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TRENDS OF HR MANAGEMENT OF THE SUGAR INDUSTRY BETWEEN 2000 AND 2010 IN EU COUNTRIES

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ABSTRACT

The sugar industry in the EU has undergone significant changes over the last decade. The mergers and acquisitions and the reform of the sugar market organization led to concentration and an increase in processing capacity, while the number of sugar factories decreased. The goal of this study is to show the human resource management specificity of beet-processing and sugar production in the period between 2000 and 2010 in Hungary and in other EU countries. The analysis is based on data from the European Sugar Manufacturers Association (CEFS). During the data processing, the following human resource management-related indicators have been calculated: employment in the campaign period, raw material and finished product related labor productivity, and raw material and finished product related labor demand. The main findings of the analysis are the following: Over the investigation period each of the calculated indicators showed improvement. The largest improvement was registered in the case of specific sugar production and in the case of labor demand in sugar production. For these indicators the rate of change in some cases exceeded 100%. In the case of the other indicators the improvement was moderate. Hungarian values compared with the values of the best countries of the EU show a significant difference in the case of each indicator. The difference in the case of sugar beet processing related labor productivity was more than double and in the case of sugar production related labor productivity nearly triple. If we compare Hungarian values to the average of the EU countries, we can find that all of the Hungarian indicators have reached or in some cases slightly exceeded the EU level.
Keywords: sugar, sugar beet, human resource management, labour productivity, employment

INTRODUCTION

In the countries of the European Union the sugar industry has gone through significant changes over the past decade. The regulation of the sugar production and trade has changed. Decreasing subvention for the production of sugar and decreasing export subvention resulted reductions in the sugar output. The production decrease has been accompanied by rationalisation processes, which led to factory closures, mergers and capacity concentration.

These processes had an effect also on the human resource management. As a result of the changed conditions, not only in the number and composition of the labour force, but in the labour productivity and labour demand also a significant change has occurred. The purpose of the study is the presentation and analysis of human resource management changes in the field of sugar industry during the last decade.

MATERIALS AND METHODS

The required data for the analyses are from the database of the European Sugar Manufacturers Association (CEFS). The duration of the analysis was between 2000 and 2010. For the presentation of changes in the field of human resource management various indicators have been calculated by using a Microsoft Excel spreadsheet program. The results are presented on diagrams.

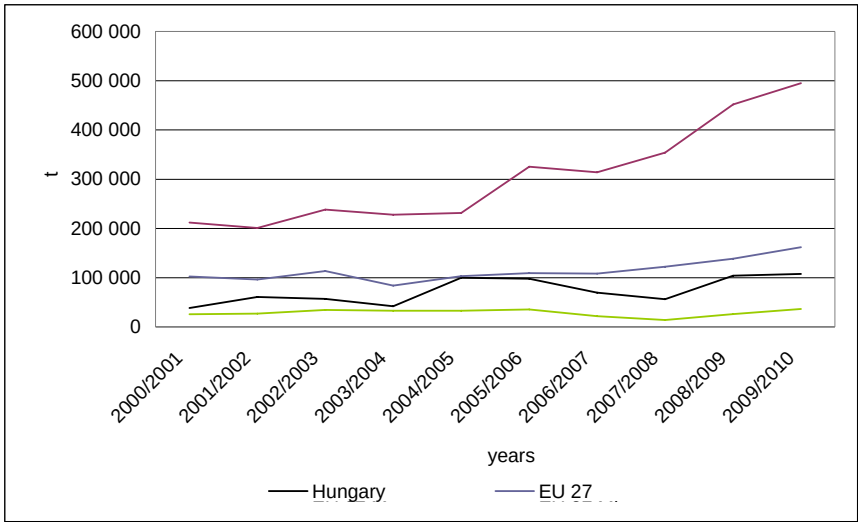
RESULTS AND DISCUSSION

Sugar production

In the case of sugar factories, the efficiency of the human resource use and the labour productivity is essentially influenced by the quantity of sugar produced per factory. *Figure 1* shows that the countries of the European Union already in 2000, have an average of 102 655 tons of sugar produced per sugar factory. The Hungarian average over this period was only one third of this, 38 320 tons. The best European factories produced more than five times higher quantities (211 981 tons) during a single campaign. During the analysed period of 10 years the Hungarian average increased 2.5 fold to 107 590 tons, so it is slightly higher than the EU average was in year 2000. The average of the EU countries in the 10 years period, increased to a lesser extent, with about 60% and amounted to 162 000 tons. The difference between Hungary and the most advanced countries in the EU has not decreased between 2000 and 2010, since e.g. sugar factories in the Netherlands produced on average more than 495 000 t of sugar in 2010. This is more than four times higher compared to the Hungarian value.

