Competition and Information Asymmetry

If one does not compete is a bad thing.
Competition always makes one improve oneself.
(Unknown author)

~ *Ph. D. Student* **Cristiana Matei** *(Romania)*

E-mail: crismatei2002@yahoo.com

Abstract: *The paper highlights the fact that the market analysis is not fully based on information asymmetry, a concept highlighted by the theory developed in the 70's by G. Akerlof, Spence M., J. Stiglitz. Information asymmetry can often lead to negative effects on unfair competition and sustainable economic growth.*

The existence of information asymmetry often makes the uninformed buyer bear some additional costs. It is a situation where one must act and be aware that there may be valuable information and additional documentation which might reduce costs. Therefore, it is useful to analyse the relationship between information asymmetry and economic growth, especially as one of the perverse effects of information asymmetry is that there is not a clear obligation of the seller to voluntarily offer complete information, but on the other hand, he or she is obliged to correctly answer all questions.

Key words: asymmetric information; sustainable growth; degree of operational leverage;

Introduction

Three famous economists chose to explore alternatives to the unimpeded domination of public policies that have ruled markets in recent decades, respectively the vision on market deregulation, especially of those trained at the School of Chicago. They mainly sought an alternative to the economic thinking which was dominated by free market fundamentalism.

We must mention that economic theory was based for a prolonged period on the assumption according to which economic agents have equal and sufficient information needed in decision-making, and that was why problems related to the distribution of information on the markets were considered unimportant.

The economists mentioned above are famous; they are Nobel Prize winners in economics in 2001: Joseph Stiglitz, Michael Spence and George Akerlof.

In their approach, they studied and investigated the following phenomenon: there is a wide range of markets in economic activity where information is asymmetrically distributed and the way it spreads from one trader to another influences the behaviour of individuals in that market. If, within the traditional economic theory, the issues of the balance between supply and demand, how to distribute income during the exchange, or the efficient allocation of resources were firstly discussed, the new microeconomics suggested an original approach - many of the market shortcomings could be the result of an asymmetric distribution of information. The authors mentioned above are reputed economists; Joseph Stiglitz is more widely known by the public, especially because of the high positions with the IMF and World Bank but

also because of numerous appearances in the media; the other two spent most of their careers in academia, respectively Harvard for Michael Spence and University of California, Berkeley for George Akerlof.

George Akerlof's vision made him the most famous of the three economists, because of the metaphor chosen or the symbol from the daily activity he used to describe his vision; Akerlof wrote about the theory of "market for lemons", which was first used in an essay in the 70's to describe the information asymmetry between buyer and seller in a given market.

Each of the mentioned authors found one defining element of the asymmetric information market: Akerlof – adverse selection, Spence - signalling and Stiglitz - screening.

Like any new theory, Akerlof's was criticised, even from the finding that none of markets where "lemons" abounded did not disappear, nor were they sufficiently regulated so that the presence of "lemons" would become impossible.

This theory created effervescence and any discussion on information asymmetry favouring the seller at the expense of the purchaser was likely to make the devotees to a totally free market (or as free as possible) as a solution to all the problems in the economy face those considering the former's view simplistic and incorrect.

Trying to include among an economist's instruments the information theory, psychology and sociology, thus being able of delivering a more refined understanding of the markets was what made Akerlof famous.

We went further and considered that it was necessary to include other elements as well among the economist's instruments, such as law, theology and other sciences that

can contribute to better understand human behaviour today.

1. The importance of economic models analysis

Addressing a topic on competition and asymmetric information started from the fact that this was an extremely interesting area, worth thorough research, especially regarding the economic consequences of incomplete information.

As noted above the research of asymmetric information markets is an alternative approach to economic theory progress. This alternative explores the consequences of new behavioural assumptions. The 1970's were the beginning of the development of literature on the consequences of information imperfection; part of it regards "asymmetric information", the issue approached in this paper.

The novelty that can be seen from the specific results to be presented here is the introduction and development of this concept in the economic theory; it sketches some ideas that can develop studies to demonstrate how sustainable economic growth can eliminate information asymmetry, as the operating leverage may lead to the elimination of information asymmetry, or how the financial leverage can lead to the elimination of information asymmetry.

