

ANALYSIS OF COMPETITIVENESS OF HUNGARIAN WHEAT SECTOR WITH PORTER'S DIAMOND MODEL

A MAGYAR BÚZAÁGAZAT VERSENYKÉPESSÉGÉNEK ELEMZÉSE PORTER GYÉMÁNT MODELLJÉNEK SEGÍTSÉGÉVEL

PETER KARÁCSONY

University of West-Hungary Faculty of Agricultural and Food Sciences, Institute of Management and Social Sciences, 9200 Mosonmagyaróvár, Vár 2., Tel.:0036 96 566 758, Fax: 0036 96 566 794, peterkaracsony@yahoo.com

Manuscript received: April 18, 2008; Reviewed: July 17, 2008; Accepted for publication: August 27, 2008

ABSTRACT

Competitiveness – as many other scientific branches use this term – has an especially rich international special literature. A number of ways and indicators have been developed in the past decades to measure and define competitiveness, but because of its complexity it has no generally accepted general definition or measuring method. As it is hard to find a generally acceptable definition of competitiveness, the measurement levels and the measurement numbers exist in several varieties, they are adequate for a given research purpose, but their general extension often creates a distorted result.

In my study I use the „Porter’s diamond model” to explore the competitiveness of wheat sector.

Keywords: competitiveness, wheat sector, Hungary, diamond model

ÖSSZEFOGLALÁS

A versenyképességnek, mivel több tudományág is használja ezt a fogalmat, rendkívül gazdag nemzetközi szakirodalma van. A versenyképesség mérésére és meghatározására számos eljárás és versenyképességi mutató került kidolgozásra az elmúlt évtizedekben, de összetettsége miatt nincs általánosan elfogadott definíciója és mérési módszere sem. A versenyképességre általánosan elfogadható definíciót nehéz találni, mivel a mérések szintje, annak mérőszámai számos változatban léteznek, egy adott vizsgálati célkitűzésnek megfelelnek, azonban általános kiterjesztésük sokszor torzított eredményt produkál.

A tanulmányomban Porter gyémánt modelljét használtam fel a búza ágazati versenyképességének feltárására.

Kulcsszavak: versenyképesség, búzaágazat, Magyarország, gyémánt modell

RÉSZLETES ÖSSZEFOGLALÁS

A magyar mezőgazdaság a rendszerváltást követően – a megváltozott és romló külső és belső gazdasági környezet hatására – a transzformációs időszakot a legnagyobb vesztesékként élte át. A növénytermelésben az elégtelen tápanyagellátás és a gyenge technológiai szint miatt a termelési eredmények nehezen kiszámíthatóvá, ingadozóvá váltak. E negatív irányú változások nyomán az ország kedvező természeti és társadalmi adottságainak kihasználtsága fokozatosan csökkent, ami a nemzetgazdaságban a mezőgazdasági ágazatok versenyképességének romlását idézte elő.

A tanulmány készítés elsődleges célja az volt, hogy a magyar agrárgazdaság egyik legfontosabb növénytermesztési ágazati termékének, az őszi búzának a termelési helyzetét és versenyképességét bemutassa.

A tanulmány Michael Porter gyémánt modelljét használja fel az őszi búza ágazati versenyképességének feltárására. A modell lényege, hogy egy ország kompetitív előnyét a hazai gazdasági környezet négy összefüggő adottsága teszi lehetővé. A négy tényező a következő: tényezőellátottság, keresleti viszonyok, kapcsolódó és beszállító iparágak, valamint a vállalati stratégia, vállalati struktúra.

A vizsgálataim elvégzése után általános következtetésként vontam le, hogy a hazai búza ágazati versenyképesség javításának alapvető feladatai közé tartozik a gazdák és felvásárlók közötti információáramlás javítása, a kockázatkezelés és a piacorientált minőségi termelési programok ösztönzése, az előregedett, jelentős

