

# **The Welfare Effects of the EU Membership on the Hungarian Food Consumers and Producers**

## **FINAL REPORT**

Food consumption of a household is affected by several factors. These factors relating to marketing, income, structure of expenditure. Besides satisfying physiological needs food consumption is also used as sociological indicator. Purchased food consumption is declining in Hungary, both national and regional level. Underdeveloped regions are not able to keep workforce, food consumption is stagnating. Purchased consumption is effected by many factors. Such as household incomes, food prices, household expenses like price of energy, price of substitution products, food consumption outside the household, urbanization, demographical factors.

The accession of Hungary to the European Union (EU) in 2004 was expected to lead to price convergence to the EU levels. The influence of national and EU policies on Hungarian producers and consumers is important as they were facing a new situation. Consumers' welfare depends on the constantly altering world- and common market, and political actions.

Accession to the EU means interalia the adoption of the Common Agricultural Policy (CAP) and the integration in the Single Market. Although the CAP does not affect directly retail food prices, particularly if there is a high component of value-added in food products, it still results in higher prices of agricultural products than under free market conditions. Additionally, integration in the Single Market and the removal of trade barriers means that prices, at least for tradable goods and services, should converge towards EU levels. In the case of both Hungary and Romania, this has, in general, meant rises in food prices. Moreover, in Romania the value added in food products is still low. Also, food expenditure accounts for a much higher share of total household consumption expenditure as compared with most EU member states, e.g. 30 per cent in 2008. In Hungary, the proportion of food expenditure in total household consumption expenditure is lower than in Romania, but still accounts for approximately 20 per cent.

Previous studies have demonstrated that EU accession entails higher food prices. Georgakopoulos (1990) showed that accession increased the price of food in Greece by 8.5 per cent. Renwick and Hubbard (1994) estimated the average increase in the cost of food for

the UK as a result of EU membership to be between 2.4 per cent and 3.7 per cent of gross income. In the case of the Netherlands, Kol and Kuijpers (1996) estimated an increase in the total cost of food of about 7 per cent of average disposable income. Hubbard and Podruzsik (2006) estimated an overall increase in Hungarian food prices of 8.7 per cent, and the Office of the Committee for European Integration (2005) in Poland calculated a 7.8 per cent rise in total prices of food and non-alcoholic drinks, in the first year after accession. Nonetheless, the literature regarding distributional effects of food price changes (i.e. on different groups of consumers) following EU accession, either in established or new EU members, is sparse. Hubbard and Podruzsik (2006) estimated that the short-term impact of food price changes in Hungary varied between 0.5 per cent, for the highest-deciles income group, and 2 per cent for the lowest group. Hubbard and Thomson (2007) estimated the short-term economic welfare effects on a 12-fold breakdown of Romanian households, i.e. six socio-economic categories from urban and rural areas, as a result of assumed food price changes. Relative Romanian food prices were aligned to relative food prices in neighbouring Hungary, who joined the EU in 2004. In addition, an 8 per cent increase in the real level of food prices in Romania was assumed. The results showed that although on average the welfare loss was 2.6 per cent, the impact was much higher for the most vulnerable groups, i.e. unemployed, pensioners and farmers, from both urban and in rural areas. However, the high share of self-consumption diminished these impacts, in particular for rural households.

The most common method used in applied welfare economics for the estimation of gains or losses of a consumer (i.e. individual, household) due to prices changes is the Marshallian consumer surplus. However, unless the income effect is negligible, this is not an exact measure of a change in consumer welfare (Hubbard and Thomson, 2007). Compensating Variation and Equivalent Variation are typically viewed as alternative welfare measures of the changes in consumer surplus. By approximating the consumer real income as the ability to buy the same bundle of goods as was bought before the price change, Slutsky CV and EV assess to what extent the consumer's real income changes when the price of a good changes, i.e. to what extent the consumer's standard of living changes when price varies. Against this background and given that, in both Hungary and Romania, food expenditure still represents a large share of total household expenditure, the Slutsky Compensating Variation based on Laspeyres indexes is considered as an appropriate measure for estimating changes in consumer welfare.

