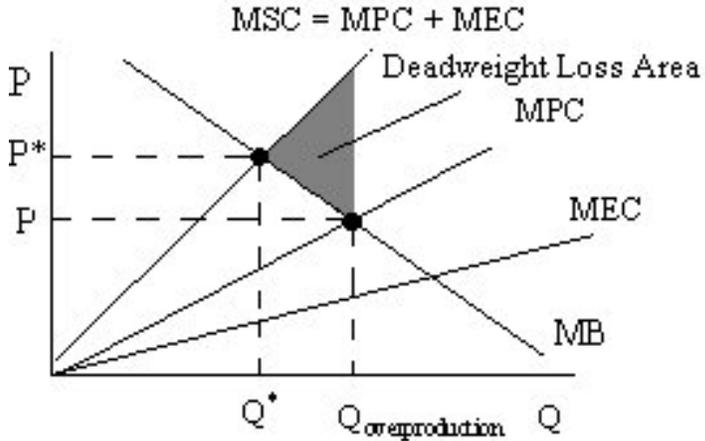# ESM 204: MIDTERM REVIEW

MEC, MSC, MPC

MSC = MPC + MEC

Q1: Label efficient level of production on the graph.

A1: Q* is efficient level of production/consumption when we take externality in to account.

Q2: When we do not account for the MEC, and produce at Q over-production, where is the dwl located on the graph?

A2: Deadweight Loss of a Negative Externality is the dollar measure of the inefficiency caused by a negative externality when over producing. This is the area where we are producing when MSC> MB.

Q3: What tax would result in the efficient level of production/consumption? Label the amount of the tax on the graph: The difference between the MPC and MSC at the efficient level of production (i.e. MEC(Q*))

A3: The difference between the MPC and MSC at the efficient level of production (i.e. MEC(Q*)) See graph.

MSC = MPC + MEC
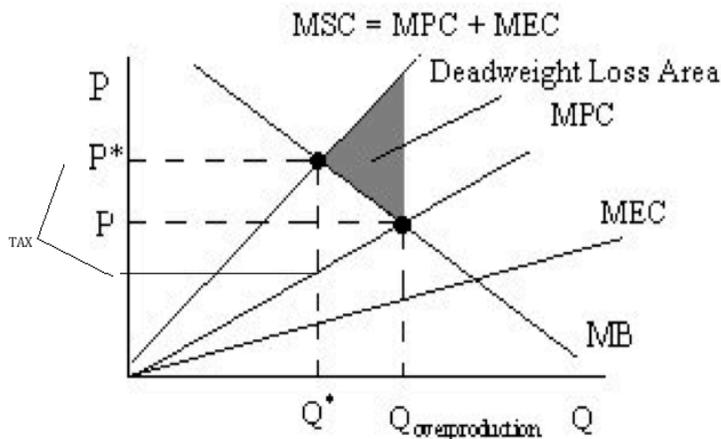
RISK

Uncertainty: When it is difficult to assign probability to an outcome.

When approaching Expected utility:

1) Define number of possible states of the world
2) Assign probabilities to these states. +

There are two possible states of the world, A and B. If we are in world A, we will have x_A dollars, and if we are in world B we will have x_B dollars. Worlds A and B occur with probabilities A and B, respectively.

