# Trends in Food Expenditure, Consumption and Nutrition in Latvia
# Pārtikas izdevumu, patēriņa un uzturvērtības tendences Latvijā

**Dina Popluga, Ligita Melece**
Latvian State Institute of Agrarian Economics
Latvijas Valsts Agrārās ekonomikas institūts
e-mail: dina@lvaei.lv; ligita@lvaei.lv

**Abstract.** The population welfare level remarkably changed after 1990 when Latvia experienced dramatic economic changes. These changes affected the structure of food expenditure and consumption satisfying not only quantitative, but also qualitative food needs of inhabitants. The aim of this study was to analyse the trends of food consumption patterns and nutritive value of diet in Latvian households over the past decade. The study results showed that Latvian food consumption pattern had significantly changed over the last decade. At present food, transport, housing, water, electricity and gas constitute the largest categories of household expenditure. Furthermore, Latvian population constantly allocate more money for education, recreation, and culture. However, despite the fact that the share of food expenditure (expressed in % of total household expenditure) annually decreases, Latvia is still among those European Union member states which households spend relatively high share of their disposable income for purchasing food. A positive correlation was concluded between food consumption and income. For instance, consumption of cereal, oil and fat products tend to decline, whereas consumption of beverages, meat and fish appears to rise with the increase of income. Regardless some positive qualitative changes in the dietary pattern of Latvian population, the general situation is unsatisfactory due to high share of animal origin fat, sugar, and low share of plant origin calories in the nutritive value of Latvian population.
**Key words:** food consumption, expenditure, nutrition, household.

## Introduction

Food consumption and nutrition are important factors in the promotion and maintenance of good health throughout the entire life course. Therefore these factors have been broadly investigated by different organizations, like World Health Organization (WHO) (WHO, 2006; 2003; 1999), United States Department of Agriculture (USDA) (USDA, 2007) and researchers (Friedl et al., 2006; Schenkel et al., 2005; Wu, 2004).

Many studies show close relationship between the consumption and income, which can be directly related with expenditure. It has been proved that economic development is normally accompanied by improvements in a country's food supply and the gradual elimination of dietary deficiencies, thus improving the overall nutritional status of the country's population (WHO, 2003).

Some authors point out that economic development also brings quantitative and qualitative changes in the diet. These changes include shifts in the structure of the diet towards a higher energy density diet with a greater role for fat and added sugars in foods, greater saturated fat intake (mostly from animal sources), reduced intakes of complex carbohydrates and dietary fiber, and reduced fruit and vegetable intakes (Elsner, Hartman, 1998; Frazao et al., 2007).

At the beginning of the 1990s, radical changes in Latvia's economics occurred. K. Elsner and M. Hartman point out that due to these changes most families bought food[1] products solely to satisfy their quantitative food needs. At the end of the 1990s, within the improvements in economic situation, the diversification of these expenses begun – the assortment of food purchased expanded, and nutrition value of the consumed products expanded and improved (Elsner, Hartman, 1998).

Therefore Latvia is a good example where broad research studies in the field of food consumption considering development of inhabitant's welfare level could be carried out. However, only few research studies about food consumption patterns in Latvia can be found (LVAEI, 2007; Pirksts et al., 2007)

Such evaluation of current situation encouraged carrying out this research and the following **hypothesis** was highlighted: income level is an important factor

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[1]  Here and further "food" – food and non-alcoholic beverages.

affecting food consumption pattern and nutritive value of consumed food and its trends.

The **aim** of this study was to analyze the trends of food consumption patterns and nutritive value of diet in Latvian households over the past decade. The main **objectives** were:
–   to characterize food expenditure in the budget of Latvian households and its main trends;
–   to describe trends of Latvian households food consumption, and to examine the possible development trends over the next several years;
–   to evaluate trends of consumed food nutritional value.

## Materials and Methods

Data output to meet the objectives of this study were obtained from Central Statistical Bureau of Latvia (CSB) (Central Statistical Bureau of Latvia, 2007) as well as from the Household Budget Survey (HBS) (Central Statistical Bureau of Latvia, 2006).

Data grouping and analysis methods were used to describe food expenditure in the budget of Latvian households, and to identify its main trends.

Quintile groups were used to characterise the food consumption and expenditure in households of different levels. In Household Budget Survey households are divided into quintiles according to their disposable income per household member. Quintile groups are formed by arranging all households in ascending sequence by income per one household member and dividing them afterwards in five equal groups. Each quintile represents 20%, or one fifth, of all households, where Quintile 1– the poorest households, Quintile 5 – the richest households.

A squared correlation coefficient ($R^2$) was calculated to estimate the main tendencies of a household's consumption of staple food groups (cereal products, meat products, dairy products and fat) in the past decade. If the $R^2$ is greater than 0.8 then there is a *marked tendency* towards a growth or decrease in consumption of certain food groups.

