

Real Rigidity of Prices of Goods.

Katarina Dukoska, Ph.D.

Euro College, Kumanovo Campus, Done Bozinov 41, 1300 Kumanovo, Republic of Macedonia.

E-mail: info@eurocollege.edu.mk

Telephone: +389 (0)31 417-202

ABSTRACT

The issue of economic liberalism and state interventionism is one of the key questions both in economic theory and economic practice. It is of such significance that the entire history of economic thought can, in relation to it, be divided into two great courses: 1) interventionist (mercantilism, historic school, utopian socialism, Marxism, Keynesianism and post Keynesianism, welfare economics, institutionalism, neo-conservatism, and neo-institutionalism) and 2) liberalistic (physiocrats, classics, marginalism, neo-conservatism, monetarism, economic supply, the theory of rational expectations). "Keynesian Revolution" in economic science received general support of the leading economists.

New Keynesians explain real rigidity of prices through several externalities: externalities of deep market, externalities of consumer's market, externalities in input-output chart, and externalities of the imperfection of capital's market. In the real world the mere process of establishing connections between the seller and buyer, is connected with some expenses. The consumer's market differs from the auction market. The costs of researching markets are insignificant because most of the products of this market are being sold through the process of "shopping".

In the work of Gordon (1981) he emphasizes the importance of complexity in making important decisions, in conditions when thousand enterprises buy thousand products, in which thousand components are built, produced by thousand different enterprises all around the world. The Nobel Prize winner Stiglitz considers that price as a reflection of quality is a source that determines the rigidity of price and service.

Economists of new Keynesian economy consider that reducing problems of asymmetric information can be done by credit rationing.

(Keywords: New Keynesianism, micro economy, market imperfections, factors of production, price rigidity)

INTRODUCTION

The interaction between the nominal and real rigidity is a key characteristic of the new Keynesian theory. The new Keynesians consider that the nominal and real rigidity go "hand by hand" and complete each other. The real rigidity is especially important because the economic subjects are more interested about real categories than nominal. For an example, If in economy comes to decreasing of money offers, that will influence also on decreasing of aggregate demand, and in the meantime the enterprises confronted with reduced demand, react with reducing the demand of labor force or with reducing workers fees and reducing the range of production.

New Keynesians explain real rigidity of prices through sensitivity of marginal expenses and price elasticity of demand of changed economic activities. Real rigidity of prices is as bigger as the cyclical sensitivity of price elasticity of demand is bigger, and as the cyclical sensitivity of the marginal expenses is smaller.

There are many sources which determine real rigidity of prices, and which are elaborated by the new Keynesians, those are:

- 1) Externalities of deep market
- 2) Externalities of consumer's market
- 3) Externalities in input-output chart
- 4) Externalities of the imperfection of capital's market

Professor Stiglitz considers that the price as a reflection of the goods' quality and service is important source which determines the real rigidity of prices. According to Mankiw, the real price rigidity of goods and services is caused by different time risking, that is with adjustment of prices and fees by the enterprises, and other mistakes in coordination (elaborated in Mankiw, 2003, p.512, 513).

EXTERNALITIES “DEEP MARKET”

In the real world the mere process of establishing connections between the seller and buyer, is connected with some expenses. Those expenses are researches of the market of goods and services. Consumers are spending time gathering information and they are researching the market of products which they want to buy. On the other side, the sellers are also spending time and resources for advertising, promotion and etc. so they can make the products and services available to the buyers. How big would research expenses be, depends whether we talk about “deep markets”, where trade activities are on a higher level, or about “shallow” markets where trade activities are on a lower level, as well as in which phase of the production cycle is the economy found.

When we talk about “deep market” in conditions of expansion and high level of economic activity, research costs would be smaller than when the markets are “shallow”, (i.e., when the level of trade activity is low). People want to participate more in “deep” markets, where the trade activity is on a high level. That can lead to strategic complementariness, (i.e., the optimal level of activity in one enterprise depends from the activity of other enterprises).

Because in conditions of a recession firms are confronted with higher costs for researching markets, they would not decrease the price of products and services even though they are confronted with a reduced demand.

If the externalities of “deep” markets in conditions of recession during low level of economic activity move the curve of marginal expenses to above, and in conditions of expansion and higher level of economic activity, move it downwards, then that would be a significant source of real price rigidity in the market of goods and services.

