# Corruption

## EE461 - Lecture 11/1

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# Basic Model

- One government produces homogenous good, such as a passport, or a right to use government resources
- Demand curve from private agents: $D(p)$
- An official (seller) has the opportunity to restrict the quantity of the good that is sold.
- The government official is a monopolist. His objective is to maximize the value of the bribes collecting from selling this government good.
- Let $p$ be the official government price of this good.
- What is the marginal cost to the official of providing this good?

# Corruption without theft vs. with theft

- Without theft:
  - The official turns over the official price of the good to the government
  - MC = p
  - Corruption raises the total price of the good.
- With theft:
  - The official does not turn over anything to the government
  - The price that the buyer pays = bribe, could be lower than the official price
  - MC = 0
- Equilibrium: set MR = MC (see figure Ia and Ib)

# Corruption without theft vs. with theft

- Think about bribes as commodity taxes
- Without theft, the bribe is equal to the revenue-maximizing commodity tax when marginal cost is equal to the state price p. The difference is that taxes are kept by the government rather than the officials.
- Penalizing the official for corruption changes the level of the bribe, but does not change the essence of the problem.
  - If the probability of detection and the penalty are independent of the bribe and of the number of people who pay it, the official will charge the same bribe provided that the penalties are not so high that corruption is no longer profitable.

# IO of corruption

- If we have several conplementary government good?
- Model 1: a joint monopolist agency sets the bribe prices $p_1$ and $p_2$ of two government goods ($x_1$ and $x_2$). The official prices are equal to the monopolist's marginal costs, $MC_1$ and $MC_2$.
- The per unit bribes are $p_1 - MC_1$ and $p_2 - MC_2$
- The joint monopolist agency sets $p_1$ at which $MR_1 + MR_2 \frac{dx_2}{dx_1} = MC_1$
- When the two goods are complements, then $dx_2/dx_1 > 0$, so at the optimum, $MR_1 < MC_1$
  - The monopolist agency keeps the bribe on good 1 down to expand the demand for the complementary good 2. This raises its profits from bribes on good 2.

# IO of corruption

- Model 2: Permits (goods) 1 and 2 are allocated by independent agencies
- Each agency takes the other's output as given, $dx_2/dx_1$ is set to zero.
- At the independent agency's optimum, $MR_1 = MC_1$
- The per unit bribe is higher, and the output is lower, than at the joint monopolist optimum.

# IO of corruption

- Model 3: Each of several complementary government goods can be supplied by at least two government agencies.
- If an official asks for a bribe, a citizen will go to another agency. Here, collusion between agencies is somewhat difficult. Bribe competition will drive the level of bribes down to zero.
- Tollbooths on a road example: multiple booths competing with each other for the right to collect the toll, or alternatively to the case of multiple roads. Then, the volume of traffic is the highest, toll collections are the lowest.
- The level of bribes is the lowest in this case, intermediate in Model 1, and highest in Model 2.
- Total amount of revenues collected is higher in Model 1 than in Model 2, since the independent monopolist suppliers drive the quantity sold down that total revenues from corruption fall.