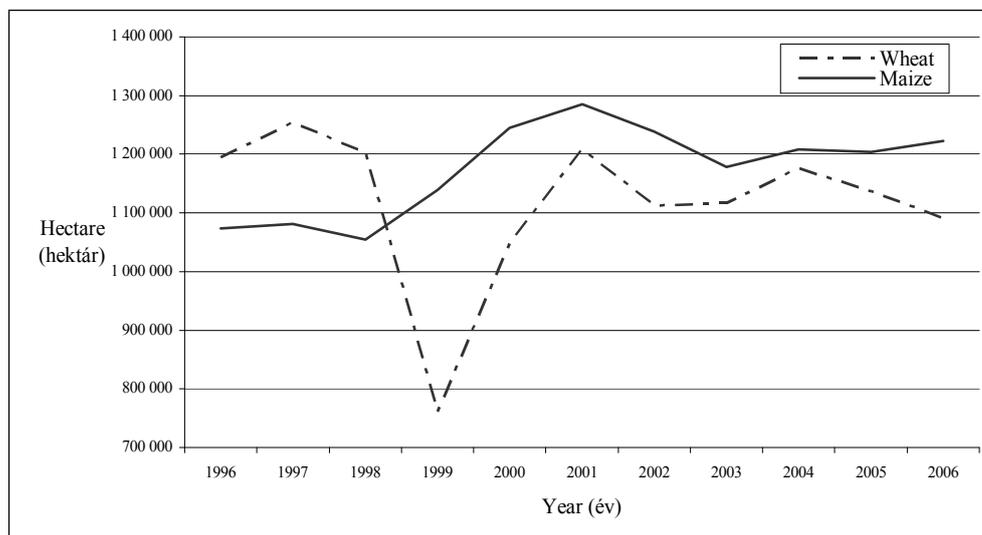
többletráfordítást igénylő gépparkok cseréje.

INTRODUCTION

The primary aim of making of this study was to showcase the production situation and competitiveness of wheat, one of the most important produce of the plant growing branch of the Hungarian agricultural economy.

The agriculture of Hungary can look back on a past of more than a thousand years. Hungarian agriculture and food industry are an accentuated branch of the national economy of our country today still, yet despite this it faces severe production, profitability and competitiveness problems. Nearly 70% of the country's territory is suitable for agricultural production. The natural makings of our country, the number of hours of sunshine, the relief conditions and the excellent quality produce growing soils have made and make good results possible in the case of most cultured plant production. Due to its agro-ecological makings Hungary's plough soil plant culture is characterized by the excess of wheat production, wheat and corn are produced on 60-70% of the agriculturally cultured soil. [1] In the last decade the sowing territory of the two plants per year has jointly exceeded two million hectares (Figure 1.).

Competitiveness – as many other scientific branches use this term – has an especially rich international special literature. A number of ways and indicators have been developed in the past decades to measure and define



Source: KSH, 2007 [2]

Figure 1: Wheat and maize production area between 1996 and 2006 (hectare)

1. ábra: Búza és kukorica vetésterülete 1996 – 2006 között (hektár)

competitiveness, but because of its complexity it has no generally accepted general definition or measuring method. In special literature it is not defined what they mean by competitiveness, or with which level of competitiveness do they wish to deal with. However, when talking about levels of competitiveness we differentiate between the comprehension levels of international, regional, branch, company and product. Módos [4] has incorporated the factors defining competitiveness into the following groups in 2003:

- a) comparative advantages (technological, productivity differences, natural makings)
- b) competitive abilities (leadership and organization abilities cost-yield-income indicators)
- c) the role of the state (education, research, macro environment, infrastructure, regulations).

Porter delineates in his 1991 Competitive Advantage of Nations study that in the changing environment of world economy we can no longer talk about comparative advantages, just competitive advantages. [5]

Competitiveness generally is depends on economic conditions (prices, costs, income, market conditions, subsidies and absorptions) on the one hand, and natural (climate, soil conditions, moisture) and factory conditions (factory type, structure, resources-provision) on the other hand. [6]

MATERIALS AND METHODS

As it is hard to find a generally acceptable definition of competitiveness, the measurement levels and the

measurement numbers exist in several varieties, they are adequate for a given research purpose, but their general extension often creates a distorted result. In my study I use the „Porter’s diamond model” to explore the competitiveness of Hungarian wheat sector.

The essence of the model is that the competitive advantage of a country is made possible by the four correlated makings of the local economic environment. The four factors are: factor conditions, demand conditions, related and supporting industries, as well as firm strategy and company structure. According to Porter the nation are capable of competitiveness in the branches where the diamond provides the most favorable makings. Two outer factors also belong to the diamond model: the roles of the government and chance. [3]

