Homework 2

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# Financial markets I

## Exercise 2

This exercises is taken from:

**Oliver Blanchard (2017) Macroeconomics (7 Edition)** > Chapter 4 Financial Markets I > Questions and Problems > Exercise 2

Suppose that the houselhold nominal income for an economy, , is billions and the nominal demand for money, , in this economy is given by:

Where is the nominal interest rate fixed by the central bank.

1. What is the demand for money when the interest rate is and ? **(3.5 points)**
2. What will be the impact on the demand of money, , if the nominal income, , declines by ? **(3.5 points)**
3. What is the relation between the demand of money, , and the nominal income, ? **(3.5 points)**
4. What is the relation between the demand of money, , and the nominal interest rate fixed by the central bank, ? **(3.5 points)**
5. Explain what the central bank should do to the interest rate, , if it needs to increase the demand of money, . **(3.5 points)**

## Data from Colombia in relation to the financial market

### Demand for central bank money

In the appendix of *Chapter 4 Financial Markets I* from the book **Oliver Blanchard (2017) Macroeconomics (7 Edition)** there is an explanation about the demand for central bank money.

* Enter into the Bank of the Republic (Colombia) using the route:

[**http://www.banrep.gov.co/**](http://www.banrep.gov.co/) > Estadísticas > Tasas de interés y sector financiero > 3. Agregados monetarios, encaje y cartera > Agregados monetarios > Descargar y consultar: Efectivo, Base monetaria, M3 y sus componentes - Mensual > Exportar

1. Make a plot of **Efectivo** ( in the model), **Reserva Bancaria** ( in the model) and **Total** as the sum of **Efectivo** plus **Reserva Bancaria** ( in the model) for *Colombia* where the x-axis corresponds to the date and y-axis corresponds to the values of **Efectivo**, **Reserva Bancaria** and **Total**. **(3.5 points)**

### Nominal interest rate fixed by the central bank

Section *4-3 Determining the interest rate II* mentions the **federals fund rate** as the for the model in the USA. In Colombia is know as **“Tasa de intervención del Banco de la República”**.

* Enter into the Bank of the Republic (Colombia) using the route:

[**http://www.banrep.gov.co/**](http://www.banrep.gov.co/) > Estadísticas > Tasas de interés y sector financiero > 1. Tasas de interés de política monetaria > Tasas de interés de política monetaria > Descargar y consultar: Serie diaria (desde 04/01/1999)

1. Make a plot of **Tasa de intervención de política monetaria** ( in the model) for *Colombia* where the x-axis corresponds to the date and y-axis corresponds to the value of **Tasa de intervención de política monetaria**. **(3.5 points)**

# Goods and financial markets: The IS-LM model

## Goods market and real variables

* Enter into the World Bank’s Human Development Indicators database using the link:

<[**https://databank.worldbank.org/source/world-development-indicators**](https://databank.worldbank.org/source/world-development-indicators)>

* In *Country* select *Colombia*
* In *Series* select *GDP (constant LCU)*, *Households and NPISHs Final consumption expenditure (constant LCU)*, *Gross capital formation (constant LCU)* and *General government final consumption expenditure (constant LCU)*
* In *Time* select *VIEW RECENT YEARS: 50*
* Apply changes and download the data using *Download options > Excel* at the upper right corner of the platform

1. Make a plot of *GDP (constant LCU)* ( in the model expressed in real terms), *Households and NPISHs Final consumption expenditure (constant LCU)* ( in the model expressed in real terms), *Gross capital formation (constant LCU)* ( in the model expressed in real terms) and *General government final consumption expenditure (constant LCU)* ( in the model expressed in real terms) for *Colombia* where the x-axis corresponds to the date and y-axis corresponds to the values of *GDP (constant LCU)*, *Households and NPISHs Final consumption expenditure (constant LCU)*, *Gross capital formation (constant LCU)* and *General government final consumption expenditure (constant LCU)*. **(3.5 points)**

## Exercise 5

This exercises is based on:

**Oliver Blanchard (2017) Macroeconomics (7 Edition)** > Chapter 5 Goods and Financial Markets; The IS-LM model > Questions and Problems > Exercise 5

Consider the following numerical example of the IS-LM model:

1. Find the equation for aggregate demand. **(3.5 points)**
2. Derive the IS relation. **(3.5 points)**
3. Derive the LM relation assuming that the central bank fix . Remember that the LM relation will be an horizontal line. **(3.5 points)**
4. Solve for the equilibrium values of , , , and . **(3.5 points)**
5. Suppose that the central bank fix the money supply to . What is the impact of this monetary policy on the IS and LM curves? **(3.5 points)**
6. Find the new equilibrium values of , , and when . **(4 points)**