Figure 1

Sugar production per factory in EU-27 countries

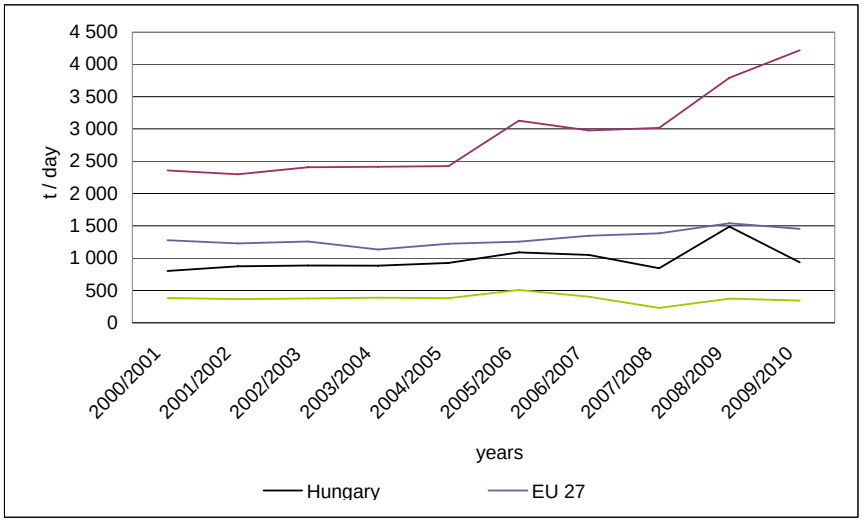


Source: *CEFS*, 2008

If we examine the daily sugar output of the sugar factories, there are almost similar results, as in the case of the annual sugar production. *Figure 2* shows that the countries of the European Union already in 2000, had an average of 1 278 tons of daily sugar production per factory. In this period Hungarian factories had an average of 803 tons which is 63% of the corresponding EU value. The best European factories produced on a nearly three times higher level, 2 355 tons per day. During the analysed period of 10 years the Hungarian average increased with 16% to 936 tons per day and therefore, it did not reach the EU average level in year 2000. The average of the EU countries in the 10 years period, increased nearly the same extent by 14%, and amounted to 1 500 tons per day. The difference between Hungary and the most advanced countries in the EU has not decreased between 2000 and 2010, since the rate of growth here was 79% and in 2010 the daily sugar output reached the 4 200 tons, which is more than four times higher compared to the Hungarian value.

Figure 2

Daily sugar production per factory in EU-27 countries



Source: *CEFS*, 2008

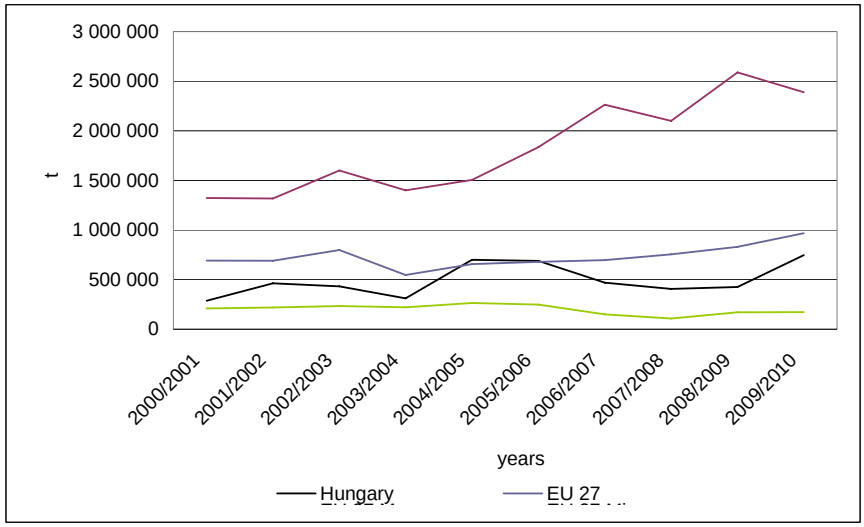
Sugar beet processing

In addition to the sugar production it is worth examining the input side indicators. The most important indicator is the amount of sugar beet, processed per factory. *Figure 3* shows that the countries of the European Union already in 2000, had an average of more than 690 000 tons of sugar beet processed per factory. The Hungarian average during this period was less than half of this quantity with 287 000 tons. The best European factories processed 1 322 000 tons on average, which is more than four times higher compared to the Hungarian value. During the