THE CONSUMER'S MARKET

The consumer's market differs from the auction market. Pioneering steps towards the explanation of the basic difference between the consumer's and auction market are made by Arthur Okun. The main characteristics of the consumer's market are low level of costs for researching in relation to the span of sale and purchase activities. The costs of researching markets are insignificant because most of the products of this market are being sold through the process of “shopping”.

The consumers in this market always have imperfect relation to the limited information about the lowest price of the product they want to buy. Because of the fact that consumers have limited information about the lowest price of the product they want to buy, in the seller's interest is to discourage buyers to begin researching market to find more suitable prices. On this market buyers mostly do repetitive shopping, that is if they are used to buy products from specific seller, they would do so in the following purchases. But what would happen if in the next purchase they face a change in the price of the product?

A doubt will appear in them as far as that price is concerned. If the firms change their prices frequently, it will cause a doubt in the consumers and they will start to research the market in a search of a lower price. This can discourage sellers to change prices frequently, because they can cause consumers to start researching around. Because of that the firms seek not to change prices, and that represents a significant source of price rigidity on the market of goods and services.

GORDON'S INPUT-OUTPUT THEORY

The theory of input-output chart is developed by Gordon (in 1981) in his work *Output Fluctuations and Gradual Price Adjustment*, and later in 1990 it is complemented by the same author in the work *What is new Keynesian Economics*.

In his works he emphasizes the importance of complexity in making important decisions, in conditions when thousand enterprises buy thousand products, in which thousand components are built, produced by thousand different enterprises all around the world.

Given the fact that any enterprise connected with thousand other enterprises through complex input-output charts, it is almost impossible to know the identity of all participants in the process of supplying input and selling of products. The enterprise can buy parts which contain components that are manufactured by many different manufacturers, which resident in different countries. Therefore, the enterprise cannot be sure that there is a shock from aggregate demand. That would cause decrease in its marginal expenses in proportion with the reduced demand of its products.

On the other hand, in the complex input-output chart there are enterprises which are residents of foreign countries, and which are faced with different phases of working cycles in those countries. A local enterprise can work in conditions of reduced level of aggregate demand, but the enterprises from which they provide inputs and are found abroad, are managing conditions of many different levels of aggregate demand. The local firm can be confronted with decreased demand of its products because of recessive tendencies in the country, and the countries in which there are the firms that supply inputs, can be in expansion.

Mainly because of the fact that enterprises found in input-output chart work with different levels of economic activity, the enterprise faced with the problem of reduced demand of its products, will face the uncertainty of making a decision to reduce prices. This represents a significant source of real price rigidity downward, according to which the balance of goods and services market becomes problematic.

DIFFERENT TIME FIXING, OR ADJUSTING PRICES BY ENTERPRISES AND MISTAKES IN COORDINATION

According to Professor Mankiw, there are two groups of factors which can cause rigidity of prices and fees: 1) different time fixing, i.e. adjusting prices by the enterprises and 2) mistakes in coordination.

A different time fixing, (i.e., adjusting price by the enterprises) is a significant source of price rigidity. This is explained by Mankiw through a simple example. First, he assumes that all the firms work in synchronization and they fix product and service prices on the first day every month. But, if

in the tenth day of the same month comes to increasing of money offer and increasing of aggregate demand, they would not be in position to do the increasing of prices, but they would have to wait the first day of next month. When the first day of next month comes, all the enterprises will once more fix prices, but on a higher level depending on the growth of money offer. This happens when enterprises work in synchronization.

But, Mankiw sets another situation. He assumes that half of the enterprises fix goods and service prices on the first day of the month, while the rest of them do so on the fifteenth day every month. Furthermore, he assumes that the increased offer of money happens on the tenth day of the month. Therefore, half of these enterprises, the ones that fix prices on the first day of the month, are not in a position to change the prices depending on the changed money offer.

The enterprises that fix prices on the fifteenth day of the month can react with price changing, (i.e., to increase the prices) if on the tenth day comes to increasing money offer, but they would not do so because in that case they confront the danger to lose their clients, which will orient towards the enterprises that did not increase their prices (the ones that fix prices on the first of the month).

The enterprises that fixes their prices on the fifteenth, can do a small price adjustment as a reaction of the changed money offer, while the rest of the enterprises would do so on the first of next month. But those price adjustments are fairly small in relation to the change of money offer. In this way, Mankiw explains the rigidity of price of goods and services. Needless to say, that the same logic applies in explaining the rigidity of fees of work market.

