

Two behavioural finance problem sets related to temporal discounting and bayesian...

[Finance](#)



Behavioural Finance by Optional Problem Set Question For this set, to calculate the present value of CHF, you maximise utility subject to the first period, second period, and third period consumption. Utility is computed by substituting the discounting factor into the equation as shown in (i), the hyperbolic discounting is left as a symbol for the time for purposes of calculation. From the maximization equation ii, find the First order condition of consumption period 1 as shown below. As shown in iii, after computing the unknown values with the know values you find the present value of CHF as shown in iv. The subsequent years are computed by referencing their formulas with respect to the known Co. The exponential discounting graph has a positive slope due to its positivity index.

---i

----ii

---iii

This implies

---iv

For the second period

Plugging into the 100CHF, we will have

The third period will be

The graph for the present exponential discounting has a positive slope while the graph for the standard exponential discounting is flat.

Question 2

This implies

For the second period

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Plugging into the 244CHF, we will have

The third period will be

Question 3

In period 1, the consumer would have $100 - 18 \cdot 18 = 81.82$

Plugging into the 100CHF, we will have

The second period will be

The value does not implement what he planned doing at time zero.

Question 4

This person should sign an agreement in period zero due to income effect and substitution effect. The high interest rate increases income a certain amount of time. Therefore, increase in consumption during the first and second period makes the income effect of the borrower to be negative in the period. Additionally, due to substitution effect, the gross interest rate is relative to consumption price during period zero compared to period 1 and 2 (Nielsen, 2005). Hence, it will be more expensive in the first and second period compared to period zero. As such, for a person, a rise in interest rate in the first or second period may rise or reduce the rate during period zero.

Optional Problem Set 2

Question 1

Assuming that Mr. Spout has an expected payout of \$1 when he invests in stock A, Mr. Spout will not choose the guaranteed stock A. Stock has an expected uncertainty of $1/3$; therefore, Mr. Spout will take his chances and invest in stock B. He will not have preference between investing in either stock A or investing in stock B (Forbes, 2009). To state this in a different way, Mr. Spout will later select the investment that has a higher expected

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return. Mr. Spout, will invest in stock B in future, since he does not consider taking into account the investment risk in his decision. As a Bayesian learner, Mr. Spout decision will be influenced by uncertainty knowledge and the time is linked through the process of learning of the stocks.

Question 2

As a risk neutral investor, Mr. Spout will be indifferent between investing in stock A or in Stock B. Since he has an experience in stock A, Mr. Spout will invest in stock B. As a Bayesian investor, Mr. Spout experimented in the first period and observed the results. Therefore, he will invest in stock B due to its uncertainty element attached to the stock. He will not have preference between investing in either stock A or investing in stock B. To state this in a different way, Mr. Spout will later select the investment that has a higher expected return. Mr. Spout, will invest in stock B in future, since he does not consider taking into account the investment risk in his decision. As a Bayesian learner, Mr. Spout decision will be influenced by uncertainty knowledge and the time is linked through the process of learning of the stocks (Nielsen, 2005).

Question 3

a)

As a reinforcement learner, Mr. Spout will still invest in stock A that previously had a return of \$1. In reinforcement learning, the investor repeats his behavior that coincided with the previous experience. Here, Mr. Spout will extrapolate his personal experience when making his investment decision.

b)

After receiving \$0 after investing in stock A Mr. Spout will shift his

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investment to stock B. As a reinforcement learner, he will repurchase stock if and only if he realized a positive return. Here, the investors are more likely to buy stocks if their investment in the industry had a higher return (Forbes, 2009).

Question 4

Reinforcement Learner and Bayesian Learner behave similarly. This is because in both, the investor is placed in a setting and is required to behave optimally in that environment. Their actions are non-deterministic and initially unknown and needs learning (Redhead, 2008).

References

Forbes, W. 2009. Behavioural finance. New York: Wiley.

Nielsen, L. 2005. Behavioural finance: A behavioural study of stock market investors. New York.

Redhead, K. 2008. Personal finance and investments: A behavioural finance perspective. London: Routledge.