analysis period the quantity nearly tripled in Hungary, and reached the 746 000 tons, which is slightly higher than the EU average was in year 2000. The average of the EU countries in the 10 years period increased moderately, with about 40% and amounted to 1 million tons. The difference between Hungary and the most advanced countries in the EU has not decreased, as the factories of Netherlands, Sweden and the United Kingdom had an average of more than 2 million tons of sugar beet processed in 2010, which is nearly three times higher than the Hungarian average.

Figure 3

Sugar beet processing per factory in EU-27 countries



Source: *CEFS*, 2008

If we consider the daily sugar beet processing capacities (*Figure 4*), we can notice that the values increased very moderately, from 6 025 tons per day in 2000 to 6 490 tons/day in 2010.

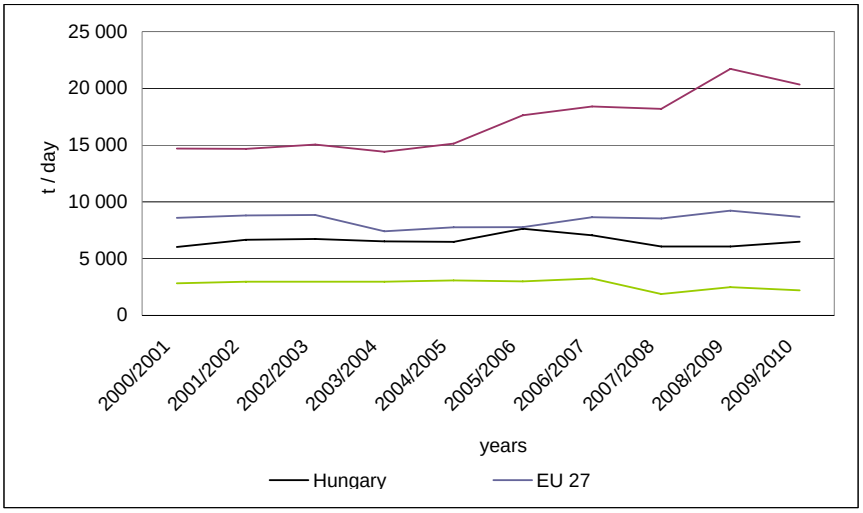
The average in the countries of the European Union has shown practically no increase at all. The index was 8 595 tons per day in 2000 and 8 676 tons per day in 2010. However, we can observe a significant increase in the case of maximum values. The average of the factories in the Netherlands increased from the initial 14 695 tons per day in 2000 to 20 330 tons/day in 2010, which is three times higher compared to the Hungarian average.

Campaign length

Not only sugar beet processing and sugar production quantities, but also the length of the campaign has essential impact on the effective human resources management (*Figure 5*).

Figure 4

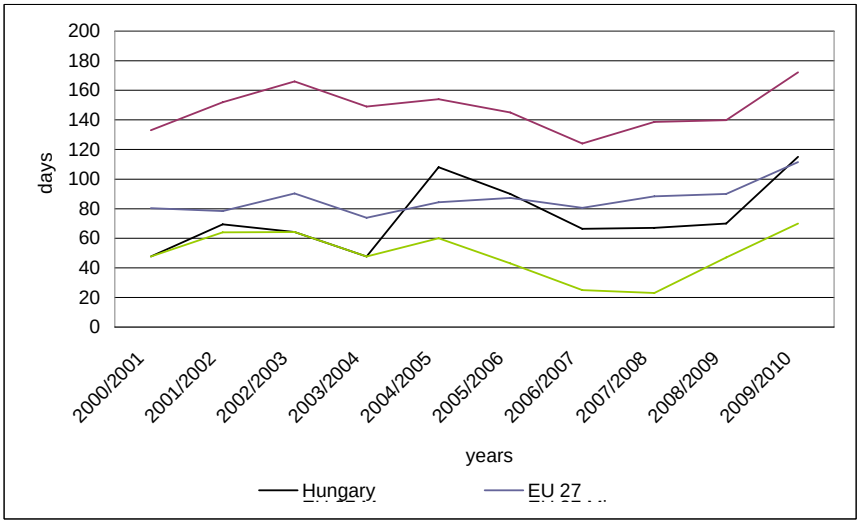
Daily sugar beet processing per factory in EU-27 countries



