Definitions

1- Who is counted as unemployed? How is defined the unemployment rate? What about the employment rate?

Number of persons in the population of *16 years and older* that are *actively looking* for a job but cannot find one. \( U_n \) = unemployed/labor force.

Employment rate = employed/population of 16 years and older

2- What is inflation? Disinflation? Deflation?

Inflation: continuous and general increase in prices of goods and services

Disinflation: continuous and general deceleration the growth of prices of goods and services

Deflation: continuous and general decrease in the price of goods and services

3- What is the Gross Domestic Product?

The GDP is the *market price valuation* of all goods and services *produced domestically* over a period of time and available for final uses.

Identities

1- Thoroughly explain what the sources and uses of products identity is.

The identity shows how an economy obtains goods and services and how it uses them. We have:

\[
P_m Q + J \equiv IC + FC_T + I_T + \Delta \text{inventories} + X
\]

with \( P_m Q \) the market value of the current production (including taxes on products), \( J \) the value of imports, \( IC \) the value of intermediate consumption, \( FC_T \) total final consumption, \( I_T \) total investment, \( \Delta \text{inventories} \) change in the stock of inventories, and \( X \) exports.

2- Using identities, define GDP is two different ways.

GDP measures the domestic supply of goods available for final uses only. Thus the measure of GDP excludes all goods and services provided by the rest of the world, and all intermediary consumption. This gives us a first way to define GDP:

\[
\text{GDP} = P_m Q - IC
\]

A second way to define GDP is by the (final) expenditure approach with an explicit measure of private domestic investment and government spending. In order to see the government sector more explicitly, let us decompose \( FC_T \) and \( I_T \) into their private and public components:

\[
FC_T = C + C_G \\
I_T = I_p + I_G
\]

By putting all government expenditures together and noting them \( G (= C_G + I_G) \) we thus have:

\[
FC_T + I_T = C + I_p + G
\]

Thus, the identity can be rewritten:

\[
P_m Q + J \equiv IC + C + I_p + G + \Delta \text{inventories} + X
\]
Change in inventories can be considered part of private investment because firms have to fund their depreciation so one can write to simplify:

\[ I = I_p + \Delta \text{inventories} \]

Thus, the identity becomes:

\[ P_mQ + J \equiv IC + C + I + G + X \]

Applying the definition of GDP obtained previously we can rewrite the identity to get the expenditure approach to the GDP identity:

\[ GDP \equiv C + I + G + (X - J) \]

3- What is the GNP? Give an identity that defines GNP.

The GNP gives a measure of the production goods and services available for final uses produced by the residents of a country, whether the live inside or outside of the country.

\[ GNP \equiv GDP + \text{income received by residents living abroad} - \text{income paid to non-residents} \]

4- What is the identity that defines national income? How are GDP and National Income related?

National income is approximately equal to:

\[ NI = W + \Pi + iL + R \]

With \( W \) the compensation of employees, \( \Pi \) the profit of corporations after interest payments, \( iL \) net interest, and \( R \) rental incomes. All are measured before direct taxes but after indirect taxes.

The relation between GDP and NI is:

\[ GDP \equiv NI + \text{discrepancy} \]

The discrepancy is due to indirect taxes, consumption of capital, and net income received by residents from abroad.

5- What is disposable income?

(Personal) disposable income \( Y_D \) is:

\[ Y_D = Y - T + Tr \]

It is the income \( Y \) obtained minus direct and indirect tax paid \( T \) plus transfers received \( Tr \).

(Remark: Here \( Y \) refers to GDP. Indeed, noting \( T_d \) the direct taxes and \( T_{ind} \) the indirect taxes we have:

\[ Y = Y_D + T_d + T_{ind} - T_r \]

We know that national income does not include indirect taxes so \( NI = Y_D + T_d - T_r \) and we know that \( GDP \equiv NI + \text{discrepancy}, \text{discrepancy including indirect taxes. Thus,} \ Y \equiv NI + T_{ind} \)

6- What can people do with their disposable income?

