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# RECENT TRENDS IN THE CROATIAN AGRICULTURAL BUSINESS SECTOR

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**Abstract:** The purpose of this paper is to explore recent trends in the Croatian agriculture and forestry business sector and compare it with the Croatian economy as a whole. This topic is considered interesting because recent business years have been heavily influenced by the global financial crisis. Many authors would say that agriculture, as a specific branch of the economy, does not follow general trends, but is affected rather by other factors, especially such as environmental ones. The global financial crisis had the most negative impact on the Croatian economy in the 2008/2009 period, when the GDP growth rate tumbled from 2.4% to -5.8%. Although some positive movements have been recorded since 2009, a recession is still going on. Based on information from the National Financial Agency (FINA) database we found that during the period 2007-2011, agricultural firms experienced the same trends as the whole economy, except in terms of average monthly salaries and employment. However, due to the impact of / on? agricultural products prices and yields, in two year period from 2008 to 2010, agricultural firms recorded an almost linear fall in revenues, while the national business sector on the whole experienced a sharp fall in revenues in 2009 and then only a modest fall in 2010.

**Key words:** agriculture, financial crisis, revenues, efficiency ratios

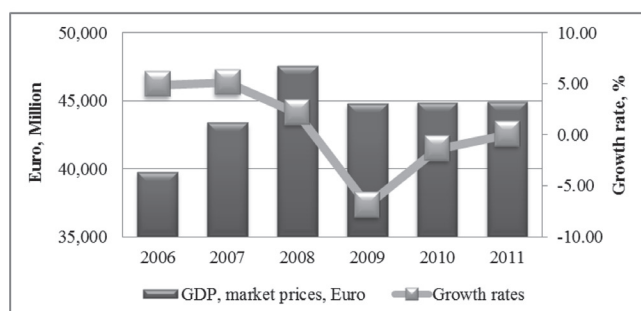
## Introduction

The first impacts of the financial crisis were registered in the United States of America (USA) in 2007. The crisis emerged because of a huge increase of securitised lending, which caused a strong increase in the housing market. Securitisation lenders, originating from many countries besides the USA, invested in the USA housing market because the prices were on a long-term high. At the same time, lending institutions in the USA loosened their requirements for the backing-up of credits. Finally, when USA housing prices declined, major global financial institutions that had invested heavily in asset-backed securities reported significant losses. The shock that affected the USA financial sector in 2007 appeared in Western Europe almost simultaneously, while it did not affect Eastern Europe until 2008 (Yifu Lin and Martin 2010; Swinen and Van Herck 2010).

According to several authors, the global financial crisis did not affect the agricultural sector in the same way as other sectors of the economy. For the USA's farming sector, the impact of the crisis has been alleviated by the strong financial position of the majority of the farms (Ahrendsen 2012). Farmers usually borrow from smaller, local institutions which have not been involved in investments on the housing market (Boehlje and Hurt 2008). There are also many evidences that the agricultural sector is a bit more "recession-proof" than the economy in general, since its output prices are influenced by a number of factors besides a recession. In addition, for

some of the agricultural products, the supply is much more important in determining price variations than are movements on financial markets. Ultimately, long-term prices and the weather are the most influential factors on the supply side of agriculture (Good and Irwin 2008, Matthews 2011). This is true for some of the most important crops such as maize, soy beans, wheat and rice.

The Croatian economy moved into crisis in 2009 after a long period of continuous growth. A sharp decline in GDP as well as in the growth rate clearly shows the effect of the crisis (Figure 1).



**Figure 1.** Gross Domestic Product and its growth rate in Croatia  
Source: According to data from Statistical Yearbook of Croatia, Central Bureau of Statistics, Zagreb

As well as the decline in GDP, the Croatian economy also experienced all the other effects of the global crisis, and it is still in recession with no sign of recovery. In the years

after 2009, interest rates increased, businesses, households and government debts grew and unemployment soared to a very high level. However, the Croatian government did not take any serious measures to ease the negative impacts on the economy. The Croatian National Bank continued to manage a firm monetary policy of preservation of the national currency Kuna (HRK), with some interventions in the banking sector to provide additional financial resources. Also, a new tax was introduced to cover the rising budget deficit.

According to the financial data provided by FINA, business entities in Croatia grew in number from 2002 to 2007. Today, the Croatian private sector is still heavily influenced by the destructive impact of the global financial crisis. Because of these negative developments, the business sector needs additional resources to finance its activities and its indebtedness increases. Lenders are still willing to lend, but interest rates are higher than they used to be before the crisis. Also, the quality of bank sector placements has deteriorated. For example, the share of partly and fully irrecoverable bank loans to business enterprises in terms of the total value of loans has increased from 7.3 to 20.1 per cent.