Mistakes in coordination. Mankiw considers that the enterprises that work in one economy are faced with mistakes in coordination when deciding about increasing or decreasing of all products and services prices and in choosing the moment when would that happen. In this context, Alan Blinder made an interesting survey. The results of the survey, in which the managers answer the question: "How often the prices of your products are changing in a year?"- are shown in the chart.

As we can see in the chart, 39, 3% of enterprises do a change in price of their most important

products once a year, while 10, 2% of enterprises do changes less than once. This means that one half of the surveyed enterprises do a change in the prices of their most important products once a year max. On Blinder's question, why they do not change prices frequently, and offering them standard answers of the question (which he previously explained), 60,6% of the managers answered that the basic reason are mistakes in coordination.

This condition (the mistakes in coordination) is especially characteristic in conditions of oligopolistic market morphology, according to which the decision of enterprises about increasing or decreasing the price of products is not independent from the action of the other rival enterprises. These are situations which the modern micro economy explains through "theory of games". The theory of games confirms that the errors of enterprises, which are in most cases connected with wrong assessment of the rivals' reaction, can cause a loss of part of the enterprise's profit, which in certain conditions of good coordination would not happen. This type of mistakes in coordination can cause recession in economy.

Besides the above mentioned sources which determine real price rigidity of goods and services, in this context two more can be mentioned:

- 1) The price as a reflection of quality
- 2) Imperfection of capital's market

THE PRICE AS A REFLECTION OF QUALITY

The Nobel Prize winner Stiglitz considers that price as a reflection of quality is a source that determines the rigidity of price and service. Quite often the products that have the highest price have better quality. Do the enterprises in conditions of lower demand decrease their price? Naturally not. Consumers that have incomplete information about merchandise, consider that the merchandise with higher price has better quality and as soon as the price is lower they consider that the quality is smaller too. That represents rigidity of price of goods and services.

According to the survey conducted by Blinder, which in this content has 12 theories for determining the rigidity of price of goods and services, the managers should find the price which is most suitable for their firms. The price as

a reflection of quality is stated by only 10 % of the surveyed managers. For comparison, 60, 6 % managers stated that the basic reason for not changing the price of the products frequently, are the errors in coordination.

IMPERFECTION OF CAPITAL'S MARKET

The enterprises satisfy their needs of external financing through capital's market. But, on capital's market there is asymmetric information between offer and demand, i.e. those who seek are better informed about the quality of the investing project than the ones who offer the capital. Because of that the prices of internal and external financing sources can be different. In conditions of expansion, the firm confronts bigger demand of its products and makes bigger profit.

Firms have the possibility to use internal financing source, which means that in conditions of recession firms are confronted with decreased demand of its products, therefore it is necessary besides the internal sources, to use external financing sources too. That increases their expenses.

If firms' financing expenses act counter-cyclically, real expenses of firms in conditions of expansion are decreasing. They are increasing in terms of recession, supporting mostly the curve of marginal expenses. They represent significant source that determines price rigidity of goods and services.

ASYMMETRIC INFORMATION ON GOODS AND SERVICES MARKET

Contrary to the claim of classic micro economy that all participants in economic life dispose of complete perfect information about the market, the economy of information showed that a number of markets function in conditions of incomplete, imperfect competition and with asymmetric information. The worker who applied to an open competition has more information about his qualifications, technical abilities, etc., than the firm who wants to employ him. On the goods market manufacturers always have more information about the products they manufacture and sell than the buyers. On the capital's market, the one who asks for a loan always has more information about his credit condition, than the one who gives the loan. The person who desires

to insure his life in some insurance company has more information about his health than the insurance company. These examples clearly show that asymmetric information, as a field of market failure, is present on all markets (the market of work, the market of goods and services and the finance markets).

All of this contributes to the fact that a number of economists pay special attention to asymmetric information, and they research it in different areas of economic life. The Nobel Prize winner Stigler gave a pioneer contribution in researching the importance of information on the function of markets and on the economy itself. The process itself, which leads to making certain economic decisions, is connected to certain expenses. These expenses of gathering information are basically expenses of researching. Therefore, a person who wants to buy a car researches the vehicle's market, goes from one vehicle seller to another, and enquires about different car brands, about their performances, prices and similar.

