

Exclusivity as inefficient insurance

Long Term Contracts and Foreclosure

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Outline of talk

- Introduction
- Model
- Analysis with investors
- Analysis without investors
- Conclusion

Hypothetical Situation

- Large incumbent producer signs long term exclusivity contracts with large industrial consumers
- Competition authorities are worried as it may foreclose the market and keep more efficient entrants out of the market. Should it forbid those contracts?
- The defendants have two claims:
 1. The long-term exclusivity contract is required for risk hedging purposes
 2. There are no other parties (financial investors, banks) willing to insure this risk by offering a contract
- Concerns that lack of contracts will create market power, destabilize markets (*c.f. Californian Energy Crisis*) and hamper investments
- How should the competition authorities deal with this?

Exclusion and Risk Sharing

- It is well known that an incumbent firm can use exclusivity contracts to **monopolize an industry** or deter entry
- Exclusive dealing contracts also **help with efficiency** by solving various problems (intrabrand competition, hold-up problems, etc.)
- We focus on *risk sharing*.
- An anticompetitive practice could be tolerated if it were associated to such efficiency gains
- **Can the insurance provided by a long-term exclusivity contract be invoked to justify its use in the face of its negative impact on competition?**

What we do

- We revisit the Aghion-Bolton (1987) model
 - One of the standard models to study exclusion
- And extend it in different ways:
 - by introducing **risk-aversion** on the part of the buyer
 - by introducing **financial investors**
- Study the **trade-off** between
 - Risk allocation (+)
 - Exclusion of efficient entrant (-)

What we find (1)

- An exclusivity contract indeed **induces efficient risk-sharing**
 - So, although exclusionary, it can be preferred to no contract at all
- However, risk sharing **should not be allowed as an insurance defense** for the exclusivity contract
- If exclusivity contracts would be allowed then in equilibrium
 - The entrant will be foreclosed from the product market
→ Inefficient production
 - The financial investors will be excluded from the insurance market
→ Incumbent has monopoly power in providing insurance

What we find (2)

- Hence, both claims of the defendants are true:
 - 1. Exclusivity contracts improves risk sharing
 - 2. No other party wants to hedge the price risk
- But it is the consequence of the exclusivity contract that leads to the break down of the financial market
- Hence, as long as financial investors can provide risk sharing, exclusivity contracts should not be allowed
- So should exclusivity contracts be allowed, if financial investors are not present?

What we find (3)

- If there are no financial investors, then the exclusivity contract may indeed be better than a situation without contracts.
 - The risk sharing benefits may outweigh the welfare loss of excluding the entrant
- However, an alternative contract can achieve risk sharing without reducing entry
 - The incumbent and the buyer can sign a **bilateral financial forward contract** (defined below)
 - There is **no need for the financial market to be liquid**,
The only requirement is that a spot market exists

Related Literature

- **Exclusion literature:** It is well known that an incumbent firm can use exclusivity contracts to monopolize an industry or deter entry
- Two “theories of harm” from exclusive contracts
 - “naked exclusion”: Rasmusen et al. (1991), Segal and Whinston (2000): incumbent denies viable scale to potential entrant by signing up enough customers
 - Aghion and Bolton (1987): incumbent uses contractual provisions to force the entrant to price low, and capture efficiency gains
- **Vertical restraints literature:** Exclusive dealing contracts help efficiency by solving various problems (intrabrand competition, hold-up problems, etc.) Focus here is on *risk sharing*.
- An anticompetitive practice could be tolerated if it were associated to such efficiency gains
- **Few papers study the trade-off between exclusion and efficiency gains of contracts**

Related Literature

- Financial instruments and product market competition
- Hedging / Vertical integration improve competition in wholesale spot market.
 - In a Cournot game, producers will sell forward contracts in order to commit to competing more aggressively (for quantities are strategic substitutes) Allaz and Vila (1993), Willems (2005).
 - In a Bertrand oligopoly, producers buy forward contract to commit to being less aggressive (for prices are strategic complements) Mahenc and Salanié (2004).
 - Contract regulation can be used as market power mitigation tool with Virtual Power Plants, Willems (2006), or by regulation Willems and De Corte (2008)
- This literature can be criticized for not looking at impact on incentives to enter
- We show that if firms use financial contracts to hedge, there is no negative effect on entry