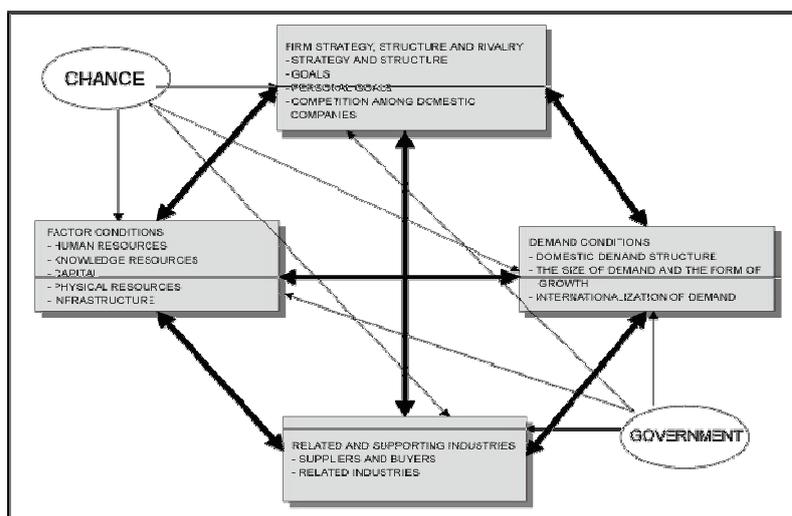
RESULTS OF RESEARCH

Applying the factors of the Porter’s model the competitiveness of the Hungarian wheat sector has shown the following results:

1. Factor conditions in the wheat sector

In the introduction I already mentioned that Hungary’s agro ecological potential provides excellent conditions for the production of grains, among them quality wheat. Besides the climatic factors the trustiness of the Hungarian wheat types also deserves a mention as well as their adaptability to different production site conditions.

Taking into account the technical-technological conditions the tender opportunities available after joining the EU have helped a great deal in the replacement and



Source: Croatian National Competitiveness Council, 2007

Figure 2: Porter’s diamond model
2. ábra: Porter gyémánt modellje

modernization of the used, old machine pool. At the same time we can still find power and boom machines of inadequate technical quality in the machine pool of the farmers. In order to increase effectiveness these machines need to be replaced urgently.

Taking capital provision into account we can state that from the beginning of the 1990's capital provision has worsened, the number and amount of loans drawn into agriculture has increased and the majority of farmers are facing the threat of becoming indebted. The share of the growers from the revenues generated in agriculture has decreased, whilst the profit quota of merchants and forestallers has increased.

The infrastructure of the branch has improved because the storage capacity of grains has increased in the country and the attention put into the maintenance of the quality has developed. Behind our latter statement is the fact that the attention put into the maintenance of the quality is primarily due to having to conform to intervention regulations and reaching that adequacy. Grain transportation in Hungary is by train or ship. The problem here is that our loading capacities are limited as well as our special grain transporting wagon capacities. The speedy development of road transport could be measured at the time of the sale of the intervention stocks primarily during transport to EU.

In the case of human resources factors the number of people employed in agriculture had decreased significantly after the change in the political system, at the same time there was also a change in structure, in the growers' sector the number of people with intermediate or higher education degrees has increased.

2. Demand conditions

The main characteristics of local consumption: in our country the consumption of cereals continuously decreases, which has resulted in the decrease of the processing of grains for human alimentation purposes too. The cereal consumption is 90% wheat based.

Due to the unpredictability and fluctuation of the forage consuming animals' sector (pigs, poultry) the grain utilization for forage alimentation purposes has also significantly decreased.

Export market trends: wheat is one of the biggest of agricultural mass products in world trade. In the past decades traditional wheat exporting and wheat importing countries have emerged. Hungary is by tradition a wheat exporting country. The amount of export-due to the significant growth of the yield averages fluctuated between 1-2 million tons. In the 1990's our country's wheat export has shown great extremes: in some years we exported just some ten thousand tons, whereas in

years' with record yield we exported as much as 2.5 million tons.

In our country wheat export is carried out mainly by trading companies or forwarding companies, the amount of manufacturers' or growers' export is small. In case of export within the EU the price is determined by the intervention price level. This is so because Hungary is a country with large excess of grains, weak logistics background and is without a sea port.

3. Related and supporting industries

The main characteristics of input industries: the majority of the types of grain produced in Hungary (70 percent) are locally bred grains. The types produced in the Research Institute of Martonvásár are marked with the letters "Mv" (eg: Mv 24 or Mv Koma). The types produced in the Grain Research Institute of Szeged are marked with the letters "Gk" after these letters some kind of a name is added (eg: Gk-Öthalom). The plant seed market is strongly concentrated and is primarily dominated by foreign companies.