\( Y_D \) can either be consumed or saved: \( Y_D = C + S \)

7- Say that \( P_mQ = 9, J = 5.5, IC = 2, FC = 7, T_F = 2, \Delta \text{inventories} = -1.5, X = 5 \).

a. Calculate GDP in two different ways.

\[ GDP = P_mQ - IC = 9 - 2 \Rightarrow GDP = 7 \]
\[ \text{GDP} = FC + IT + \Delta \text{inventories} + X − J = 7 + 2 − 1.5 + 5 − 5.5 \Rightarrow \text{GDP} = 7 \]

b. What is the value of the trade balance (net exports)?

\[ X − J = 5 − 5.5 \Rightarrow \text{NX} = -0.5 \]

c. Say that private domestic consumption and public (i.e. government) investment have the following respective value: \( C = 3, I_G = 0.5 \). Calculate each component of the expenditure approach to GDP. Calculate GDP in a third way (you should find the same value as in a.).

\[ \begin{align*}
FC &= C + CG \Rightarrow CG = 7 − 3 = 4 \\
IT &= I_p + IG \Rightarrow I_p = 2 − .5 = 1.5 \\
I &= I_p + \Delta \text{inventories} = 1.5 − 1.5 \Rightarrow I = 0 \\
G &= CG + IG = 4 + .5 \Rightarrow G = 4.5
\end{align*} \]

We already know that \( C = 3, X = 5, \) and \( J = 5.5 \). In addition, we know that the expenditure approach to GDP is \( \text{GDP} = C + I + G + X − J \). Thus:

\[ \text{GDP} = 3 + 0 + 4.5 + 5 − 5.5 \Rightarrow \text{GDP} = 7 \]

8- Now that you know the preceding, say that the total compensation of workers (\( W \)), the gross profit of firm (\( \Pi \)), and net interest payment (\( iL \)) are the only incomes existing in the economy. Let us assume also that:

- The economy does not earn any income abroad and does not pay income to the rest of the world (so that \( \text{GNP} = \text{GDP} \)).
- The only discrepancy between \( \text{GDP} \) and \( \text{National income (NI)} \) is due to indirect taxes (\( T_{\text{ind}} \)), which are reduced to taxes on domestic products: no taxes on imports.
- Knowing that total taxes (\( T \)) are equal to indirect taxes (\( T_{\text{ind}} \)) plus direct taxes (\( T_d \)), we assume that workers pay an income tax on \( W \) at a tax rate of \( t_w (\text{tr} = 0\%), t_{iL} = 0\% \).
- There are net transfers given to household for a value of \( T_t = 1.5 \).
- \( \text{NI} = 6, \Pi = 1, iL = 1, t_w = 20\% \).

a. What is the value of \( W \)?

\[ \text{NI} = W + \Pi + iL \Rightarrow W = 6 − 1 − 1 \Rightarrow W = 4 \]

b. What is the value of indirect taxes? What is then the value of domestic production before taxes on products and imports (\( PQ \))? Calculate \( \text{GDP} \) in a fourth way by using \( PQ \).

\[ \begin{align*}
\text{GDP} &= \text{NI} + T_{\text{ind}} \Rightarrow T_{\text{ind}} = 7 − 6 \Rightarrow T_{\text{ind}} = 1 \\
PQ &= P_mQ − T_{\text{ind}} = 9 − 1 = 8 \\
\text{GDP} &= PQ + T_d − IC = 8 + 1 − 2 \Rightarrow \text{GDP} = 7.
\end{align*} \]

c. What is the value of \( T_d \)? What is the value of \( T \)?

\[ \begin{align*}
T_d &= t_wW + t_{\Pi}\Pi + t_{iL}iL = .2 \times 4 + 0 \times 1 + 0 \times 1 = \Rightarrow T_d = 0.8 \\
T &= T_{\text{ind}} + T_d = 1 + .8 = \Rightarrow T = 1.8
\end{align*} \]
d. Excluding transfers, does the government generate a surplus or a deficit? By how much? What if net transfers are included in the calculation?