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Model: Market

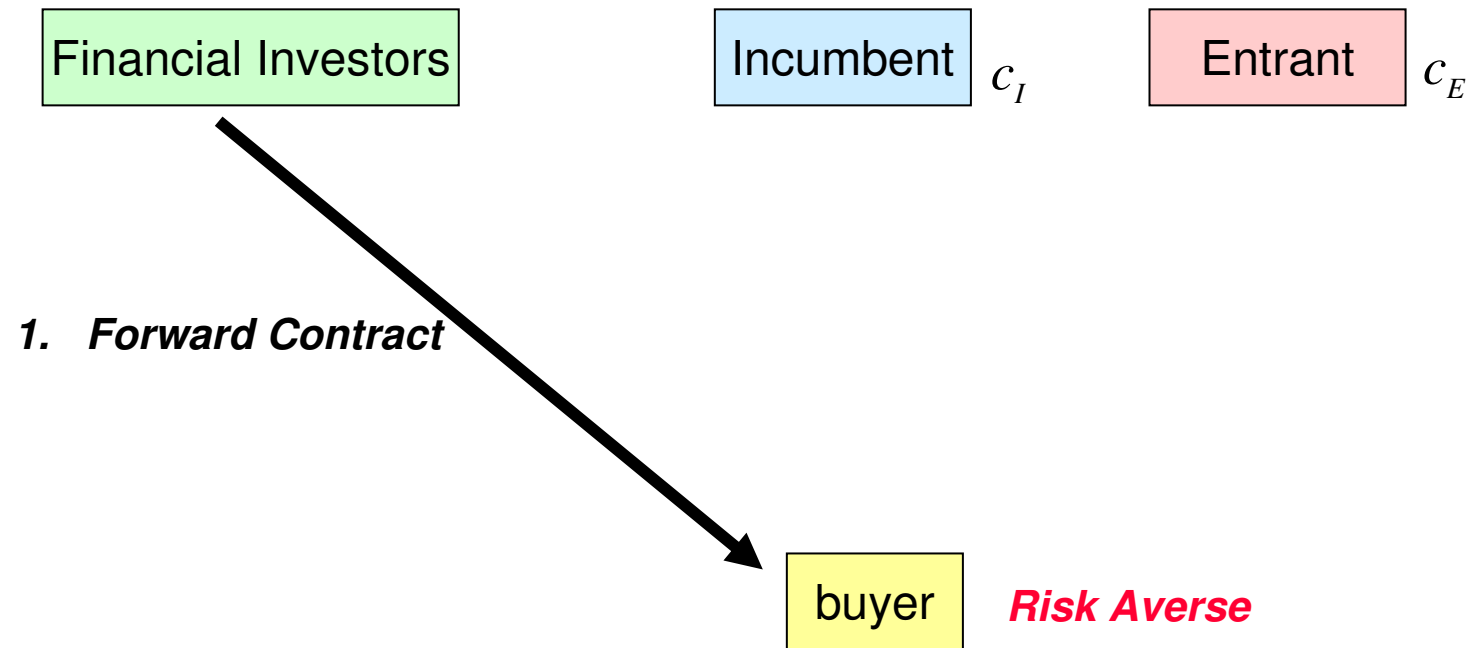
Financial Investors

Incumbent c_I

