

THESIS OF THE PhD DISSERTATION

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**INTEGRATED POULTRY COMPANIES ON THE
MARKET OF THE EUROPEAN UNION**

THESIS

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1. The topicality, the subject, the targets and the sources of the research

The examinations related to the operation system and the middle- and long term competitiveness of companies operating as a part of the Hungarian poultry sector become so timely in the last couple of years which were so recessive from the aspect of poultry sector. The future of the Hungarian poultry industry – which count so important in the Central and Eastern European region – is primarily depend on that the sector will be able to pull trough this crisis situation, and with improvement it's efficiency will be able to remain in the competitive environment of the European Union.

The dissertation would like to contribute to open up the present situation of Hungarian poultry industry and to define its future possibilities with conclusions and proposals coming from scientific examinations. In the scope of this in one hand the examinations deal with the whole Hungarian poultry industry, in the other hand – for the more detailed analysis – sometimes they analyse the structure and operating system of the main Hungarian poultry companies.

The main target of the examinations to open up the competitive situation of the vertically integrated poultry companies operating in the Hungarian poultry industry, and define proposals on improvement their present situation. In scope of these the targets of the dissertation is (1) to open up the objective situation of Hungarian poultry industry; (2) to make detailed analysis on the operating speciality of poultry integrations; (3) by right of the mentioned things to outline the structural model of the poultry integration; (4) to analyse the competitiveness, and the cost and income situation of the Hungarian integrations; (5) toward reliable conclusions to make an international comparison of the mentioned examinations; and (6) by right of the above mentioned things to draw up proposals supported with new and novel scientific results which could help the Hungarian poultry integrations to work more efficient.

The research started with the analysis of the bibliography of the topic. In the course of that a lot of publication of the Hungarian and the international scientific literature had been processed. The data and information used for the detailed examinations (*drawing up integration structure, cost structure analysis, income and competitiveness analysis, etc.*) been collected in the course of examination of the activities of Bábolna Co. Also been used some country data from the Poultry Product Council and from the Agricultural Research Institute, which had been compared internationally by right of the data collected from A.V.E.C. and FAO.

2. Methods and procedure of the research, territories of the examination

The applied research methods – irrespectively of which examination territory had they been used – were the followings:

1. Descriptive type comparative analysis based on statistical data and calculation results with graphic supplements.
2. International descriptive type comparative analysis based on statistical data and calculation results with graphic supplements.
3. Construction of product chain model based on own experiences and observations.
4. Using profit and margin approach calculation model based on cost structure calculations and cost and turnover data respectively.
5. Correlation analysis of cost and income data coming from statistical databases and own collection.
6. Setting up SWOT analysis based on the main specialities of the players of the product chain.

Fit into the targets of the dissertation the concrete methods and the territories of the examinations were the followings:

1. Review of the Hungarian poultry industry

By means of summation the activities of the main players of the Hungarian poultry industry is possible to get acquainted with the close business ambience composed by the companies of the sector; the size and structure of the sectoral market; as well as some other typical operating speciality of players working in the sector. In the course of the explication of this topic the results were written down as a descriptive analysis.

2. Vertical integration in the Hungarian poultry industry

In the course of dissection of poultry industry integrations operating in Hungary the main target was to define a supply chain model which could help to determine (1) the operating structure; (2) the internal and external connection system of integrated poultry companies; (3) and the internal economical process of this structure; and (4) the logical sequence of the consecutive cost and income factors. The model is made by dint of flowsheets by right of the logical attach of each supply chain elements.

3. The examination of cost and income situation of the vertical structure

The analysis of cost and income situation is based on the individual cost structure examination of consecutive supply chain elements, than the received data been estimated according to real logical attachment of each supply chain elements, as added cost factors. For the calculations a database (*calculation model*) had been set up which contains (*from april 2002 until november 2005*) the main cost elements of chicken growing, slaughtering and retail trade. By right of the calculations the dissertation determines *the profit productivity and the margin productivity* of each activities of the supply chain, as well as the total cumulated margin which is available along the whole chain. The results mostly published in graphical form.