The analysis enables us to conclude that all main groups are affected by the price changes. They should be compensated by 0.1-4 per cent of their basic income on the basis of

the given consumer basket. The low income groups are the most vulnerable; at least 4 per cent increase in disposable income is necessary for the poorest deciles while only 0.9 per cent is needed for the richest households. This welfare loss seems to be not too high compared to results of 3-6 per cent for Argentina (Porto, 2003), 11.9 per cent for Vietnam (Niimi, 2005) and 73-85 per cent for Indonesia (Friedman and Levinsohn, 2001). The values of the Laspeyres index calculations are also lower in Hungary than in a neighbouring country. In Romania in 2008, the consumer's welfare loss varied between 4 per cent for decile 10 and 12 per cent for decile 1 (Hubbard et al., 2010). Thus we can conclude that the EU accession caused slight changes in Hungarian consumers' welfare if only the above listed 18 food products are considered in the consumer basket, *ceteris paribus*.

Own price elasticities are different for the poor and the middle class groups. The larger elasticities showed that poor consumers are more sensitive to price changes than the gentility. For instance, the price elasticity for pork was -0.23 among the poor and only -0.08 among the middle class. Cross price elasticities were mainly negative for D1 and D7.

Income elasticity of demand is used to see how sensitive the demand for an income changes. It is found that almost all goods are inferior and negative income inelastic. Only onions behaved as a normal good. The observed reduction in food quantities may lead to the assumption that food consumption patterns shifted toward different type of foods such as fast food or pre-prepared meals.

There is no economic model, that explains perfectly an economic situation, but the above method can lead to more accurate results if it is possible to meet the following criteria:

- expanding the consumer basket with more food products that are also often consumed goods (like tomatoes, pasta, mineral water and wine);
- expanding the consumer basket with durable goods, considering food consumption to be constant;
- instead of single-price-change multiple-price-change should be counted, where not the food consumption, neither durable good's consumption is constant;
- choosing an earlier year than 2003 to be the base year could also lead to more reliable results.

Although 2003 was the last year before Hungary's EU accession, prior to access, agricultural and food trade were already increasing, so the connection has not reported such a major change. 2003 was even not a good year in agricultural production. Low crop yields due to high prices were observed, and if it is considered the base year, it also might distort the welfare effects of EU accession.

Although welfare changes are negligible after the EU accession in the medium-term, a forthcoming study might focus on changes in the long-term. Beside the CAP support programme, more events may occur that bias consumer welfare. Economic recession in 2008, extreme currency exchange rates in 2009 and flood-damaged crop plantations in 2010 could also impact directly on prices and indirectly on consumers. Government policies should broaden the social net in order to compensate the aggrieved consumers.

The research based on full-consumption of products in consumer basket, however it is possible to analyze single specific product consumption as well. Welfare models were established for that purposes. Welfare model such as the double hurdle model is applicable for counting factors that affect welfare. The models enable to give basis for food industry in order to fit production in with the customer needs.

As a result of the calculations it could be realized, that Laspeyres indexes exceeded 100 percent for all three consumer groups. It means that the increasing food prices had a slightly negative impact on the overall consumer welfare. The highest increase (3.7 percent) was observed by the low income group which leads us to draw the inference that this group is the most hard-hit due to the accession. The average amount of the compensation varied between 4.2 and 5.3 EUR in 2008. In average compensation amount that should be added to the average households to remain as well off as in 2003 is 4.8 EUR. Because of the difference in the weightings used for the Laspeyres and Paasche indexes, the two indexes produced different results for the same period. Similarly the equivalent variation varies between 2-2.5 EUR among the low and high income group.

To have a look at the meat industry closer as an example today the meat industry is responsible for the slaughters of animals, processing and packing the meat, and finally for distributing it to retailers, restaurants to the end of the food chain: for human consumption. In recent years, the health benefits of meat are overshadowed by risks and by food-borne hazards. The consumers have altered their consumption of various meats. Consumption of red meat is changing, while consumption of white meat is increasing. The Hungarian meat industry is being affected by the transition of 1989, the EU accession in 2004, new regulations and by growing quantity of import meat. The country was not avoided from animal diseases either. BSE, dioxin-contamination and avian flu all occurred less or more important losses in production and demand. The meat consumption, the sign of welfare and prosperity is affected by healthcare concerns, production outputs and household incomes. Animal disease outbreaks had accelerated a shift in consumption away from red meat to poultry, which is now the most commonly produced and consumed meat-type in Hungary.