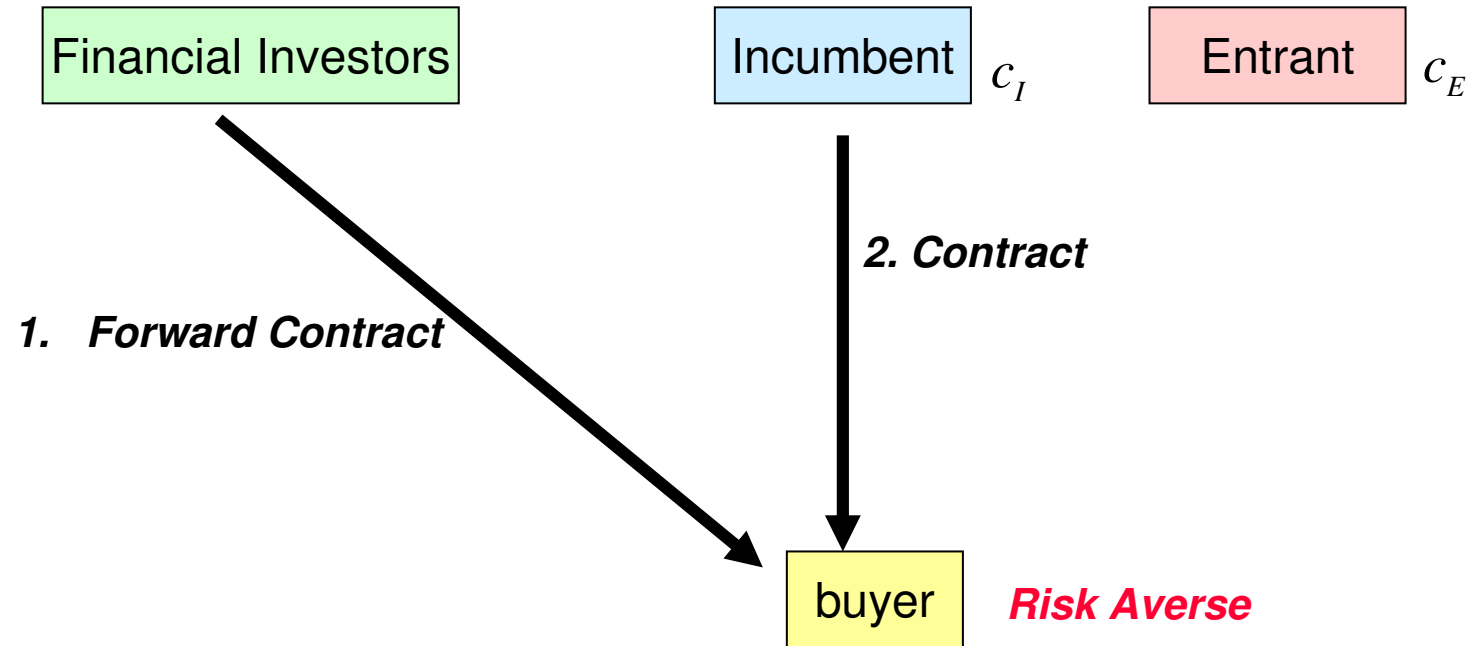
Entrant c_E

buyer *Risk Averse*

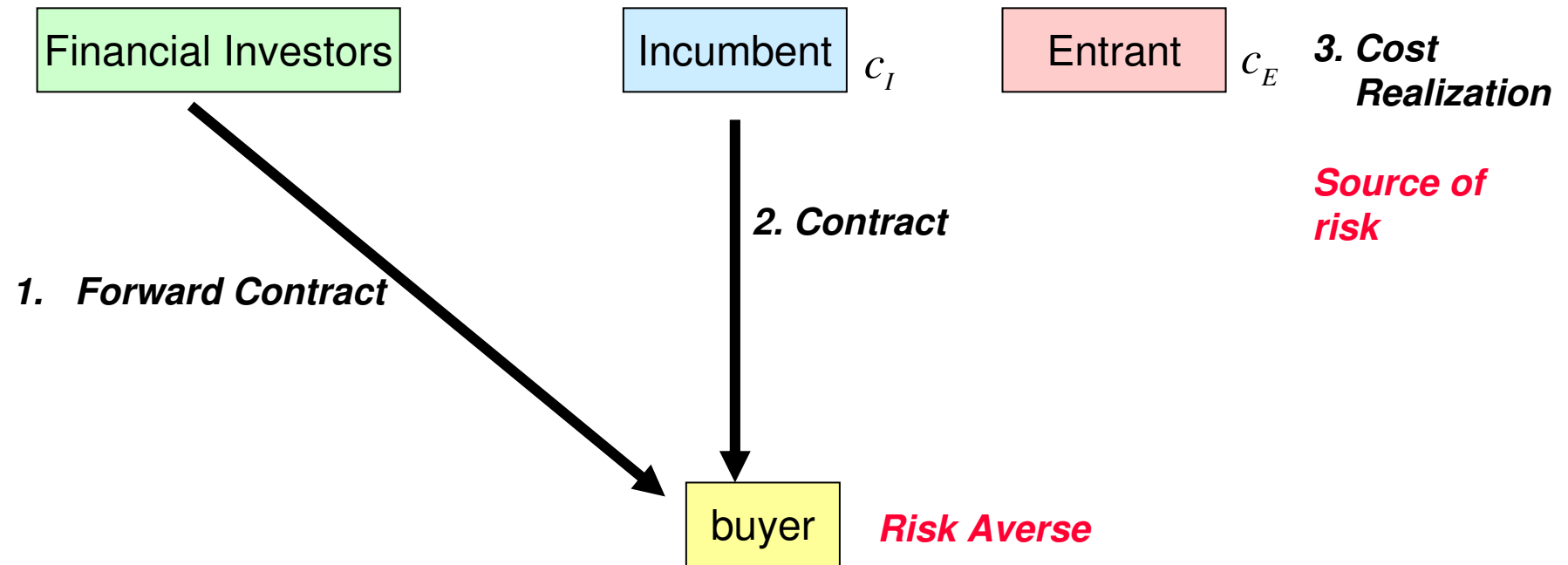