Source: *CEFS*, 2008

Figure 5

Average campaign length in EU-27 countries



Source: *CEFS*, 2008

Sugar beet cannot be stored for an unlimited period after the harvesting, therefore, the sugar production is limited to the autumn months. Those sugar factories, which

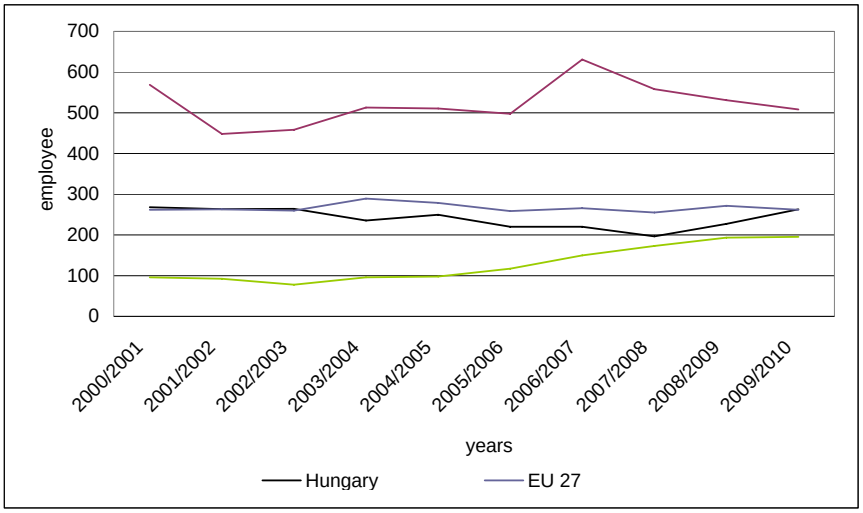
are able to run longer campaign and so reduce the inactive period, known as the maintenance period, can use available human resources more efficiently. Hungarian average campaign length showed an intensive improvement from 2000 to 2010. The number of campaign days increased from 48 to 115, which is above the average of EU countries with 111 days. The maximum number of campaigns days was registered in the United Kingdom, with 133 days in 2000. Although the initial value was extremely high the improvement continued and in 2010 has been almost six months. The British factories were operating on average 172 days in 2010. The reason of the longer campaign period was the raw sugar refining after sugar beet campaign.

Employment

Figure 6 shows the number of employees during the campaign. In the least effective countries in the EU, the number of employees was between 500 and 600. This numbers were practically unchanged during the investigation period. We can observe the same trend, if we consider the average of the EU countries. The number of employees was in every year between 270 and 280 from year 2000 to 2010. In the case of Hungary, the number of employees per factory was 268 in 2000. This value has decreased continuously until 2008 up to 197, and then in 2009 and 2010 the trend was rising and amounted to the initial value. Hungary personal data are on the same level as the EU average, and employ more people exactly one third compared to the most efficient countries in the EU, Italy, or in the Czech Republic.

