Teach yourself how to build a Business Case for any industry

including mining

1p Hands On Modelling – Sunk Costs

Carthage, Tunisia: So little remains of two successive, mighty cities

www.economicevaluation.com.au

Carthage, Tunisia

Spend only a few seconds on each page

This website may contain errors so always check your own work and have it audited by a competent person.

This module has personal opinions!

The purpose of this module is to discuss how to handle **Sunk Costs**

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on economic modelling

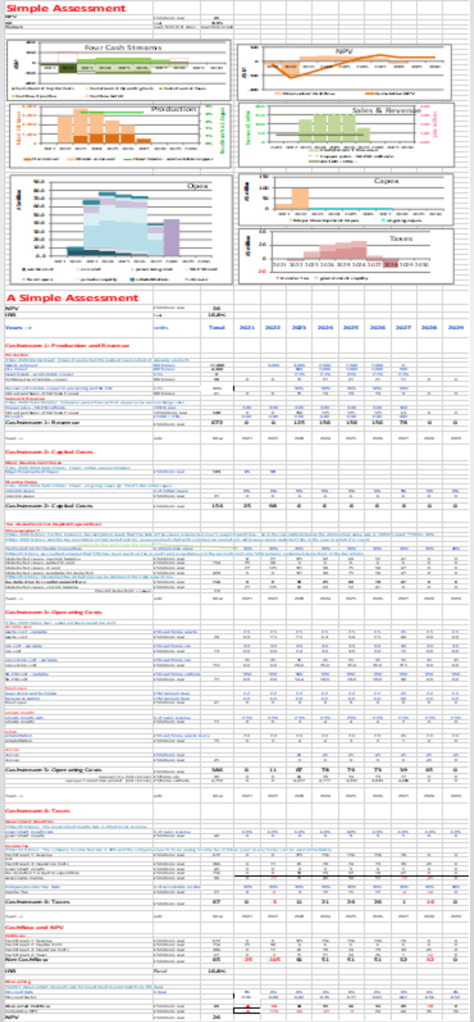
#1: Revenue

#2: Capex

#3 Opex

#4: Taxes

Cashflow
(incl NPV)



Are sunk costs included in an evaluation?

The <u>expected</u> answer might be "No! because only costs from now on are included."

People might say "A valuation does not consider how much money has been sunk into the business/project in the past – it only worries about cash flows in the future."

"I understand $10 million has been spent in capital costs and operating expenses in setting up this business, but looking forward it is expected to generate cash flows with a net present value of only $6 million. So $6 million is what I think it is worth!"

www.economicevaluation.com.au

Carthage, Tunisia once ruled the Mediterranean

Are sunk costs included in an evaluation?

But the proper answer is "Yes!"

"because when I compute the value of a business/project, I include the benefit in future tax computations of any cash invested in the past which has not yet been claimed."

So the explanation becomes: -

"*I understand $10 million has been spent setting up the business. I have included future tax deductions of $6 million of capex and $4million in operating expenses. This should increase cashflow over the coming years by $10 million * 25% income tax rate = $2.5 million. But even after including this benefit when I look forward the whole business is expected to generate cash flows with a net present value of only $7.6 million, so that is what I think it is worth!"*

Years -->	units	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Computing tax deductions - including erosion by local inflation									
3 Aug 2022 P Carter: In this evaluation model all capital purchases will be pooled into one category to avoid excessive and unwarranted computations of a relatively minor expenditure. The impact on NI									
Weighted deduction rate for the pool of capital items	*% diminishing*		*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*
5 Aug 2022 P Carter: The following computation of tax deductions for capital purchases is performed in Nominal terms to include the erosion of deductions by inflation. Because tax returns are submitte									
Inflation - In country			*8.0%*	*8.0%*	*8.0%*	*8.0%*	*8.0%*	*8.0%*	*8.0%*
Inflator - In country			*1.04*	*1.12*	*1.21*	*1.31*	*1.41*	*1.53*	*1.65*
undeducted capital costs - opening balance	*Nominal currency units*		***6,000***	*4,746*	*3,791*	*3,002*	*2,306*	*1,787*	*1,404*
capital costs - added	*Nominal currency u*	***1,491***	*327*	*309*	*212*	*72*	*78*	*84*	*91*
undeducted capital costs - available for tax deductions	*Nominal currency units*		*6,327*	*5,054*	*4,003*	*3,074*	*2,383*	*1,871*	*1,494*
Tax deductions ('tax depreciation')	*Nominal currency u*	***7,491***	***1,582***	***1,264***	***1,001***	***769***	***596***	***468***	***374***
undeducted capital costs - closing balance	*Nominal currency units*		*4,746*	*3,791*	*3,002*	*2,306*	*1,787*	*1,404*	*1,121*
Tax deductions ('tax depreciation')	US$ 000 Real	5,742	**1,522**	**1,126**	**826**	**587**	**421**	**306**	**227**

Doing it properly …

As an evaluation specialist, I do not pretend to be an expert in tax. My first step when trying to work out future tax benefits of past expenditure (on capex + opex) would be to discuss the situation with my tax specialist/accountant.

Step 1: Discuss with your tax specialist

In this example, where $10 million has been spent to set up the business the tax specialist might examine the details and explain to you that:

- $3.2 million has already been claimed as operating expenses elsewhere by the owners,
- $1.1 million of expenditures are not legitimate tax deductions,
- These leave an opening balance of unclaimed deductions for capex and opex of $5.7 million.

We would then discuss the timings of claiming these deductions.

Step 2: Get approval to make simplified calculations

Unless it was a huge amount I would aim to get the OK from my tax specialist to:

◦ pool it with future capex (in one or two pools) and

◦ compute tax deductions on a diminishing value basis (at say 150% or 200% of the straight line rate) because this is so very much simpler than matrices of straight line deductions. (As discussed elsewhere, the difference is likely to have minimal impact on NPV. Remember you can spend the rest of your life doing highly accurate income tax computations as though you were completing the Company's income tax return – or you can get a fit-for purpose result in just a few rows using diminishing value pools.)

- People with commercial backgrounds are **infamous** for highly detailed tax computations that have minimal impact but coarse computations, where it really matters in sales and costs.

Acquisitions and Joint Ventures

Getting your tax specialist involved is especially important when evaluating the acquisition or joint venturing of a business/project.

- ❑ There could be sunk costs or important future items that cannot be claimed by an acquiring company.
- ❑ The tax laws may allow an acquiring company to revalue the assets and get extra tax deductions in the future.

Always do a spot check that:

1. Your total deductions for tax over the life of the business = unclaimed opening balances + future costs
2. The resulting tax benefit makes sense.

Be alert for:

- some countries have limits on how many years these unclaimed amounts can be carried forward.
- Some deductions are not transferable to new owners.
- People talk about ‘unclaimed deductions’ and ‘tax losses’ as if they are the same. To me the ‘tax loss’ here would be 25% (income tax rate) of the ‘unclaimed deduction’ - so probe for exact details.

END OF MODULE