Government balance = T – G = 1.8 – 4.5 = -2.7

Government balance including net transfers = T – G – Tr = -2.7 – 1.5 = -4.2

e. What is the value of disposable income for workers? (be careful: W already excludes indirect taxes)

This is the amount of money after disposable income for workers, less the amount of taxes paid when spending W. Let us call \( W_{b\text{Ind}} \) the wage before indirect taxes. We know that:

\[ W_{b\text{Ind}} = W + T_{\text{Ind}} = 4 + 1 \]

\[ W_D = W_{b\text{Ind}} - T + T_r = 5 - 1.8 + 1.5 = 4.7 \]

\[ W_D = W - T_d + T_r = 4 - 0.8 + 1.5 \Rightarrow W_D = 4.7 \]

f. What is then the value of saving by workers (\( S \))?

\[ W_D = C + S \Rightarrow S = 4.7 - 0.7 \Rightarrow S = 1.7 \]

g. Starting with \( W_D \) calculate NI. Then calculate GDP in a sixth way by starting with \( W_D \).

We know that \( W_D = W - T_d + T_r \Rightarrow W = W_D + T_d - T_r \)

We also know that: \( NI = W + \Pi + iL \). Therefore:

\[ NI = W_D + T_d - T_r + \Pi + iL = 4.7 + 0.8 - 1.5 + 1 + 1 \Rightarrow NI = 6 \]

Thus:

\[ GDP = W_D + T_d - T_r + \Pi + iL + T_{\text{Ind}} = 3.7 + 0.8 - 1.5 + 1 + 1 \Rightarrow GDP = 7 \]

-Neoclassical Model

1- What are the 5 basic assumptions of the Neoclassical model?

- Individuals care only about real variables.
- Money is just a means to facilitate transactions of goods and services: rational agents do not want to accumulate money.
- Pure and perfect competition applies.
- The whole is the sum of the parts: microfoundations are essential and by aggregating one arrives to macroeconomic results. There are no macroeconomic forces independent of microeconomic forces.
- Diminishing returns apply: the more one produces, the less s/he can get marginally.

2- Draw the labor market with all the relevant information?
3- How is each curve obtained?

The entrepreneurs arbitrate (i.e. make a choice) between asking for job and firing. They
determined their demand for labor by comparing the real wage (w/p), which is the marginal
cost of labor, and the marginal productivity of labor (MP_L), which is the marginal gain (in
terms of output) induced by employing one more person. When both are equal, the demand
for labor is determined and entrepreneurs maximize their profit.

\[ MP_L = w/p \Rightarrow L_d \]

Individuals willing to work arbitrate between work and leisure. They determine their supply
of labor by comparing the marginal cost of working (or marginal disutility of labor) (MC_L),
which is the pain and suffering induced by working, with the marginal gain of working, which
is the real wage. When both are equal, the net marginal gain from working one additional
hour is nil and so there is no more incentive for individuals to work more; individuals
maximize their utility:

\[ w/p = MC_L \Rightarrow L_s \]

Given MP_L and MC_L, we, therefore, can deduce that a higher wage leads to a lower demand
for labor and a higher supply of labor. Indeed, assume that before the change in w/p the two
previous equilibrium conditions held. Then, after the increase in wage, we have:

\[ \Delta w/p > 0 \Rightarrow MP_L < w/p \Rightarrow \text{net marginal gain is negative} \Rightarrow \text{incentive to fire people} \Rightarrow \Delta L_d < 0 \]

\[ \Delta w/p > 0 \Rightarrow w/p < MC_L \Rightarrow \text{net marginal gain is positive} \Rightarrow \text{incentive to work more} \Rightarrow \Delta L_s > 0 \]

4- On the labor market, draw the impact of:

a. An decrease in MC_L from MC_L0 to MC_L1. Explain your result.
Higher MPC implies that the workers feel less painful to work. Therefore they are ready to accept lower real wage. A decrease the equilibrium w/p increases the profitability of employing more workers, given MP_L, and so employment increases.

b. A decrease in MP_L from MP_L0 to MP_L1. Explain your result.