Figure 6

Average number of employees per factory during campaign in EU-27 countries



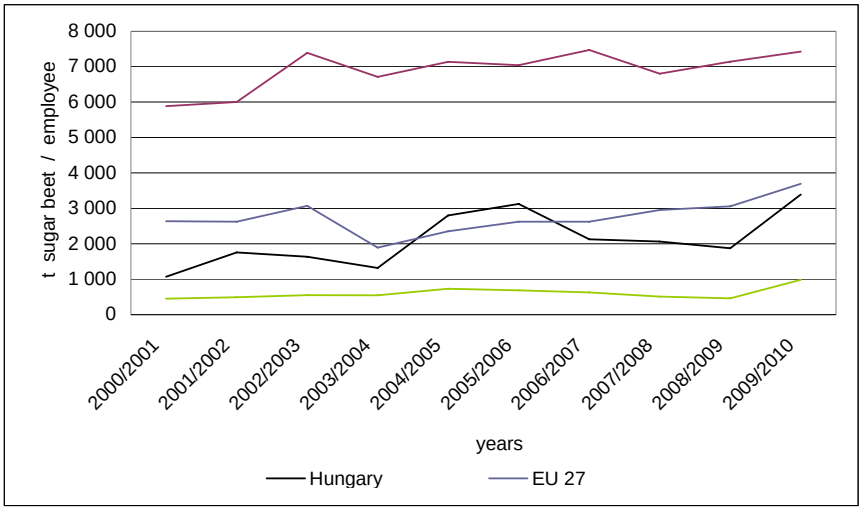
Source: *CEFS*, 2008

Labour productivity calculated on raw material

Analysing the labour productivity calculated on the raw materials, it can be concluded that Hungary is far behind the most productive European countries, and with the exception of two years - 2005 and 2006 -, below the EU average. The highest value of the processed sugar beet per employee (*Figure 7*) was in Belgium in 2000, amounted to about 6 000 tons. The EU average was 2 884 tons in 2010. In that year in Hungary, this index was only a 1 073 tons per employee. The data shows that with some interruptions, both in Hungary, the EU average and EU maximal values have risen up. It is favourable that the domestic value tripled during the investigation period. Hungarian value in 2005 and 2006 reached, in 2010 with 3 393 tons per employee neared the EU average. Meanwhile, in the most productive country of the EU, Belgium, modestly increased this indicator to 7 423 tons per employee, the productivity even more than double compared to the current Hungarian value.

Figure 7

Labour productivity of sugar beet processing in EU-27 countries (employee)



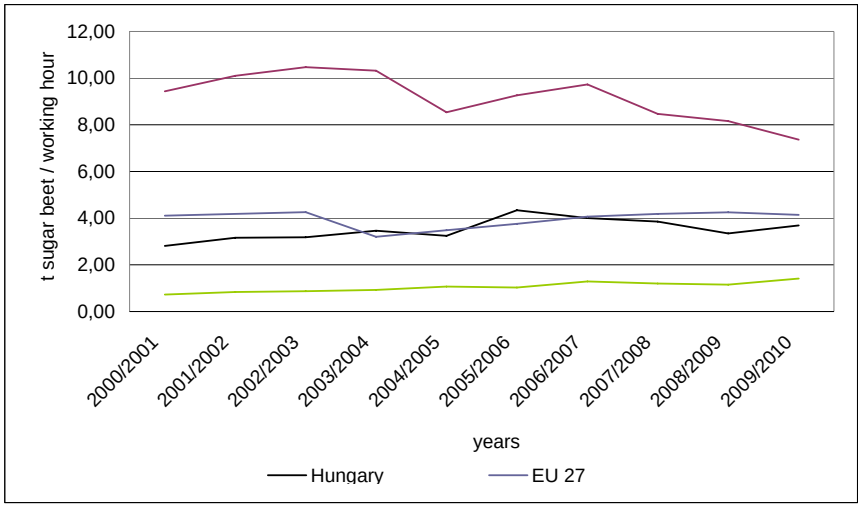
Source: *CEFS*, 2008

If we examine the effectiveness of labour calculated for one working hour and for raw material the analysis shows a more precise picture (*Figure 8*). In this case, the length of the campaign, the hours worked by an employee and the daily working hours are also included in the calculation. Examining the values of the EU, the initial value in year 2000, is the same as calculated in 2010. In both cases, the indicator is 4.1 tons of sugar beet per working hour. It is interesting that in the most effective countries the trend was decreasing. The initial value in year 2000 was 9.4 tons of sugar beet per working hour and it decreased to 7.4 tons per working hour until 2010. In the case of Hungary the trend of calculated index is moderately rising. In year 2000, the rate was 2.8 tons of sugar beet per working hour. This

value increased to 3.7 tons per working hour during the analysis period. This is 10% below the EU average.

Figure 8

Labour productivity of sugar beet processing in EU-27 countries (working hour)