Statistical data analysis equalising the dynamic rows with analytical equalising methods, resulting in a straight or regular curved trend line, thus best reflecting the data analysis were performed in order to establish permanent connections. The calculations were done with the least square method, and the results were expressed as the trend lines.

Other important characteristics calculated in order to compare quantity and price that households with different income levels (Quintile 1 and Quintile 5) have paid for purchasing the same products were the ratio of product quantity (1) and ratio of price (2):

$$y = \frac{Q_5}{Q_1}, \qquad (1)$$

where
  y   – ratio of product quantity;
  $Q_5$ – quantity of consumed products in households representing Quintile 5, kg;
  $Q_1$ – quantity of consumed products in households representing Quintile 1, kg;

$$y = \frac{P_5}{P_1}, \qquad (2)$$

where
  y   – ratio of price;
  $P_5$ – purchase price of consumed products in households representing Quintile 5, LVL;
  $P_1$ – purchase price of consumed products in households representing Quintile 1, LVL.

In order to forecast the food consumption in Latvia for the period of next seven years (2007 to 2013) the following methods and materials were used: food consumption dynamics in Latvia from 1990 to 2006; consumption regularities (consumption of various foods depending on income – the Engel curve); forecasts of other European countries' food consumption, and also the analysis of consumption forecasts done by international institutions.

The calculations of nutritional or nutritive value were done using the norms of chemical content of different food products by Souci and co-authors (Souci et al., 1994).

The methods of analysis and synthesis as well as induction and deduction methods were used to draw conclusions.

## Results and Discussion
### Food Expenditure in the Budget of Latvian Households and its Trends

According to the data of CSB, within the last decade, the Latvia' s household's disposable income has increased more than two times (from LVL 51.52 in year 1996 to LVL 110.30 in year 2006) due to rapid economic development and employment growth (Central Statistical Bureau of Latvia, 2007). As a result of this structure of households' consumption expenditure has changed and since year 1996 consumption expenditure per one household member has increased by 70%.

In 2006, the largest categories of household expenditure were:
–   food, with the average monthly household expenditure of LVL 43.69 per household member, representing 28% of the total household expenditure on goods and services;

- transport, with the average monthly household expenditure of LVL 20.27, representing 13% of the total household expenditure on goods and services;
- housing, water, electricity, gas and other fuels, with the average monthly household expenditure of LVL 19, representing 12% of the total household expenditure on goods and services.

Two general tendencies related to the increase of a household's income level can be observed in Latvia and also in other developing and developed countries.

Firstly, although household's food expenditure annually increases, its percentual share of total household expenditure decreases (Table 1). This trend is consistent with Engel's Law, a phenomenon first observed by Ernst Engel, who found that, as income increases, food spending also increases, but the proportion of income devoted to food declines (Merella, 2006). Here it should be noted that the percentage of consumption expenditure on food is one of the internationally comparable material of welfare indicators. Austrian and American researchers (Friedl et al., 2006; Frazao et al., 2007) stressed that in low-income countries food expenditure forms the vast majority of total household budget (up to 50%) while in high-income countries, for example, Organisation for Economic Co-operation and Development (OECD) countries, expenditure for food is small (about 15% of total household budget) as more money

is allocated to education, recreation and culture, and for purchasing nonexpendable goods.

Despite that in Latvia the food expenditure share annually decreases (since 1996 food expenditure share of total household expenditure has decreased for 22.8 points or 55.2%), Latvia is still among those European Union member states whose households spend relatively high share of their disposable income for purchasing food (Latvia is on the sixth place). Higher share is only in Slovakia, Poland, Lithuania, and Rumania (USDA, 2007).

Secondly, the trend toward consuming more food away from home was observed due to spending less time for preparing meal at home (Fig. 1). A similar result is given by Irish researchers estimating Irish household's expenditure (Keelan et al., 2005).

Nevertheless, the proportion of income spent on food in Latvian households varies, depending on their income level. For instance, in 2006, a household member in the lowest income quintile (Quintile 1) spent for food 35% of total consumption expenditures per month, while in the highest income quintile (Quintile 5) – only 20%. However, assessing the structure of household's budget, we can conclude that the welfare level of all households rises with the decrease of the annual share of consumption expenditure on food.