Given (w/p)_0 * a decrease in MP_L to MP_L1 leads to MP_L1 – (w/p)_0 * < 0: the net marginal real gain from employing L_0 * is negative. Thus labor demand decreases, which decreases the w/p and so decrease the supply of labor until the equilibrium 1 is reached.

c. The imposition of a minimum wage with (w/p)_min > (w/p)*. Explain your result.

The imposition of a minimum wage prevents the equilibrium point in the labor market to be reached. Thus at (w/p)_min more people would like to work than employers are ready to hire: there is some involuntary unemployment (U_n = L_smin – L_dmin)

5- Draw the market in which r, S, and I are determined (leave aside the government). Include all the relevant information.
6- In the market of question 5, draw the impact of:

a. An increase in the impatience of savers reflected in an increase of $\theta$ from $\theta_0$ to $\theta_1$. Explain your result.

People become more impatient so they need a higher reward in order to save the same amount $S_0$. $r$ rises but, because $r_1^*$ is lower than what is necessary to keep $S$ at this level, $S$ decreases and so $I$ decreases too.

b. An increase in the marginal output obtained by adding capital equipment from $MP_{K0}$ to $MP_{K1}$. Explain your result.

Because the marginal real gain from borrowing is higher in terms of output, firms can afford a higher marginal real cost of borrowing. Thus investment increases until $MP_k = r$ again.

c. Government spending financed by monetary creation. Explain.

No effect because in this case the government does not ask for any money to savers. However, inflation increases, and $i$ increases so that $r$ stays the same.

d. Government spending financed totally by taxes. Explain.

No effect for the same reason.

e. Government spending financed by borrowing some of the private saving. Explain.

Then in this case the demand for loanable funds increases and so there is an increase in the real interest rate given the supply of saving.
7- What is the quantity theory of money? How is it different from the identity \( MV = PQ \)?

The quantity theory of money states that inflation only has monetary origins: an increase in the money supply will only affect prices.

This is different from the identity \( MV = PQ \) because the QTM defines some behavioral assumptions from each variable of the identity (which is always true).

8- Say that \( M = 100 \) and \( PQ = 500 \).

a. Calculate \( V \). Explain

\[
V = \frac{PQ}{M} = \frac{500}{100} \Rightarrow V = 5
\]

The given money supply has to circulate 5 times in order to complete all transactions.

b. Knowing that \( Q^* = 50 \), calculate \( P \).

\[
P = \frac{MV}{Q} = \frac{100 \times 5}{50} \Rightarrow P = 10
\]

c. Say that \( M \) is doubled, what is the impact on \( P \)? Explain the mechanism through which \( \Delta M \Rightarrow \Delta P \)

\[
M = 200 \Rightarrow P = \frac{200 \times 5}{50} \Rightarrow P = 20
\]

The price level is also doubled. An increase in \( M \) leads to an increase in the demand of goods and services, which because \( Q \) is fixed, only leads to a rise in \( P \).

d. Say that \( V \) is doubled with \( M = 100 \), what is the impact on \( P \)? Explain.

\[
V = 10 \Rightarrow P = \frac{100 \times 10}{50} \Rightarrow P = 20
\]

The demand for money decreased so people want to spend more with the given amount of money then have: they spend it faster. Given the supply of goods and services, only \( P \) rises.

9- Draw a graph that explains how production is determined.
10- What is Say’s law? Why does this law apply?
The law states that there cannot be a general glut: there cannot be too much goods and
services in the economy.
Indeed, one could think that a lower level of consumption would lead to the accumulation of
involuntary inventories by firms. However, Say’s law, because of the loanable funds theory,
shows that all that is not consumed is invested.