Agriculture, including forestry and fishery, constitutes around 5% of the total gross value added in Croatia. Statistics are usually given according to National Classification of Activities (2007) and data for agriculture only are not available. Therefore in this paper we use data for sector of Agriculture, Forestry and Fishery to represent the situation and trends in agriculture. We view this as an acceptable compromise since forestry and fishery are of marginal importance in the sector compared to agriculture.

Agricultural businesses cannot avoid the negative impact of the global financial crisis which has hit the Croatian economy. However, as has been stated by the above mentioned authors, it is possible that the crisis has affected agriculture in a different way than other sectors. To ascertain whether differences in development trends between the agricultural sector and the Croatian economy as a whole really exist, the available statistics for the period 2006–2011 have been analysed.

## Materials and methods

This paper is based on two main sources of data:

1. The Analysis of Financial Results of Entrepreneurs in the Republic of Croatia published annually by the national financial agency of Croatia - FINA.
2. The set of financial data for agricultural business entities in Croatia provided by the private financial consultancy firm Boniteti Ltd.

The FINA has the most comprehensive financial database for the Croatian firms since all national business entities are required to send their financial statements to FINA regularly. The second, Boniteti Ltd., provides financial consultancy based on the FINA data set and some additional data sources.

The data set used for this research includes aggregated financial information for agricultural business entities as defined by the National Classification of Activities, version

2007, which is comparable to the international classification of activities NACE Rev. 2.

General economic indicators are taken from official publications and bulletins of the Croatian National Bank, and the Croatian Bureau of Statistics.

The methods used for data description and analyses are:

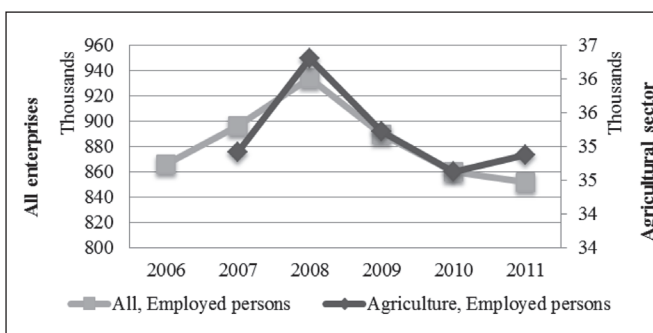
- Graphic presentations
- Descriptive statistics methods
- Indices
- Financial ratio analysis
- Linear correlation.

The series of comparable data are currently only available for 5 to 6 years, and the results of correlation and trend analyses cannot be taken as representative. However, they can serve as rough estimates of development trends for chosen variables.

## Results and discussions

The total number of enterprises in Croatia has been growing for 10 years between 2002 and 2011. This is also the case with the number of enterprises in the agricultural sector, except for 2010 when this number temporarily decreased before rising again in 2011. According to the available data, 98,530 enterprises submitted their financial reports to FINA in 2011. Of this number, 3,085 subjects were registered in the Agriculture, Forestry and Fishery sector, the vast majority of them being agricultural firms.

The number of people employed at business entities was growing until the effects of financial crisis pushed the economy down. The highest employment rate was achieved in 2009, with some 934,000 employees in total in all enterprises, and around 36,000 in agricultural businesses (Figure 2).



**Figure 2.** Employed persons at business entities in Croatia  
Source: Based on FINA and Boniteti Ltd. data sets. Zagreb. 2008–2012  
Note: Comparable data for agricultural sector are not available for 2006.

Agricultural businesses' total assets varied from HRK 27.3 million in 2007 to HRK 38.7 million in 2011. In that period, the total assets decreased only in 2010, while the average total assets per business entity were down for two consecutive years: 2009 and 2010 (approximate currency rate: € 1.0 = HRK 7.5).

If we recall the above described trend in number of entities, it is obvious that in 2009, agricultural enterprises experienced the toughest business year. Their balance sheets went down

mainly because of the decline in current assets, perhaps because they had to write off large amounts of *doubtful accounts receivable*.

### Aggregate financial performance of agricultural business entities

The total revenues of all businesses entities registered at FINA gives a clear picture of the impact of the global financial crisis on Croatian enterprises. In two consecutive years, 2009 and 2010, aggregate total revenues dropped by almost HRK 112 billion, or -15%, compared to 2008 (Figure 3). At the same time, the decrease in the total revenues of agricultural businesses was even larger in relative terms: from HRK 26 billion to HRK 21 billion.

