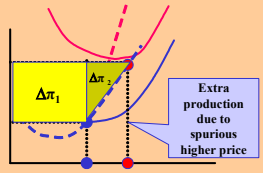
The Keith-Leffler Model



The Problem

- Suppose it costs \$10 to make a high quality product. Competition will force the price to \$10. Hence
  - If you can make a low quality product for \$5 and pass if off you can make money until caught.
  - But there is no reward for making a high quality product.

Assumptions

- Two levels of quality, q_{high} and q_{min}.

Assumptions

- Two levels of quality, q_{high} and q_{min}.
- Higher quality products cost more to produce.
- The cost function is

$$C(X,q_{high})$$

or

$$C(X,q_{min}).$$

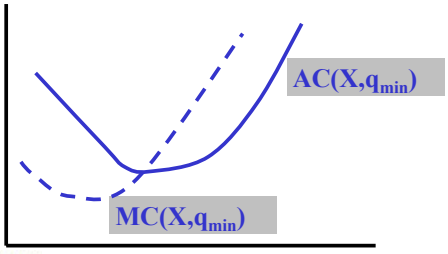
More Assumptions

- The public cannot tell in advance whether a firm produces a high quality or a low quality product, but can after a year.

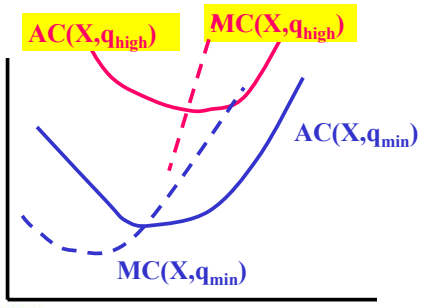
More Assumptions

- The public cannot tell in advance whether a firm produces a high quality or a low quality product, but can after a year.
- Consumers know - don't ask how - the minimum cost of producing both q_{high} and q_{min}.

Produce High or Low Quality?



Produce High or Low Quality?



Three Strategies

- Be **honest**. Produce a low quality product and sell it at the **low price**.
- Be **honest**. Produce a high quality product and sell it at the **high price**.

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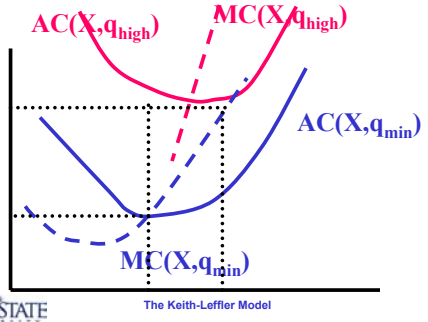
- Be **honest**. Produce a low quality product and sell it at the **low price**.
- Be **honest**. Produce a high quality product and sell it at the **high price**.
- **Cheat**. Produce a **low quality** product, label it a high quality product and sell for a year at the **high price**.

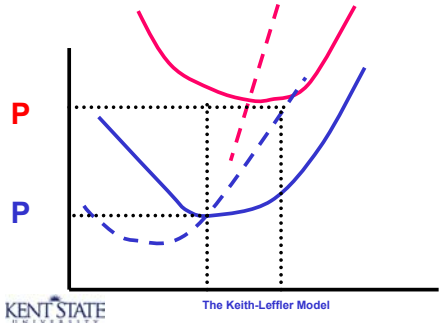
Profits

- Be honest. Produce a low quality product and sell it at the low price. $\pi = 0$
- Be honest. Produce a high quality product and sell it a the high price. $\pi = 0$
- Cheat. Produce a low quality product, label it a high quality product and sell for a year at the high price. ***Let's see***

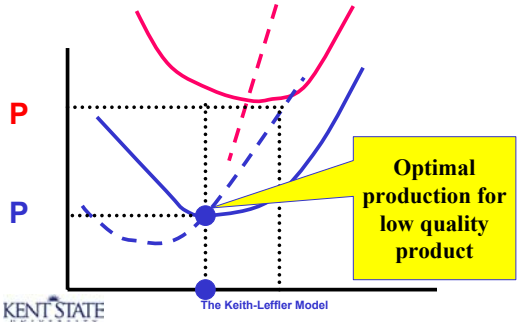
Produce High or Low Quality?



Produce High or Low Quality?



Produce High or Low Quality?