Figure 2 shows that the expenditure for meat and meat products, milk, cheese and eggs, vegetables,

Table 1

**The structure of household's consumption expenditure in Latvia (% of total expenditure), between 1996 and 2006**

|  | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Food and beverages | 50.9 | 46.8 | 41.0 | 38.2 | 36.5 | 36.4 | 35.2 | 32.4 | 30.6 | 31.0 | 28.1 |
| Transport | 6.0 | 7.0 | 6.7 | 7.4 | 7.5 | 9.4 | 9.7 | 10.7 | 11.9 | 11.6 | 13.1 |
| Housing, water, electricity, gas and other fuels | 14.3 | 15.0 | 16.6 | 17.3 | 16.3 | 14.3 | 13.0 | 12.7 | 12.6 | 12.0 | 12.2 |
| Clothing and footwear | 5.7 | 5.7 | 6.9 | 6.5 | 6.5 | 6.4 | 6.8 | 7.5 | 7.2 | 7.8 | 7.7 |
| Recreation and culture | 4.1 | 4.6 | 5.5 | 5.6 | 6.2 | 6.2 | 6.5 | 6.6 | 6.2 | 6.7 | 7.5 |
| Communication | 1.4 | 2.0 | 3.1 | 4.2 | 5.2 | 5.3 | 5.9 | 6.0 | 6.6 | 6.1 | 6.1 |
| Hotels, cafes and restaurants | 2.4 | 2.6 | 2.4 | 2.2 | 2.4 | 4.9 | 5.6 | 4.9 | 5.3 | 5.6 | 5.9 |
| Furnishings and household equipment | 2.5 | 3.0 | 4.0 | 4.9 | 4.8 | 4.3 | 4.4 | 5.4 | 5.1 | 5.5 | 5.8 |
| Miscellaneous goods and services | 3.1 | 3.7 | 4.0 | 4.3 | 4.1 | 4.3 | 4.8 | 5.0 | 5.2 | 5.1 | 5.2 |
| Health | 3.7 | 3.8 | 3.4 | 3.7 | 4.0 | 3.9 | 3.2 | 3.6 | 3.9 | 3.9 | 3.7 |
| Alcoholic beverages and tobacco | 5.1 | 5.0 | 5.4 | 4.8 | 5.5 | 3.1 | 3.4 | 3.6 | 3.5 | 3.3 | 3.3 |
| Education | 0.8 | 0.8 | 1.0 | 0.9 | 1.0 | 1.5 | 1.5 | 1.6 | 1.8 | 1.5 | 1.4 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
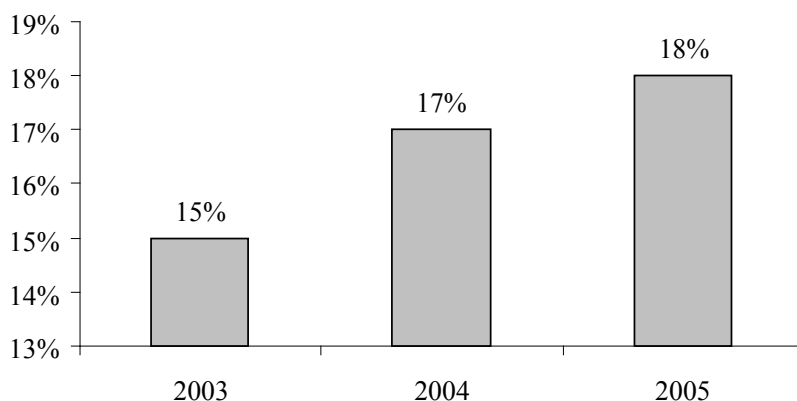
Fig. 1. The average share of food expenditures spent for food out of home in Latvia between 2003 and 2005 (%).
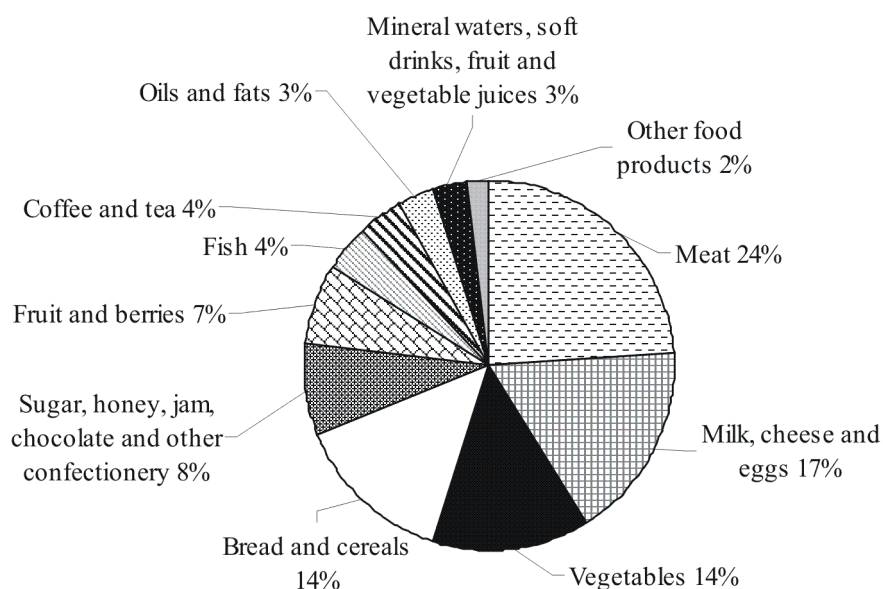


Fig. 2. The structure of food expenditure (% of total food expenditure), 2006.

bread and cereals has dominated in Latvian food consumption.