The unwritten rules by which in the economic models one should consider only the economic phenomena agents as individualistic, selfish maximization factors limiting the economic theory and, in some cases, even making the economics profession seem strangely absurd because, without relaxing these rules, some almost indisputable

economic facts, such as the existence of involuntary unemployment[1], become incompatible with the economic theory. It is about the well-known models of macroeconomic rational forecasts. These models are incompatible with permanently high unemployment rates as they occur throughout the business cycle, especially because these models are based on the market balance.

If we were to summarize, we could say that Economics theorists, like French chefs in the culinary field, have developed stylized models whose ingredients are limited to several unwritten rules. Similar to the French cuisine which does not use raw fish or seaweed, neoclassical models make assumptions derived from psychology, anthropology, sociology. We believe it is useful not to limit the nature of the ingredients in economic models.

The need for analysis is important especially as something went wrong and as it is a time when changes need to be made in order to advance in the direction in which the ordinary people are convinced that efforts will be rewarded accordingly or each effort should be rewarded by a payment corresponding to its importance.

In many cases, markets left to chance fail to deliver effective and timely, which makes the state assume a role in correcting these market failures by developing certain

---

[1] Involuntary unemployment is due to other causes related primarily to market products. It exists because of the mismatch between aggregate demand and aggregate supply, which on the labour market translates into a surplus of labour supply. Therefore, involuntary unemployment is represented by all those who wish to offer their services but cannot find jobs and who may be employed, part time or full time, only at certain times of economic development.

public policies (taxes and regulations) to align private incentives with social benefits. Of course, there is often disagreement about the best way to do this. But today only few believe in the unlimited freedom of financial markets and their failures require a cost too high from the rest of society or that companies should be allowed to exploit the environment without any restriction.

When government does its job well, the gains received by a worker or an investor are virtually equal to the benefits to society which he contributes to by his work. When they are not limited, it is called market failure, meaning that markets fail to produce effective results.

Private rewards and social benefits are not well aligned when competition is imperfect; when there are "externalities" – where one person's actions can have extensive effects, positive or negative, on the others, for which that person is not punished or rewarded; when there are imperfections or there is information asymmetry - when someone knows something significant about a market transaction that no one else is aware of; or where risk markets or other markets are absent - one cannot buy insurance for most risks one faces.

When companies honestly and vigorously compete, prices drop to the point where profits (exceeding normal return on capital) are pushed down to zero, which is a disaster for those in search of big profits.

When analysing the concept of competition one considers the hardships as well, including obstacles to market entrance, but also how such barriers are created, barriers that guarantee that profits will prevail. In fact, in the last three decades, attention was given not on how to make economy more efficient,

but on how to better ensure monopoly power or how to better avoid legal regulations intended to align social benefits with private rewards.

Taking advantage of information asymmetries (selling securities designed to cause loss to their holders, being fully aware that it is not known by the buyer; taking excessive risks) knowing that the state is ready to undertake the loss allows these "predators of economic rent" to borrow at lower interest rates than they would otherwise get and borrow money from the central banks with low interest, which is usually small or very small.

2.Asymmetry of information disseminates quality uncertainty and affects the market mechanism

As noted above, the existence of several categories of goods causes both interesting and important issues for the market theory. A first idea arises from the interaction between the qualitative differences and uncertainty as can be seen in the case of major institutions, especially in the labour market. The fact that business is difficult in countries with a lower level of development and the necessity to realize that we need a structure to determine the economic costs of 'dishonesty' lead the way to analysing how information asymmetry influences decisions, leading in many cases to substantial loss for those who do not have enough information, but also to the increase of sellers' revenues, turning them into "predators of economic rent".

The applicability of this draft theory can include comments regarding: the structure of money markets, the liquidity of durable goods, the notion of "what can be provided", but also the relevance of the brand.

There are many markets where buyers use market statistics to interpret the quality of future purchases.

In this case, there are incentives for sellers to market poor quality merchandise, since earnings for high quality generally accumulate at the level of the whole group and not individually, thus affecting the statistical situation of the group.

