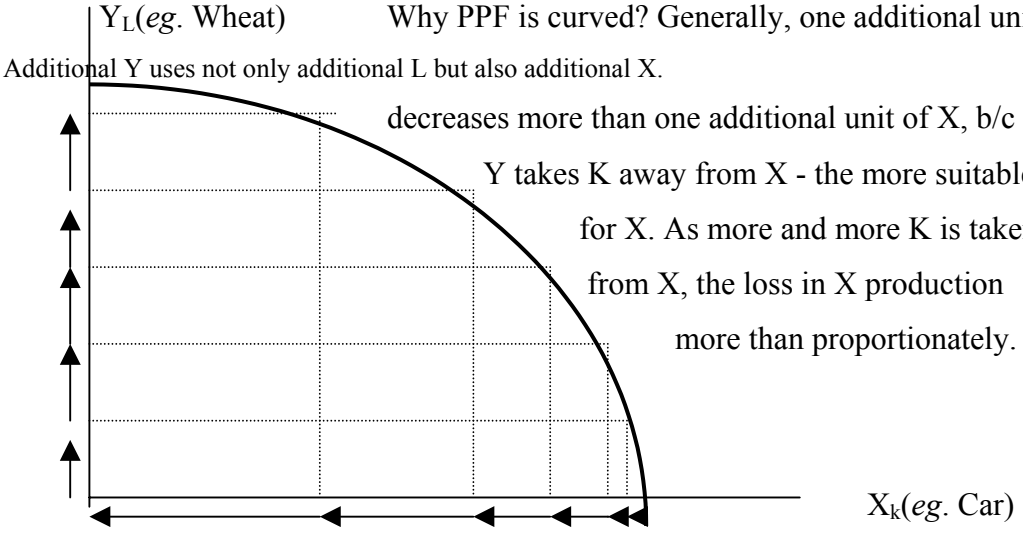
Week 1. Micro Foundation of Macro

1. **Opportunity Cost** of decision A is the value of the next best alternative (decision B) that has to be forgone or given up. This is a cost, because you can never enjoy the benefit of decision B that you could have if you had chosen B. Hence, B is the cost of choosing A. In economics opportunity cost (or shadow cost) is the true cost to take into account in any decision you make.
e.g. 1) You have $1,000 to invest and you're torn between whether to buy stocks that lures w/ 10% return or to put it in the bank that pays 9% interest. If you decided to buy (a portfolio consisting only of) stocks, the 9% interest payment would be your opportunity cost. Especially if the stocks fail to return 10% or even 9%, you would regret more not having put it in the bank. That you will have to live or deal w/ this regret is certainly a cost to you.
e.g. 2) You have $1,000 to spend either on a notebook computer or on a (still decent) used car. If you decided to buy the computer, you will reap the benefit from using that computer, but on the other hand, you will be missing the benefit you could have enjoyed if you had bought the car. This missing benefit that could've is the cost of choosing the computer, and vice versa for the car.
e.g. 3) College Education, Choice of Spouse in Marriage...etc.
e.g. 4) Opportunity Cost of Specialization under the assumption of homogeneous labor productivity

	France	Germany
Wine	50 units/man-hour	5 units/man-hour
Beer	25 units/man-hour	20 units/man-hour
Opportunity Cost of Wine	1/2 units of Beer	4 units of beer
Opportunity Cost of Beer	2 units of Wine	1/4 units of wine

Although France is in more productive than Germany in both wine and beer production, France will choose to specialize in wine, because its opportunity cost of producing only wine is smaller than that of beer, while Germany will choose to specialize in beer for the same rationale.

2. **Production Possibility Frontier** is the curve concave to the origin (bowed out). It depicts the different combinations of various goods that a producer can turn out w/ the available resources and existing technology.
i) Any point on the frontier represents an efficient combination of production, because there is no resource is wasted in production at that point.
ii) Any point inside the front is attainable, but inefficient, because some resources are wasted or not fully utilized. Any point outside the frontier is simply unattainable w/ the given resources(inputs) and available technology.
iii) **Why is PPF curved?**
PPF tends to curve, because between goods X & Y, the more we produce Y, the more we use resources K & L. Now between the inputs K & L, suppose K is an input used intensively in production of X, and L more intensively in production of Y. However, as we produce more and more of Y, more and more of K - more suitable for X and less suitable for Y - is used at the expense of X (less production of X than it could have if less Y were produced), and vice versa. Hence, the curve is bowed in at both ends.