According to American researchers, staple food products, such as cereals, fats and oils, fruits and vegetables, account for a larger share of the total food budget in low-income countries than in higher income countries, while meat and dairy budget shares are greater for high-income countries (Martin, 1999).

**Trends of Latvian Food Consumption**

The food consumption structure and its trends in Latvia are analyzed on the basis of HBS assuming that average household's consumption reflects per capita consumption.

Figure 3 presents the main trends of staple food consumption per capita between 1997 and 2006 in Latvia. The product groups the consumption of which

has the sharpest decrease are bread and cereal products ($R^2$=0.80), and fats ($R^2$=0.83), whereas consumption of meat and its products have increased ($R^2$=0.98).

Total meat consumption has increased by 31% since 1997. In general consumption of pork, poultry, sausages, smoked meat and semi-manufactured meat products has increased, while consumption of beef – decreased.

Bread and cereal consumption has decreased by 20% largely due to decline of wheat and rye bread consumption. Certain regularities have been found analyzing bread and cereal products' consumption in Latvia's households with different income level where bread and cereal product consumption is conversely to inhabitants' income (Fig. 4). For instance, in households with low income (Quintile 1 and 2) the consumption of bread and cereal products is bigger
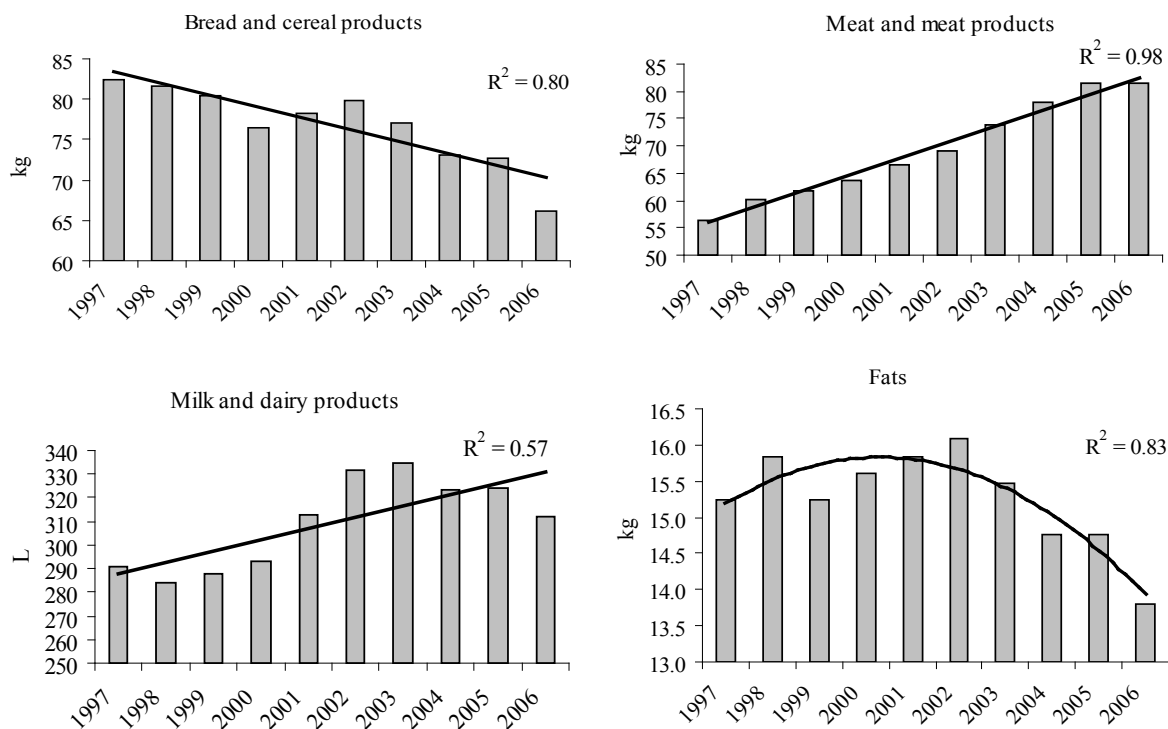
Fig. 3. The consumption of staple food groups in Latvian households between 1997 and 2006 (kg).
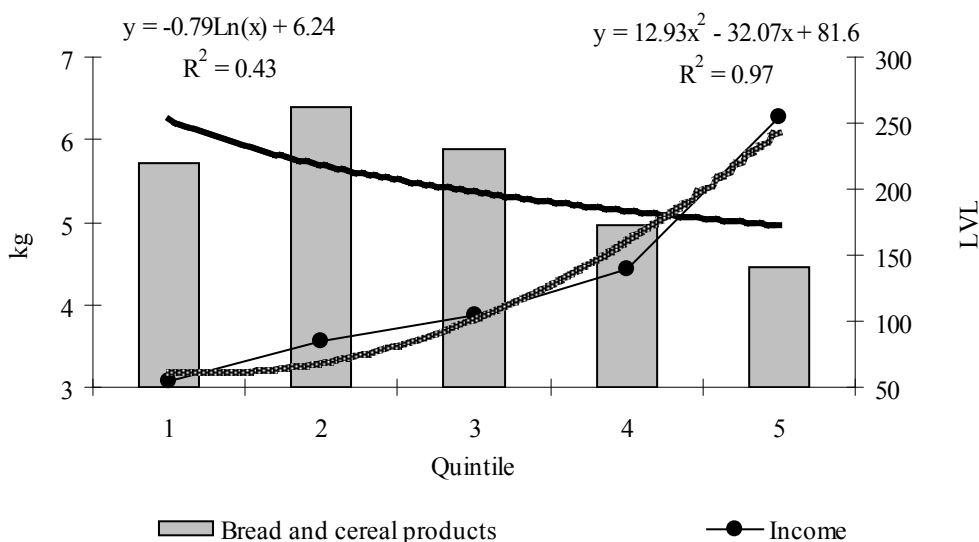