Therefore, there is a trend of lowering the average quality of goods and the market size. It is necessary to realize that individuals and social benefits differ on these markets and therefore, in some cases, the government's intervention may help increase all parties' welfare.

However, by their nature, these institutions are non-atomist and therefore concentration of power can occur, with all the unpleasant consequences hereto.

Continuing the approach in the first chapter we shall use the car market in the following example to illustrate and express ideas, invoking the famous theory of "the market for lemons". It should be noted that this market is chosen primarily for its concreteness and ease of understanding and not necessarily for its importance and realism. The model,

a. Car market

The example of used cars evokes the essence of the problem. Most of the time we notice the ongoing discussions on the price differences between fascinating new cars and those that already left the showrooms. The natural joy of having a "new" car faces its necessity. For a clear and simple example we shall assume that there are only four kinds of cars: new and used cars, good and bad cars. We must agree that new cars can be good or bad , and the same argument applies to used cars.

Individuals in this market buy a new car without knowing whether it will be good or bad. However, the q probability tells us that it is a good car and (1-q) probability tells us it will be a bad one; we assume q is the ratio of good cars and (1-q) is the ratio of bad cars.

After having a car for a certain period, its owner can have a reasonable idea about its quality, assigning a probability if the car turns out to be bad. This estimate is more accurate than the original one. This way an asymmetry of the available information arose, as vendors have now more information than the buyers about the quality of a car. But good and bad cars must be sold at the same price - as the buyer cannot differentiate between a good car and a bad one. It is obvious that the used car may not have the same value as a new car –had this been the case, it would have been more advantageous to sell an old car at the price of a new one and buy another new car with a q probability higher that to be a good car and a lower probability to be a bad one. This way the owner of a good car must be dedicated and consistent in actions. Not only is it true that he or she cannot receive the value of his or her car, but the buyer cannot even get the expected value of a new car. So Gresham's law[2] has been altered because most sold cars will be bad, and there is a possibility that good cars are not marketed at all.

"Bad" cars tend to eliminate "good" (the

---

[2] GRESHAM, Sir Thomas (1519-1579), English financier. Creator of the Royal Exchange in London (1571). Author of the famous economic theory (G.'s law) according to which „bad money drives out good" (where two currencies circulate at the same exchange value, the one considered to have a lower intrinsic value tends to eliminate the currency with intrinsic high value due to the tendency to be amassed).

same way that bad money drives out good money). But the analogy with Gresham's law is not complete: bad cars drive out the good ones because they are sold at the same price as the good ones. Similarly, bad money drives out good money because the exchange rate is equal. But bad cars are sold at the same price as good cars since it is impossible for the buyer to distinguish the differences between a bad car and a good one; this is known only by the seller. However according to Gresham's law, it is assumed that both the buyer and the seller can make the difference between good and bad money. So, the analogy is instructive, yet not complete.

b. Asymmetric information

It could be noticed that good cars can be eliminated from the market by bad cars. But continuing the explanation on different categories of goods, there may be worse situations. It is very likely that evil may chase the least evil away; in its turn, it drives away average evil which eliminates the not-too-good one and it ultimately drives the good away, in such sequence of events that the market no longer exists.

One might assume that the demand for used cars depends mainly on two variables - car price, p, and the quality of used cars sold, μ, or: $Qd = D(p, \mu)$.

Both supply and demand for used cars and μ, the average quality, will depend on the price, or $\mu = \mu(p)$ and $S = S(p)$. In balance, the offer must be equal to the demand for a certain level of average quality, or $S(p) = D(p, \mu(p))$. As the price gets lower, normally quality will decrease as well. It is quite possible that no goods are sold at any price level.

Such an example may result from the utility theory. Suppose there are only two groups of traders: group a and group b. We allocate a utility function to group a:

$$Ua = M + \sum_{i=1}^{n} xi$$

where M represents consumption of goods other than cars, xi is the quality of cars, and n is the number of cars.

Similarly, let us consider:

$$Ub = M + \sum_{i=1}^{n} 3/2xi$$

where M, xi and n are defined above.

One can make three observations regarding these utility functions:

(1) Without linear utility (let us say with logarithmic utility), we would be lost in nonsensical algebraic complications.