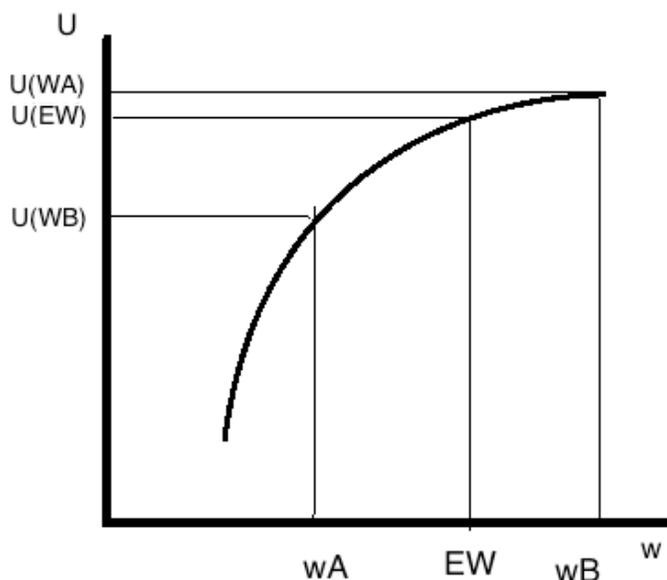The **expected value of wealth** (**EW**) (or expected payoff from the gamble) is given as:

$$EW = p_A\, x_A + p_B\, x_B$$

Our utility level at the expected value of the gamble **(EW):**
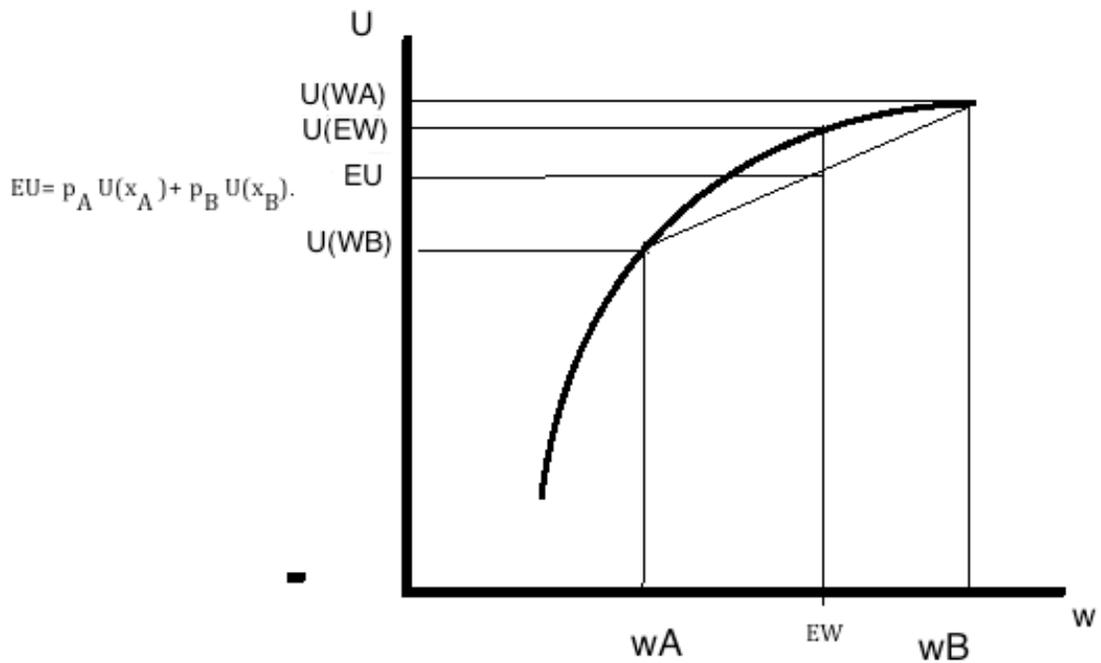
$$U(EW) = U(p_A\, x_A + p_B\, x_B).$$

The **expected utility** (**EU**) from gambling is given as:

$$EU = p_A\, U(x_A) + p_B\, U(x_B).$$

Attitudes towards risk:

- We are **risk averse** if U(EW) > EU
- We are **risk loving** if U(EW) < EU
- We are **risk neutral** if U(EW) = EU

U

U(WA)
U(EW)

$EU = P_A U(x_A) + P_B U(x_B).$ EU

U(WB)

wA   EW   wB   W

Q: What are the risk preferences of the person's preferences shown in graph above?

Answer: Risk averse