The calculations made by right of the following formulas:

$$\text{Profit productivity} = \text{Available sales price of final product} - \text{Cost price of final product}$$

$$\text{Margin productivity} = \text{Available sales price of final product} - \text{Costs of raw materials}$$

$$\text{Total cumulated margin} = \text{Margin of poultry growing} + \text{Margin of processing} + \text{Margin of retail}$$

Next to the income and margin calculations the dissertation also made a correlation analysis of the cost variables of the supply chain. In the course of these calculations each cost variables was evaluated as how do they correlate with the cost price of the final product of each supply chain elements.

On the grounds of the previously mentioned things the correlation between the certain cost variables of the supply chain and the cost prices of the final product (*correlation coefficient*) is written down by the following formula:

$$r = \frac{\sum (x_i - x_{\text{átlag}}) \times (y_i - y_{\text{átlag}})}{\sqrt{\sum (x_i - x_{\text{átlag}})^2 \times \sum (y_i - y_{\text{átlag}})^2}}$$

r = correlation coefficient

x_i = each cost variable

$x_{\text{átlag}}$ = average of cost variables

y_i = cost price of the product

$y_{\text{átlag}}$ = average of cost prices

Next to the correlation analysis the profit proportion and the efficiency of expenditures available in the sector are also been calculated. The *profit proportion* namely the profit realized by one unit of expenditure, and the *efficiency of expenditures* namely the turnover realized by one unit of expenditure are presented also in graphical mode in the dissertation.

4. Examination of the competitiveness of Hungarian poultry industry

In the course of the analysis of competitiveness the dissertation uses a dual approach. It executes (1) the international comparison of cost factors, and makes a subjective analysis of competitiveness; as well as (2) the comparison of economical data of some Hungarian and foreign poultry companies.

Proceeding from the economical data of poultry companies the dissertation compared indicators which could describe (1) the capital adequacy, (2) the profit production ability, and (3) the financial and liquidity situation of these companies.

In the course evaluation of the competitiveness of the sector the following factors stood into the focus of the analysis which have high influence for the competitiveness: (1) production factors, (2) market factors, (3) cost and income situation, (4) sector structural factors, (5) financial situation and capital adequacy. In the course of the estimation the factors had been graded in a five stage scale by the followings: (1) low competitive situation, (2) break away competitive situation, (3) medium competitive situation, (4) competitive edge, (5) significant competitive edge.

5. The strategical opportunities of the Hungarian poultry integrations

By right of the conclusions deductible from the evaluation of the poultry sector's present situation, complex answers are needed regarding to the strategical challenges that are standing in front of the Hungarian poultry integrations. The dissertation uses the SWOT analysis to find out this answers. According to these analysis the dissertation tries to defining strategical objectives as a method of determining the strategical directions.

