



MARKET CONCENTRATION IN DIVERSIFIED INDUSTRIES: THE CASE OF PRIMARY SECTOR OF ECONOMY

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ABSTRACT

The purpose of this study is to analyze market concentration and to outline the defensive role of the diversification of activities. In the emerging common economic situation, diversification comes as a tool for overcoming crises, so typical for agricultural production and it is also a possibility for the distribution of risk into multifunctional activities.

A close observation of the agricultural production market and of the multifarious market of diversified production is essential, but their analysis and estimation will not suffice. There is a need to uncover the peculiar dependency between the market share and the profitability with view to the type of industry. It can be confidently asserted that companies having a higher market share 'nurture' their economic efficiency not on the account of price growth but rather on the basis of lower costs (Mladenova, 2000)

Key words: market concentration, diversification, primary sector

INTRODUCTION

According to numerous studies the market share has a positive effect on the level of profitability. It should be noted that this trend has remained stable in the long term and is not random or transient. The above-mentioned dependency is predominantly a consequence of the decreasing share of the average cost of production in the long term realized by economies of scale.

The motivation for the diversification of activities in the agricultural sector comes from the idea that the return from a number of activities can neutralize the low return from the principal activity of the agrarian structures which is of cyclic character and has a relatively inelastic demand for its products.

Diversified production structures operate in various sectors and they can take a linear, U-shaped or unclearly outlined curve of the relationship between market share and

profitability (Caves, 1981). It is typical for a relatively high number of the studied diversified industries that they function on markets with no overt monopolies, with many small producers, where the attainment of a dominating market share is not an end in itself. The latter can be confirmed by the fact that deciding on diversification, the entrepreneurs should steer and position their new products on the target markets (Scot, 1993).

1. Market concentration –a theoretical survey

In economic theory and practice, the generally accepted measure for finding out market concentration is the index of Herfindahl (Herfindahl -Hirschman Index (HHI)). Economic literature reports other alternative methods for gauging market concentration like: The method of absolute concentration introduced by Hannah and Kay (1977); the Rosenbluth Index (1961); the Comprehensive Concentration Index (Horvarth 1970); The Linda Index (1976); The U Index (Davies, 1980) and others.

In economics the index of Herfindahl (HHI) is a measure for defining the size of firms in relation to the industry in which they operate and it is an

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indicator of the amount of competition between them. The index is specified by summing up the squares of the market shares for each individual company. The increase in the value of the Herfindahl index is predominantly an indicator for loss of price power to the company observed and it also informs of the increasing competition in the sector, i.e.

$$(1) H = \sum_{i=1}^n (\Pi_i)^2,$$

where : Π_i – the market share of each company for the market segment concerned;
n – the number of companies in it.

So, it can vary from 0 до 10000 for example, moving from very large sums for the small enterprises on the market to little sums for the separate monopolistic producers.

- Lack of competition – Low or zero HHI means perfect competition or a slightly monopolistic competition, which is a sign of extreme or extraordinarily high competition at the market. The number of companies is rather big and thus the sum of the squares of the market shares is zero.

- Total concentration – Very high or above 10 000 HHI means there exists a monopoly at the market. This value is achieved by only one firm having a market share of 100%. We have to note that in this case there are insignificant differences of 4 or 8 enterprises concentrational proportions, which can reach a value of 100% for industries in oligopoly.

Between these two extremities HHI can decrease into low, average or be highly concentric.

- Low concentration – when HHI moves from 0 до 1 000 this is usually interpreted as low concentration of a given industry at the market.

- Medium concentration – HHI from 1 000 to 1 800. These industries are mostly oligopoly. This level corresponds to the concentrating proportion between 50% и 80%.

One of the potential problems of measuring this index is that it does not take into account such factors as the geography of markets. For that reason we investigate the Herfindahl index only for the structured market of Stara Zagora region. Defending the HHI, the summing up of the squares of the market shares of even 5 or 10 of the biggest producers can give us a relatively or approximately close to the current HHI.

In economic literature we can also find normalized. Its formula of definition is as follows:

$$(2) H^* = \left(\frac{H - 1/N}{1 - 1/N} \right) \text{ where } H = \sum (\Pi_i)^2$$

where:

N – the number of production structures at the market.

“The small index shows competitive industry with no big ‘players’ (Charoenwong, 2000)”. If all firms have equal shares the reciprocal of the HHI presents their number in the industry.

2. Types of diversified industries

We have analyzed three main groups of industries: vertically, horizontally and conglomerate diversified.

- Horizontal diversification – starting the production of new products in the branch to satisfy the extra needs of the customers or creating of entirely new markets through product diversification.;
- Vertical diversification – redirecting of the resources to production in the next stages of the reproducing process- processing, storage, sale, etc.;
- Heterogeneous/conglomerate (Georgiev, 1993)/ diversification – adopting spheres of production being too far from the main subject of the company produce, and the manufacturing of new products, having nothing in common with the existing technologies, equipment, distribution channels, etc.

The classification we have selected for the purposes of this investigation, gives us the possibility to outline the extent to which the diversified activity is economically expedient with view to the current economic situation and bearing in mind the characteristics and the state of the agricultural sector as a whole.

3. Results

Motivated by the carried out research of the various types of diversification, we can ascertain that despite the accounted for low levels of profitability and the ineffective capital structure in some of the studied objects, the diversified agricultural enterprises survive the present economic situation and realize acceptable economic achievements.

On the other hand, the impact of liberalization on the prices and trade for the products of agriculture can lead to a strong dependency of the prices at home by the ones worldwide. The state's non-interference in respect to import duties for non-European countries as well as concerning the negligible quotas for export to EU, in combination with low subsidies, gives rise to a number of problems for the sector.