Fig. 4. The consumption of bread and cereal products (kg) in comparison with
a household's disposable income (LVL) in quintile groups, 2005.

than in households with higher income (Quintile 4 and 5).

The consumption of milk and dairy products also shows a decline after the year 2003. It is interesting that health concerns have led to the downturn in consumption of some dairy products, particularly whole milk, while consumption of cheese, yoghurt and fermented dairy products has increased.

Higher consumer awareness of the nutritional benefits of a low-fat diet and a positive trend in the substitution of vegetable oils for animal fats in household diets has influenced decreasing of overall fat consumption. However, higher consumption of animal fats and margarine was observed only in households with low income (Quintile 1 and 2).

The consumption of fruits and berries has increased, largely driven by consumer health and nutritional
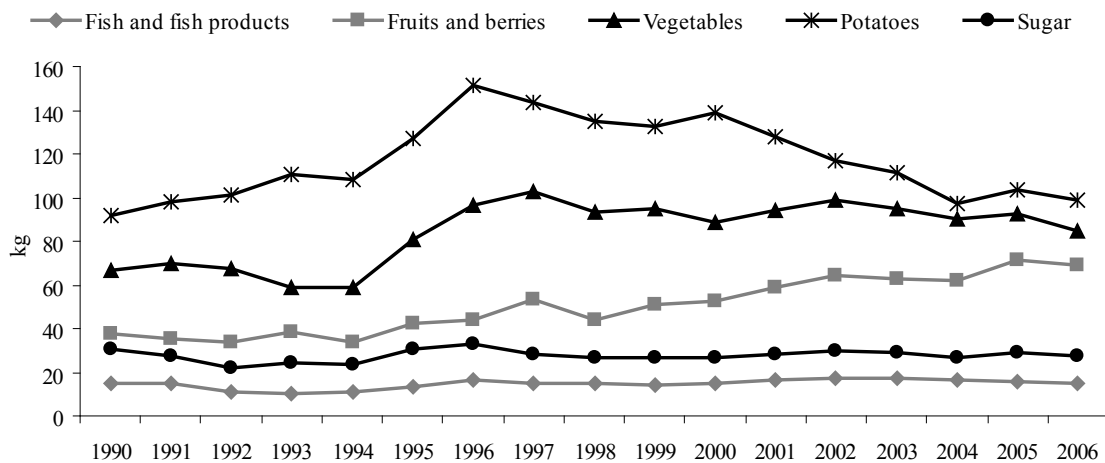
Fig. 5. The consumption of staple food groups in Latvian households between 1997 and 2006, (kg).

concerns. Since 1990 fruit and berries consumption has increased by 23% (Fig. 5).

