[Unfortunately, a one-time technical problem makes uploading of the actual SmartBoard notes impossible. This is a recap of certain key points.]

This is a course in public sector economics, not just public finance. We study the economic rationale for government activity, which provides a foundation for the economic analysis of public policy.

More precisely, the economy analysis of public policy has the following components:

a) Find a market failure, if there is one. Market failure means inefficiency, and inefficiency is a normative basis for having a public policy.

   After we are done reviewing math and microeconomics, we study some (but not all) of the basic market failures. This is what we mean by a foundation for the economic analysis of public policy.

b) If there is a market failure, ask whether the policy is designed with the market failure in mind. Will it work? Note that if the policy involves spending money, its description should take into account "where the money comes from."

c) Whether or not there is a market failure, ask whether the policy is cost effective. Whatever the goal, is there a cheaper way to achieve it?

d) Ask about unintended consequences of the policy and possible conflicts with goals besides those stated for the policy.

We consider b), as well as c) and d), in specific examples.

The second part of the course (about the last 11 lectures) focuses on "tax policy." This analysis generally takes total government spending as given. It then asks about the cost effectiveness and unintended consequences of raising the required revenue in different ways. This perspective reflects the institutional fact that, at least for central governments, "where the money comes from" is often a separate question from how the money should be spent.

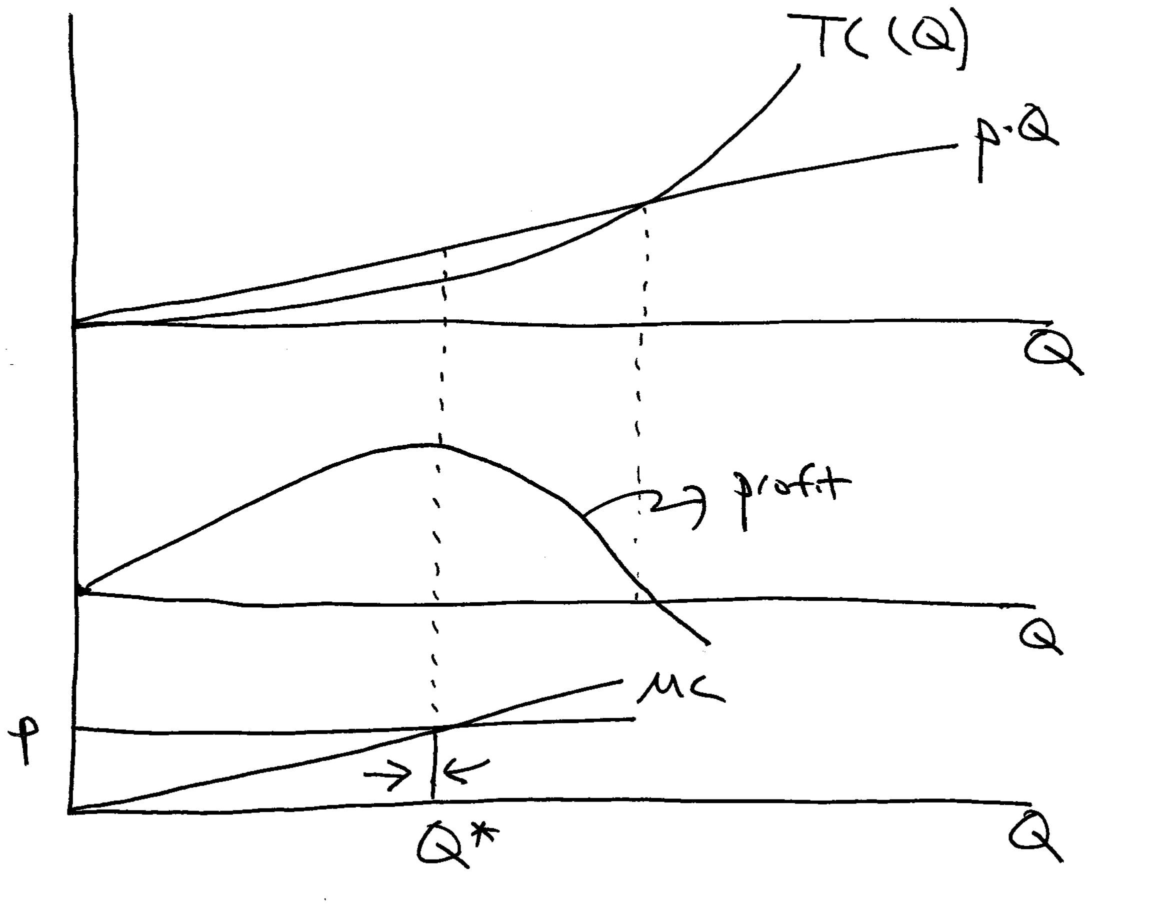
$$\max_{Q} \overbrace{pQ - TC(Q)}^{\text{profit}}$$

$TC(Q) =$ "Total cost"

$MC(Q) =$ "Marginal cost" $= \dfrac{\partial TC}{\partial Q}$

$$\frac{\partial \text{ profit}}{\partial Q} = p - MC(Q) = 0$$

$$\Rightarrow p = MC(Q) \text{ ; defines } Q^*$$



If $Q < Q^*$, Then $p > MC(Q)$

You can increase total profit by increasing output. Intuitively, you can make a profit "on" The next unit you produce, so you should produce it.

