Good example of case study on what is the present value of your bank account toda...

Sociology, Shopping

- Suppose your bank account will be worth $4, 200. 00 in one year. The interest rate (discount rate) that the bank pays is 5%.

PV = FV * [1 / (1 + i)t],

where PV is the present value my bank account,

FV is the future value,

i is the interest rate the bank pays,

and t is the time period (in years).

Then PV = FV * [1 / (1 + i)t] = 4, 200 * [1 / (1 + 0. 05)1] = 4, 200 * [1 / (1. 05)1] =

= 4, 200 * [1 / 1. 05] = 4, 200 / 1. 05 = 4, 000

So, today the present value of my bank account is $4, 000. 00

- Suppose you have two bank accounts, one called Account A and another Account B. Account A will be worth $3, 800. 00 in one year. Account B will be worth $6, 500. 00 in two years. Both accounts earn 5% interest.

What is the present value of each of these accounts?

What is the combined present value of the two accounts?

PV = FV * [1 / (1 + i)t],

where PV is the present value my bank account,

FV is the future value,

i is the interest rate the bank pays,

and t is the time period (in years).

- For Account A:

PVA = FVA * [1 / (1 + i)t] = 3, 800 * [1 / (1 + 0. 05)1] = 3, 800 * [1 / (1. 05)1]

=

= 3, 800 * [1 / 1. 05] = 3, 800 / 1. 05 = 3, 619. 05

So, the present value of Account A today is $3, 619. 05

- For Account B:

PVB = FVB * [1 / (1 + i)t] = 6, 500 * [1 / (1 + 0. 05)2] = 6, 500 * [1 / (1. 05)2]

=

= 6, 500 / [(1. 05)2] = 6, 500 / 1. 1025 = 5, 895. 69

The present value of Account B today is $5, 895. 69

PVAB = PVA + PVB = 3, 619. 05 + 5, 895. 69 = 9, 514. 74

So, the combined present value of the two accounts is $9, 514. 74

- Suppose you just inherited an oil well. This oil well is believed to have three years worth of oil left before it dries up. Here is how much income this oil well is projected to bring you each year for the next three years: Year 1: $125, 000Year 2: $258, 000Year 3: $310, 000Compute the present value of this stream of income using a discount rate of 7%.

We will use the following formula:

PV = FV * [1 / (1 + r)t],

where PV is the present value my bank account,

FV is the future value,

r is the discount rate,

and t is the time period (in years).

- For the 1st year:

PV1 = FV1 * [1 / (1 + r)t] = 125, 000 * [1 / (1 + 0. 07)1] = 125, 000 * [1 / (1. 07)1] =

= 125, 000 / (1. 07) = 116, 822. 43

- For the 2nd year:

PV2 = FV2 * [1 / (1 + r)t] = 258, 000 * [1 / (1 + 0. 07)2] = 258, 000 * [1 / (1. 07)2] =

= 258, 000 / (1. 1449) = 225, 347. 19

- For the 3rd year:

PV3 = FV3 * [1 / (1 + r)t] = 310, 000* [1 / (1 + 0. 07)3] = 310, 000* [1 / (1. 07)3] =

= 310, 000 / (1. 225043) = 253, 052. 34

PV = PV1 + PV2 + PV3 = 116, 822. 43 + 225, 347. 19 + 253, 052. 34 = 595, 221. 96

So, the present value of the oil well is $595, 221. 96

The present value of the assets should be calculated as it is necessary for the financial decision making. We need to pay attention to the interest and discount rates to make sure that we are investing our money into profitable projects.

We have done these calculations and found the present values of our bank accounts and the present value of the oil stream. Now we can see how much profit can our projects bring and what is their present value.

References

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