

Plan a or plan b



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Explanations to the information in the Excel template: a. In order to determine the present value of plan A to a typical employee, we discount the amount of \$1,500 that represents payment in an annual annuity at a discount factor of 3.312 (4 yrs, 8%). The present value equals \$4,698.00.

b. In order to find the amount a typical employee will owe under Plan B when the loan is due, we find the future value of \$20,000 compounded annually at 3% for five years (factor 1.159).

The present value of this lump sum (5 yrs, 8%) is obtained using discount factor 0.681. Subtracting this amount from the \$20,000 loan, we determine the present value of the company's subsidized financing to equal \$4,214.

42. c. Therefore, a typical employee will choose Plan A as it provides a higher present value, \$4,698.00 as compared to just \$4,214.42 under Plan B. d.

Reworking parts (a) through (c) with an opportunity cost of 10%, we will see that for employees with this opportunity cost: under Plan A, the present value amounts to \$4,755.00, under Plan B \$5,605.22. This means that for those employees Plan B is preferable due to higher present value. Overall, employees with higher opportunity costs will probably tend to prefer Plan B because it offers a longer time frame. Plan B envisages repayment of the loan after five years as opposed to Plan A that will supply employees with funds over the time frame of four years.

Under Plan B, they can use available funds to invest elsewhere at a higher rate, which will give them greater return than the 3% they will owe on the loan. As a result, the higher opportunity cost employees at Hanover Maple Works can hope for, the more attractive Plan B including a loan will seem to these employees, and vice versa.