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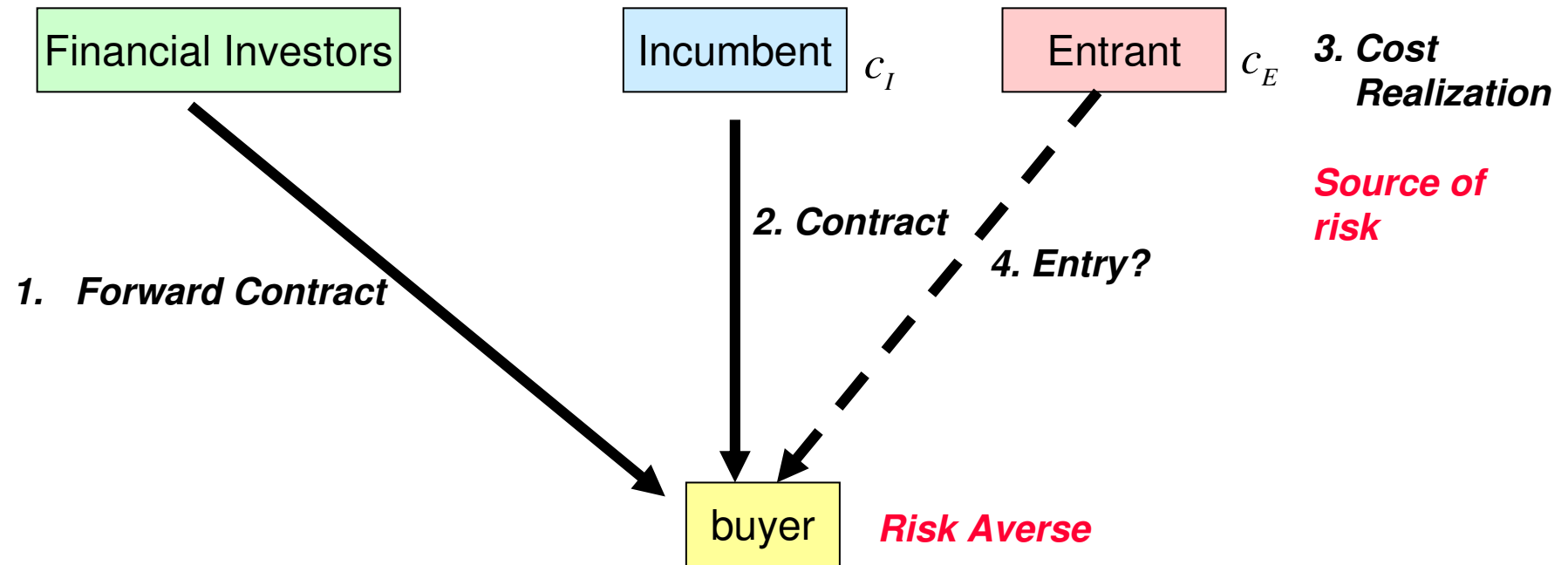
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