

NEOCLASSICAL MODEL in the LONG-RUN

▪ **Production function (Aggregate Supply)**

- $Y = AF(K, L) = AS$ where Y is GDP, A is technology, K is capital and L is labor.
 Labor supply, capital supply and A are fixed ==> GDP is fixed: $\bar{Y} = \bar{A}F(\bar{K}, \bar{L})$.
 Constant returns to scale and diminishing marginal products of L and K.
- Factors (L and K) are paid their marginal products: $\frac{W}{P} = MP_L$ and $\frac{R}{P} = MP_K$
 where W is nominal wage, P is price of a unit of output, MP_L is marginal product of labor, R is the nominal rental price of capital, and MP_K is marginal product of capital.

▪ **Demand for Goods and Services (Aggregate Demand)**

- $AD = C + I + G$ Closed economy, so $NX=0$
 C= Consumer demand for goods and services. Example: $C=5+0.8*(Y-T)$, where T is lump-sum taxes, Y-T is disposable income.
 I = Demand for investment goods. Example: $I = 200-20*r$, where r is the REAL interest rate.
 G= Government spending on goods and services. Example: $G=20$. G and T are both exogenous (just numbers, no equation).

▪ **Solving the model for r, C, S^N and I (endogenous variables).**

- Equilibrium is where $AS=AD$, or where National Savings = Investment.
- National Savings: $S^N = \text{Private Savings} + (T-G)$
 Private Savings: $S^{PR} = (Y-T) - C$