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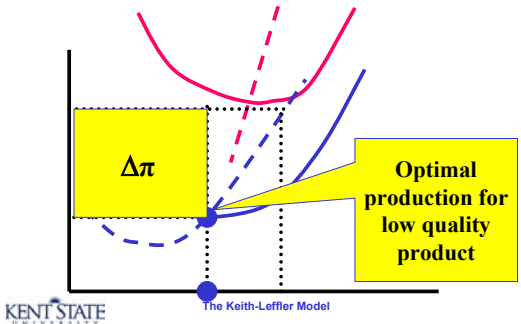
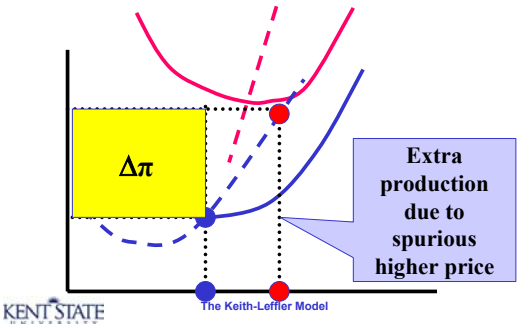


Produce High or Low Quality?



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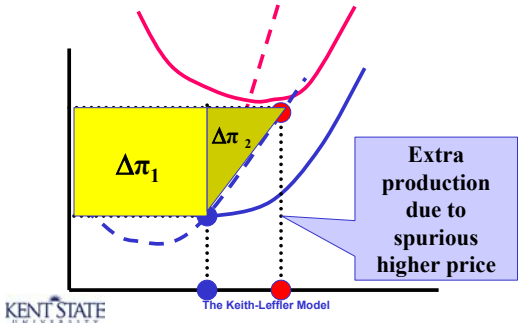
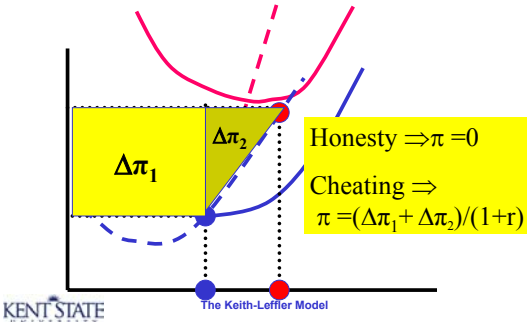
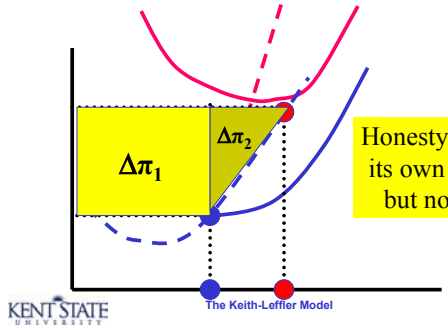


Produce High or Low Quality?

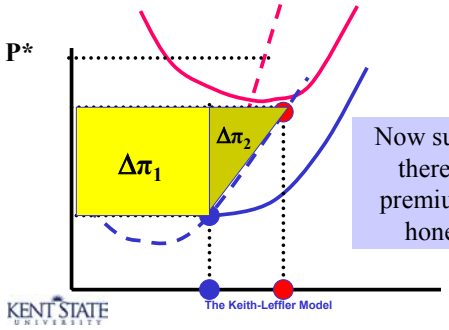


Produce High or Low Quality?



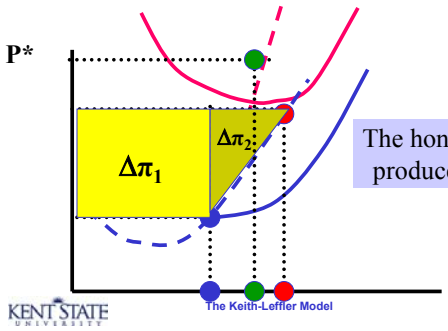
Honesty may be its own reward but not here

The Incentive for Honesty



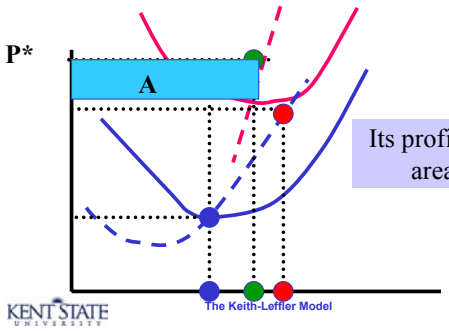
Now suppose there is a premium for honesty