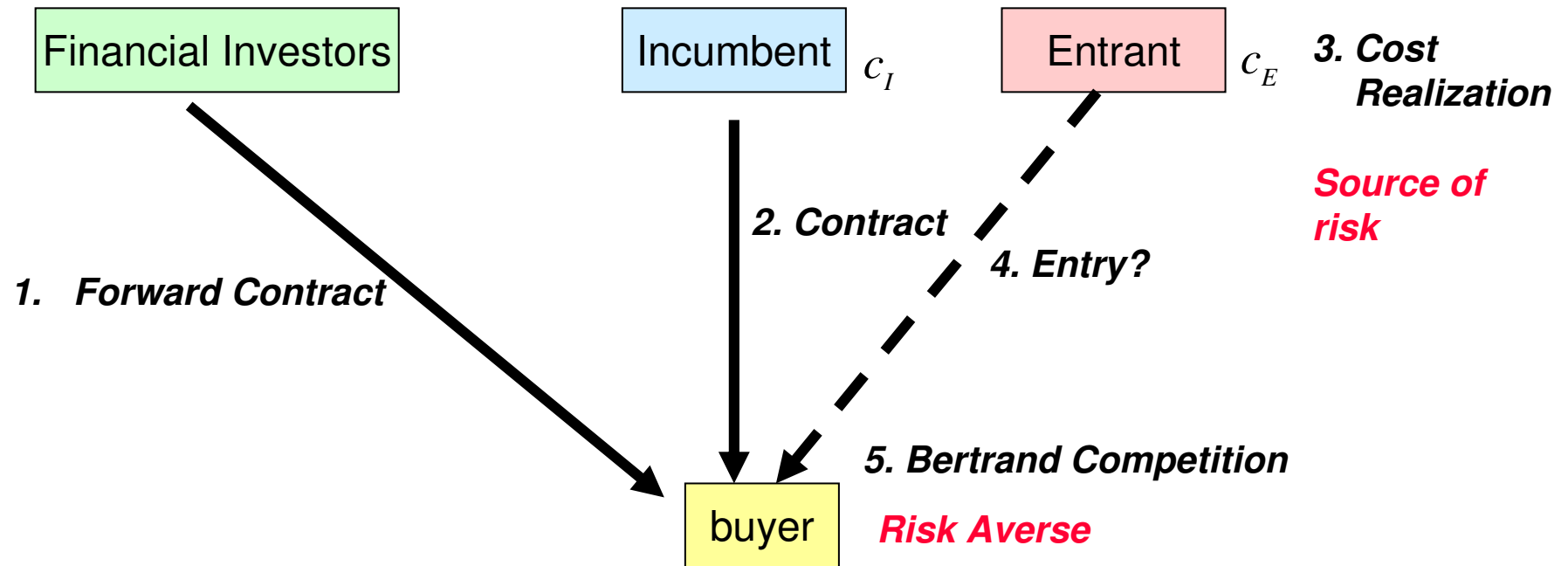
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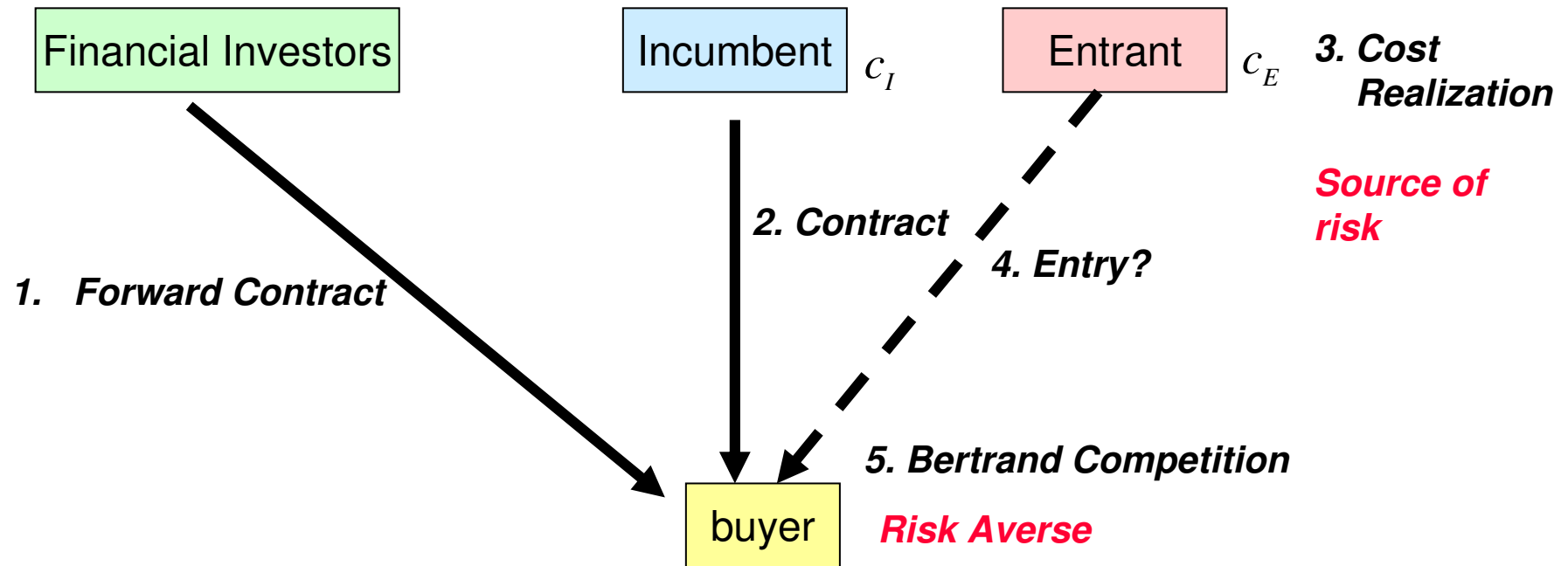
Model: Market