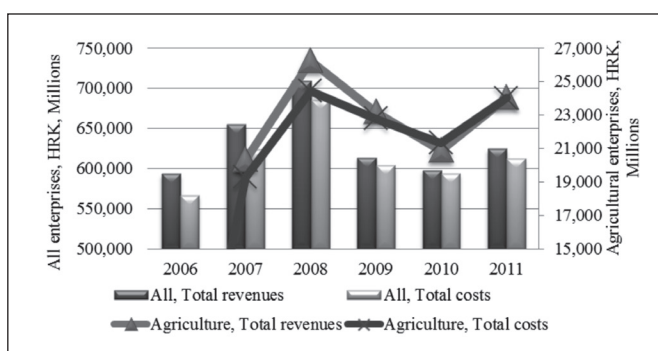


Figure 3. Total revenues and costs of all enterprises and of agricultural enterprises in Croatia  
Source: Same as Figure 2.

In Figure 3, we can see that the agricultural sector registered almost the same relative decrease of revenues in 2009 and 2010, while the business sector as a whole dropped much less in 2010. The agricultural sector showed an even negative profit in 2010 when total costs stayed above the decreased revenues. However, figures started to recover after 2010. The highest total revenues achieved in 2008 are due to the positive trends of two factors: (1) a higher price index of agricultural products compared to 2007 and (2) a favourable production year and good harvest of the most important crops in 2008. In 2009, both prices and yields decreased, and this development augmented the negative all-embracing impact of the global financial crisis. We should be aware that since 2008, the gap between price indices of agricultural products and agricultural inputs has widened. The average value of price indices of current inputs for agriculture is 125, while the average of price indices of agricultural products is 109.

The key business performance ratios are in line with the total values of revenues and costs. The net profit margin of the whole business sector started to fall in 2008 (Figure 4) because the increase in revenues, compared to 2007, was relatively smaller compared to costs. In 2008, because of favourable price conditions and high production, the ratios in the agricultural business sector were better than for the business sector as a whole. However, soon after in 2009, negative trends hit agricultural businesses severely; since

then, its results have stayed behind the results of the overall business sector.

The deterioration of business results due to the crisis has brought problems of liquidity as an unavoidable result. The self-financing ratio (equity to asset ratio) of the whole business sector started to fall in 2006 and reached its lowest level in 2011 (Figure 5).

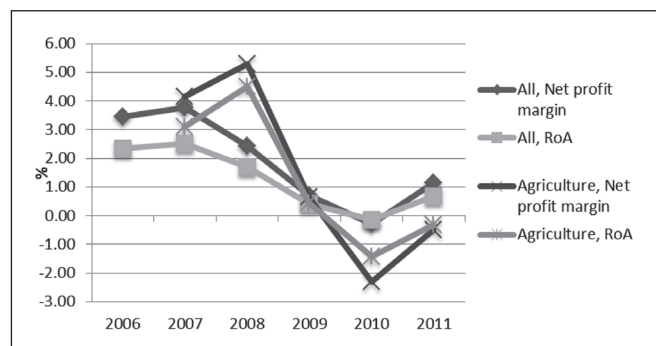


Figure 4. Net profit margin and rate of return on assets (RoA): All sectors and agricultural sector  
Source: Same as Figure 2.

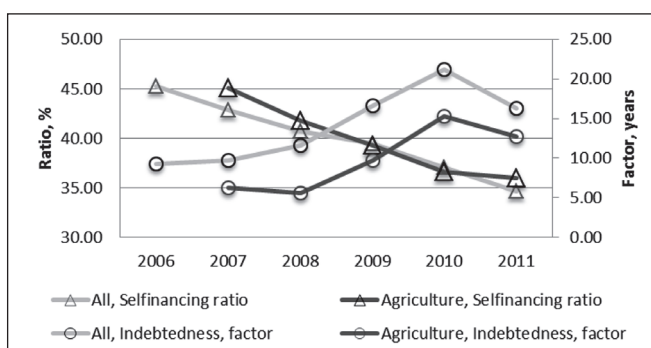


Figure 5. Self-financing and indebtedness of all businesses and agricultural businesses  
Source: Same as Figure 2.

The indebtedness factor (liabilities or debts divided by the money available for repayment) was stable until 2008, and then started to grow until 2010 (Figure 5), indicating a longer period for servicing debts and more problems therein.