The majority of artificial fertilizers used in production are imported from primarily from Slovakia and Romania these are complex fertilizers which contain nitrogen, phosphor, and potassium. The problem is that artificial fertilizer usage is fluctuating and the reasons for this are the well-known financing problems in the background. Regarding the utilized plant protection products the foreign made herbicides are the wide-spread ones primarily. Thus the market of plant protection products is similar to the above mentioned two markets, that is, it is strongly concentrated.

The position of output industries: the superscripts for flour consumption are fluctuating since 1990, and show a slightly decreasing tendency. According to the Hungarian Central Statistics Bureau consumption hit rock bottom in 1998 (84.1 kg/head) while the population consumed the largest amount of cereals in 1990 (110.3 kg/head). The behavior of the consumer side is characterized by price sensitivity. When buying the primary aspect is the price, followed by quality. Food product trade has become concentrated, foreign owned companies appear on the Hungarian market in an ever bigger ratio.

4. Company strategy and structure

Medium strength concentrated characterizes grain industry and forage production. The degree of product differentially is low in grain production and medium in the processing industry.

After observing the product path segments it can be said that procurement and trade are strongly concentrated, so this part of the product verticum is in the hands of the companies specializing in this.

The few co-ops which have remained after the change in the political system are present almost exclusively in the production only.

The systems which can be regarded as company strategy organizations are the production systems, the processing industry integrations and the franchise systems. In order to ensure a (more) successful strategy the strengthening of the cooperation (joint production and sales between the small and the medium companies would be needed.

5. Government regulations

The national and international regulations (export and import regulations as well as exchange rate policy, inflation management etc.) can be listed among government actions.

In the European Union the market regulation of grain, oil, protein and fibreplants is the same. In our country a significant ratio of grain production subsidies is comprised of the so-called direct payments which the farmers receive on the basis of the base area and the base yield. The export and import actions are also regulated within the frame of the Common Agricultural Policy of the European Union. The WTO (World Trade Organization) agreement has a great influence on the shaping of both actions, as it forces the Union to decrease its protectionist policy.

6. Chance

The competitiveness of the grain sector was significantly influenced by our joining the European Union. On a market which struggles with excess production in the case of several products only those can be successful who continuously meet the strict quality, transport, financial and other conditions.

At the same time the Hungarian farmers have to face a competition from the imported grains flooding our country from the member EU states. The greatest change on the demand side of the grain market was caused by the introduction of the intervention system after our joining the Union.

Hungarian market risks mainly come from the fluctuation of internal production and the price fluctuations which are a result of those previous fluctuations. Natural risk factors were and are ever present influences in grain production and in particular drought, floods and rainy harvest periods have left their strong mark.

CONCLUSIONS

After the change in the political system Hungarian

agriculture has suffered its greatest losses during the transitional period due to the deteriorating external and internal economic environment.

Due to the insufficient nutrient supply and weak technological level the production results in plant production have also become difficult to predict and fluctuate. These changes in the negative direction made the utilization of the favourable natural and social makings of the country decrease too, and this resulted in the deterioration of the sector within the national economy as well.

It can be said about the most important type's grains which are wide spread in public production that they are competitive when compared internationally. Staple cereals are worth producing even when the applied minimum grain market prices and import duties are higher than in the previous years, and even when other fields which do not enjoy further comparative advantages have to be put into production.

In order to improve sector competitiveness bettering information streaming, risk management, and incentives to create quality production programs are a must, and so is the replacement of the old, out of date machine pool which is maintained at significant expenses.

REFERENCES

- [1] Hingyi H.: A magyarországi régiók búza- és kukorica termelésének főbb jellemzői. *Gazdálkodás, Gyöngyös* (2005) XLIX. Évf., 5. szám, pp. 39 – 45.
- [2] KSH: A fontosabb növények vetésterülete. KSH Termelésstatisztikai Osztály, Budapest, 2007
- [3] Lloyd-Reason, L., Wall, S.: *Dimension of Competitiveness; Issues and Policies*. Cheltenham, UK, 2000
- [4] Módos Gy.: A versenyképesség összetevői és mérése, in: *Agrárgazdaság, vidékfejlesztés és agrárinformatika az évezred küszöbén*. AVA konferencia kiadványa, Debrecen, 2003
- [5] Porter, M. E.: *The Competitive Advantage of Nations*. Macmillan Press Ltd., London, UK, 1991
- [6] Salamon L.: A jövedelmezőség-versenyképesség ökonómiai feltételei a búza- és kukoricatermesztésben. *Agro Napló, Pécs* (2004) 7. szám, pp. 22 – 23.