Model: Market



Model: Market



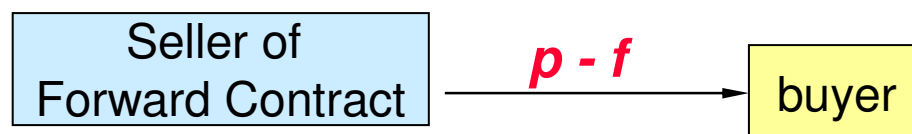
- Efficiency requires that:
 - Buyer is insured: It buys the good at a fixed price
 - Efficient entry: Entrant enters iff $c_E < c_I$

No Contracts: benchmark

- Buyer faces risk (-)
 - Low price if entry
 - High price if no entry
- Entry is efficient (+)
 - Entrant will enter as long as he has a lower cost than the incumbent

Type of Contracts

1. No contract
 - Benchmark case
2. Exclusivity contract
 - Buyer commits not to buy from the entrant; can be breached against payment of penalty
 - Price for delivery of the good P
 - Penalty for beaching the contract P_0
3. Financial Forward contract (= contract for difference)
 - Insurance contract on the spot price p sold at price f



- Pure financial contract, no need for physical delivery of the good

Technical Assumptions

- When the buyer and the incumbent are perfectly insured with the forward contract, then their payoff function does not depend on the spot price.
- We would have to rely on an equilibrium selection mechanism to determine the equilibrium in this situation.
- In order to avoid making an arbitrary selection, assume
 - There is a small fringe buyer in the market who buys ε units of the good
 - Market clearing as in a clearing price auction
- Additionally, in order to endogenize the entry decision of the entrant, we assume there is a very small entry cost