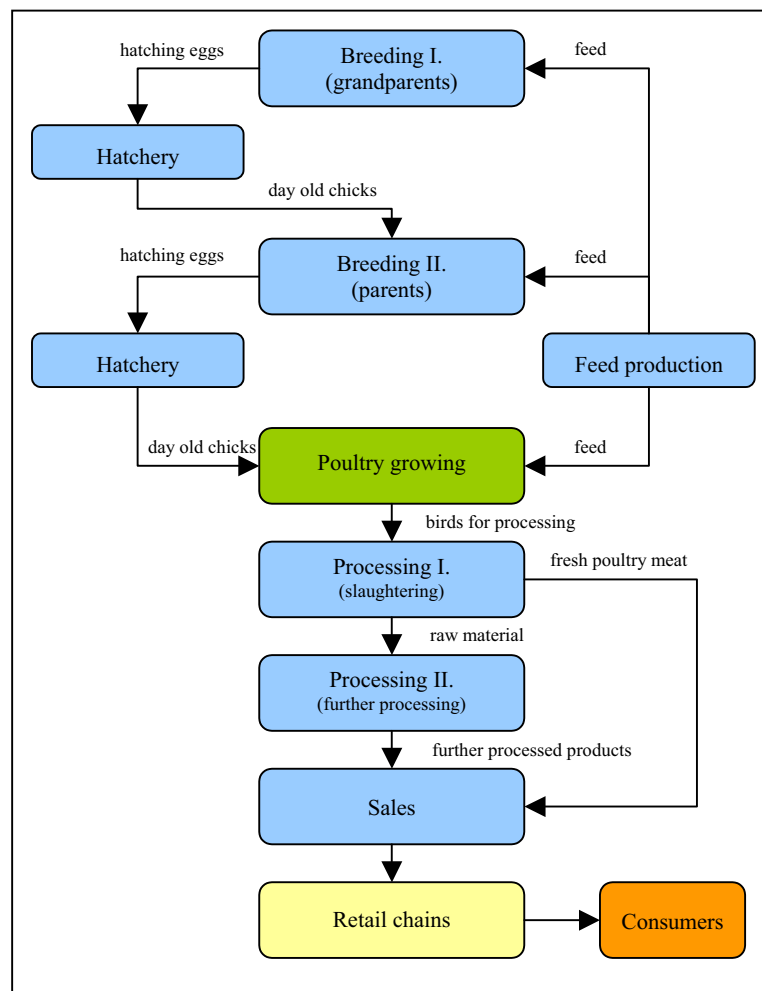
3. Results of the examinations

3.1. Vertical integration in the Hungarian poultry industry

The main structure of integrated company systems working in the Hungarian poultry sector acts upon the international trends can be set down as the model can be seen on the 1st graph.

1st graph

General activity structure of integrated poultry companies

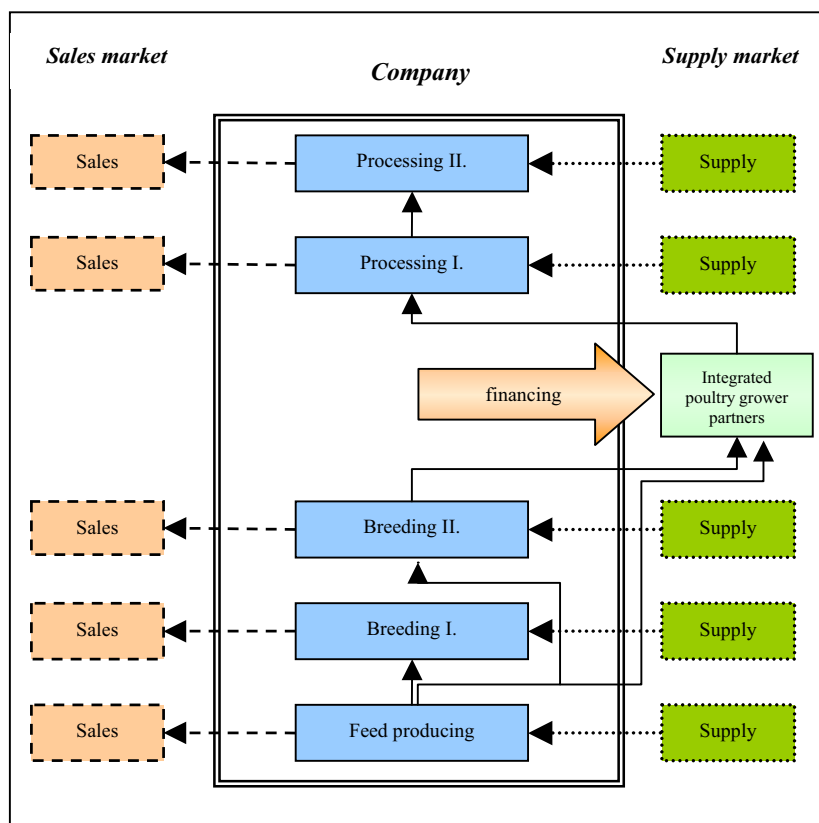


Source: Own illustration of the author (2005)

Based on the vertical parameters and the internal connection system of poultry chain can be squarely standardized the market connection system wherein a company structure is working like this. Further speciality of the system is, that all of the supply chain elements has also own market connections beyond the internal product transmission. The system of that connection structure can be seen on the 2nd graph.

2nd graph

The market connection system of an integrated poultry company



Source: Own illustration of the author (2005)

Fit into the major international trends the companies of the Hungarian poultry industry are aspire to work out integration systems which can be seen on the previous graphs.

The standardization of the structure of Hungarian poultry companies is so difficult because the fundamentals of the integration chain are missing sometimes. Creating new integration elements needs significant capital expenditures but it is not possible in the present situation of the sector. According to this, the systems evolved in Hungary are multivarious and hardly standardizable, but they would like to take under their control the main elements of the integration with contracts or proprietary representation.