(2) Using linear utility allows a focus on the effects of information asymmetry, with a concave function of the utility we should cope with a combination of both the unusual effects of uncertainty risk variation and the special effects we wish to discuss here.

(3) Ua and Ub have the strange feature per which by adding a second car or the k car, utility is increased by the same amount as the first car.

Again, we ignore reality to avoid deviation from the main goal.

To continue, it is assumed:

(1) that both a and b groups of traders are Von Neumann-Morgenstern maximizing probable utility factors;

(2) that group a has N cars with uniformly distributed quality, x, $0 \le x \le 2$ and b group has no cars;

(3) that the price of "other goods" M is unitary.

We note with Ya the revenues (including those obtained from selling cars) for all types of traders in group a and with Yb the

revenues obtained by traders in group b.

The demand for used cars will be the sum of both groups' demands. When indivisibilities are ignored, group a's demand for cars will be:

$$Da = Ya/p \qquad \mu/p > 1$$
$$Da = 0 \qquad \mu/p < 1.$$

The car offer provided by a type traders is:

(1) $Sa = pN/2 \quad p \leq 2$

average quality,

(2) $\mu = p/2$

The uniform distribution of car quality is used to deduce (1) and (2).

Similarly, for type b traders the demand is:

$$Db = Yb/p \qquad 3\mu/2 > p$$
$$Db = 0 \qquad 3\mu/2 < p.$$

and

$$Sb = 0$$

Thus, the total demand $D(p, \mu)$ is:

$$D(p, \mu) = (Yb + Ya)/p \qquad \text{if } p < \mu$$
$$D(p, \mu) = (Yb/p) \qquad \text{if } \mu < p < 3\mu/2$$
$$D(p, \mu) = 0 \qquad \text{if } p > 3\mu/2,$$

However, for the price p the average quality is p/2 and therefore there will be no transaction at any price, despite the fact that at any given price between 0 and 3 there are type a traders who are willing to sell their cars at a price that type b traders are willing to pay.

c. Symmetrical information

Those mentioned above contrast with cases of symmetric information. Let us assume that all cars are evenly distributed in terms of quality, $0 \leq x \leq 2$. In this case, the demand and supply curves can be written as:

The offer:

$$S(p) = N \qquad p > 1$$
$$S(p) = 0 \qquad 1 < p$$

And the demand curves are:

$$D(p, \mu) = (Yb + Ya)/p \qquad \text{if } p < \mu$$
$$D(p, \mu) = Yb/p \qquad \text{if } 1 < p < 3/2$$
$$D(p, \mu) = 0 \qquad \text{if } p > 3/2,$$

In balance,

(3) $\qquad p = 1 \qquad \text{if } Yb < N$

(4) $p = Yb / N \qquad \text{if } 2Yb / 3 < N < Yb$

(5) $p = 3/2 \qquad \text{if } N < 2Yb / 3$

If $N < Yb$, there is more utility compared to asymmetric information. If $N > Yb$, type b traders' income is insufficient to buy all N cars, then there is a utility gain of $Yb / 2$ units.

In conclusion, we must mention that in this example, if the merchants in a and b groups have the same probabilistic estimate on the quality of each separate car - although they may vary from one car to another - (3) (4) and (5) shall continue to describe the balance, with a slight modification: in this case p will be the forecast price per quality unit.

Example,

a. In insurances:

It is well known that people over 65 have serious problems with the purchase of health insurance, due to the increased risk.

A legitimate question arises: why not increase the price to cover the risk?

The answer would be that as one increases the price, the insured people will be those increasingly convinced that they need insurance against medical errors, physicians' pity for the elderly, etc., facilitating the

assessment of the risks involved more for the applicant than for the insurance company. The result is that the average health of insurance applicants deteriorates with increasing price levels, which proves that insurance sale cannot be done at all costs3. This is similar to the example above regarding cars, where the average quality of used cars lowered with the decreasing proper price level. This is consistent with the explanations given by insurance textbooks:

In general, policies are not available for ages older than sixty-five... For everyone, except for the most pessimistic person (let us admit he or she is the least healthy), term insurance premiums are too high to be attractive. Thus, there is a serious problem of adverse selection at these ages4.