The Incentive for Honesty



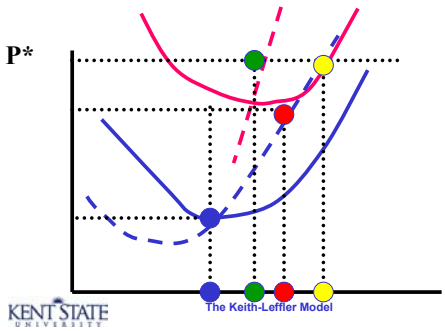
The honest firm produces here

The Incentive for Honesty

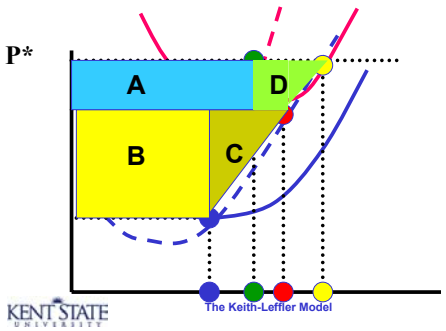


Its profit is the area A

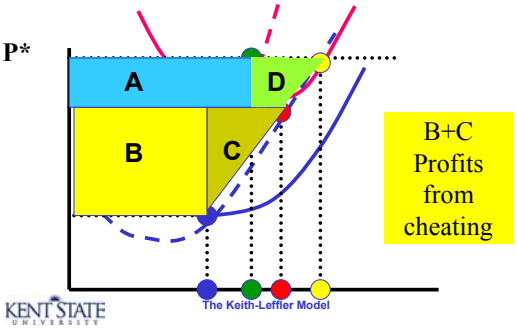
The Dishonest Firm Does More



Its Profits

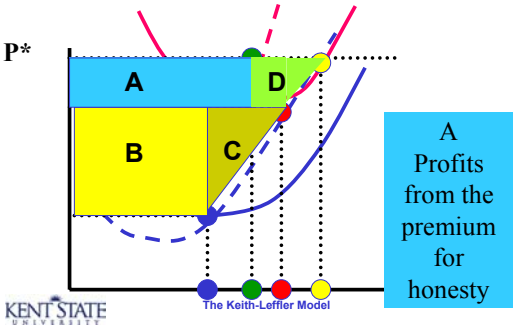


Its Profits



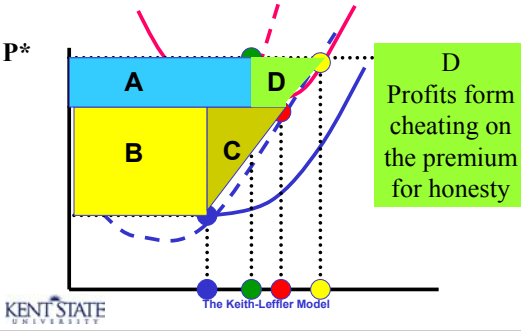
B+C
Profits
from
cheating

Its Profits



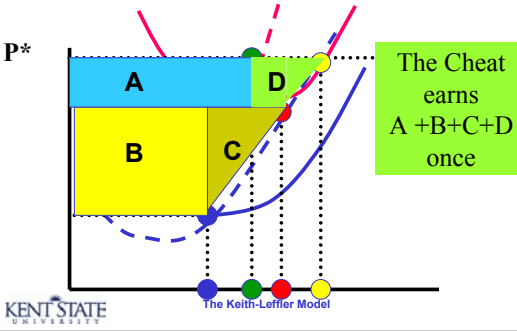
A
Profits
from the
premium
for
honesty

Its Profits



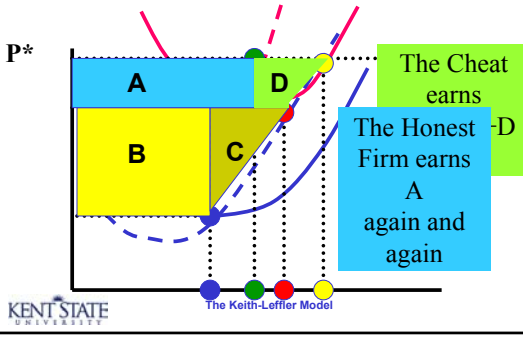
D
Profits form
cheating on
the premium
for honesty

The Difference



The Cheat
earns
A +B+C+D
once

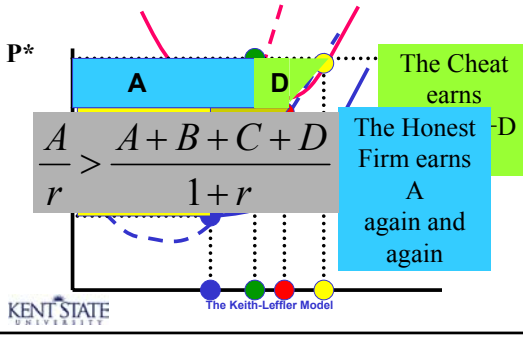
The Difference



The Cheat
earns
-D

The Honest
Firm earns
A
again and
again

To Cheat or Not to Cheat



The Cheat
earns
-D

$$\frac{A}{r} > \frac{A+B+C+D}{1+r}$$

The Honest
Firm earns
A
again and
again

End

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