In connection with the Hungarian company players worthwhile to remark that in the last couple of years (3-5 years) a strong realignment process started around the processor players of the sector which means the transformation or sometimes the termination of the company structure of the biggest market players. The owners of the major processing plants had been changed, and connection with this the realignment of the integration activities operating around the processing activity also started.

3.2. The cost and income situation of the vertical structure

In the course of analysing the cost- and income situation of vertical poultry systems the dissertation got to the following results:

- It can be declared by the grounds of the cost structure of the main activities in the supply chain that the poultry industry is working as a significantly raw material cost orientated sector. *(This statement is confirmed by the cost structure analysis and cost correlation analysis of the dissertation.)* By right of the mentioned things from the side of the costs, the profitability is mostly determined by the costs of used raw materials, and the other cost elements *(for example: energy costs, labour costs, cost of logistics, etc.)* are playing less function in this question.

- On the output market of each sections of the poultry industry (*eg.: retail chains, poultry processing companies*) the level of selling prices are so rigid, and in the last time it has not been increased permanently. This fact together with the previous statement made a situation wherein the poultry growing and processing was working with extremely low profitability moreover in some periods it was precodely loss-maker.
- According to the calculations made from the angle of the margin productivity of each partial activities of the sector is declarable, that the cumulated margin calculated on the level of raw materials frequently not, or just partially was enough to cover the other costs of the supply chain elements. The distribution of the total margin producted along the supply chain between the supply chain elements is mostly shifted to the side of the retail chains. The other players of the supply chain are obliged to manage their costs and profit from lower margin.

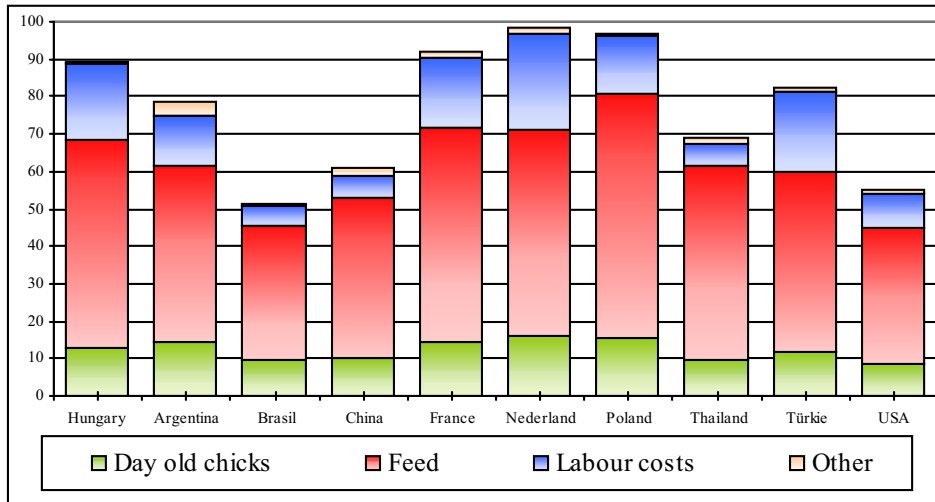
3.3. The competitiveness of Hungarian poultry industry

The dissertataion approaching the sectoral and the company competitiveness of the sector by dint of complex analysis. The main parts of these analysis were (1) the international comparison of the cost effectiveness of the sector, (2) the estimation of economical indicators of some company players, and (3) a five graded subjective analysis of competitiveness.

In the subject of cost effectiveness which is principally influencing the competitiveness, the main target was the comparison of the raw material costs and roduct cost prices. In this respect the dissertation points the fact that the main factor of international competitiveness and cost effectiveness is the level of feed costs, which is significantly influencing the cost prices of the final products of the chain. The results of the comparison can be seen on the 3rd and the 4th graph.