-Keynes: Identity Between Saving and Investment
1- Define saving. Can you save if you do not have any income?
Saving in the part of income that is not spent. Because an income is necessary before saving,
if the former does not exist then saving cannot exist.
2- Let us assume that an economy was just created in which there are no taxes, no
transfers, and no government expenditures. In addition, we are in a closed economy.
Let us assume that firms want to produce goods and services and pay workers a wage.
W = 100, C = 0, and I = 0. In addition:
   a. Knowing that profit is equal to \( \Pi = \text{sales} - \text{cost} \) and that the only cost is labor
cost, calculate aggregate profit.
Sales are C + I which is nil. Thus \( \Pi = C + I - W = 0 - 100 \Rightarrow \Pi = -100 \)
b. What is the value of income (Y) from the income approach? From the
   expenditure approach?
Income approach: \( Y = W + \Pi = 100 - 100 \Rightarrow Y = 0 \)
Expenditure approach: \( Y = C + I = 0 + 0 \Rightarrow Y = 0 \)
c. Knowing that enterprises retain all their profits (they do not pay taxes, interest,
or dividends), what is the value of aggregate saving?
\( S_T \equiv S + \Pi \equiv W - C + \Pi = 100 - 0 - 100 \Rightarrow S_T = 0 \)
3- Let us assume that W = 100, C = 90, and I = 0.
a. Calculate aggregate profit
\( \Pi = C + I - W = 90 - 100 \Rightarrow \Pi = -10 \)
b. What is the value of income (Y) from the income approach? From the
   expenditure approach?
Income approach: \( Y = W + \Pi = 100 - 10 \Rightarrow Y = 90 \)
Expenditure approach: \( Y = C + I = 90 + 0 \Rightarrow Y = 90 \)
c. What is the value of aggregate saving?
\( S_T \equiv S + \Pi \equiv W - C + \Pi = 100 - 90 - 10 \Rightarrow S_T = 0 \)
4- Let us assume that W = 100, C = 100 and I = 100
a. Calculate aggregate profit
\( \Pi = C + I - W = 100 + 100 - 100 \Rightarrow \Pi = 100 \)
b. What is the value of income (Y) from the income approach? From the expenditure approach?

Income approach: \( Y = W + \Pi = 100 + 100 \Rightarrow Y = 200 \)

Expenditure approach: \( Y = C + I = 100 + 100 \Rightarrow Y = 200 \)

c. What is the value of aggregate saving?

\( S_T = S + \Pi = W - C + \Pi = 100 - 100 + 100 \Rightarrow S_T = 100 \)

5- What can you conclude from all these examples: can actual investment ever be different from actual saving?

No they can never be any difference between the two. If one goes for an open economy with a government that spends and taxes this does not change anything.

6- In the accumulation process, what does saving represent? What does investment represent?

Saving: financial accumulation
Investment: physical accumulation

7- Write the identity between saving and investment in an economy with a government surplus, a government deficit.

\( Y + T = C + I + G \Rightarrow S + (T - G) = I \)

8- What is the meaning of “bilateral character of the transactions between producers […] and […] the consumers or the purchasers of capital equipment” (Keynes 1936, 63)?

It means that when one wants to analyze the economy, one needs to be aware that when someone spends, another person receives an income. Contrary to the neoclassical approach one cannot analyze the economy by looking at an isolated individual. Indeed, the decision of the latter will affect other individuals.

9- Do you need an adjustment process to equalize actual saving and actual investment? Why? Why not?

No. There are always equal because of the bilateral character of transactions.

10- Why can you still talk about difference between saving and investment?

Because there may be a difference between desired and actual values for both saving and investment.

- Keynes’s involuntary unemployment and effective demand

1- What is the purpose of Keynes’s General Theory?

To explain why the economy can be permanently below full employment.

2- What is involuntary unemployment?

People that are ready to work at the given real wage cannot find a job.