Since 2002 the consumption of vegetables has decreased, and the study results show that members of Latvian households do not follow the World Health Organization (WHO) recommendations, which suggest an intake of more than 400 grams of vegetables (in addition to potatoes) and fruits per day. According to the WHO, only 60% of Latvian population report that they consume vegetables, excluding potatoes, (raw or cooked) daily (six to seven days per week). Besides in households with higher income level (Quintile 4 and 5) the consumption of frozen vegetables and those having low energy content (e.g., tomatoes, cucumbers) as well as semi-processed vegetables has increased (WHO, 1999).

The average consumption of fish and fish products, sugar, honey, chocolate, and other confectionery has not changed significantly. Some differences could be observed in the consumption structure between households with different income level. For example, households with higher income tend to consume more fresh and smoked fish, chocolates, honey, and ice-cream, while households with low income – cured fish, sugar, and jam.

Assessing the consumption of staple food products in households with the different income level it could be observed that better secured household diet is more diverse than diet of poorly secured households. The better-secured households consume by 69.5% more products (total number of analyzed products – n=95) than the poorest households. Therefore, the main factor affecting the diversity of consumed food is the income level of a household.

The ratio of product quantity and the ratio of price were other important characteristics calculated for comparing quantity and price that households with different income levels (Quintile 1 and Quintile 5) have paid for purchasing the same products. Logically, that households with higher income tend to purchase more diverse products – totally 70% of all analyzed products (n=84); and better secured households tend to purchase more expensive foodstuffs than poorly secured households. Yet, at the same time, households with low income have paid more than households with higher income for purchasing such products as beef, honey, mandarins, bean coffee, etc. (Table 2). In the authors' opinion this could be explained by the fact that consumers from the poorest households prefer shops closer to their place of residence instead of visiting supermarkets where the particular products cost cheaper than in small shops.

M. Schenkel with co-authors specifies that the rapid increase in purchasing power for food has been the most important (but not the only one) contributor to shifts in food consumption patterns (Schenkel et al., 2005). Also J. L. Martin reports that rising incomes and their impact on levels of food consumption has been one of the most important determinants in explaining shifts in global food demand and trade (Martin, 1999). At present in Latvia the income level of population exactly explains food consumptions trends in Latvia.

The forecast results of Latvian food consumption pattern for the planned seven year period (from 2007 to 2013) show the following food consumption tendencies within the household's income growth:
– consumption of bread and cereal products will decrease;
– consumption of meat and meat products on the whole will increase;
– regarding milk and dairy products, only the consumption of whole milk will decrease, whereas the consumption of other milk products will either rise or will remain at the same level (Fig. 6).

Table 2

**The ratio of product quantity and ratio of price for certain food products between Quintile 5 and Quintile 1 in Latvia, 2006**

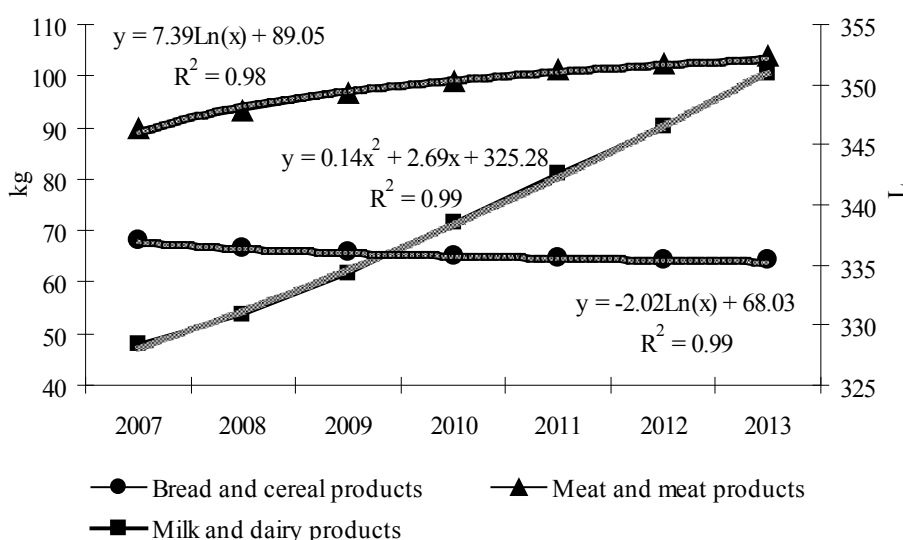| Food products | Quintile 5/Quintile 1 | |
|---|---|---|
| | ratio of product quantity | ratio of price |
| Beef | 2.7 | 0.8 |
| Semi-finished meat products | 1.7 | 0.9 |
| Mandarins | 3.3 | 0.9 |
| Coffee (bean) | 2.9 | 0.9 |
| Honey | 4.0 | 0.9 |
| Garlic | 1.3 | 0.9 |
| Semi-finished products | 2.7 | 0.9 |



Fig. 6. Expected consumption of main foodstuffs (kg or L), forecast for 2007-2013.