This process of gathering information was called research by Stigler. He says: *"The prices are frequently changed on all markets and if one market is not completely centralized, no one knows all the prices of different buyers (or sellers) in a given moment. On (buyer) or seller who wants to ensure the most suitable price should inform himself about different sellers (or buyers) - a phenomenon which I gave the term 'research'"* Stigler studies the problem of profitable information too. Optimizing during gathering information, according to Stigler is done by the same principles, as well as making decisions about the optimal range of production by the firm.

The optimal range of production by the firm is a point where marginal expenses and marginal incomes are crossed. Therefore, the optimization of gathering information happens when the expenses done by gathering additional information (marginal expenses) are equalized with the benefits of the information (marginal incomes). As long as the expenses of gathering additional information are smaller than the benefits caused by that information, the process of researching is profitable. Therefore, Stigler concludes that information is a significant input in economic activities, and the expenses made in its gathering should be calculated in the price, the same as it is done with the rest of the production costs.

Big contributions in research of this issue have had Nobel Prize winners Mirrless and Vickrey. The effect of encouragement or motivation in conditions of asymmetric information in sphere of taxation and restitution of optimal tax system, first handedly about income taxing is especial contribution of Mirrless for which he received a Nobel Prize for Economy in 1996.

While Mirreless's researches were directed towards theoretical elaboration of asymmetric information, Vickrey managed to find its practical use in the public sector. Furthermore, Vickrey researches asymmetric information and its implications in the function of the market of goods and services in big public enterprises- natural monopolies. Asymmetric information has big role in the function of big public enterprises, i.e. to the way they secure goods and services, form prices and conduct allocation of resources. A special contribution of Vickrey (for which he received a Nobel Prize in economy), can be found in the sector of electro economy, telecommunication and public transport.

The economy Nobel Prize winners from 2001, Akerlof, Spence, Stiglitz contributed greatly in researching of the function of markets with asymmetric information. In contrast of Mirrless and Vickrey they expanded the field of research of functioning markets with asymmetric information in commercial sectors, like the market of goods and services, the market of capital, insurance, banking industry, the market of labor and etc. While the researches of Spence and Stiglitz foremost apply to asymmetric information and its implications on the labor's market, capital's market, insurance and etc., the contribution of Akerlof is viewed in assessment of goods and services market with asymmetric information.

Akerlof's essay "Lemon's market" from 1970 represents one of the most significant studies in economy and information. In this essay he introduces for the first time the term "adverse selection". Adverse selection as one of the modalities of asymmetric information happens before the act of sale and purchase. He analyses the market of goods and services where sellers own more information about the quality of the product which they sell to the buyers. In his work in a simple way he explains the market of used cars, which because of the bad quality he calls lemons. The sellers have complete information about the quality of those cars, their technical

rightness and etc. while the buyers do not own a thing of that information. Given the fact that buyers do not have information, on the market certain brands of cars with same color, but different quality (technical rightness) are being sold by same or similar price.

The Nobelists Akerlof, Spence, Stiglitz, as well as other economists which belong to the so called group new Keynesians, are offering solutions which would alleviate the problems of adverse selection and moral hazard on the market of asymmetric information.

Akerlof considers that the problem of asymmetric information can be alleviated with:

- Making a agreement between sellers and buyers (this agreements involve activities which should be taken if in future comes to some unexpected situation)
- Issuing a guarantee by the manufacturer
- Introducing trade measures (firms that have big reputation introduce trade measures for their products, as well as a guarantee for quality)

Spence claims that the problem of adverse selection can be alleviated with sending signals by the well informed individuals to those which are not informed. The manufacturer can give a guarantee for his product, and that is a good signal for the buyer, that the product will have good quality. The Japanese car manufacturers recently are giving a guarantee that the engines of the cars will function impeccably until 100000 kilometers passed as a signal that the car have got high quality.

As rest of the solutions that can alleviate the problem of asymmetric information on the market of goods and services, the following ones can be stated:

- Solutions of market types (paying penalties if the goods and services deviate from the predicted quality and the deadline of delivery);
- Reputation that acts as force on the entrance barrier (if in the sector enterprises with gained and proved reputation work, that is a factor

which prevents entrance of enterprises without reputation and enterprises that cannot achieve and maintain high quality of products and services).

It is assumed that these solutions can decrease or alleviate problems that can appear as a result of the existence of asymmetric information on the market of goods and service, which does not mean that they can all be removed. Modern economy of information considers that perfect information is just a fiction.

Asymmetric information as a field of market failure is present on all markets. This is confronted with the suppositions of classic economy that markets function perfectly and that participants in economic life dispose of perfect information. In that context, the market functions in conditions of imperfect information, therefore we need a state regulation.