3- Explain how N is determined by using the Z, D diagram. How is this different from the Neoclassical analysis?

Z is the aggregate supply price, it looks at the expected costs induced by an employment level.
D is the aggregate demand price, it looks at the expectations of demand (and so monetary profit) induced by a level of employment.

N is determined at the level of employment for which \( Z = D \). At this level, enterprises maximize their profit.

The main difference is that N is exclusively determined by entrepreneurs and that the latter care about the monetary profit they will make: producing more (\( MP_L \)) does not interest them if they cannot sell their output.

4- What is the point of effective demand?
It is the point at which \( Z = D \). At this point firms maximize their profits

5- What is the main cause of (involuntary) unemployment in Keynes? How does this compare with the Neoclassical model?
The main cause of unemployment is a too low level of effective demand: long-term expectations are too pessimistic.

6- Explains Say’s Law in terms of the Z, D diagram. In this case, why will N go to full employment and not stop before full employment?
The Say’s law in the Z, D diagram implies that expected cost and expected sales are equal for all levels of employment.

The entrepreneurs will not stop employing before reaching full employment because they want to produce as much as possible.

-The Simple Keynesian Model

1- What is the purpose this model?
To show that the economy can reach an equilibrium level before full employment.

2- What are the two possible uses of disposable income? Define the MPC and the MPS.
Income can either be consumed or saved. The MPC is the propensity to consume any additional amount of income. The MPS is the marginal propensity to save.
3- What is the relation between the MPC and the MPS? What does it mean?

MPC + MPS = 1: Income is either saved or consumed

4- Mathematically write the consumption function and the saving function. Define each element of the functions. What is the slope of the consumption function? What is the intercept of the consumption function? What is the slope of the saving function? What is the intercept of the saving function?

\[ C = a + bY_D \] with an autonomous consumption, b the MPC and \( Y_D \) disposable income.

\[ S = Y_D - C = -a + (1 - b)Y_D \] with -a autonomous saving and 1 – b the MPS

Intercept of C is a and its slope is b

Intercept of S is -a and its slope is 1 – b

5- Graphically represent each function in the E, Y diagram.

See graph 6.5 page 107.

6- Given: \( C = 200 + .8Y_D \), \( I = 200 \), \( T = 100 \), \( G = 0 \).

a) Draw the graph of the consumption function and of aggregate expenditure in the same graph.

b) Value of the multiplier = 
   \[ 1/(1 - b) = 1/(1 - .8) = \frac{5}{1} \]

c) The value of autonomous expenditures:
   \[ a - bT + I + G = 200 - 80 + 200 + 0 = 320 \]

d) \( Y^* = \)
   \[ 1/(1 - b) \times (a - bT + I + G) = 5 \times 320 = 1600 \]

e) \( C^* = \) (be careful that \( Y^* \) is different from \( Y_D^* \))
   \[ 200 + .8Y_D = 200 + .8(Y^* - T) = 200 + .8 \times 1600 - 80 = 1400 \]

f) \( S^* = \)
   \[ Y_D - C = (Y - T) - C = (1600 - 100) - 1400 = 100 \]

g) Say that \( \Delta I = +100 \), how does \( Y^* \) change? What if \( \Delta T = -100 \)?

\( \Delta Y^* = 1/(1 - b) \times \Delta I = 5 \times 100 = \pm 500 \)

\( \Delta Y^* = 1/(1 - b) \times (-b\Delta T) = 5 \times (-.8 \times (-100)) = \pm 400 \)

h) Write the identity between saving and investment.
   \[ S = I - T \Rightarrow 100 = 200 - 100. \]

7- Explain how the simple multiplier works: why does an initial increase in autonomous spending increase income by more than the initial increase?

The multiplier grabs the feedback effect between income and consumption induced by a change in autonomous expenditures.

8- Explain the paradox of thrift (be careful to make a distinction between micro and macro level).
Paradox: higher thriftiness by individuals (ΔMPS > 0) will not lead to an increase of aggregate saving (ΔS = 0).