3rd graph

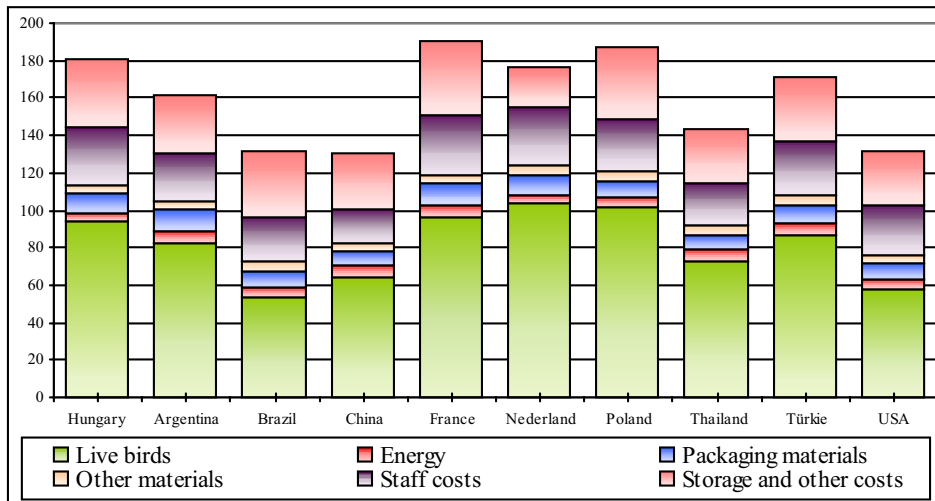
International comparison of the main costs of poultry growing (USD cent/kg)



Source: Own illustration of the author based on the data of A.V.E.C. and FAO (2005)

4th graph

International comparison of the cost price of whole chicken (USD Cent/kg)



Source: Own illustration of the author based on the data of A.V.E.C. and FAO (2005)

In the course of analysing the company competitiveness and the comparison of the different indicators calculated from the financial and accountation data of the companies it came to light that the point of view of capital adequacy and liquidity, which are some of the most important company criterias of vertical structure, the Hungarian players are in a disadvantageous competitiveness situation comparing to foreign players.

By right of the subjective competitiveness analysis the Hungarian poultry sector had been classified in the *significant competitive edge category* from the aspest of production factors; in the *break away competitive situation* from the aspest of market factors; in the *break away competitive situation* from the aspect of cost and income situation; in the *break away competitive situation* from the aspect of sector structural factors, and also in the *break away competitive situation* from the aspect of financial situation and capital adeqacy.

3.4. The strategical opportunities of Hungarian poultry integrations

The basis of listing the strategical opportunities can be declared for the integrated company players of the Hungarian poultry industry is the SWOT analysis which is lean on the examination chapters of the dissertation. (*The SWOT analysis can be seen on the 5th graph*) The strategical target system coming from the analysis can be useful to handle the present and near future challenges of the companies of the Hungarian poultry industry.

The specified strategical targets are the followings: (1.) Protect and improve market positions; (2.) Develop cost effectiveness; (3.) Expand the vertical integrations; (4.) Help and develop the sectoral concentration; (5.) Develop the animal health and food safety systems; (6.) Implement strategical management; (7.) Overall financial rationalization and source management; (8.) Strengthening the representation of interests; (9.) Self-limitation of production.

The SWOT analysis of Hungarian poultry companies

Strongnesses	Weaknesses
<ul style="list-style-type: none"> • Good technological level of processing plants • Wide production profile • Good practice in producing further processed products • Professional knowledge (professional managements) • Evolved market connections with the importer countries of the EU • Relative low staff costs • Privately owned developing integrated companies • Stable supply of raw materials 	<ul style="list-style-type: none"> • Overall overcapacity • Low effectiveness in processing • Internationally high cost prices • Low liquidity, missing development sources • High ratio of needed near-cash assets • Absence of product marketing • Absence of company strategy • Strong position of customers (no influence on prices)
Opportunities	Threats
<ul style="list-style-type: none"> • Working out new and complex company strategies • Reduction of costs by ameliorate effectiveness • Racionalization of company activities • Play upon the concentration process wich started in the sector • Expansion of vertical integration • Make strategical associations to get stronger market positions • Make associations for procuration • More efficient export activity (eg.: east markets) 	<ul style="list-style-type: none"> • To crab into critical financial situation • Hard market competition, losing markets • Suffering the concentration process wich started in the sector • Coming out of more efficient western competitors • Bad credit standing decaying connections with the bank sector • Difficulties on the product chain (overproduction, stock difficulties, etc.) • Acquisition ambition of foreign companies • Coming out of animal health problems

Source: Own composition of the author (2005)

