Payback Analysis

The answer to the questions:

- How long before I get my money back?
- Which investment is financially better?

Presented by: Eric de Diesbach

Table of Contents

This presentation will cover (with an example):

- The questions & answers
- The components
- The calculation
- The Standard Payback Period
- The Discounted Payback Period
- Conclusion

Payback Analysis: Questions

Everyone having to make an investment decision, such as purchasing equipment, installing a new production line, building a factory or acquiring a business faces the following questions:

- How long before I get my money back?
- Which of these investments is better?

Payback Analysis: Answers

The Payback Period answers these questions: It tells the length of time (Weeks, months or years) before an investment reaches breakeven and begins to return a profit.

Payback Analysis: Components

This calculation must take into account Incomes, Expenses and Taxes:

- The shorter the payback period, the better;
- The longer the payback period, the longer funds are locked up and the riskier the project probably is.

Note: Depreciation should not be included in the calculation.

Payback Analysis: Calculation

Payback period = When cumulative net cash flow reaches break even

Payback period =

(Last year that will show a negative cash flow)

+

(Absolute cumulative net cash flow for that year / Total net cash flow in the following year)

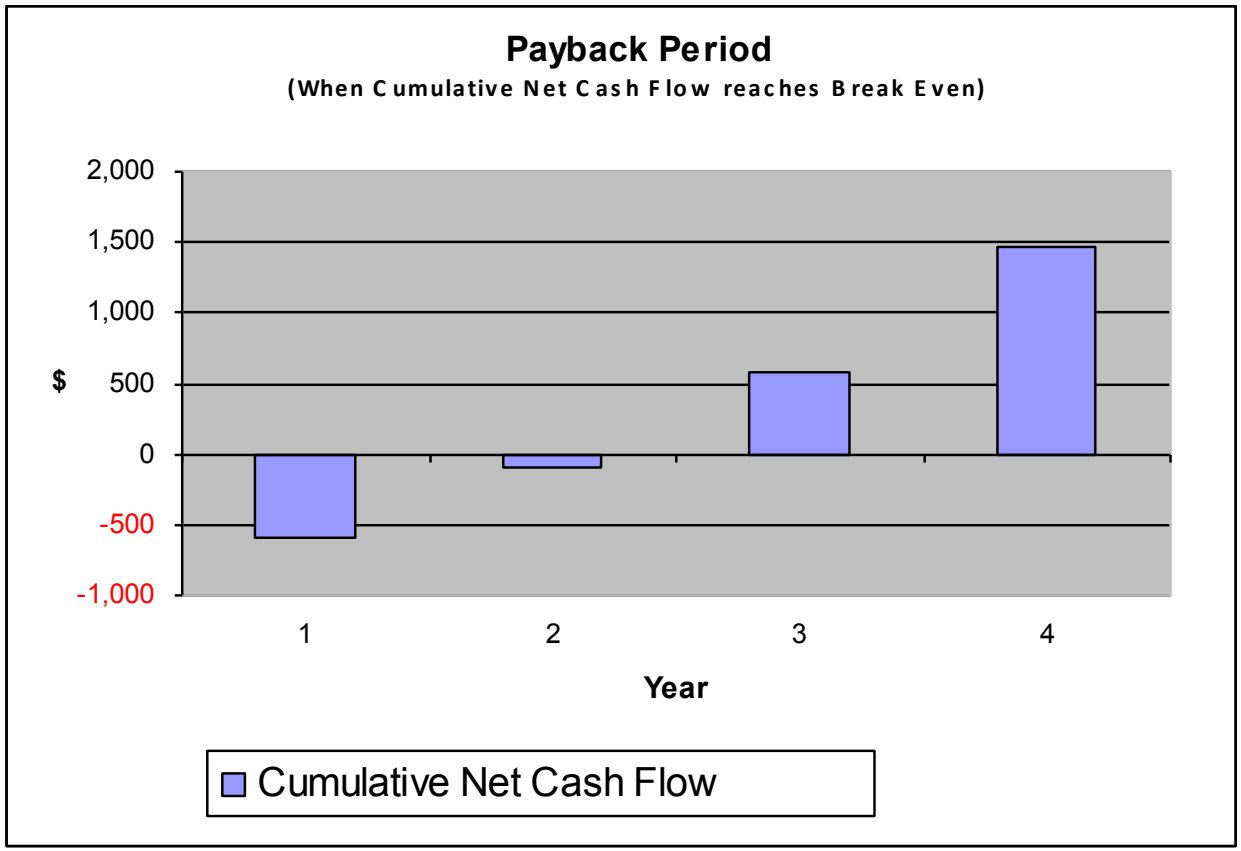
Payback Period Example

Year:	0	1	2	3	4
Total Increase in Sales/Revenues		500	1,000	1,400	1,800
Total Increase in Costs/Expenses		-200	-300	-420	-540
Increase/(Decr.) in Profit Before Tax		300	700	980	1,260
Corporate Tax (30%)		-90	-210	-294	-378
Minus: Investment	-800				
Net Cash Flow for the Year	-800	210	490	686	882
Cumulative Net Cash Flow	-800	-590	-100	586	1,468
Payback Period =	2.1	years			

In this example:

- Payback Period = 2 + 100/686 = 2.1 years
- Cumulated Net Cash Flow end of Year 4 = $1,468

Payback Period Example



The same results presented in a graphic.

Payback Period Limitations

- One limitation to the Payback Period is that it does not consider the time value of money: One $ today is worth more than one $ tomorrow (Or the other way around: One $ tomorrow is worth less than one $ today).
- The way to remove this limitation is by calculating the Discounted Payback Period. It is the same calculation, but taking into consideration the time value of one dollar.