Researching in economy in the direction of the function of markets with asymmetric information begins with the pioneering achievement by the Nobelist Stiglitz about the importance of information in the market functioning. It is about theoretic elaboration of asymmetric information and their practical use in the public sector.

The economy Nobel Prize winners from 2001, Akerlof, Spence, Stiglitz have big contribution in researching the function of markets with asymmetric information in the commercial sector as the market of goods and services, capital's market, insurance, bank industry. In that context, in the report upon the occasion of awarding of the Nobel Prize for economy, it is said that they are the "core" of the modern economy of information. Stiglitz analyses asymmetric information in many different contexts, starting with asymmetric information in the market of labor, all the way to its implication in creating optimal tax system. His work as coauthor with Wels is known, in 1981, in which is processed asymmetric information in the market of capital. In this work they conclude that if the banks wish to reduce bad loans, they should rationalize credits, rather than increase the rate of interest. Stiglitz researches are not just constrained on the capital's market, but are widened further on all financial market.

The epilogue of his research is known as Grossman's and Stiglitz's paradox: if the markets are informational effective, i.e. if all relevant

information are reflected in market prices, then no individual economic agent will have initiative for gathering information based on which prices are formed.

The basic steps in analysis of asymmetric information and its implication on the capital's market are made by the work of Stiglitz and Wels in 1981. Informational asymmetry described as principal-agent problem means that land giver (principal) dispose of public information, land receivers (agents) dispose of public and private information.

"This informational asymmetry can have different shapes: first land givers do not have enough information about the risks of the project, then land givers and land receivers have different information(different knowledge)about the project that can lead to different opportunities for different distribution of income."(Rothem 1998, n.228)"

Because land givers have less information than land receivers, they are more in a situation, if the rate interest is left to determine the level of credit (with higher credit demand, the rate of interest will increase, and credit rationing will be left out), to choose a credit with higher level of risk than the average. In this case loan givers are faced with the problem of asymmetric information. In literature this is known as adverse selection. Adverse selection exists in the moment when land givers approve loan to land receivers. Because they do not dispose of perfect information (private information are on the side of credit receivers), it is possible that the loans they approve are with higher risk than the average.

When credits once are approved by loan givers, they face another modality of asymmetric information, known as moral hazard. Furthermore, persons who have their loan approved can act sloppily in its use. Loan givers can commit a fraud by transferring funds (loans) for their personal expense, instead for their purposeful usage, for which the credit is approved.

Economists of new Keynesian economy consider that reducing problems of asymmetric information can be done by credit rationing.

REFERENCES

1. Corry, B. 1988. "Keynesova ekonomija: revolucija u ekonomskoj teoriji ili politici?". *Marksizam u svetu*. br 4.
2. Davidson, P. 1994. *Post Keynesians Macroeconomic Theory*. Edward Elgar.
3. Greenwald, B. and J. Stiglitz. 1993. "New and Old Keynesians". *The Journal of Economic Perspectives*. 7(1).
4. Gordon, J.R. 1990. "What is New Keynesian Economics". *Journal Of Economic Literature*. 28(3).
5. Hal, R.V. 2006. "Mikroekonomija: Moderan pristup". Ekonomski Fakultet, Beograd.
6. Jakshich, M. 1997. "Doktrine velikih ekonomista". Ekonomski Fakultet, Beograd.
7. Kitanovich, D., D. Petrovich, and N. Golubovich. 2009. "Osnovi ekonomije". Ekonomski Fakultet, Beograd.
8. Sekulovich, M. 1997. "Uloga Drzave u Procesu Tranzicije". *Ekonomске teme, Ekonomski fakultet Nish*. br2.
9. Stojanovich, B. *Mikroekonomija*. Ekonomski Fakultet Nish.
10. Zdravkovich, D., B. Stojanovich, and D. Djordjevich. 2008. "Teorija I Politika Cena". Petrograf Nish.
11. Mankiw, G. and D. Romer. 1991. "New Keynesian Economics". *Imperfect Competition and Sticky Prices* vol 2, MIT Press: Cambridge, MA.

SUGGESTED CITATION

Dukoska, K. 2015. "Real Rigidity of Prices of Goods". *Pacific Journal of Science and Technology*. 16(1):210-216.

 [Pacific Journal of Science and Technology](http://www.akamaiuniversity.us/PJST.htm)