The paradox is due to the bilateral character of economic transactions: if someone wants to save, then, given income, someone else will have disave. At the aggregate level, income is endogenous, and higher saving leads to lower income and so lower saving. It is only if investment increases first that S can increase.

9- Say that, MPC = .9, and I = 100 (all other parameters are nil).
   a) What is Y*?
      \[ 10 \times 100 = 1000 \]
   b) What are C* and S*?
      \[ C^* = .9 \times 1000 = 900 \]
      \[ S^* = 1000 - 900 = 100 \]

Say that the government wants to promote thriftiness at the individual level (i.e. increase the MPS by .4 so that MPS = .5) in order to promote aggregate saving
   c) What is Y*?
      \[ 2 \times 100 = 200 \]
   d) What are C* and S*?
      \[ C^* = .5 \times 200 = 100 \]
      \[ S^* = 200 - 100 = 100 \]
   e) Has the government been successful in its policy? What are the consequences of its policy? Is the economy better off?
      No aggregate saving is the same and the economy is worse off because aggregate income is five times lower.
   f) Why did we obtain these results? What are the economic forces that Neoclassical economists missed?
      The result is due to the fact that income is endogenous and negatively affected by higher desired to save.
   g) Is the assertion that “individual savings add up to aggregate saving” true?
      No
   h) Did we have to go through all the questions from 11a) to 11g) to know that saving would not change? Why or Why?
      No we did not have to do all that. Indeed, we know that, in the simplest case, S = I, thus if I = 100, S must be equal to 100

- Investment in Keynes’s General Theory.

   1- What is the marginal efficiency of capital? Is it different from the MPK? Why? Why not?

   The mek is the expected monetary rate of return induced investing one more unit of capital. It is thus different from the MPK, which is a technical relationship that gives the future amount
of output added by investing one more unit. Stated alternatively, the MEK is concerned with sales, while the MPK is concerned with production.

2- How is investment determined in Keynes’s theory? Draw the graph that explains the determination of aggregate investment.

![Graph showing the relationship between MEK and Investment](image)

a. What is the impact of expected higher inflation?
Shift the mek up and so increase investment

b. What is the impact of long-term expectation of lower wage?
Shift the mek down because of expected lower sales (the lower cost is over compensate by the multiplicative effect of lower wage on spending)

c. What is the impact of a one-time decrease in wage?
Shift the mek up and so increase investment

3- Say that entrepreneurs have to decide to invest and have the following information:

a. \( i = 2\% \)

b. The following relationship exists between investment level and rate of return

<table>
<thead>
<tr>
<th>Amount of Investment spending (I)</th>
<th>Rate of return expected (mek)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>200</td>
<td>8%</td>
</tr>
<tr>
<td>300</td>
<td>7%</td>
</tr>
<tr>
<td>400</td>
<td>5%</td>
</tr>
<tr>
<td>500</td>
<td>2%</td>
</tr>
<tr>
<td>600</td>
<td>1%</td>
</tr>
</tbody>
</table>

Draw the curve that link I and mek. What is the level of investment that will be implemented?

\( I = 500 \)

4- What is the main variable that affects investment in Keynes’s theory?

The mek

5- How are long-term expectations determined in the General Theory?
Conventions: mental representations of how the economy works.

6- Is this method of determination of expectation irrational?

No, it is a social rationality: individuals are social animal and determine their behavior in function of the consensus.

7- “An act of individual saving means—so to speak—a decision not to have dinner today. But it does not necessitate having dinner or to buy a pair of books a week hence or a year hence or to consume any specified thing at any specified date.” (Keynes 1936, 210). Explain. How is this different from the Neoclassical analysis?

Indeed, this is the paradox of thrift. Permanent increase in MPS leads to lower aggregate income. In addition, lower aggregate income depresses the long-term expectations of entrepreneurs and so the MEK, and so I. In the end Y is far lower and so consumption is lower in absolute terms.