

## **ADVERSE SELECTION**

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### *Abstract*

*The adverse selection is the difficulty to select and distinguish healthy companies, those with a high credit rating, from those that are riskier. Adverse selection in the field of banking intermediaries is an issue concerning an ex-ante situation to the provision of funding. This problem surfaces in a context where many companies seek to draw from finance resources at the disposal of a given bank. Screening is a technique useful to solve this problem. Adverse selection arises with asymmetric information and is of particular relevance in the areas of contractual relationships, such as in the definition of optimal contracts between the main player (principal) and the agent (agent).*

The role of bank intermediaries is to “intermediate” between players who are in financial deficit and those experiencing a surplus in order to resolve their need to invest available financial resources. People who are in financial deficit seek monetary resources by placing “liabilities” on the market and by offering them to those in surplus. The problem is therefore to reconcile the preferences expressed by buyers as compared with those made by the issuers of liabilities in terms of maturity, yield, value fluctuation, etc...

Subjects in surplus have difficulties in identifying and evaluating the quality of those in deficit, they must take into account the uncertainty associated with future events,

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their degree of risk aversion and the preference of short-term assets. On the other hand, those in deficit prefer to issue long term liabilities, not to disclose their quality of credit and, once the funds are obtained, they prefer to opt for more profitable but risky projects.

As a matter of fact, a direct transfer of resources from subjects in surplus to subjects in deficit is rather rare.

Consequently, the foundations are laid for the presence of a third party who is able to meet the different needs and to interact by transferring and finally reallocating financial resources within the economic system. Ultimately, financial intermediaries realise the channeling of savings into investments.

The existence and role of financial intermediaries is explained by the traditional theory that has developed a number of reasons to justify the development of this phenomenon. Among these, we can find the function of evaluating and selecting business projects within the theoretical paradigm of incomplete markets and imperfect information. This theory puts emphasis on the activities of banks by recognizing their critical role when it comes to the ability of solving the problems of asymmetric information that are relevant to an imperfect market - adverse selection and **moral hazard**. Thanks to the role played by financial intermediaries, such problems may be partly solved or at least transferred to the same financial intermediaries who have the means to bear any adverse effects, thus avoiding their transfer onto a single or a small number of savers.

In brief, adverse selection concerns the difficulty to select and distinguish healthy companies, those with a high credit rating, from those that are riskier. Adverse selection in the field of banking intermediaries is an issue concerning an *ex-ante* situation to the provision of funding. This problem surfaces in a context where many companies seek to draw from finance resources at the disposal of a given bank. Screening can be regarded as a technique to solve this problem, which the bank can implement through the employment of professionals and the use of skilled and ex-

pensive methods, unlike what a single economic agent can usually do, given the high costs and the limited resources he/she may dispose of.

1) *Adverse Selection: the case of insurance intermediaries*

In the case of insurance intermediaries *adverse selection and moral hazard* occur in different situations. The first phenomenon is usually experienced prior to the signing of the insurance contract, in case the insurer does not have sufficient information to classify its clients into homogeneous classes of **risk**, namely in classes that are characterised by the same probability of suffering a damage such to make the insurer establish an equal premium for all those insured against the same risk. In such cases, the premium would result too high for low-risk individuals and too cheap for those expected as the riskiest, thus generating an accumulation of bad risks and the consequent default of the **insurance company**. The second phenomenon occurs after the signing of the contract and it characterises the actions taken by the insured leading to changes in the likelihood of risk as originally estimated by the insurance company or the amount of the reimbursement – such a case is encountered when, being covered by the insurance contract, the insured reduce the caution they would have applied had they not been insured, thus making the insured event more likely and its reimbursement higher.

In order to counter these problems, the insurance companies may seek to acquire more detailed information on the conduct of the insured agents and to employ measures to discourage and combat these phenomena, by:

- a) segmenting customers into homogeneous risk classes,
- b) making it compulsory to take out an insurance for all the subjects exposed to certain types of risks,
- c) involving insured agents in sharing the risk,
- d) tying the premium to the history of the person to be insured,

e) reducing the premium if the insured implements special precautions to reduce the probability of the risk occurring.

The first two types of measures tend to contain the phenomenon of *adverse selection*, the last three types are mostly used to limit *moral hazard* by making virtuous behaviours cost-effective for the insured.

Information is therefore essential and the basis of every decision linked to the activities of financial intermediaries. A proper information system is key to the solution/minimization of problems arising from asymmetric information.

### 2) *Adverse Selection: the Principal-agent case*

In addition to the financial intermediaries, asymmetric information problems (adverse selection and moral hazard) are of particular relevance in the areas of contractual relationships, such as in the definition of optimal contracts between the main player (*principal*), identifiable for example with a company shareholders' meeting, and the agent (*agent*) identifiable with the company CEO. The *principal* is the one who offers a contract and who is not familiar with the capabilities of the agent to whom the contract is offered. In the case of *adverse selection*, it is the agent who knows his/her own true professional skills, while the principal can only guess them and learn them over time, but only after having signed the contract. The case of *moral hazard* arises when the agent's actions are not fully verifiable by the principal: this case is justified by the fact that if every action of the agent were to be checked and approved by the principal, then his/her role would be unnecessary and it would represent only an additional cost for the company.

### 3) *Adverse Selection: the case of Akerlof's lemons*

When dealing with problems of adverse selection and moral hazard, the most fre-

quently cited and studied example in economics is the one developed by George Akerlof in relation to the used car market, which distinguishes cars classified as good from those defined as "lemons". In a few words, in this market only sellers know the quality of the car on sale while buyers ignore its characteristics. If buyers were aware of which car is good, they would pay the price they feel reasonable for a good car; but since there are also "lemons", they will be willing to pay a price that, based on the probability that the car on sale is a lemon, averages between the reasonable price for a bad car and the one judged as appropriate for a good car. Considering the price lower than the correct one, good car sellers will not be inclined to sell, while sales of lemons will be promoted at a higher price than their value. Considering the trend in sales of lemons, buyers will no longer be inclined to pay the requested price, thereby generating a negative trend in sales, to the point that transactions will decline to zero. This situation generates the need for a third party who acts as an intermediary and has the tools and skills to discharge that function.

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