ECON 1100 - Basic Macroeconomics

Instructor: Ettore Gallo

Midterm Exam

October 15th, 2019

First and Last Name (here and on the blue book)

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Instructions:

- The exam contains 5 questions worth 6 points each. The exam will count for 30% of your final grade.

- You have <u>70 minutes</u> minutes to complete the exam.

- Make sure you understand the questions before providing an answer (ask questions if you are not sure you understand the question). <u>Carefully</u> explain what you do and be as precise as you can. Be brief; typically 2-3 sentences should be enough (notice however that I do ask you to provide a careful explanation for your answer; most of the points will be given for the explanations).

- **Write as clearly as you can** to make it easy to read and understand what you did.

Question 1

Consider the following list of events. For each item on the list, tell whether it will or it will not be included in the GDP and briefly explain why.

(1.a) A US steel company sells steel to General Motors

(1.b) You are hired by the government to fix computers

(1.c) You are hired by a private company as an employee to fix computers

(1.d) You buy a new car that was manufactured in France

(1.e) You sell your used car

Question 2

Suppose that the base year for the CPI is 2017. The CPI is 100 in 2017, 150 in 2018, and 200 in 2019.

(2.a) What is the annual rate of inflation in 2019 from the previous year?

(2.b) If private consumption was $400 in 2019 prices, what is it in 2017 prices?

(2.c) If the rate of inflation during 2020 will be 10%, what will the CPI be in 2020?

Question 3 [1-2 lines for point a., 4-5 lines for points b. and c.]

(3.a) Define the natural rate of unemployment.

(3.b) Consider a scenario in which a positive aggregate demand shock boosts output and lowers the actual rate of unemployment below its natural level. Represent the short and long-run effects with the help of the AD-AS diagram (with real output on the x-axis and the price level on the y-axis). According to this theoretical framework, what are, if any, the economic reasons that make impossible for the unemployment rate to be **permanently** below its natural level?

(3.c) In this same scenario, what are, if any, the political reasons that make impossible for the unemployment rate to be **permanently** below its natural level? In other terms, explain if and why maintaining full employment is politically unsustainable.

Question 4 [1-2 lines for point a., 4-5 lines for points b. and c.]

(4.a) Consider a closed economy without government activity. Explain the saving-investment identity in this setting.

(4.b) According to loanable funds theory, how should we causally read the saving-investment identity? In other terms, does investment determine saving or viceversa? With the help of the supply-demand diagram for loanable funds (loanable funds on the x-axis, real interest rate on the y-axis), explain what would happen if everyone in the economy saves more (e.g. a tax law encourages Americans to save more out of their incomes).

(4.c) According to Keynesian theory, how should we causally read the saving-investment identity? In other terms, does investment determine saving or viceversa? Briefly describe Keynes' paradox of thrift (no diagram needed). In this framework, what is the macroeconomic outcome of an increase in aggregate saving? [*Hint: consider the effect of an increase in saving on consumption*]

Question 5 [4-5 lines for each point]

(5.a) Define the quantity equivalence of money, i.e. the accounting identity that links money supply (M), the price level (P), real output (Y) and velocity of money (v). The identity states that two flows must be equivalent *by definition*. What are these two flows?

(5.b) Now define the quantity theory of money as a casual way to read the accounting identity mentioned in the previous question. What does the theory imply? Do economists believe that the quantity theory of money should be used to account for long or short-run phenomena?

(5.c) The attached figure shows the evolution of nominal GDP (pY), quantity of money (M) and velocity of money (v) in the US economy from 1960 to 2015. Do you think the graph provides empirical support to the quantity theory of money? Or do you rather think that this pattern is a mere consequence of the quantity equivalence of money? Motivate your answer.
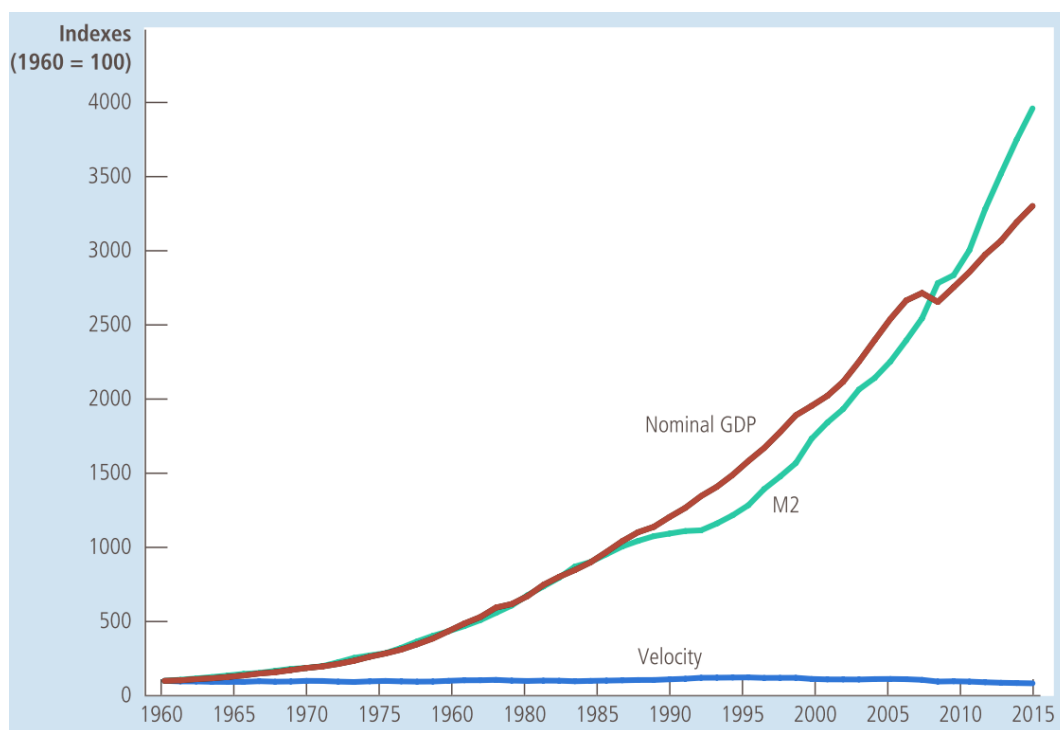

Figure 1: Nominal GDP (pY), the Quantity of Money (M), and the Velocity of Money (v), US, 1960-2015