Why PPF is curved? Generally, one additional unit of Y decreases more than one additional unit of X, b/c additional Y takes K away from X - the more suitable input for X. As more and more K is taken away from X, the loss in X production more than proportionately.

Additional Y uses not only additional L but also additional X.

It is due to increasing opportunity cost per each additional unit production of Y. increases

3. **Principle of Increasing (Opportunity) Cost** (TC ⊃ OC)
According to **2. iii)** as we produce more and more of Y, we will have to give up production of more and more units of X for an additional unit of Y. This means that the opportunity cost of Y is increasing. ***In technical terms, Marginal Rate of Substitution between X and Y (MRS_{XY}) is increasing.*** $\left(\frac{\Delta X}{\Delta Y}\right)$

4. **Economic Growth** can be depicted by an outward shift of PPF over time caused by increase in productivity. Expanded PPF means that there are more goods & services (Output) in the economy w/in the attainable region of the PPF.

Supply & Demand in the Market Economy

1. Demand is a function of (mainly) price, income, population, taste (preference), prices of relative goods (substitutes & complements). It can be expressed as:
   $Q_d = f(p, Y, N, \ldots$ etc.)
   Movement along the demand curve is due to change in price. Shift in or out of the demand curve is due to change in other variables.

2. Supply is a function of price, size of the industry, technology (usually expressed as a parameter rather than a variable in the production function), input prices, prices of related outputs.
   $Qs = f(p, n, MPK, MPL, \ldots$ etc.)
   Movement along the supply curve is due to change in price. Shift in or out of the supply curve is due to change in other variables.

3. **Aggregate Demand and Supply Curves** each show respectively the quantity of domestic product demanded and supplied at each possible price level. It's just an

extension of individual commodity's (industry's) demand and supply curve on national scale.
4. **Equilibrium** is the state where there are no inherent forces to produce change. Changes away from the equilibrium will occur only as a result of exogenous (externally originated) events that disturb the *status quo*. Therefore, in reality, the equilibrium is only a static and temporal phenomenon.
E_{qm}: Set $Q_d = Q_s$ and solve for Q_e and then p_e.

Restraining the Market Mechanism by Policy Intervention

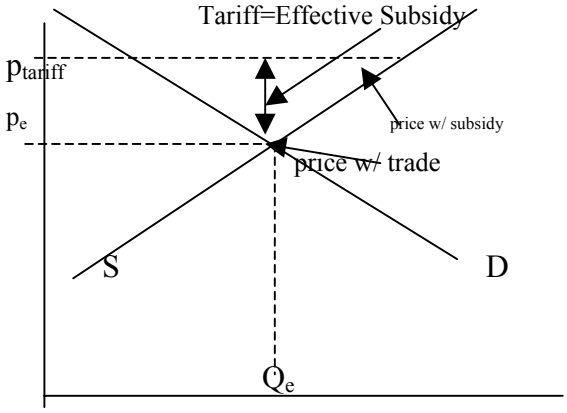
1. Price Ceiling is a legal maximum on the price below the equilibrium price(*eg*. Rent Control in NYC)and will result in:

i) Persistent shortage
ii) An illegal black market that charge higher than free market (*eg*. Ticket Scalping)
iii) Most of the profit ends up with illicit suppliers instead of producers.
iv) Drying up investment in the industry.

2. Price Floor is a legal minimum on the price above the equilibrium price price. (*eg*. protectionist policies are indirect form of price floors. Much cheaper imported goods will be tariffed to match the competing domestic goods in EU. p85 8th ed.)

Cost of Restraining Market Mechanism

1. Favoritism & corruption
2. Unenforeceability (Difficulty in monitoring)
3. Auxiliary restrictions
4. Limitation of volume of transactions
5. Misallocation of resources (*eg*. subsidy)



Definition Check

The following terms are used interchangeably in economics:
Output = Product (GDP) = (National) Income = Y
Y = Consumption (C) + Investment (I) + Gov't Spending (G) + [Export (X)-Import (M)]
Input = Factor of Production = Resource = K&L
Investment (I) ≡ Saving (S)