If $Q > Q^*$, Then $p < MC(Q)$

You can increase total profit by reducing output. Intuitively, you make a loss on The last unit you produce, so you shouldn't produce it.

* The first order condition, $p = MC(Q)$, really conveys the intuition behind profit maximizing choice of Q.

* Calculus gives us rules like $p = MC(Q)$. It does not give formulas for Q^* unless we have specific functions. Rules are generally more interesting than formulas.

$$\max_{K,L} \ \overbrace{p \cdot f(K,L) - vK - wL}^{\text{profit}}$$

$$\frac{\partial \text{ profit}}{\partial K} = p \cdot \frac{\partial f}{\partial K} - v = 0$$

$$\frac{\partial \text{ profit}}{\partial L} = p \cdot \frac{\partial f}{\partial L} - w = 0$$

These define K^*, L^* simultaneously.

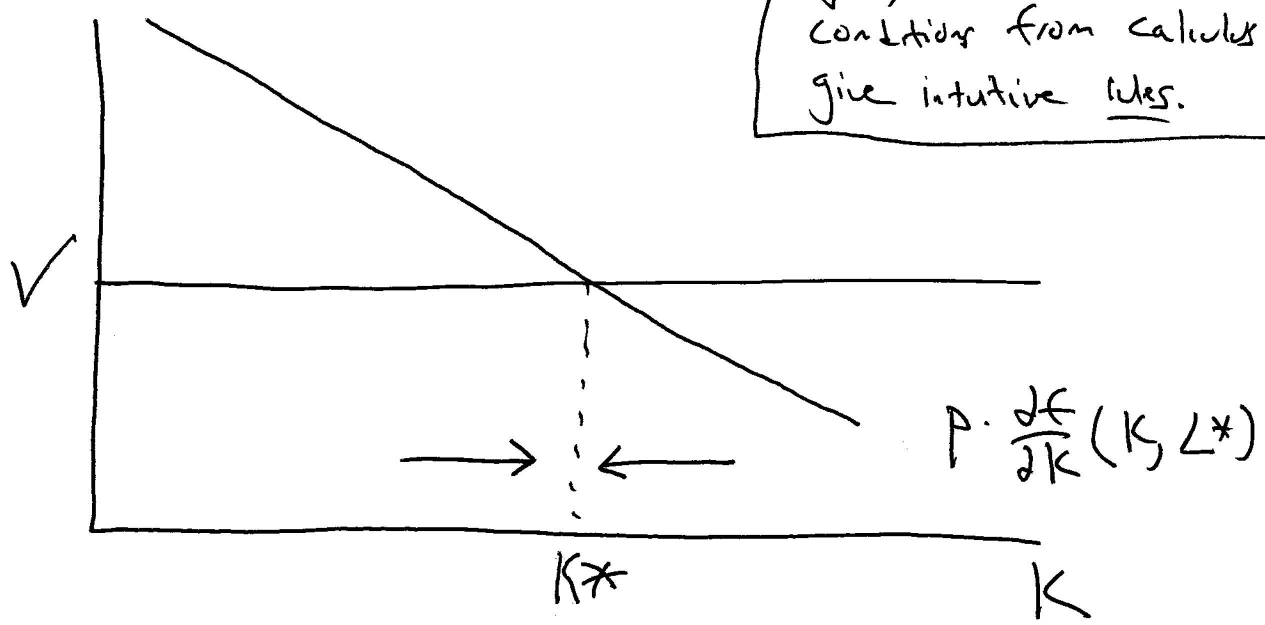
$$p \cdot \underbrace{\frac{\partial f}{\partial K}}_{} = V \longrightarrow \text{cost of a unit of capital}$$

Value of the marginal product of capital

$$p \cdot \underbrace{\frac{\partial f}{\partial L}}_{} = w \longrightarrow \text{wage}$$

Value of the marginal product of labor

$\boxed{\text{Again, the first order condition from calculus give intuitive rules.}}$



$K < K^*$, can increase profit by hiring more capital.

$K > K^*$, can " " less capital.