In summary, food consumption trends of Latvian households tend to follow some worldwide tendencies (WHO, 2003; Wu, 2004) in terms of consumption of food and individual food items:
- food consumption budget falls as income rises;
- the budget shares of cereal, oil and fat products tend to decline as income increases;
- consumption of beverages, meat and fish appears to rise as income increases.

**Nutritive Value of Consumed Food and its Trends**

The economic development is normally accompanied by improvements in a country's food supply and the gradual elimination of dietary deficiencies, thus improving the overall nutritional status of the country's population (WHO, 2003). However, study results showed that in respect of food consumption, in the quantitative terms, Latvia is getting closer to the developed country's level, while qualitative changes in diet are still unsatisfactory.

Food consumption expressed in kilocalories (kcal) per capita per day is a key variable used for measuring and evaluating the global and regional food situation. Analysis of CSB data shows that dietary energy measured in kcal per capita per day has been fluctuating over the last few years, while globally it is steadily increasing. Average daily calorie consumption in Latvia in 2006 was 2570 kcal, which is 9%, or roughly 257 calories, below Latvian dieticians recommended calorie intake level (2827 kcal day$^{-1}$) (Table 3).

At the same time data shows that a relatively low proportion of food is derived from animal origin, but the tendency is positive, as annually this proportion increases. For instance, in 2002, daily calories consumed from animal products contributed 34% to total calorie intake, but in 2006 the consumption

Table 3

**The nutritional value (kcal or g day$^{-1}$) and origin of consumed food in Latvia, 2003-2006**

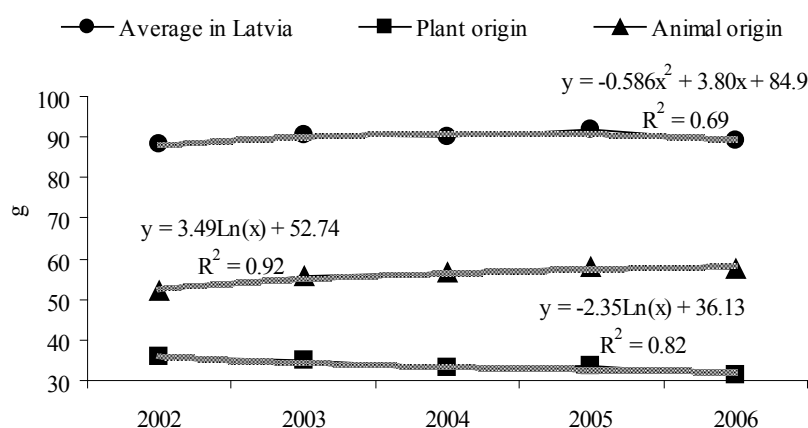|  | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|
| Energy, kcal day$^{-1}$ | | | | | |
| Total | 2663 | 2665 | 2611 | 2675 | 2570 |
| Plant origin | 1768 | 1730 | 1666 | 1712 | 1611 |
| Animal origin | 895 | 935 | 945 | 963 | 959 |
| Carbohydrates, g day$^{-1}$ | | | | | |
| Total | 345 | 336 | 322 | 331 | 312 |
| Plant origin | 331 | 322 | 308 | 317 | 298 |
| Animal origin | 14 | 14 | 14 | 14 | 14 |
| Fats, g day$^{-1}$ | | | | | |
| Total | 116 | 117 | 117 | 119 | 116 |
| Plant origin | 46 | 44 | 43 | 44 | 42 |
| Animal origin | 70 | 73 | 73 | 75 | 75 |



Fig. 7. Daily amount of protein taken with food in Latvia (g), 2002-2006.

of animal products amounted to a share of 37%. A similar increase can be observed for the protein intakes derived from animal products, although absolute protein intake has declined (Fig. 7).

Possible reasons, which have led to increase in the share of animal origin calories and thus to decline in the share of vegetable calories since 2002, are as follows:

- changes in relative prices between plant and animal products, particularly animal fat – speck, margarine, etc.;
- decrease in the consumption of bread and cereals.

However, according to K. Elsner and M. Hartman (Elsner, Hartman, 1998), in the OECD countries

opposite tendency has been observed, which shows absolute fall in meat products consumption since 1980s, and it has been forecasted that this trend will continue in the future, as health consciousness is increasing.

The results of the study show that in the diet of Latvia's inhabitants 45.4% of total daily calories come from carbohydrates, 13.9% – from protein, and 40.7% – from fat. These indicators are inadequate to meet internationally recommended daily intake of energy and other macronutrients. WHO (WHO, 2003) stressed that, in general, the share of nutrients varies according to individual needs (age, gender, etc.), but the preferable average structure of macronutrients in the diet is the following[2]:

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[2]  http://www.healthydiningfinder.com/site/diners/getmore/healthylifestyles/calories.htm

- 45% to 65% of total daily calories should come from carbohydrates;
- 10% to 35% – from protein; and
- 20% to 35% – from fat.