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Results with Investors

1. If the incumbent is allowed to offer an exclusivity contract, then this is bad twice
 - It will foreclose entry in the product market
 - The financial market will brake down
2. If the incumbent is not allowed to offer an exclusivity contract, then
 - We have optimal risk sharing (+) and optimal entry (+)
 - Incumbent loses market power in insurance market, which is beneficial for the buyer (+)

1. Incumbent cannot offer excl. contract

- Buyer buys insurance from financial investors at competitive rates
- No long-term contract between the incumbent and the buyer
 - There are no gains from trade to be achieved by signing a long term contract
 - Manipulation of spot price is not possible without an exclusivity contract
- Entrant will enter the market

2. Incumbent can offer excl. contract

- If the buyer buys a forward contract from investors, then **the buyer will be insured against high spot prices.**
- It is then profitable for the buyer and the incumbent to sign **an exclusivity contract** to exclude the entrant as this will **increase the spot price**, and **increase the transfers** they receive from investors.
 - Why: the larger transfers they from the investors outweighs production efficiency gains they could have achieved with more entry
- Investors will foresee this behavior and only offer forward contracts at a very high price
- At this high price the buyer will not buy the contract
- Market brakes down due to **Moral Hazard**

Contracting externality: buyer and incumbent sign exclusivity contract → reduce rent of financial investor

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Results without Investors

1. If the incumbent is allowed to offer an exclusivity contract
 - The buyer buys an exclusivity contracts
 - It will foreclose entry in the product market
2. If the incumbent is not allowed to offer an exclusivity contract, then
 - The incumbent offers a financial forward contract

Analysis : Exclusivity Contracts

- Buyer is insured (+)
 - When there is no entry: buyer buys the good at the contract price
 - When there is entry: buyer buys good from entrant, and pays penalty for breaching the contract, the entrant makes him indifferent
 - → buyer does not face risk
- Entry is inefficient (-) → Aghion-Bolton result
 - Entrant needs to compensate the buyer for the penalty it has to pay to the incumbent
 - Entrant will have to price lower than without contract (gains for incumbent & buyer)
 - Entrant will enter less than socially optimal

Contracting externality: buyer and incumbent sign exclusivity contract → reduce rent of entrant

Analysis: Forward Contract

- Buyer is insured (+)
 - It will pay the forward price specified in the contract
- Entry is efficient (+)
 - Incumbent is fully hedged: it will bid competitively in the spot market
 - Incumbent bids at marginal cost
 - Entrant enters efficiently

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Conclusion

- We show that in equilibrium
 - The incumbent and the buyer will sign exclusivity contracts
 - The buyer will be hedged by the exclusivity contract
 - Financial investors will not offer insurance to the buyer
- However, an insurance defense should not be allowed for a exclusivity contract
 - Without the exclusivity contract, financial investors will offer insurance to the buyer, and there is no longer a need for contract between the incumbent and the buyer
 - Even if there are no financial investors, other contracts such as a bilateral financial forward contracts will achieve risk sharing without exclusion

Policy Implications (1)

- **Exclusivity contract should be forbidden**, as not only the entrant, but also financial investors are excluded
- In fact, a **sales contract which allows resale** of products to other buyers, but which **specifies a penalty for returning the goods** to the incumbent, would be exclusive, and **should be forbidden**.
- **We conjecture that** competition authorities should allow LT contracts as long as the penalty of breach is limited to the (ex-post) “market value of the contract”.

Policy Implications (2)

- **Take-or-pay contract**
 - Often used in the gas sector
 - Pay for the gas even if you do not use it
 - Price that you pay is indexed on the oil price
- **Implications**
 - **Implies a large penalty** for not accepting delivery of the quantities specified in the contract → Penalty is larger than the ex-post market value of the contract → **Exclusion possible**
 - The gas price is **indexed on the oil price**, which is more or less the price that exporters would have received without contract
 - **No risk reduction for exporter**
 - **Higher risk for importer** (correlated energy prices).
- **Should take-or-pay contracts be forbidden?**
 - Other reasons for exclusivity contract: hold-up in down-stream investments in distribution infrastructure? Open question
- **Are take-or-pay contracts really enforced?**
 - Russian gas exports reduced significantly during economic crisis.