Bank loans to business entities grew in value over the whole period, while interest rates rose until 2009. In 2010 and 2011, interest rates decreased to a level which is still above the 2006 level. The liquidity ratios of the whole business sector started to worsen from 2007 until 2010. The liquidity ratios of agricultural firms have become lower on average and more volatile over the years. Agriculture especially has a lower quick ratio with an average of 0.68 over 5 years, while the overall average is 0.79.

### Agricultural business results and the financial crisis

So far, the review of the available data sets showed that agricultural businesses experienced the same general trends as the entire business sector in Croatia. However, the degree of annual change of total revenues in agriculture was quite



different. In the 2007/2008 period the total revenues in agriculture grew more than the entire business sector, and then in 2008/2009 they fell less in comparative terms. In 2010, the total revenues of agricultural firms then declined more than for the entire business sector, and finally in 2011, the relative increase of total revenues was larger in the agricultural sector. The discrepancies described show that the global financial crisis is not the only factor which has influenced agricultural business and its results.

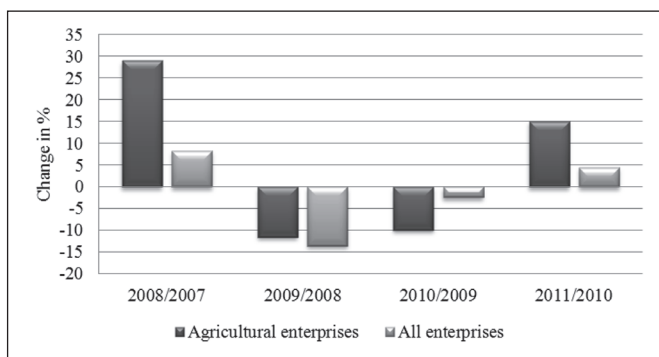


Figure 6. Relative annual change in total revenues  
Source: Same as Figure 2.

The most obvious impact factor is sale revenue, since we found that these make 95–96% of total revenues in the agricultural sector. Knowing that the total revenue is a product of price and quantity we have observed the trends of these two variables (Figure 7).

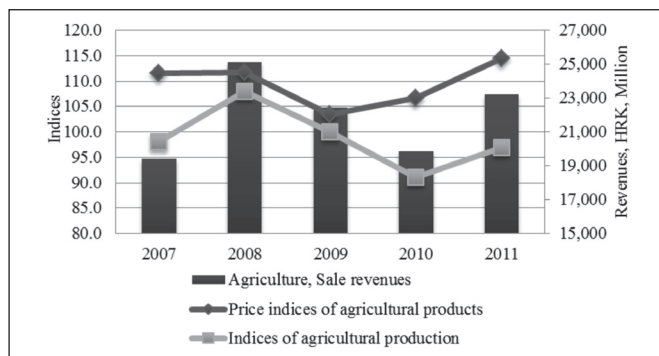


Figure 7. Sale revenues of agricultural firms, price indices and agricultural production indices  
Source: Same as Figure 2.

Figure 7 provides an insight into the causes of decline in the sale revenues of agricultural firms. Since the sale revenue bars follow the production indices curve more closely, we can say that yield is a more important factor in influencing revenues than are the prices of agricultural goods. Hence, although the price indices curve increased in 2010, due to the lower production level, the revenues continued to fall in the same year.

Using data from Figure 3 and Figure 7, we can also observe that total revenues in agriculture were falling annually at a similar rate from 2008 to 2010, while the entire business sector experienced (1) a sharp fall from 2008 to 2009 and

then (2) a slower fall from 2009 to 2010 (Figure 3). It seems that revenues in the agricultural sector were protected in 2009 from the destiny of the entire business sector by satisfying production volumes. However, in 2010, agricultural firms experienced worse production results and consequently, their revenues dropped more than for the entire business sector. The connection between total revenues and indices of agricultural production can also be seen in the value of Pearson's correlation coefficient,  $r=0,79$  (which for crop production is even higher:  $r=0,80$ ).

The results of the research allow us to accept the conclusions of other authors who have found that the performance of the agricultural sector in crisis is not necessarily in line with the entire economy (Ahrendsen 2012, Matthews 2011). In fact, it is very much influenced by yields and prices of agricultural products (Good and Irwin 2008, Matthews 2011). These other factors besides a financial crisis can cause the agricultural sector to perform better or worse compared to other sectors in crisis conditions. In case of the Croatian agricultural sector, it is important to stress that it cannot influence its output prices, especially for the most strongly represented products (corn, wheat and milk). The prices are taken from either the world or the regional market. Hence, in case of high yields in Croatia, the prices will not necessarily fall and decrease potential growth in revenues.

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