The groups of vertically and conglomerately diversified industries take a higher risk in offering their products and/or services at new markets away from their principal activity. Entering such markets is accompanied by various difficulties both when it comes to marketing and when we consider the overall production policy.

It is typical for a relatively great number of the surveyed diversified industries that they operate

on markets with no pronounced monopolies, in the presence of many small producers keeping themselves aside from attaining a dominant market share as their sole aim of management.

The measure and analyzed index of market concentration represents the size of the firms in interrelation with the branch in which they operate and it is an indicator of the amount of competition between them. We have to admit that the Herfindahl – Hirschman index is accounted only for the structured market of Stara Zagora region for each of the three diversified structures.

In the group of the horizontally diversified industries we report levels of HHI varying from 36 to 1773. For 90% of the studied objects we observe low market concentration (**Table 1**).

Table 1. Indexes of market concentration for the group of the horizontally diversified companies

Company (signature)	Number of activities	Index of market concentration	Normalized market index
P	5	36	35,97
K	4	119	118,97
J1	5	354	353,75
J2	3	179	178,80
L	2	1773	1772,3
E1	3	197	196,8
V1	3	310	309,5

What we pointed out is due to the fact that horizontally diversified enterprises operate only at the market of agricultural production, characterized by the existence of numerous small producers, offering products hard to be distinguished by the customers. It is typical for the low levels of the Herfindahl index in horizontally diversified production structures to observe the conservative producers' behaviour and to see how they conduct independent firm policies. Yet, the separate enterprises do have a certain level of coordination, based on their belonging to a definite product group. The manufactured in horizontal diversification

products are to a great extent economic substitutes. They satisfy one and the same needs

of the consumers at approximately the same price. With respect to the accounted market concentration in the group, we can claim that this type of produce could not compete at the regional market on the criterion of price, but they take a certain price level in the market segment. In the long run, product prices move here in the predetermined by the high HHI firms price orbit. In most of the cases the group of horizontally diversified enterprises is reported to establish an unfavorable proportion between the marginal product costs and the prices of the latter. This is one of the reasons for the evident low levels of market concentration. A rose-producing company with the signature L is an exception in this group. The accounted HHI for this firm is 1773 and it indicates a close to the average level

of market concentration, resembling the structure of an oligopoly. We do not hesitate to say that in the rose-producing market there dominate some big producers one of them being a representative of the studied production structure. Companies

with such a market segment profit from the stability and predictability of the market prices and coordinate their mutual market and price policy in a much more improved manner.

Table 2. Indexes of market concentration for the group of the vertically diversified enterprises

signature	Number of activities	Index of market concentration
Z3	2	1105
Z2	2	2896
D1	2	157
A2	2	130
D2	3	83
G2	3	1454
A1	3	835
H	4	221
Z1	4	621
B1	4	1097
B2	4	510
X2	4	174
P	6	184
G1	6	195
C	6	736

In the studied vertically diversified industries the levels of market concentration vary in a very large range- from 83 in a firm with signature D2 to 2896 in a firm with signature Z2. The Herfindahl index is not only a means of measuring the real market concentration, but also an indicator of the amount of competition between the firms, operating on the market segments in concern. It is evident from the reported HHI how wide a scope of competitive power we have been discussing.

The results from Herfindahl index definitely indicate a loss of price power for the studied firm with the rising of competition even when it comes to a regional market such as that of Stara Zagora region.

Out of the 15 surveyed vertically diversified production structures only four can be defined as

having an average level of concentration, resembling the structure of the oligopoly, for which $HHI > 1000$.

We observe a certain correlation between the number of activities and the value of the market concentration index, the greatest values of HHI being for the vertically diversified industries with two or three activities, providing a significant amount of production in two to a maximum of four product lines. In the vertical structures of industries manufacturing many products (with more than 4 activities), which we ascertained as ineffective and chaotic in the use of resources for every separate industry, we account lower levels of market concentration. In the analysis of the conglomerately diversified industries there stand out the low levels of HHI, varying from 17 to 232 (**Table 3**).

Table 3 Indexes of market concentration for the group of conglomerately diversified enterprises

signature	Number of activities	Index of market concentration
O	2	40
E2	2	232
X3	3	36
X5	3	17
X6	3	164
T	3	53
I	3	17
X1	4	17
U	4	65
X4	4	190
V2	7	84

Apparently, in that type of industries there is a perfect competitiveness and only some of the surveyed have negligible monopolistic competition.

The normalized HHI, measuring the competitive environment in the studied region both on the basis of the number of firms functioning at the given market segment is calculated for the group of the horizontally diversified enterprises of the agrarian sector. For the vertically and conglomerately diversified industries there is no working possibility of its calculating for lack of output information about the market segments, variegated in kind for this group.

CONCLUSION

The use of diversification as a means of stabilization aims at decreasing the seasonal and cyclic character of both the production and sales of agricultural products. It is applied to neutralize to a certain extent price inelasticity of demand and to bring about a more effective functioning of the principal factors of production and thus to redistribute market risk.

It is typical for a relatively big number of studied industries to operate on markets with no overt monopolies and at the availability of many small producers not having as their one and only final aim of management to achieve a dominant market share.

The accounted low levels of market concentration index in the three types of diversified industries for the structured market of Stara Zagora region, displays a loss of price power with the increasing of competition as a result of the small producers' numerous presence at the market. It is evident that product prices form their level at their very market segment, on the basis of the predetermined by the enterprises having a high HHI index price orbit.

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