Source: *CEFS*, 2008

Labour productivity calculated on end product

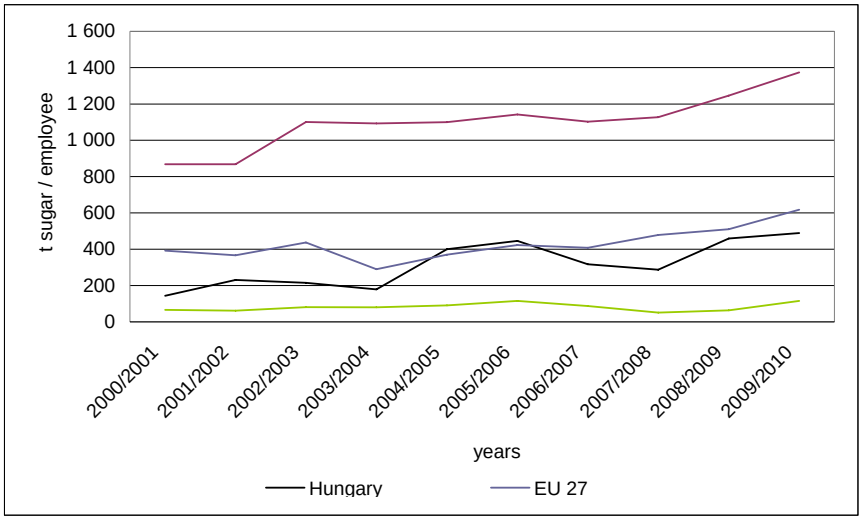
Similarly, to the raw material based labour productivity, analysis of the labour productivity calculated on the end product concludes that Hungary is far behind the most productive European countries, and with the exception of two years - 2005 and 2006 -, below the EU average. The highest value of the produced sugar per employee (*Figure 9*) was in Belgium in 2000, amounted to about 870 tons. The EU average was 392 tons in 2010. In that year in Hungary, this index was only 143 tons per employee. The data shows that with some interruptions, both in Hungary, the EU average and EU maximal values have risen up. It is favourable that the domestic value was more than tripled during the investigation period. Hungarian value in 2005 and 2006 reached, in 2010 with 489 tons per employee neared the EU average. Meanwhile, in the most productive countries of the EU, eg. in the Netherlands, also intensively increased this indicator to 1 374 tons per employee, so the productivity nearly triple compared to the current Hungarian value.

If we examine the effectiveness of labour calculated for one working hour and for end product the analysis shows a more precise picture (*Figure 10*).

In this case, the length of the campaign, the hours worked by an employee and the daily working hours are also included in the calculation. Examining the values of the EU, the initial value in year 2000, slightly increased until 2010. In 2000 the indicator was 0.65 tons of sugar per working hour, in 2010 0.61 tons of sugar per working hour.

Figure 9

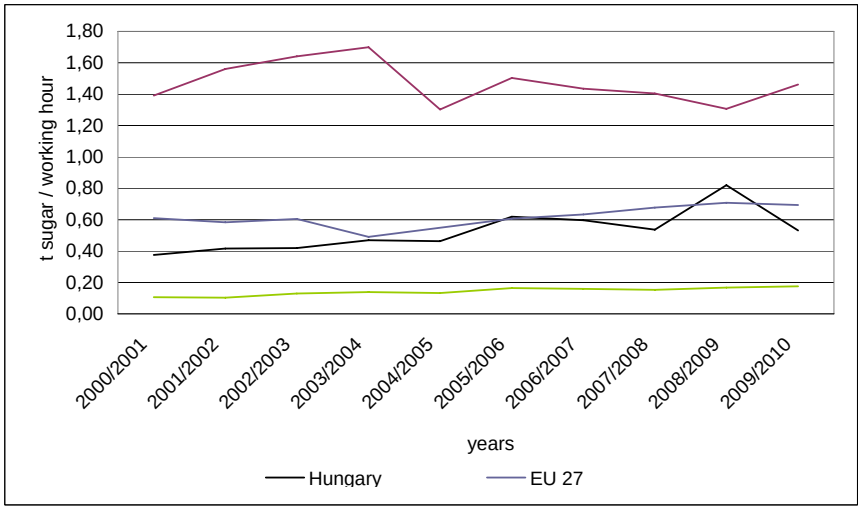
Labour productivity of sugar production in EU-27 countries (employee)



Source: *CEFS*, 2008

Figure 10

Labour productivity of sugar production in EU-27 countries (working hour)



Source: *CEFS*, 2008

The trend of the most effective countries was also slightly increasing with considerable fluctuations during the 10 years. The initial value in year 2000 was 1.39

tons of sugar per working hour and it increased to 1.46 tons per working hour until 2010. In the case of Hungary the trend of calculated indexes was intensively rising from 2000 (0.37 tons of sugar per working hour) until 2009 (0.82 tons of sugar per working hour), then decreased to 0.53 tons of sugar per working hour in 2010.

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