If one would search the statistics one would find that they do not contradict the conclusion.

b. The costs of dishonesty:

Starting from the market for lemons theory mentioned above we can make certain clarifications on the cost of dishonesty. If we consider a market where goods are sold honestly or dishonestly, quality can be correctly or incorrectly represented. The problem the buyer faces is identifying quality. The presence on the market of those willing to offer inferior goods tends to push the market toward extinction, as in the case of bad cars. This possibility itself is the major cost of dishonesty - as dishonest transactions tend to eliminate fair market transactions. There is a possibility of potential buyers for quality goods and there could be potential sellers of such products at an appropriate price level, however the presence of people who are willing to risk offering inferior quality goods as good quality tends to eliminate legitimate

business from the market. Consequently, the cost of dishonesty is not only the amount by which the purchaser is cheated with, this cost must also include the loss resulting from the elimination of legitimate business.

¬¬¬¬¬¬¬

3 Arrow K., Uncertainty and Medical Care, American Economic Review, vol 53., 1963.

4 O.D. Dickerson, Health Insurance, Homewood, III, Irvin 1959, page 333

Dishonesty in business is a significant problem in developing countries.

The pattern illustrated above provides a possible structure to this statement and outlines the nature of the 'external' economies involved. In particular, in the economy of the model described, dishonesty or misrepresentation of car quality cost 1/2 utility unit per car; moreover, it reduces the used cars market size from N to 0. Thus, we can evaluate the costs of dishonesty, at least from a theoretical point of view.

Therefore, this prejudices **fair competition and sustainable economic growth and contributes to the increase of inequalities, the diminishing of the role of markets and their disappearance** as shown above, which is why strategies are needed to restore the market mechanism.

Conclusions and suggestions

In order to counter the negative effects of information asymmetry we consider it necessary to undertake research so as to develop competition and ensure sustainable growth to eliminate information asymmetry.

Therefore, it is necessary to undertake research to signal that allow net distinguishing

the good companies from bad ones, signals that cannot be copied by companies with underperforming management:

a) Sustainable growth: a company with effective investment projects will be recognized by reinvesting profits and through major participation of managers in funding investments. Being better informed on the performance of the new projects, they will be the first to invest their money in such projects. The managers of distressed companies, who would mimic the behaviour of the former, see their own money at risk and will not endanger such an investment.

b) The operating leverage: a modern company would not hesitate to renew technology and management, thus recording an increase of the fixed costs and operating risk. The turnover increase will bring higher profits compared with a company technically and managerially less equipped.

c)The financial leverage: a solid company is one that can afford a high rate of indebtedness to finance ambitious investment projects. It can repay debt and pay interest and maintain the ability to pay. Copying this structure by a distressed company is risky, because it accelerates the company's entry into default and even bankruptcy.

REFERENCES:

1. **Altman, E.I.** - *Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy,* Journal of Finance, 23, Sept. 1968, pp. 589-60

2. **Akerlof, G.** - *The Market for Lemons: Quality Uncertainty and the Market Mechanism,* Quarterly Journal of Economics, 1970

3. **Brealey, R., Myers, St**. (2005). *Principles of Corporate Finance,* 7th edition, The McGraw Companies, Inc.

4. **Charreaux, G.** (2000). *Gestion financičre,* Litec, Paris

5. **Charreaux, G.** (1995). *Finance d'entreprise,* Litec, Paris

6. **Halpern şi autorii** (1998). *Finanţe manageriale,* Editura Economică, Bucureşti, pp. 144-165

7. **Ross and co-authors** (1999). *Corporate Finance,* 2nd canadian edition, McGraw Hill Ryerson Limited, pp. 743-753

8. **Stancu, I.** (2007). *Finanţe,* Editura Economică, Bucureşti

9. **Van Horne, J.** (1998). *Financial Management and Policy,* 11th edition, Prentice Hall, New Jersey, pp. 727-75

10. **Vintilă, G. (**2006). *Gestiunea financiară a întrinderii,* Editura Didactică şiPedagogică, Bucureşti