Macroeconomics
Winterterm 2023
Tutorial 4

1. Determine the relationship for the growth rates of the variables in the quantity theory of money using the total differential at constant velocity of money.
   (a) What is the inflation rate in a country if the money supply grows by 10% and GDP shrinks by 5% ?
   (b) Using the Fisher equation, calculate the nominal interest rate in the country when real interest rates are -2%.
   (c) The ECB's balance sheet increased by around 2,300 billion Euro in 2020 ($\sim$ 20%). The economy in Germany collapsed by 4.9% in 2020 and real interest rates in Germany were around -2% in 2020. In light of this and the previous results, are you an advocate of the quantity theory?

2. According to the yield-curve, short-term (1-year term) interest rates in Romania are 3% p.a. and long-term interest rates (2-year term) are 5% p.a.
   (a) Determine the expected short-term interest rates in one year according to the expected value theory.
   (b) In Kenya, short-term interest rates are 12% and long-term interest rates are 14%. Assume that 5% points of the long-term interest rates are due to the liquidity premium. Calculate the expected short-term interest rates in one year according to the expected value theory. (What do you have to consider in the calculation compared to the previous subtask?)
   (c) What macroeconomic signal can be derived for Romania and what for Kenya?