

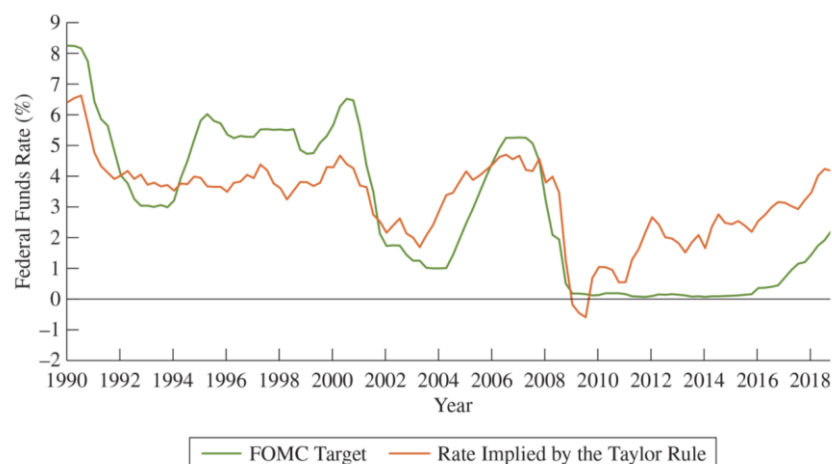
Exercise
EE432 Monetary Theory and Policy
B.E. International Program
Faculty of Economics, Thammasat University
Semester 1/2021

Instruction:

1. Please upload your **answers (short written answers and graphs) in pdf format**, together with **spread sheets and graphs in excel format** by 17 December 2021 (no later than midnight) via google classroom.
2. To place your answers, please put your name and student ID at the upper right corner of the first page of both files.
3. Exercise is worth 10 %

Question 1: Central bank interest rate and the Taylor Rule

- 1) Plot the rate implied by the Taylor rule since 1990 on a quarterly basis until the latest available date in 2020 (follow the Figure 18.7 in the textbook as shown below). For the output gap, use the percentage deviations of real GDP (FRED code: GDPC1) from potential output (FRED code: GDPPOT). For inflation, use the percent change from a year ago of the price index for personal consumption expenditure (FRED code: PCEPI). Assume that the long-run risk-free rate averages 2 percent and the target inflation is 2 percent. When complete, compare the Taylor rule rate against the policy rate (effective Fed fund rate), so called actual FOMC target rate (FRED code: FEDFUNDS).
- 2) When did the policy rate deviate from the rate implied by Taylor's rule, please specify the periods? Professor John Taylor from Stanford University argued that Fed did not act early enough to prevent the risk of bubble formation during 2004-2006 and cut the rate below the implied rate (could be negative rate) during 2008. Do you agree with his idea? Explain. Based on the implied rate after the outbreak of COVID-19 pandemic (during 2020), what should Fed conduct its policy? Discuss.



Question 2: Money multiplier

- 1) Plot M1 money multiplier – the ratio of M1 or narrow money (BOT Table EC_MB_004_S2) to monetary base (BOT Table EC_MB_001_S2) over the period from 1997 to present. Likewise, on the right axis, plot M2 multiplier (the values of M2 are reported in BOT Table EC_MB_004_S2 as well, following the Figure 17.10 in the textbook as shown below, but using Thai data on monthly basis since 1997).
- 2) The change in money multiplier would reflect the link between monetary base and money supply. During the aftermath of the Asian financial crisis, the Bank of Thailand adopted a series of policy interest rate reduction from 12.5% to 4.0% in 1999 (and another round from 3.75 to 2.75 during the 2001-2005 Thailand political turmoil). The central bank purchased securities through open market operation which thus increased commercial bank's reserve. Nonetheless, commercial banks were cautious to create more loans and interest-bearing deposits later decreased. Based on such circumstance, explain the movement of M1 and M2 money multiplier over the period of 1997 to 2005.

Remarks: $M1 = \text{Narrow Money (Currency + Transferable deposits, aka Checkable deposits)}$

$M2 = \text{Broad Money} = M1 + \text{Quasi-money (Other deposits + Securities other than shares)}$

