

3.3.2 Investment appraisal

Starter – which project would you choose?

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| Project 1: A new warehouse which will mean you can double your capacity |  |
| Project 2: A new marketing campaign which will double sales |  |
| Project 3: Research into new products which will give you an edge in a highly competitive technical market place |  |

Write a definition of investment appraisal here:

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Investment appraisal – planning process

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Investment appraisal – decision making

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Payback explained

* A business needs to decide which project or proposal to invest in.
* It cannot afford all four so it will have a number of methods to work out which one it should spend the money on.

Technique

1. Calculate which year the cost of the project is paid back e.g. £80,000 cost, pays back £40,000 yr 1 and £40,000 yr 2 = 2 years
2. If it’s part of a year then find what is needed from what is left and multiply by 12

e.g need to find £20,000 from £50,000 20/50 x 12 = 4.8 round up to give 5 months

Payback calculation

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| **Cash flows (£000s)** | **Proposal 1** | **Proposal 2** | **Proposal 3** | **Proposal 4** |
| **Year 0** | -£120 | -£95 | -£80 | -£160 |
| **Year 1** | £80 | £10 | £30 | £30 |
| **Year 2** | £40 | £40 | £40 | £50 |
| **Year 3** | £40 | £40 | £30 | £90 |
| **Year 4** | £20 | £60 | £30 | £80 |
| **Year 5** | £40 | £50 | £20 | £60 |
| **When does the project payback?** |  |  |  |  |

Which proposal is paid back in the quickest time?

ARR Explained

* Payback is very simplistic tool and only looks at when the project will pay back and does not take into account rate of return
* So, a business can also use the ARR system which looks at the average rate of return of the projects

Technique

1. Add all the inflows for all the years of the project
2. Remove the original cost of the project
3. Divide this figure by the number of years the project runs for
4. Now divide this by the cost of the project
5. Now multiple the result by 100 to get a %

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| **Cash Inflows (£000s)** | **Proposal 1** | **Proposal 2** | **Proposal 3** | **Proposal 4** |
| **Year 0** | -£120 | -£95 | -£80 | -£160 |
| **Year 1** | £80 | £10 | £30 | £30 |
| **Year 2** | £40 | £40 | £40 | £50 |
| **Year 3** | £40 | £40 | £30 | £90 |
| **Year 4** | £20 | £60 | £30 | £80 |
| **Year 5** | £40 | £50 | £20 | £60 |
| **ARR** |  |  |  |  |

Which proposal gives the highest rate of return?

NPV Explained

* Once a business has looked at the payback period for a set of projects and then looked at the ARR they may need to look at the NPV
* This is the net present value and it takes into account that money in the future is not worth what it is today – so it adds in a discount table to make it more realistic

Technique

1. You get a discount table to make the value of the money more realistic e.g. 20% this is given to you in an exam
2. Multiply each cash inflow by the discount, this will give a NPV value
3. Add all the NPV values together and then minus the cost of the project
4. The best result is the highest NPV value proposal

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| **Cash Inflows** **(£000s)** |  | **Proposal 1** | **Proposal 2** | **Proposal 3** | **Proposal 4** |
| **Year 0** | **1.00** | -£120 | -£95 | -£80 | -£160 |
| **Year 1** | **0.833** | £80 | £10 | £30 | £30 |
| **Year 2** | **0.694** | £40 | £40 | £40 | £50 |
| **Year 3** | **0.579** | £40 | £40 | £30 | £90 |
| **Year 4** | **0.482** | £20 | £60 | £30 | £80 |
| **Year 5** | **0.402** | £40 | £50 | £20 | £60 |
| **NPV value** |  |  |  |  |  |

Limitations of Investment Appraisal

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| Payback limitations |  |
| ARR limitations |  |
| NPV limitations |  |





