact that the right to future income also implies an obligation to keep the provision into service. The depreciation of the asset is the increase in the cost of that obligation. This is also an exponential depreciation, but in reverse. Suppose an asset is newly built with a life expectancy of 60 years. So after 60 years a replacement investment is required. What is the value of the replacement investment? Simple, the present value of the investment over 60 years. For interest (i) the real value is taken to avoid rumbling with inflation

$$PV = \frac{Investment}{(1+i)^{60}}$$

What is the depreciation in the first year? The increase in the present value of the obligation:

$$Depreciation = \frac{Investment}{(1+i)^{59}} - \frac{Investment}{(1+i)^{60}} = \frac{Investment(1-\frac{1}{1+i})}{(1+i)^{59}}$$

The upper part of the formula is comparable with the decrease per year of the current value as it is applicable for salable assets. But the lower part indicates that this decline only takes place in 59 years. So for a new asset with an expected life of 60 years that is almost nothing. But if the asset reaches the end of its service life, the depreciation increases rapidly.



The graph shows the three types of depreciation. One question is whether the obligatory replacement can be applied to tradable assets. Also in that case a machine that has a certain production capacity and its value has the same kind (depending on age) as the replacement duty. That is true, but that only applies if the usage is in exactly the same way as the asset is used today. And the new owner can use the asset in a different way. To get back to the washing machine in the last column, the energy costs are not relevant to an owner that uses the machine only very rarely. For the large-scale consumer the machine has no value due to advancing technology, but for an occasional user still. These possibilities are part of the market value according to the economic theory and so that is the only correct value for a tradable asset. It also explains why that market value will not become zero. A machine indeed at least is worth the scrap value. For cables in the ground this does not apply. They have scrap value, but the cost to take them out are higher than scrap value, so they stay where they are.

All in all, there however is a link between asset management and depreciation, but only if the depreciation is linked to the real value of the asset and not to some kind of accounting construction. The book value for marketable assets is then a bonus when considering to stop the asset and replace it with a new one, but unfortunately a penalty for non-saleable assets. The residual value is simply discarded when the asset is stopped, the asset is indeed not tradable. But the new asset adds value, so the net effect is zero. Eventually all these effects come into the picture as you take the real cash flows of the decision into account. In other words, look at the facts and you come to the right decision. Despite the fact that a relationship can be established between depreciation and asset management, your life as asset manager is a lot easier if you're not taking it too much into accounting.

John de Croon and Ype Wijnia are partner at AssetResolutions BV, a company they co-founded. In turn, they give their vision on an aspect of asset management in a weekly column. The columns are published on the website of AssetResolutions, www.assetresolutions.nl/en/column