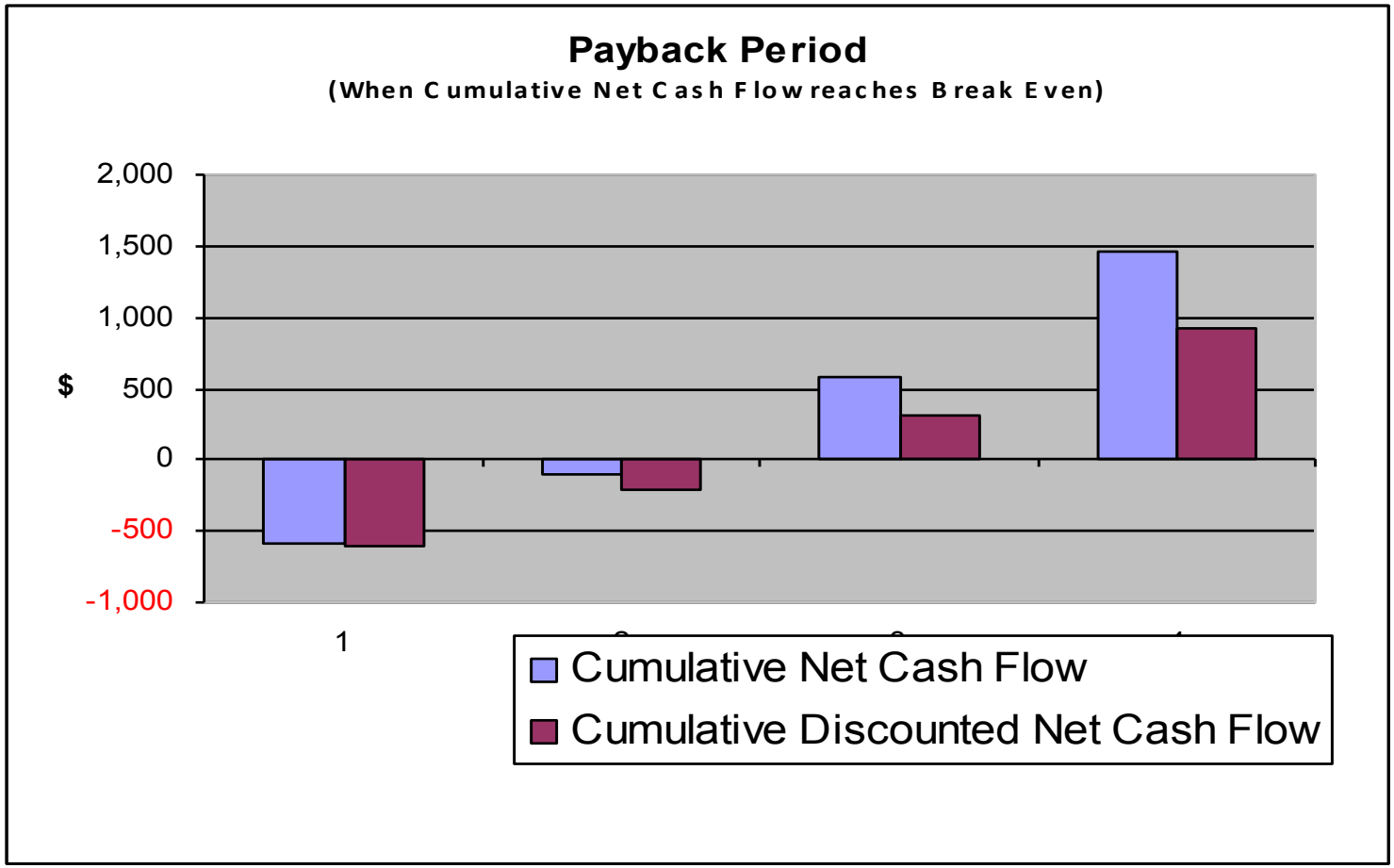
Discounted Payback Period

Year:	0	1	2	3	4
Total Increase in Sales/Revenues		500	1,000	1,400	1,800
Total Increase in Costs/Expenses		-200	-300	-420	-540
Increase/(Decr.) in Profit Before Tax		300	700	980	1,260
Corporate Tax (30%)		-90	-210	-294	-378
Minus: Investment	-800				
Net Cash Flow for the Year	-800	210	490	686	882
Cumulative Net Cash Flow	-800	-590	-100	586	1,468
Payback Period =	2.1	years			
Discount Factor (at Cost of Funding = 10%)	1.0000	0.9091	0.8264	0.7513	0.6830
Discounted Net Cash Flow for the Year	-800	191	405	515	602
Cumulative Discounted Net Cash Flow	-800	-609	-204	311	914
Discounted Payback Period =	2.4	years			

Applying a discount factor for cost of funding = 10%:

- Discounted Payback Period = 2 + 204/515 = 2.4 years
- Cumulated Discounted Net Cash Flow end of Year 4 = $914

Discounted Payback Period



The same results presented in a graphic.

The 2 Payback Periods

- We begin to see a difference when taking into consideration a 10% funding cost (Not uncommon in Australia!):
  - Standard: Payback Period = 2.1 years
  - Discounted: Payback Period = 2.4 years

- But look at the Cash Flow:
  - Standard: Cumulated Net Cash Flow = $1,968
  - Discounted: Cumulated Net Cash Flow = $ 914

➔ <u>Less than half</u> of what was expected:

What a massive difference!

Payback Analysis: Conclusion

- Any mistake or oversight can be very costly:
  - Not only can the break-even point be further away than you think;
  - But the cumulated cash benefit can easily be half of what you expect!
- Do not leave your investment decision to chance:
  - Do your calculations;
  - Or hire an expert to do them for you!

Contact the expert:

Eric de Diesbach

- Financial Management
- Capital Management
- Return on Investment

eric.dediesbach@informgroup.com.au

www.informgroup.com.au