4. Summary of the new and novel results

1. One of the results of the dissertation can be the applied complex examination method which is working with different points of view and different methods in all cases of the examined factors. This complex view of examination gave the possibility to analyze the vertically integrated poultry systems as consistent whole organisations, taking into consideration the logical connections of each supply chain elements and as well the interest system functioning between them.
2. By means of the analysis of the internal operating typicalities of the vertical poultry companies working in Hungary the dissertation sets up an operating model which is (1) based upon practical observations, and reflects the real structure and internal logical relations of Hungarian poultry companies; (2) means a possibility to analyze the internal operating character and the market relation system of the players of the sector; (3) means a possibility to modelling the connections between each elements of the supply chain.
3. The cost and income situation of the supply chain elements of the vertical integrations been estimated by the consonant results of several analyzing methods. The dissertation opens up and propping up with factual data the raw material cost orientated operating of the sector and the logical relations between each cost variables. By right of the factual data been demonstrated the profit productivity of the supply chain, and have been made the critical valuation of factors influencing the profitability. In the course of the analysis cleared up that the main activities of Hungarian poultry industry working with really low profitability and in some periods they were loss-makers.

4. The competitiveness of the sector and the company players is basically restricted because of (1) the weak natural effectiveness and low cost effectiveness; (2) some geographical circumstances which determine the above mentioned things; (3) the weak organization, capital adequacy and liquidity; (4) the low level of vertical integration; and (5) the overcapacities and the deconcentrated sectoral structure. This establishment is also supported with more angled (*objective and subjective*) analizations.
5. In the topic of improving competitiveness, the dissertation emphasizes the strategical way of thinking also from the point of view of the whole sector and especially from the point of view of the company players. By help of the SWOT analysis made by the examination results the dissertation declares strategical targets which could be helpful to handle the present and near future challenges of the company players.

5. Proposals on theoretic and practical application of the results

1. One of the theoretic applications of the results of the dissertation can be the detailed working-out of the main methods set up for the analysis. By the course of the methodological applications of the dissertation a uniformed analyzing model can be worked-out which is also easely adoptable for the real company operation.
2. Among the results of the dissertation the applied analyzing methodology and the company specifically improved variants of that can be useful for the complex analysis of the activities of real integrated company players. The examination of cost and profit factors, and the valuation of the internal and external connection systems of the company also can be useful in the reality for detecting the weaknesses and defining the main challenges.

3. The cost analysis, especially the correlation cost analysis and the company specifically improved variants of that as a part of the controlling system of the company players can give a possibility to make better the planning of the whole integrated poultry activity.
4. In case of real company operation the SWOT analysis is suggestible as a method of the strategical approach analysis which could help to define the strategical challenges and opportunities relative to the given company organization.
5. The system of strategical targets been defined in the dissertation contains establishments which are absolutely useful for improve the situation of the different players of the Hungarian poultry industry. Of course by means of a more detailed analysis these targets can be adopted for given company players and can be converted into particular tasks which could give help and orientation in the course of every day operation.
6. On the whole, by means of theoretical improvement of the results defined in the dissertation several practical application can be worked-out, which primarily can be applicable in the economical management, the production programming system, the market policy and the complex strategical management of the company players of the Hungarian poultry industry.

6. Publications made in the theme of the dissertation

Publications in lectured periodicals:

1. Szentirmay A. (2003): Koncentráció és vertikális integráció az európai és a hazai baromfiiparban. GAZDÁLKODÁS XLVII. évf. 3. sz.
2. Szentirmay A. – Gergely I. (2005): Vertikális integrációk az élelmiszergazdaságban. GAZDÁLKODÁS XLIX. évf. 2. sz.
3. Szentirmay A. (2006): Analysis of some important cost factor of poultry meat production. Acta Agronomica Óváriensis - under publishing

Presentations on scientific conferences:

1. Káldi J. – Szentirmay A. – Nagy F. (2002): Az EU-ban kapható támogatások adminisztratív feltételei. XXIX. Óvári Tudományos Napok, 2002. október 3-4., Mosonmagyaróvár
2. Szentirmay A. – Gergely I. (2003): A baromfiágazat vertikális integrációja mint stratégiai lehetőség. XLV. Georgikon Napok, 2003. szeptember 25-26., Keszthely