MAINTAINING CAPITAL

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The discussion on maintaining capital in time should commence with the definition of the interest rate.

The purpose of my work is to investigate the impact of interest rates on the value of capital, to explore the dependence of interest rates on other parameters and to determine their impact.

Interest rate is the price charged by a lender to a borrower for the use of borrowed assets. It becomes a rate of return for the borrowed assets.

Interest rate is dependent on:

- the risk
- time
- capital markets

There are the following theories making up the basic theory of interest rate: loanable funds theory, preferred liquidity theory, expectations theory, segmentation theory and theory of preferred environment [1].

The above considerations should facilitate the calculation of future interest rate, i.e. the future value of capital in time. One may start with a quite obvious assertion that the present value of 1,000 EUR is higher than the value of the same amount in the future. On the one hand, this is due to inflationary processes, but primarily to the increase of value of money in time along the catchphrase "time is money". Should this money be invested in such low return instrument as bank deposits, its value would grow after one year to 1050 EUR [3].

For example: An economic entity has been considering starting a long term bank deposit. The bank offered 7% annual interest. Calculate the future value of EUR 10,000 allocated to the deposit. Tax on deposits is 20%, payable at maturity. Another option is to invest the funds in an investment policy, tax free, with the annual yield of 5%. Choose the most beneficial variant for the investment, providing substantiation by showing the future value of investment. The investments are for four years, interest added at the end of the year, and then capitalized [2].

Solution: The formula to calculate the future value of investment at compound interest is as follows:

$FV_n = K_0 * (1 + k)^n$

Where, FV_n–the value of capital at the close of n-year; K_0 –initial capital; k –interest rate; n –time of keeping the deposit

So, **$FV_n = 13107,96$ EUR**

We can also check the calculations on Tab.1

	K0	k	k * K0	FVn
1	10000	0,07	700	10700
2	10700	0,07	749	11449
3	11449	0,07	801,43	12250,43
4	12250,43	0,07	857,5301	13107,96

Tab.1. The future value calculations with the annual yield of 7%

On the date of payable at maturity, the Tax on deposits is 20%

The revenue from the deposit is (13107,96 -10000=) **3107,96 EUR**

The Net Profit or revenue without Tax is 3107,96 *(100%-20%)= **2 486 EUR**

In such a way at the end of the period we will get the Net Profit of **2 486 EUR** for a long term bank deposit. In other words, a future value of **12 486 EUR** is equal to a present value of only 10000 EUR.

Another option is to invest the funds in an investment policy, tax free, with the annual yield of 5%. By the same method (Tab.2):

	K0	k	k * K0	FVn
1	10000	0,05	500	10500
2	10500	0,05	525	11025
3	11025	0,05	551,25	11576,25
4	11576,25	0,05	578,8125	12155,06

Tab.2. The future value calculations with the annual yield of 5%

Since the tax free, the revenue from the deposit is equal to Net Profit and (12762,82-10000=) **2155,06 EUR**

In such a way at the end of the period we will get the Net Profit of **2155,06 EUR** for a long term bank deposit. In other words, a future value of **12155,06 EUR** is equal to a present value of only 10000 EUR.

Of these three options, I would choose the first one, because Net Profit is higher than in the second option, and is equal to 2 486 EUR . We earn more money even if we pay the Taxes.

The benchmark interest rate in Ukraine was last recorded at 19.50 percent. Interest Rate in Ukraine averaged 42.48 percent from 1992 until 2015, reaching an all time high of 300 percent in October of 1994 and a record low of 6.50 percent in August of 2013. Interest Rate is reported by the National Bank of Ukraine

All interest rate forecasts should be taken very cautiously. They are among the most difficult economic variables to predict. They are not quite as hard to forecast as exchange rates and stock market values, but they come close.

References

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3. Seal W., Garrison R. H., Noreen E. W., Management Accounting, McGraw-Hill Education, New York 2009 TRADING ECONOMICS/Ukraine Interest Rate. Electronic resource: http://www.tradingeconomics.com/ukraine/interest-rate.