WHO specifies that a diet, adequate to meet physiological requirements, containing sufficient amounts of fruit and vegetables and limited amounts of saturated fats and simple sugars combined with regular physical activity, is a cornerstone of good health (WHO, 2006).

Summarizing the results of the study, adverse changes in Latvian household dietary pattern can be observed, which include shifts in the structure of the diet towards:

- a higher energy density diet with a greater role for fat and added sugars in foods, and greater saturated fat intake (mostly from animal origin);
- reduced intakes of complex carbohydrates;
- reduced vegetable intakes.

Assessing the study results we can partly agree to M. Schenkel and co-authors (Schenkel et al., 2005) which argue that dietary changes are compounded by lifestyle changes. As the main consequences of unbalanced diet are sustained and acute increase in overweight and obesity of Latvia's citizens. According to WHO[3] data, among the population older than 15 years of age, 9.5% of the men and 17% of the women are clinically obese, while 41% of the men and 33% of the women are pre-obese. In all, 50% of the adult population is overweight. Moreover, the nutritional deficiencies are responsible for 1.2% of the disease burden in the Latvia's mortality group.

## Conclusions

The structure of households' consumption expenditure has changed as a result of rapid economic development and employment growth. However, the share for food decreases annually; nevertheless the average share for food remains high comparing with other countries, and is one of the highest in all European Union member states.

Over the last decade Latvia food consumption pattern has changed significantly, particularly after accession to the European Union thus experiencing a similar tendency with other developed countries.

In general, there is a positive correlation between food consumption and income. For instance, the consumption of cereal, oil and fat products tend to decline, whereas consumption of beverages, meat and fish appears to rise as income increases. There are remarkable differences in food consumption (diversity and price of products, quantity of high nutrition value products, etc.) between the households with different income level; therefore income can be defined as the main factor influencing consumption.

Despite some positive qualitative changes in the dietary pattern of Latvian households, for example, increasing share of animal protein in the diet, the general situation is unsatisfactory due to high share of animal origin fat and sugar and low share of plant origin calories in nutritive value of Latvian population.

For more detailed estimation of trends and forecasts of Latvia food consumption and nutrition value it could be necessary to assess other consumption-influenced factors than income level, for instance, age, gender, education, socio-economical status, etc.

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**Anotācija**

Pēc 1990. gada, kad notika būtiskas izmaiņas Latvijas ekonomikā, mainījās iedzīvotāju labklājības līmenis, kas ieviesa izmaiņas pārtikas izdevumu un patēriņa struktūrā, apmierinot ne tikai kvantitatīvās, bet arī kvalitatīvās vajadzības pēc pārtikas. Raksta mērķis bija analizēt galvenās pārtikas izdevumu, patēriņa un uzturvērtības tendences Latvijas mājsaimniecībās pēdējo 10 gadu laikā. Galvenie pētījuma rezultāti ļāva secināt, ka iedzīvotāju izdevumu struktūra pēdējo gadu laikā ir mainījusies. Lielākās izdevumu grupas ir izdevumi pārtikai, transportam un izdevumi mājoklim, turklāt Latvijas iedzīvotāji arvien vairāk naudas līdzekļu atvēl izglītībai, atpūtai un kultūrai. Tomēr, neskatoties uz to, ka izdevumu īpatsvars pārtikai katru gadu samazinās, tas joprojām ir viens no augstākajiem Eiropas Savienībā. Vispārējās pārtikas patēriņa tendences ļauj salīdzināt Latviju ar citām attīstītām valstīm, kur novērojamas līdzīgas tendences. Secināts, ka pastāv pozitīva korelācija starp pārtikas patēriņu un ienākumiem. Piemēram, palielinoties iedzīvotāju ienākumu līmenim, graudaugu, eļļas un taukvielu produktu patēriņš samazinās, bet gaļas, zivju un bezalkoholisko dzērienu (sulu, minerālūdens, avotu ūdens) patēriņš palielinās. Neskatoties uz dažām pozitīvām izmaiņām Latvijas mājsaimniecību patērētās pārtikas uzturvērtības struktūrā, piemēram, dzīvnieku izcelsmes olbaltumvielu īpatsvara palielināšanos uzturā, kopējā situācija ir neapmierinoša, jo organismam nepieciešamā enerģija lielākoties tiek nodrošināta ar dzīvnieku izcelsmes taukiem un saldumiem, bet ievērojami mazāk ar augu izcelsmes produktiem.