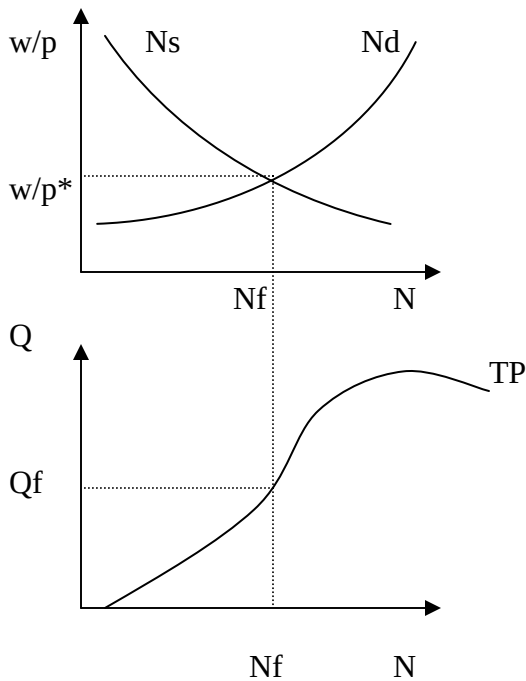


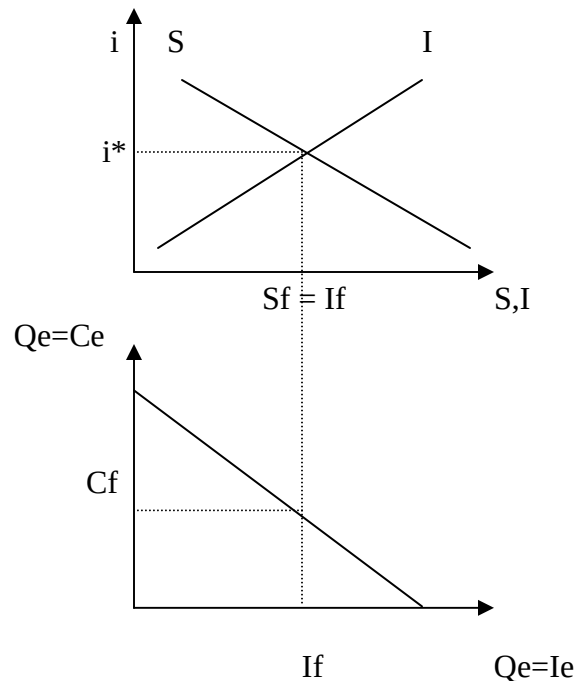
Neoclassical Model

Factor Market



Total Product

Loanable Funds Market



Distribution of Total Output

FACTOR (INPUT) MARKET

N_s = Labor Supply = $f(\text{leisure})$

N_d = Labor Demand = $f(\text{real wage, which reflects the marginal product of labor})$

The factor market is always at full employment. There is no involuntary unemployment.

OUTPUT MARKET (TOTAL OUTPUT)

Represents that output for total product in the economy vs. the labor employed in its production. As it directly corresponds to the factor market above, note that total output too is always at its full employment level: $Q_f = N_f$

Assumptions: Flexible wages and prices ensure that the real wage is such that everyone who wants to work will find employment → N_f (With flex wage you'll never have unemployment, because if more people want to work they will bid wages down and be hired into jobs → equilibrium)

The two determinants of full employment are the utility-maximizing behavior of households and the profit-maximizing behavior of firms. In other words households evaluate the pleasure from leisure against the disutility from work and firms compare the costs of hiring workers with the revenue that the employment of workers will bring.

The question is how total output is divided between consumption and investment. And the answer lies in the loanable funds market. The determining factor is the interest rate, which is set in the market for loanable funds.

LOANABLE FUNDS

The assumptions are that the interest rate is a reward for patience or for waiting, i.e., the interest rate is an inducement to forgo consumption today (i.e. save) in exchange for consuming tomorrow. This reward for parting with consumption and saving today provides the available funds for investment. Oversimplified, firms need access to these savings to finance their investment. In this framework, savings causes investment, $S \rightarrow I$ and $S = I$.

DIVISION OF OUTPUT

$$C_e + I_e = Q_e$$

$Q_e = C_e \rightarrow$ all is consumed, none is invested

$Q_e = I_e \rightarrow$ all is invested, none is consumed

The interest rate determines how much is consumed and how much is saved and therefore invested. Note the assumption is that all savings are always invested.

C_f and I_f are naturally the full employment levels of consumption and investment.

THE INTEREST RATE IN THE NEOCLASSICAL MODEL:

- It is a reward for waiting. Reward for patience, i.e., for postponing consumption
- It is the cost of borrowing, a productivity index.
- It is a real phenomenon: it is determined by the productivity of capital
- A trigger of *intertemporal substitution*. Substitute consumption today for consumption tomorrow)
- It is determined by the equilibrium between the supply of and demand for loanable funds. (Make sure you can discuss what happens to saving and investment when the interest rate deviates from its equilibrium position, e.g. it falls or increases.)

ASSUMPTIONS THAT UNDERPIN THE MODEL:

1. output, factor employment and investment are derived from firms' profit-maximizing decision
2. labor supply, consumption and savings are derived from household utility-maximization
3. all markets always clear
4. Money is neutral

- a. It is only a medium of exchange
- b. It has no impact on investment, consumption decisions, as investors and households care only about real values. C-M-C' (we are interested in maximizing consumption C')
- c. The equation of exchange holds $MV=PQ$ (money times velocity = prices times quantity). Changes in the money supply only affect prices, not investment and spending decisions.

SUMMARY:

1. factor market equilibrium determine the real wage $(w/p)^*$ and the level of employment N_f . There is *no* involuntary unemployment as $N_d = N_s = N_f$.
2. Output level Q_f is *supply-determined*, i.e. determined, via the production function $Q = f(N)$, from the level of employment determined in the factor market, N_f .
3. Goods markets are brought into equilibrium by interest rates, i.e. at the equilibrium interest rate i^* , aggregate demand equals aggregate supply *and* investment equal saving *and* demand for loanable funds equals the supply of loanable funds.
4. The Quantity Theory of Money holds, i.e. money is *neutral*, so that changes in the supply of money only affect the absolute price level and do not affect any real variables.

For details see also: <http://cepa.newschool.edu/het/essays/macro/neoclass.htm>

IMPLICATION:

Inflation is a monetary factor:

Nominal interest rate = real interest rate + expected inflation

$i = r + p^*$ (see Burton and Lombra Chapter 6)

EXERCISE:

- Under the neoclassical model, discuss effect of government spending on the interest rate in the following two scenarios?
 - a) When the government finances its spending by borrowing? (hint: what happens to the demand for loanable funds, how does this impact the interest rate and then what is the effect on savings and investment).
 - b) When government finances spending by printing money? (hint: use the equation of exchange and assume constant velocity and output)